

# MULTIPLE INDICATOR CLUSTER SURVEY, 2000

## SUDAN - FINAL REPORT



Federal Ministry of Health



Central Bureau of Statistics



unicef

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## *Foreword*

The governments that signed the World Summit for Children (WSC) Declaration and Plan of Action for Children have committed themselves to monitor the progress made toward the end decade goals. The Convention on the Rights of Children (CRC) Plan of Action called for each country to “establish appropriate mechanism for regular and timely collection, analysis and publication of data required to monitor social indicators related to the well being of children.”

In Sudan, a major joint effort was put into the development of the Multiple Indicator Cluster Survey (MICS) for the end decade review and as a tool for monitoring the situation of children and women during the 2000. The survey results have kept the promise of promoting and monitoring progress towards achievement of the end decade goals. Three extra modules were added to the main questionnaire to cover new issues: wealth index for poverty analysis, children in need of special protection measures, and female genital mutilation. Data were for the first time disaggregated not only by gender and age groups but also by state thus highlighting geographical disparities as well.

The survey was carried out successfully in partnership with the Government of Sudan, UNICEF and the World Bank. The co-ordination between the different line ministries, government institutions, UN agencies, Universities and NGOs was a key factor and a prime mover for producing good quality work. The leading role of the technical and steering committees has to be acknowledged. The spirit of teamwork fostered and led by the Federal Ministry of Health and the Central Bureau of Statistics during the course of implementation is commendable.

Technically the survey has been guided by MENA region through a number of training courses conducted for the counterparts as well for UNICEF staff without which the survey would not be implemented and completed successfully.

The MICS results no doubt will contribute to and enhance the planning and decision-making process and help in formulating policies to promote child rights, allow better resource allocation, address disparities; and help develop programmes in a rights-based framework.

MICS data will be archived and disseminated to the research institutions and the universities for

further analysis and research work.

## Executive Summary

The 2000 Sudan Multiple Indicator Cluster Survey (MICS2) is a nationally representative survey of households, women and children. The objectives of the survey are to provide up-to-date information for assessing the situation of children and women in Sudan and to furnish data needed for monitoring progress toward goals established at the World Summit for Children as a basis for future action.

### *Infant and Under Five Mortality*

Using the direct method, the 1999 UNFPA-supported Safe Motherhood Survey (SMS) data suggest that the infant mortality rate (IMR) was 68 per 1000 live births with little difference between urban and rural areas. Under-five mortality rate (U5MR) was 104 per 1000 live births in the north (101 urban, 105 rural). The Blue Nile, Red Sea and Kassala states have the highest IMR (101, 116 and 101, respectively) and U5MR rates (172, 165 and 148 per 1000 live births, respectively). Conversely, Gezira, Northern and Nahr El Niel states have the lowest U5MR (59, 78 and 81 per 1000 respectively). The SMS estimates the IMR and U5MR in the main urban towns of Juba, Wau and Malakal in the south at 82 and 132 per 1000 live births, respectively (the indirect method).

### *Education*

- Fifty-three percent of children of primary school age in northern Sudan are not attending primary school (37% urban, 63% rural). School attendance in South Darfur is significantly lower than in the rest of the country at 22 percent compared to 72% in Khartoum. At the national level, there is virtually no difference between male and female primary school attendance. In the urban south towns, 42% of school-age children do not attend school.
- Less than a third of children who enter the first grade of primary school eventually reach grade five with a gender parity of 50.1 %. In the Blue Nile state, 86% of the enrolled children does not reach grade five.
- Half of the population over age 15 years is illiterate with a wide range of variation between urban (33%) and rural (61%) without a notable gender gap. The lowest illiteracy rate is in Northern state (28%) and the highest rate is in West Darfur (72.5%). The literacy rate in the main towns in the south is 54.2% among males and 52.3 among females.

### *Water and Sanitation*

- After considerable debate on what constitutes access to safe drinking water, the steering committee agreed to change the indicator to "access to improved source of drinking water" throughout this report. Roughly 40% of the population do not have access to an improved source of drinking water – 21 percent in urban areas and 53 percent in rural areas. The situation in West Darfur State is considerably worse than in other states; only 26 percent of the population in this state get its drinking water from an improved water source compared to 89% in Khartoum. In the urban towns of the south, an average of 60.7% of the population has access to improved water sources. In Malakal the figure is

only 5% where the main source of water is the river.

- Forty percent of the population of Sudan have no access to sanitary means of excreta disposal with a range in the northern states between 14% and 64%. Only 46.3% of the rural population have such access. In the major southern towns (urban) access to sanitary means of excreta disposal stands at 48.0%

#### *Child Malnutrition*

- Eleven percent of children under the age five in northern Sudan showed wasting (too thin for their height). In the rural areas in the north, almost 12 percent of under-five children are moderately and 12% severely wasted; compared to 16 and 7 percent, respectively in the urban areas. The worst situation in moderate wasting was found in North Kordofan, River Nile, White Nile, and North Darfur; while severe wasting is noted in West Kordofan, North Darfur and Blue Nile states
- Children whose mothers have secondary or higher education are at least likely underweight compared to children of mothers with less education.

#### *Breastfeeding*

- Approximately 19 percent of children aged less than four months in the northern states, and 18% of those in the southern towns are exclusively breastfed, a level considerably lower than the recommended breastfeeding. At age 6-9 months, 44 percent of children are receiving breast milk and solid or semi-solid foods. By age 20-23 months, only 44 percent continue to breastfeed.

#### *Low Birth weight*

- Although the survey showed that approximately 31 percent of infants are estimated to weigh less than 2500 grams at birth (question on knowledge not actual weights).

#### *Salt Iodination*

- .6 percent of households in northern Sudan has adequately iodised salt. In the urban north the percent of iodised salt use is .9 % compared to .4 % in the rural areas while in the South the figure account for .5%

#### *Vitamin A Supplementation*

- Within the six months prior to the MICS, 44 percent of children aged 6-59 months received a high dose of Vitamin A supplement. Approximately six percent did not receive a supplement in the last six months but did receive one prior to that time. In rural areas in the north, 39.7 % received Vitamin A supplement compared to 51.2 % in the urban north and 33.7% in urban south.
- The likelihood of Vitamin A supplementation is related to the mother's level of education. The percentage of children receiving a supplement in the last six months increased from forty percent among children whose mothers have no education to fifty percent among children of mothers with secondary or higher education.

- Only about 19 percent of mothers in the north and 29% in the urban south with a birth in the year before the MICS received a Vitamin A supplement within eight weeks of the birth. Coverage was highest in Khartoum (45%) and lowest in South Darfur (11%).

#### *Immunisation Coverage*

The results for all the children aged 11-23 months who had vaccination at any time were as follows:

- Only 26.4% of the children aged 11-23 months have had all the vaccines. 64.5% of the children had BCG, 65.9% DPT1 and 42.0% completed DPT3.
- 74% had the first dose of polio but only 44.2 percent had the third dose of polio.
- 51.5% of the children were vaccinated against measles.
- Only 25.9% of children have health cards.

The following results pertain to children with complete birth date (day, month and year) and have health cards. Those were very few because in Sudan there is a problem of birth registration (only 58% have birth certificate).

- Ninety-seven percent of children aged 12-23 months and who have birth certificate or completed birth date (day/month/year) and vaccination card received a BCG vaccination by the age of 12 months and a first dose of DPT. The percentage declines for subsequent doses of DPT to 79 percent for the second dose, and 93 percent for the third dose.
- Similarly, 98 percent of children received Polio 1 by age 12 months and this declines to 94 percent by the third dose.
- The coverage for measles vaccine is lower than for the other vaccines at 86 percent, primarily because only about 74 percent of children get the vaccine before their first birthday.
- Slightly over half of children had all eight recommended vaccinations in the first 12 months of life.
- Male and female children are vaccinated at roughly the same rate.
- Vaccination coverage is highest among children whose mothers have secondary or higher education. The education differences are greatest for the third doses of DPT and Polio, suggesting that drop out rates are higher among children with less educated mothers.

#### *Diarrhoea*

- Approximately 28% of U5C in the north and 25% in urban south had diarrhoea in the two weeks preceding the survey with little variation between rural (29.1%) and urban (26.5%) in the north. Among the northern states the rate varied from 40% in Blue Nile to the 19% in south Kordofan.

- Approximately 37 percent of children with diarrhoea received one or more of the recommended home treatments (i.e. were treated with ORS or RHF).
- Only 24 percent of children with diarrhoea received increased fluids and continued eating as recommended.

#### *Acute Respiratory Infection*

- Seventeen percent of under-five children in the north and 14 percent in the towns of the south had an acute respiratory infection in the two weeks prior to the survey. In the north, about 15 percent of U5C in urban compared to 17.8% in the rural areas had ARI. Approximately 62 percent of these children were taken to an appropriate health provider.

#### *Malaria*

- In the north the percentage of under-five children who had fever in the two weeks prior to the survey was 22.8% with a small gender gap. Differences between the states were large ranging from 11% in the Northern state to 45% in Blue Nile state. In the south the urban average is 37.2 higher than the northern urban.
- 24 percent of under-five children slept under a bed net the night prior to the survey interview. However, only about 8% of the bed nets used are impregnated with insecticide.

#### *HIV/AIDS*

- Only 9% of women aged 15-49 in the north and 13% in the towns of the south knew two of the main ways to prevent HIV transmission: having only one uninfected sex partner, using a condom every time, or abstaining from sex.. 15.7 percent in urban versus 5.7% in rural northern states.
- Only 6% of the women correctly identified three misconceptions about HIV: that HIV can be transmitted through supernatural means, that it can be transmitted through mosquito bites, and that a healthy looking person cannot be infected.
- The percentage of women who had sufficient knowledge of HIV transmission and the percentage who knew where to get tested for HIV increased with the level of education.

#### *Contraception*

- Only 21% of currently married women have ever used a method of family planning and 7 percent are currently using a method. The pill is the most widely used method (4 percent), followed by periodic abstinence (2 percent).

#### *Prenatal Care*

- Forty two percent of women in northern Sudan and 56 percent in southern towns with recent births were protected against neonatal tetanus. The vast majority of these women (40%) received two or more doses of tetanus toxoid within the last three years.

A wide variation between rural and urban has been noted. 52% urban compared with 31.2% rural. Women living in Khartoum are most likely to be protected (65 percent) while those living in Western Darfur are the least likely to be protected (24 percent). The urban south reached 54.8.

- About 70 percent of the women in northern Sudan and 90 percent in the three Southern towns receive antenatal care from skilled personnel (doctor, health visitor, midwife trained TBA). A little over one quarter of women with a birth in the year prior to the survey in northern Sudan and only 4 percent in the towns of the south received antenatal care from a doctor. 19 percent in northern Sudan and 66 percent in the towns of the south received antenatal care from a health visitor. 15 percent, and 10 percent respectively from a midwife, and 11 percent from trained TBA.

#### *Assistance at Delivery*

- In the northern Sudan 44.4% and 16.3% in the towns of the south women delivered with the assistance of mid-wife. Doctors assisted with the delivery of 6% of births and health visitors assisted with 8%, and trained TBA assisted with 29% in northern Sudan. In the towns of the south: Juba, Wau, and Malakal the percentage is 3.9% for doctors, 65.9% for health visitors, 9.5% for mid-wife and 11.1% trained TBAs.

#### *Birth Registration*

- The births of 59 percent of children under five years in Sudan have been registered. There are no significant variations in birth registration across sex, age, or education categories. The registration in the urban areas is 82.7% compared to a low level of registration in rural areas only 45.4 percent.
- Overall, 90 percent of children aged 0-14 months are living with both parents. Children who are not living with a biological parent comprise one percent and children who have one or both parent's dead amount to 4 percent of all children aged 0-14.

#### *Child Labour*

- About one percent of children aged 5-14 years engages in paid work; and three percent participate in unpaid work for someone other than a household member.
- Ninety seven percent of children are engage in domestic tasks, such as cooking, fetching water, and caring for other children, for less than four hours a day while three percent spend more than four hours a day on such tasks.

#### *Child Disability*

- Despite some variations among the northern states 71.7 percent of the child physical disability is in the rural areas. This is an indicative of some relation between the disability and poverty. The highest child disability rate exists in Gedarif (81.6 %) and Gezira (68%), while that of mental disability is in White Nile and then northern states.
- In northern Sudan 50.7 percent of the disabled were participating in daily activities such

cleaning, playing and cooking. 28.5 percent were enrolled in schools whilst that of the towns in the south is 51.8 percent.

*Wealth Index*

- In a sample of 25,200 households 47 percent were classified as poor, 21 percent as middle and 32 percent as rich. The Wealth Index is a method used by the World Bank and applied on the asset modules where the house inventories were used to reflect the condition of living. West Darfur, North Kordofan , and Gedarif states have the largest percentage of poor families, 67,66.8 and 60 percent respectively.
- In the rural areas the poor families account for 64.2 percent while in urban areas the figure is 17.9 percent.
- Only 6.2 percent of the families in the north have a floor of wood. 89 percent have straw and 3.1 percent have Daфра.
- About 12 percent have gas/electricity as source of energy. The majority (87 percent) are using firewood/charcoal and dung.
- From the poor 66 percent are having land, for the middle group 19 percent has land while the rich have only 15 percent owned land for cultivation.

## Summary Indicators

World Summit for Children Indicators		
Under-five mortality rate	Probability of dying before reaching age five	104 per 1000
Infant mortality rate	Probability of dying before reaching age one	68 per 1000
Underweight prevalence	Proportion of under-fives who are too thin for their age	
Stunting prevalence	Proportion of under-fives who are too short for their age	
Wasting prevalence	Proportion of under fives who are too thin for their height	11.2 percent
Use of safe drinking water	Proportion of population who use a safe drinking water source	60 percent
Use of sanitary means of excreta disposal	Proportion of population who use a sanitary means of excreta disposal	60 percent
Children reaching grade five	Proportion of children entering first grade of primary school who eventually reach grade five	71 percent
Net primary school attendance rate	Proportion of children of primary school age attending primary school	47 percent
Literacy rate	Proportion of population aged 15+ years who are able to read a letter or newspaper	50.6 percent
Antenatal care	Proportion of women aged 15-49 attended at least once during pregnancy by skilled personnel	72 percent
Contraceptive prevalence	Proportion of married women aged 15-49 who are using a contraceptive method	7 percent
Childbirth care	Proportion of births attended by skilled health personnel	87 percent
Birth weight below 2.5 kg.	Proportion of live births that weigh below 2500 grams	31 percent
Iodised salt consumption	Proportion of households consuming adequately iodised salt	60 percent
Children receiving Vitamin A supplementation	Proportion of children aged 6-59 months who have received a Vitamin A supplement in the last 6 months	44 percent
Mothers receiving Vitamin A supplementation	Proportion of mothers who received a Vitamin A supplement before infant was 8 weeks old	19 percent
Exclusive breastfeeding rate	Proportion of infants aged less than 4 months who are exclusively breastfed	19 percent
Timely complementary feeding rate	Proportion of infants aged 6-9 months who are receiving breast milk and complementary food	44 percent
Continued breastfeeding rate	Proportion of children aged 12-15 months and 20-23 months who are breastfeeding	44 percent (12-15) 44 percent (20-23)
DPT immunisation coverage	Proportion of children immunised against diphtheria, pertussis and tetanus by age one	42 percent?
Measles immunisation coverage	Proportion of children immunised against measles by age one	51.5 percent
Polio immunisation coverage	Proportion of children immunised against polio by age one	44.2 percent
Tuberculosis immunisation coverage	Proportion of children immunised against tuberculosis by age one	64.5 percent
Children protected against neonatal tetanus	Proportion of one year old children protected against neonatal tetanus through immunisation of their mother	42 Percent
ORT use	Proportion of under-five children who had diarrhoea in the last 2 weeks who were treated with oral dehydration salts or an appropriate household solution	37 percent
Home management of diarrhoea	Proportion of under-five children who had diarrhoea in the last 2 weeks and received increased fluids and continued feeding during the episode	24 percent
Care seeking for acute respiratory infections	Proportion of under-five children who had ARI in the last 2 weeks and were taken to an appropriate health provider	62 percent
Pre-school development	Proportion of children aged 36-59 months who are attending some form of organised early	16 percent

	childhood education program	
<b>Indicators for Monitoring Children's Rights</b>		
Birth registration	Proportion of under-five children whose births are reported registered	59 percent
Children's living arrangements	Proportion of children aged 0-14 years in households not living with a biological parent	1 percent
Orphans in household	Proportion of children aged 0-14 years who are orphans living in households	0.2 percent (both parents) 3.86 percent (one parent)
Child labour	Proportion of children aged 5-14 years who are currently working	14 percent
<b>Indicators for Monitoring IMCI and Malaria</b>		
Home management of illness	Proportion of under-five children reported ill during the last 2 weeks who received increased fluids and continued feeding	21.2 percent
Care seeking knowledge	Proportion of caretakers of under-five children who know at least 2 signs for seeking care immediately	59.2 percent
Bednets	Proportion of under-five children who sleep under an insecticide impregnated bednet	24.3 percent (high risk areas only)
Malaria treatment	Proportion of under five children who were ill with fever in the last 2 weeks who received anti-malarial drugs	22.7 percent
<b>Indicators for Monitoring HIV/AIDS</b>		
Knowledge of preventing HIV/AIDS	Proportion of women who correctly state the 3 main ways of avoiding HIV infection	9 percent
Knowledge of misconceptions of HIV/AIDS	Proportion of women who correctly identify 3 misconceptions about HIV/AIDS	6 percent
Knowledge of mother to child transmission	Proportion of women who correctly identify means of transmission of HIV from mother to child	12.9 percent
Attitude to people with HIV/AIDS	Proportion of women expressing a discriminatory attitude towards people with HIV/AIDS	12.4 percent
Women who know where to be tested for HIV	Proportion of women who know where to get a HIV test	8 percent
Women who have been tested for HIV	Proportion of women who have been tested for HIV	1.1 percent

## **I. Introduction**

### ***Background of the Survey***

At the World Summit for Children (WSC) held in New York in 1990, the Government of Sudan (GoS) pledged itself to a Declaration and Plan of Action for Children. Subsequently, a National Plan of Action for Children was developed and implemented. The Sudan launched a Mid-Decade Goals Plan of Action (SMDGPA) in 1994, prepared by the Federal Ministry of Health (FMOH) with the assistance of and in co-operation with UNICEF and WHO. The plan laid down strategies and priorities in achieving the mid-decade goals in the Sudan.

The WSC Plan of Action called for the establishment of mechanisms to monitor progress toward the goals and objectives set for the year 2000. Toward this end, UNICEF has developed, in co-ordination with other international organisations, a core set of 75 indicators on specific aspects in the situation of children and women. The first Multiple Indicator Cluster Survey (MICS1) was conducted in 1995 to measure progress at mid-decade while the 2000 MICS (MICS2) was implemented to provide end-decade information on many of the indicators. Information on other indicators will be derived from the vital registration system and various monitoring systems.

MICS2 was a joint exercise between the Federal Ministry of Health and the Central Bureau of Statistics. Financial, technical assistance and training were provided by UNICEF Sudan Country Office and MENA region under the guidance of UNICEF HQ. The World Bank provided part of the cost. This final report presents results on the principal topics covered in the survey and on the World Summit indicators.

### ***Sudan Background***

Sudan is a vast country with an area of 2.5 million square kilometres and a population of 31 million in year 2000. The annual population growth rate is 2.6 percent. Sudan is multicultural, multiethnic with different local dialects. The majority of the people in the northern states is Muslims and speaks Arabic, while in the south the people are predominantly aesthetic and the majority speak local African languages.

With the introduction of the federal system in 1994, the country was divided into twenty-six states each with a state government under a governor (Wali). The State is divided into a number of provinces as a political unit for advocacy and political mobilisation. Each province consists of Rural Councils as the smallest unit of government with a role to plan and provide social services. During the 1990s, a number of national surveys were conducted in Sudan, e.g. the PapChild, Safe Motherhood and MICS1. Among a number of problems, access in the war-affected areas is the major constraint that reduces the chances for full coverage. Therefore, only safe urban areas were included in the surveys for the southern parts of the country.

The long and devastating civil war in the towns of the south has resulted in the worst internal displacement problem in the world. It is estimated that there are four million internally displaced people, of whom 147,000 are children less than one year, 630,000 are children under five and 924,000 are women at childbearing age.

With 80% of the population depending on agriculture and livestock production, the cyclic natural catastrophes of drought and pest infestation have made the situation even worse for the increasingly vulnerable population. Currently, the percentage of the people living below the poverty line is variously estimated at 70 - 90%<sup>1</sup>.

### ***Survey Objectives***

The primary objectives of the 2000 Sudan Multiple Indicator Cluster Survey were:

- To provide up-to-date information for assessing the situation of children and women in Sudan at the end of the decade and for looking forward to the next decade;
- To furnish data needed for monitoring progress toward goals established at the World Summit for Children;
- To contribute to the improvement of data and monitoring systems in Sudan and to strengthen technical expertise in the design, implementation, and analysis of such systems.

## **II. Survey Methodology**

### ***Sample Design***

The sample for the Sudan MICSII was designed to provide estimates for a wide range of socio-economic indicators not only at the national level but also disaggregated by state, urban-rural setting and by gender for Sudan. Sixteen states in the north and the three main towns in the south (Juba, Malakal and Wau) comprising one unit, were covered giving a total of 17 "states". The sample design was a two-stage stratified cluster sample. The 17 "states" were considered as strata, and were further stratified into urban and rural areas according to the population size. The village councils (VC) in rural areas and quarter councils (QC) in urban areas were taken as the primary sampling units (PSUs) in stage one. The PSUs were selected using probability proportional to size (PPS), with modifications in some states. Secondly, a fixed number of households (HH) were taken from each selected PSU using systematic sampling. Full technical details of the sample are included in Appendix A.

### ***Questionnaires***

The Sudan questionnaire is an adaptation of the MICS Model Questionnaire with some modifications and additions. A household questionnaire is designed to collect information on household members including sex, age, literacy, marital status, and orphanhood status was administered in each household. **The household questionnaire** also included education, child labour, water and sanitation, salt iodisation and assets modules. In addition to the household questionnaire, two sub-questionnaires were administered in each household for women age 15-49 and for children under the age of five. The children questionnaire was administered to the mother or caretaker of the child. The questionnaire for **women** contained the following modules:

1. Child mortality

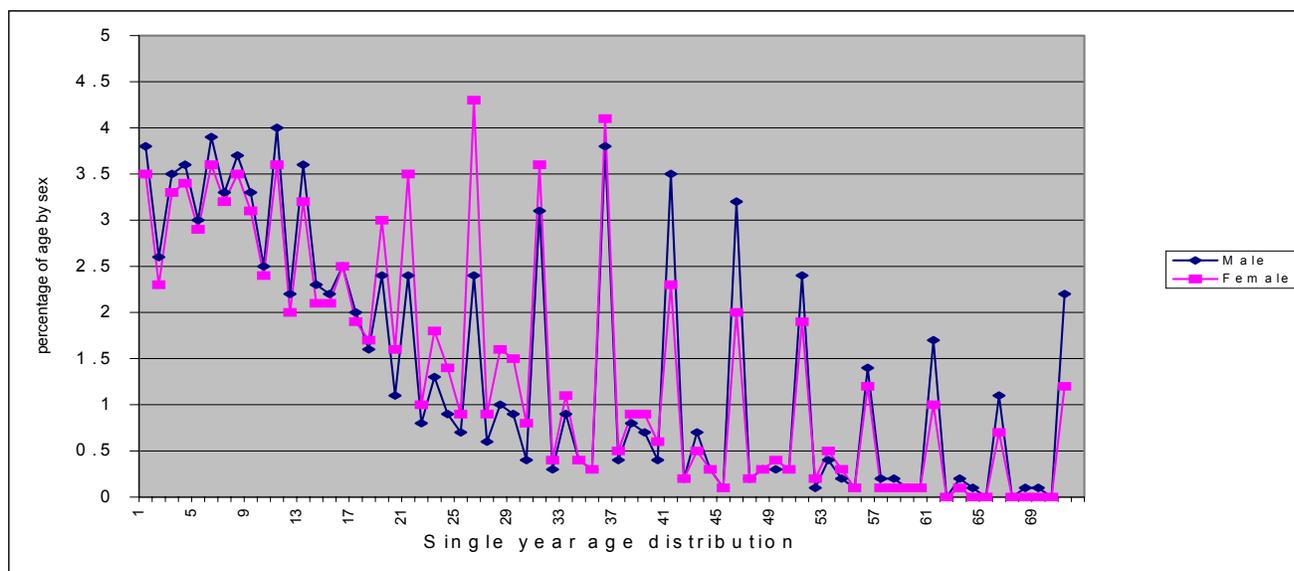
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<sup>1</sup> Centre for Strategic Studies, Annual Report, 1999.  
Federal Ministry of Health, Central Bureau of Statistics and UNICEF, Sudan 2001

2. Tetanus toxoid
3. Maternal and new-born health
4. Contraceptive use
5. HIV/AIDS.
6. Female Genital Mutilation (FGM)

The questionnaire for **children under age five** included modules on:

7. Birth registration and early learning
8. Vitamin A
9. Breastfeeding
10. Care of illness
11. Malaria
12. Immunisation and Anthropometry



The MICSII model English version was translated into Arabic and adapted to the Sudan situation. The questionnaires were pre-tested during June 2000 and, based on the results of the pre-test, modifications were made to the wording and translation of the questionnaires. For the full questionnaires, **see Appendix B**.

### ***Fieldwork and Processing***

Local field teams from the states were trained for seven days in early July 2000 on data collection techniques. Two teams from each state were trained with each team comprising four interviewers responsible for field data collection. Each team had a supervisor and one driver. The state MICS Co-ordinator provided overall supervision, guidance, editing and revision of the questionnaires on daily basis. The fieldwork began late in July and concluded in August 2000.

Data were entered in four microcomputers using the EMPHS and SPSS software. In order to ensure quality control, all questionnaires were double entered and internal consistency checks were performed. Procedures and standard programs developed under MICS and *Federal Ministry of Health, Central Bureau of Statistics and UNICEF, Sudan 2001*

adapted to the Sudan Questionnaire were used throughout. Data processing began in August 2000 and finished in December 2000.

### **III. Sample Characteristics and Data Quality**

#### ***Response Rates***

Of the 26,810 households selected for the Sudan MICSII sample, 25,200 were in the northern states and 1,610 in the towns of the south (Table 01 A). Of these, 25,183 HHs were successfully interviewed with a household response rate of 99.9 percent with a negligible difference between rural and urban areas. In the interviewed households, 24,993 eligible women aged 15-49 were identified. Of these, 22,949 were successfully interviewed, with a response rate of 91.8 percent. In addition, 23,540 children under age five were listed in the household questionnaire. Of these, questionnaires were completed for 23,296 children with a response rate of 99 percent.

#### ***Age Distribution and Missing Data***

Table 02A and Figure 1 present the single year age distribution of household population by sex. The total number in the sample from the north was 147,552 (48.6 percent males and 51.4 percent females). The children below five year of age constituted 16 percent; and the women 15-49 years of age constituted 48 percent of the total number of females in the sample. We note age "heaping" in all ages ending by "0" or "5".

#### **Figure (1): Single year age distribution of the HH population by sex, Sudan, 2000.**

As a basic check on the quality of the survey data, the percentage of cases missing information on selected questions is shown in Table 03A. Less than one percent of household members have missing information on their level of education but 1.6 percent are missing data on the year of education. Among female respondents 0.2% did not report a complete birth date (i.e. month and year). One percent of women who gave birth in the 12 months prior to the survey did not report the date of their last tetanus toxoid injection. These low levels of missing data suggest that there were not significant problems with the questions or the fieldwork.

The data on weight and height are the most likely among the selected information to be missing. On average, 12.5 percent of children are missing this information, which maybe the result of the child not being present, refusal, or some other reason. This is a relatively high percentage that might affect the results on weight-for-age, height-for-age, and weight-for-height nutrition measurement.

#### ***Characteristics of the Household Population***

Information on the characteristics of the household population and the survey respondents is provided to assist in the interpretation of the survey findings and to serve as a basic check on the sample implementation.

Table 04A presents the percent distribution of households in the sample by background characteristics. About 37 percent of the households interviewed (9,404) were urban and 63 percent (15,779) were rural. Khartoum and the Red Sea states had the highest proportions of urban area. Twenty-nine percent of households had four or five members and about 55 percent have 4 - 7 members. About 62 percent had one or more children aged less than five years; and 94 percent had one or more women aged 15-49. Table 05A shows the characteristics of the 15-49 years old female respondents. Women aged 25-29 comprised the highest percentage of the sample at 22.5 percent. Approximately 92 percent of women in the sample were married. The majority of women have had no education (62 percent).

Table 06A shows the characteristics of children under the age of five years. 50.2 percent of the children are male and 49.8 percent are female. Approximately 62 percent of mothers of children under age five had no education, a percentage that is almost equal to the overall percentage of women with no education in the sample.

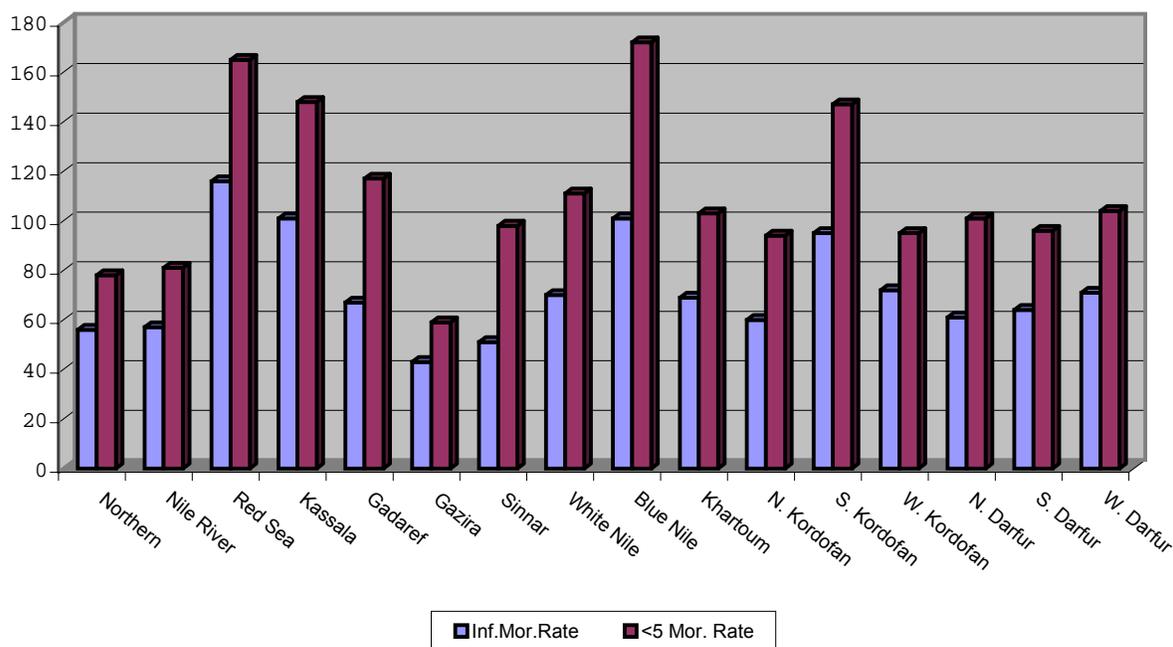
## IV. Results

### ***A. Infant and Under-Five Mortality***

The *infant mortality rate* is the probability of dying before the first birthday. The *under five-mortality rate* is the probability of dying before the fifth birthday. In SMS, infant and under five mortality rates were calculated based on an indirect estimation technique (the Brass method). The data used in the estimation are: the mean number of children ever born for five year age groups of women from age 15 to 49, and the proportion of these children who are dead, also for five year age groups of women.

Tables 07A and 07B present estimates of infant and under-five mortality for the nine years preceding the SMS 1999. For northern Sudan, infant mortality rate (IMR) is 68 per 1000 live births; 68 in rural and 67 in urban areas; 73 for males and 62 for females. Under-five mortality rate (U5MR) is 104 per 1000 live births (101 for urban and 105 for rural areas). Also U5MR is higher for male children (108) than female's (99). The Blue Nile, Red Sea and Kassala states lead the country in IMR (101, 116, and 101, per 1000 live births, respectively) and U5MR (172, 165 and 148 per 1000 live births, respectively). Conversely, Gezira, Northern and Nahr El Niel states have the lowest U5MR (59,78 and 81 per 1000 respectively). In the south towns, using the indirect method, the IMR is 82/1000 live births and the U5MR is 132/1000 live births.

Figure 2: Estimates of infant and under five mortality based on direct estimation by state, Sudan, 1999.



### Maternal Mortality

Table 08A presents estimates of maternal mortality using the Sisterhood method, Sudan Safe Motherhood Survey 1999. The maternal mortality ratio (MMR) is 509 for all Sudan, 496 for urban and 514 for rural areas reaching 763 per 100,000 in the main towns in the south namely Malakal, Juba and Wau.

### B. Education

Universal access to basic education and the achievement of primary education by the world's children is one of the most important goals of the World Summit for Children. Education is a vital prerequisite for combating poverty, empowering women, protecting children from hazardous and exploitative labour and sexual exploitation, promoting human rights and democracy, protecting the environment, and influencing population growth.

#### Early childhood education

Approximately 16 percent of children aged 36-59 months are attending an organised early childhood education programmed, such as kindergarten or a community childcare facility with organised learning activities (Table 09A). Approximately equal percentages of girls and boys are attending early childhood education programmes. There are large variations between states ranging from five percent of children in North Kordofan to 41 percent in Khartoum State. In addition, children in urban areas are almost three times as likely to attend early learning activities as are children in rural areas. Relatively few children attend at age 36-47 months (15.6%) while the majority of children attend at age 48-59 months (18.2%). Finally, the likelihood that a child will attend an early childhood education

programme is strongly related to the education of the mother. The percentage of children attending increased from nine to 33 percent as the level of the mother's education increased from none to secondary or higher education.

In the urban south: Malakal, Juba and Wau owns, there is a slight difference between the percentages of male (22%) and female children attending organised pre-school education (18.8%). The overall average is 20.2% with the same age response as in the north.

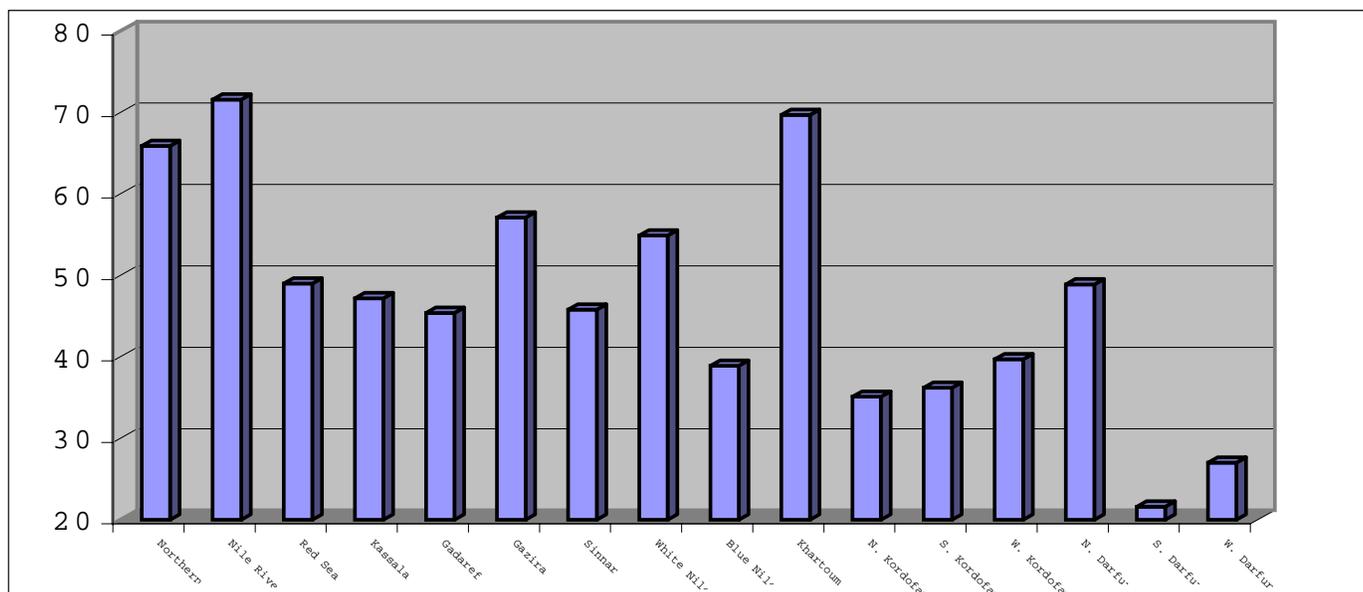
### **Basic education**

Overall, 46.8 percent of school-age children in northern Sudan are attending basic school (Table 10A). In urban areas, 63 percent of children attend school compared to 37 percent in rural areas. School attendance in South Darfur is significantly lower than in the rest of the country at 24 percent. In contrast, the overall school enrolment rates in Northern, River Nile and Khartoum States are 65.9 % and 71.6%, respectively. At the national level, there is virtually no difference between male and female primary school attendance.

In the southern towns, the overall school enrolment rate is 57.8% which, though higher than the overall northern states' figure, is lower than the north 's urban average of 63% with a marginal gender gap.

More than two thirds of children who enter the first grade of primary school eventually reach grade five (Tables 11A). However, disparities among the states in the achievement of grade five are large. Approximately 99 percent of those who enter grade one reach grade five in Kassala while in the in Blue Nile; the comparable percentage is 14. Gender wise, females are slightly in a better situation than males to reach grade five. In the south (urban) the percent of those reach grade five of those who enter grade one are 96.0, higher than the urban north 's 81.7%.

### **Figure 3: Percentage of children of primary school age attending primary school, Sudan, 2000.**



## Literacy

Half of the population over age 15 years in northern Sudan is literate (Table 12A). The *literate* population includes those who are reported to read 'easily or with difficulty'. Overall, females are slightly less likely than males to be literate (49.2 vs. 50.6 percent). The percentage literate is lower in the Western States than in the Central states like Khartoum. The percentage of literate declines from 54.8 percent among those aged 15-34 to 44.1% among the population aged 35-44.

The literacy rate in the urban south is 54.0%, far lower than the urban north 's (67.0%). Both in the north and urban south there is no notable difference between male and females or ages.

## C. Water and Sanitation

### Access to Drinking Water

Safe drinking water is a basic necessity for good health. Unsafe drinking water is known to be a significant carrier of diseases such as trachoma, cholera, typhoid, guinea worm and schistosomiasis. It could also be tainted with chemical, physical and radiological contaminants with harmful effects on human health. In addition to its association with disease, access to drinking water is particularly important for rural women and children, who usually carry the water, often for long distances. After considerable debate on what constitutes access to safe drinking water, the steering committee agreed to change the indicator to "access to improved source of drinking water" throughout this report. For the purpose of this report, *improved drinking water* sources are piped water, public tap, boreholes/ tubewell, protected well, protected spring or rainwater. Overall access to these sources is shown in Figure 4.

**Figure 4: Percentage of population using improved drinking water sources,** Federal Ministry of Health, Central Bureau of Statistics and UNICEF, Sudan 2001

**Sudan, 2000.**

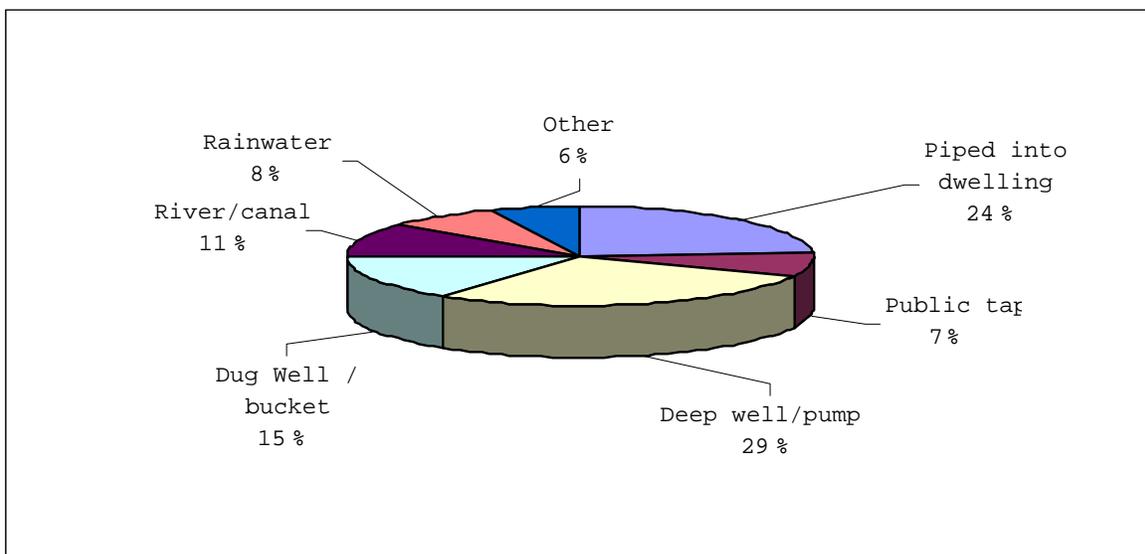


Table 13A shows that in the north, 60 percent of the population have access to improved sources of drinking water – 79 percent in urban areas and 47 percent in rural areas. About one quarter of the population uses water piped into their dwellings and 28 percent use water piped into their yard or plot (deep well /pump) where the public tap account for 7.4%. In the towns of the south there is big variation. In Malakal town 5.4 percent of the population have access to improved water supply compared to 91.3% in Juba due to reasons related to the ground water availability in Malakal town.

Access to improved sources of drinking water varies widely among the states (Table 13 A). In Khartoum 89 percent of the population use drinking water that is piped into their dwelling or into their yard or plot. In the Northern and Gazira States, 67 and 64 percent respectively use piped water. In contrast, only about 33 percent of those residing in White Nile, and 26 percent in West Kordofan have piped water.

**Sanitation Facilities**

Inadequate disposal of human excreta and poor personal hygiene are associated with a range of diseases. *Sanitary means of excreta disposal* include: flush toilets connected to sewage systems or septic tanks, other flush toilets, improved pit latrines, and traditional pit latrines. Sixty percent of the population of Sudan is living in households with sanitary means of excreta disposal (Table 14A). This percentage is 81 in urban areas and 46 percent in rural areas. The definition of sanitary means includes the traditional latrines the reason behind the increasing percent of coverage. Residents of Gadarif and North Kordofan are much less likely than others to use sanitary means of excreta disposal. In contrast, the most common facilities in other areas of the country are traditional pit latrines used by 51 percent of the population comprising 85 percent of the total population using sanitary means of excreta disposal. In Table 14B the total percentage of the population with sanitary means of excreta disposal is 48% in the three southern towns: Malakal, Juba and Wau.

**D. Child Malnutrition**

## Nutritional Status

Children's nutritional status is a reflection of their overall health. When children have access to an adequate food supply and are not exposed to repeated illness, they reach their growth potential and are considered well nourished.

In a well-nourished population, there is a standard distribution of height and weight for children under the age of five. Under-nourishment in a population can be gauged by comparing children to this standard distribution. The standard or reference population used here is the National Centre for Health Statistics (NCHS) standard, which is recommended for use by UNICEF and the World Health Organisation. Each of the three nutritional status indicators is expressed in standard deviation units (z-scores) from the median of this reference population.

Children whose weight-for-height is more than two standard deviations below the median of the reference population are classified as *moderately or severely wasted* while those who fall more than three standard deviations below the median are *severely wasted*. Wasting is usually the result of a recent nutritional deficiency. The indicator may exhibit significant seasonal shifts associated with changes in the availability of food or with disease prevalence.

In Sudan MICS2 there was a problem of "ageing" children. The birth of about 42 percent of the children is not registered. This is a very large percentage of missing values, which would have affected the weights-for-age and height-for-age nutritional status indicators. For this reason both measurements are excluded and only the weight-for-height indicator is used.

Almost one in nine children under age five in Sudan are wasted and seven percent are classified as severely wasted (Table 15A). In the rural areas in the north, almost 12 percent of under-five children are moderately and 12% severely wasted; compared to 16 and 7 percent, respectively in the urban areas. Differences between male and female children were small. Children age 12-23 months have both the highest percentages of moderate (16.7 percent) and severe wasting (12 percent). State-wise, the worst situation in moderate wasting was found in North Kordofan, River Nile, White Nile, and North Darfur; while severe wasting is noted in West Kordofan, North Darfur and Blue Nile states.

## Breastfeeding

In Table 16A, breastfeeding status is based on women's reports of children's consumption in the 24 hours prior to the interview. *Exclusive breastfeeding* refers to children who receive only breast milk and vitamins, mineral supplements, or medicine. *Complementary feeding* refers to children who receive breast milk and solid or semi-solid food. The last two columns of the table include children who are continuing to be breastfed at one and at two years of age.

Approximately 19 percent of children aged less than four months in northern Sudan and 18.2 percent in the southern towns are exclusively breastfed, a level considerably lower than recommended. At age 4-5 months, 23%t and 4.2% respectively are receiving breast milk and solid or semi-solid foods. By age 6-9 months, 44 percent of children in northern Sudan and 23% in the southern towns are still being breastfed. By age 12-15 months the percentages are high at 83 in northern Sudan and 73 in the Southern towns and by age 20-23 months dropped to 44% in the north and 69% in the urban south.

Children age 0-3 months in urban areas of the north are more likely to be exclusively breastfed (23%) than in rural areas (18%). The rate for the towns of the south is 18%. Again boys are more likely to be exclusively breastfed (19.9 percent in the north and 20 percent in urban south) than girls (18.7 and 16.7 percent, respectively).

### **Consumption of Iodised Salt**

Deficiency of iodine in the diet causes goitre (enlargement of the thyroid gland), and can cause brain damage before birth or during infancy or childhood. The iodization of salt is a low-cost way of preventing iodine deficiency disorders (IDD). During the survey, interviewers tested household salt for iodine levels by means of a testing kit. *Adequately iodised salt* contains 15 or more parts per million of iodine.

Approximately 97 percent of households had salt that was tested during the MICS, in northern Sudan and 87 percent in the towns of the south (Tables 17A and 17B). Among these, only 0.6% had adequately iodised salt in northern Sudan and 0.5% in the towns of the south. The percentage of households with adequately iodised salt ranged from 0.1% in River Nile state to 3.6% in South Darfur state where the salt iodization factory started production recently. One percent of urban households had adequately iodised salt compared to 0.4% of rural households.

### **Vitamin A Supplementation**

Vitamin A deficiency (VAD) can cause eye damage and blindness in children. It also impairs children's immune systems, increasing their chances of dying of common childhood diseases and undermines the health of pregnant and lactating women. Yet vitamin A supplementation, food fortification or dietary change can easily prevent it. Based on UNICEF/WHO guidelines, the Sudan Ministry of Health recommends that children aged 6-11 months be given one high dose of Vitamin A capsule a year and children aged older than one year be given two capsules. In some parts of the country, Vitamin A capsules are linked to immunisation services and are given when the child has contact with these services. It is also recommended that mothers take a Vitamin A supplement within eight weeks of giving birth due to increased Vitamin A requirements during pregnancy and lactation.

Within the six months prior to the MICS, 44 percent of children aged 6-59 months in northern Sudan and 34 percent in the towns of the south received the high dose Vitamin A supplement (Tables 18A and 18B). Approximately 6% in northern Sudan and 7% in the towns of the south did not receive the supplement in the last 6 months but did receive one prior to that time. Eight percent of children in northern Sudan and 11 percent in the towns of the south received a Vitamin A supplement some time in the past but their mother/caretaker was unable to specify when. Vitamin A supplementation coverage was lower in rural areas than in urban areas. Coverage in South and West Darfur states was significantly lower than the national level, and lower than all other states.

The age pattern of Vitamin A supplementation shows that supplementation in the last six months rose from 36 percent among children aged 6-11 months to 45 percent among children aged 12-23 months but remained at 45 percent among the oldest children in northern Sudan. A similar trend occurred in the towns of the south except that the rise was small from 31% in the age group 6-11 months to 34% in the age 12-23 months.

The likelihood of a child receiving Vitamin A supplementation was related to the mother's level of education. In the north, the percentage of children receiving a supplement in the last six months prior to the survey increased from 40 percent among children whose mothers have no education to 50 percent for those whose mothers have primary education. The proportion increased to 56 percent for children whose mothers had secondary or higher education. In the towns of the south there is no trend with the percentage of children receiving a supplement ranging from 32% to 34% with the mothers level of education.

Only about 19 percent of mothers with a birth in the year before the MICS in northern Sudan and 29 percent in the towns of the south received a Vitamin A supplement within eight weeks of the birth (Table 19A and 19B). This percentage is highest in Khartoum State at 45 percent and lowest in South Darfur at 11 percent. In the urban south, the lowest percentage was shown in Malakal. Vitamin A coverage for pregnant women increased with their level of education but was still only about 29 percent among women with secondary or higher education in northern Sudan and 36% in the towns of the south.

### **Low Birth Weight**

Infants who weigh less than 2500 grams (2.5 kg.) at birth are categorised as low-birth-weight babies. Since many infants are not weighed at birth and those who are weighed may be a biased sample of all births, reported birth weight cannot be used to estimate the prevalence of low birth weight among all children. Therefore, the percentage of births weighing below 2500 grams is estimated from two items in the questionnaire:

- The mother's assessment of the child's **size** at birth (i.e., very small, and smaller than average, average, larger than average, very large).
- The mother's recall of the child's **weight** or the weight as recorded on a health card if the child was weighed at birth.

First, the two items are cross-tabulated for those children who were weighed at birth to obtain the proportion of births in each category of **size** who weighed less than 2500 grams. This proportion is then multiplied by the total number of children falling in the size category to obtain the estimated number of children in each size category who were of low birth weight. The numbers for each size category are summed to obtain the total number of low-birth-weight children.

Approximately 31 percent of infants in northern Sudan and 17 percent in the towns of the south were estimated to have weighed less than 2500 grams at birth (Tables 20A and 20B). In northern Sudan, the prevalence of low birth weight was 24 percent in urban areas and 34 percent in rural areas. The percentage declined steadily with the level of education of the mother, from 33 percent of those with no education, to 31 percent with primary, to 24 percent for those with secondary or higher education in northern Sudan. In the towns of the south, there is no significant difference between the percentages for mothers with no schooling (17 percent), mothers with primary education (15%) and mother of secondary or higher education (18%).

## ***E. Child Health***

### **Immunisation Coverage**

According to UNICEF and WHO guidelines, a child should receive a BCG vaccination for protection against tuberculosis, three doses of DPT to protect against diphtheria, pertussis, and tetanus, three doses of polio vaccine, and a measles vaccination by the age of 12 months. The mothers were asked to provide vaccination cards for children under the age of five. Interviewers copied vaccination information from the cards onto the MICS questionnaire. Mothers were also probed to report any vaccinations the child received that did not appear on the card or if the child have no card.

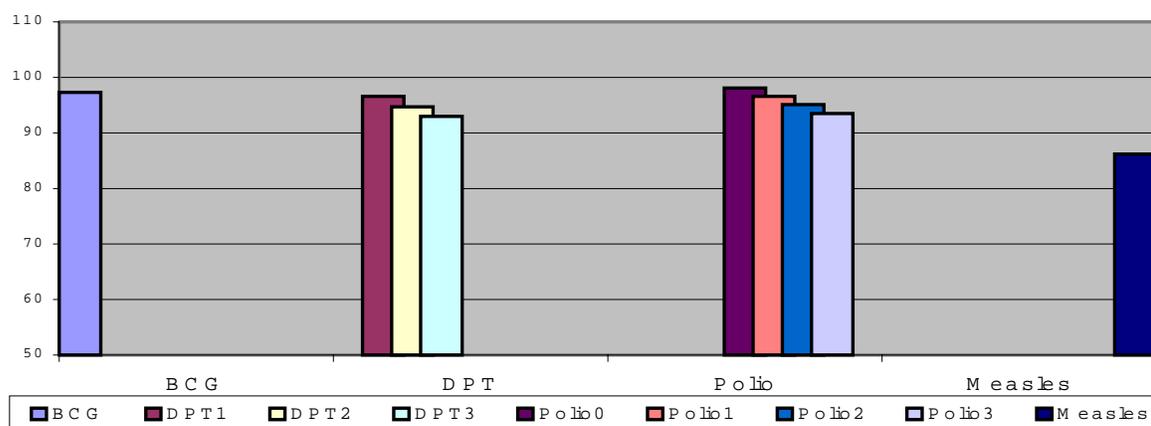
Table 21A and 21 B shows the percentage of children aged 12 to 23 months that received each of the vaccinations at any time before the survey. The denominator for the table is comprised only children aged 12-23 months who are old enough to be fully vaccinated. In the top panel, the numerator includes all children who were vaccinated at any time before the survey according to the vaccination card or the mother's report. In the bottom panel, only those who were vaccinated before their first birthday are included.

Approximately 64.5 percent of children aged 12-23 months (in northern Sudan and 74.1 percent in the three accessible towns of the Southern States) received a BCG vaccination by the age of 12 months (table 21AA and 21BA). And the first dose of DPT was given to 65.9 percent and 70.9 percent respectively. The percentage declines for subsequent doses of DPT to 55.9 in Northern Sudan and 60.2 percent in the towns of the South for the second dose, and 42.0 percent and 46.2 percent respectively for the third dose. Similarly, 74.0 percent of children received first dose of Polio and these declines to 44.2 percent by the third dose in northern Sudan and to 49.0 percents in the towns of the South. The coverage for measles vaccine by 12 months 51.5 percent in northern Sudan and 55.0 percent in the towns of the South. As a result, the percentage of children who had all eight recommended vaccinations is 26.4 percent in Northern Sudan and 27.5 percent in the towns of the south.

This result shows the vaccination coverage of all children aged 12-23 months by mother recall and vaccination card. Following is the vaccination coverage of children aged 12-23 months who have completed birth date (day/month/year) and vaccination card and at the same time completed their vaccines before their first birthday.

Approximately 97 percent of children aged 12-23 months who have full information on birth date (i.e. birth date in day, month and year) in northern Sudan and 99 percent in the towns of the south received a BCG vaccination by the age of 12 months (table 21AA and 21BA). And the first dose of DPT was given to 97 percent and 96 percent respectively. The percentage declines for subsequent doses of DPT to 95 percent in northern Sudan and 98 percent in the towns of the south for the second dose, and 93 percent and 96 percent respectively for the third dose (Figure 5). Similarly, 98 percent of children received Polio 0 and this declines to 94 percent by the third dose in northern Sudan and to 98 percents in the towns of the south. The coverage for measles vaccine by 12 months is lower than for the other vaccines at 86 percent in northern Sudan and 86 percent in the towns of the south. As a result, the percentage of children who had all eight recommended vaccinations by their first birthday is 70 percent in northern Sudan and 70 percent in the towns of the south.

**Figure 5: Percentage of children 12-23 months old who have birth certificate and vaccination card and received immunisations by age 12 months, Sudan, 2000.**



In Table 22A and 22B, the percentage of children age 12-23 months currently vaccinated against childhood diseases is shown according to background characteristics. Unlike the previous table, the estimates in this table refer to children who received the vaccinations by the time of the survey, even if they did not occur prior to the age of 12 months.

Male and female children are vaccinated at roughly the same rate in northern Sudan and at different rate in the towns of the south (31 percent for males and 25 percent for females). Urban children are more likely to be vaccinated than rural children. State breakdowns are based on small numbers of cases and should be viewed with caution. However but it appears that the central states Khartoum and Blue Nile have the highest coverage rates for most vaccinations and the highest percentage of children who have received all of the recommended vaccinations. Vaccination coverage is highest among children whose mothers have secondary or higher education. The education differences are greatest for the third doses of DPT and Polio, suggesting that drop out rates are higher among children with less educated mothers.

### Diarrhoea

Dehydration caused by diarrhoea is a major cause of mortality among children in Sudan. Home management of diarrhoea – either using oral dehydration salts (ORS) or a recommended home fluid (RHF) - can prevent many of these deaths. Preventing dehydration and malnutrition by increasing fluid intake and continuing to feed the child are also important strategies for managing diarrhoea.

In the MICS questionnaire, mothers (or caretakers) were asked to report whether their child had had diarrhoea in the two weeks prior to the survey. If so, the mother was asked a series of questions about what the child had to drink and eat during the episode and whether this was more or less than the child usually ate and drank. Overall, 28 percent of under-five children in northern Sudan and 25 percent in the towns of the south had diarrhoea in the two weeks preceding the survey (Tables 23A and 23B). Diarrhoea prevalence was significantly higher in Blue Nile State at 40 percent than in other states. The peak of diarrhoea prevalence occurred in age 12-23 months (38 percent in northern Sudan and 36

percent in the towns of the south). It decreased sharply to 20 percent for age 48-59 months in northern Sudan and to 22 percent for the age group 36-47 months in the towns of the south. There was no significant difference in diarrhoea prevalence between males and females or between urban and rural areas.

Tables 23A and 23B also show the percentage of children receiving various types of recommended liquids during the episode of diarrhoea. Since mothers were able to name more than one type of liquid, the percentages do not necessarily add to 100. In northern Sudan approximately 37 percent of children received breast milk while they had diarrhoea and in the towns of the south the percentage is 46. Children under age 12 months were especially likely to have received breast milk. About 15 percent of children received gruel and 28 percent received ORS in northern Sudan. In the towns of the south 46 percent received gruel and 49 percent received ORS. Children of mothers with secondary education appear to be more likely to receive ORS, breast milk, and gruel in northern Sudan while in the towns of the south this is true for mothers of primary education.

Slightly less than one quarter of under-five children with diarrhoea in northern Sudan and the towns of the south drank more than usual while 71 and 70 percent, respectively drank the same or less (Tables 24 A and 24 B). About 53 percent in northern Sudan and 55 percent in the towns of the south ate somewhat less, the same, or more than usual, while 42 percent and 38 percent ate much less in northern and the towns of the south, respectively. Only 21 percent of children with diarrhoea in northern Sudan and 19 percent in the towns of the south received increased fluids and continued eating as recommended.

### **Acute Respiratory Infection (ARI)**

Acute lower respiratory infections, particularly pneumonia, are one of the leading causes of child deaths in Sudan. In the MICS questionnaire, children with acute respiratory infection were defined as those who had an illness with a cough accompanied by rapid or difficult breathing and whose symptoms were due to a problem in the chest, or both a problem in the chest and a blocked nose, and for whom mother did not know the source of the problem. About 17 percent of under-five children in northern Sudan and 14 percent in the towns of the south had an acute respiratory infection in the two weeks prior to the survey according to these criteria (Tables 25A and 25B). Of these, 8% in northern Sudan and 2% in the towns of the south were taken to a doctor for treatment. Overall, almost 95 percent of children with ARI were taken to an appropriate health provider (i.e., doctor, specialist, nurse/health assistant, and hospital). However, it should be noted that these percentages are most probably for pneumonia rather than ARI due to the misunderstanding of the question in the questionnaire.

### **IMCI initiative**

The Integrated Management of Childhood Illnesses (IMCI) is a programme developed by UNICEF and WHO that combines strategies for control and treatment of five major killers of children – acute lower respiratory tract infections, diarrhoea dehydration, measles, malaria, and malnutrition. The programme focuses on the improvement of case management skills by health workers, of the health system, and of family and community practices in the prevention and early management of childhood illnesses. The approach teaches mothers that appropriate home management of diarrhoea or any other illness requires giving more fluids and continuing to feed sick children in the manner they are normally fed.

Tables 26A and 26B present information on the drinking and eating behaviour of sick children in northern Sudan and the towns of the south. Of the children reportedly ill in the two weeks preceding the MICS, 20% in northern Sudan and 9 percent in the towns of the south drank more liquids during the illness and 58 percent in northern Sudan and 53 percent in the towns of the south continued eating (i.e. ate somewhat less, the same, or more). Overall, only 11 percent of ill children in northern Sudan and 10 percent in the towns of the south received increased fluids and continued eating as recommended under the IMCI programmed.

Promoting knowledge among caretakers about when it is appropriate to seek care for ill children is another important component of the IMCI programmed. In the MICS, mothers or caretakers of children were asked to name all of the symptoms that would cause them to take a child to a health facility right away. The most common response, given by 84 percent of mothers in northern Sudan and 92 percent in the towns of the south, was that they would take their child to a health facility right away if he/she developed a fever (Tables 27A and 27B). Thirty four percent in northern Sudan and 64 percent in the towns of the south said that the child becoming sicker would cause them to take the child to a health facility and 35 percent in northern Sudan and 75 percent in the towns of the south mentioned difficult breathing. Between 14 to 26 percent of mothers in northern Sudan and 38 to 71 percent in the towns of the south cited an inability to breastfeed, fast breathing, blood in stools, and drinking poorly as reasons for taking a child to a health facility right away.

Among the states, mothers in Kassala and North Darfur States and Malakal and Juba town are more likely than mothers in other states to know the signs for seeking care immediately. Overall, 93 percent of mothers in Kassala know at least two signs for seeking care compared to 27 percent in Western Darfur.

## **Malaria**

Malaria is a leading cause of death of under-five children in Sudan. It also contributes to anaemia in children and is a common cause of school absenteeism. Preventive measures, especially the use of mosquito nets treated with insecticide, can dramatically reduce malaria mortality rates among children. In areas where malaria is common, international recommendations suggest treating any fever in children as if it were malaria and immediately giving the child a full course of recommended antimalarial drugs. Children with severe malaria symptoms, such as fever or convulsions, should be taken to a health facility. Also, children recovering from malaria should be given extra liquids and food and should continue breastfeeding.

The MICS questionnaire incorporated questions on the use of bednets among children. Twenty four percent of under-five children slept under a Bennett the night prior to the survey interview (Table 28A). This percentage declined steadily with age. However, overall, only about 8 percent of the bednets used were impregnated with insecticide.

Questions on the prevalence and treatment of fever were asked for all under-five children. Twenty three percent of under-five children were ill with fever in the two weeks prior to the MICS (Table 29A). The prevalence of fever reached is almost the same for all different ages from 6-59 except for children below 6 months (17 percent). Fever was less common among children whose mothers have secondary or higher education than among children of less

educated mothers. Differences between State in fever prevalence are large, ranging from 11% (Northern State) to 45 percent (Blue Nile State).

Mothers were asked to report all of the medicines given to a child during their illness, either at home or given/prescribed at a health facility. Approximately eight percent of children were given Paracetamol and 23 percent were given Chloroquine while less than one percent were given Fansidar. A relatively small percentage of children (7%) were given some other medicine. Overall, children with fever in the Blue Nile state, where malaria is probably most prevalent, are the most likely to receive an appropriate anti-malarial drug while those in Khartoum and Red Sea states are the least likely to receive an appropriate drug. Rural children are more likely than are urban children to be treated appropriately.

## ***F. HIV/AIDS***

### **AIDS Knowledge**

One of the most important strategies for reducing the rate of HIV/AIDS infection is the promotion of accurate knowledge of how AIDS is transmitted and how to prevent transmission. Among women aged 15-49 in Sudan, 40 percent in northern Sudan and 67 percent in the towns of the south have heard of AIDS (Tables 30A and 30B). This percentage is high in urban areas (61 percent) but considerably lower in rural areas of the north (28 percent).

Women in the MICS were read several statements about means of HIV/AIDS transmission and asked to state whether they believed the statements were true. Twenty three percent in northern Sudan and 28 percent in the towns of the south believed that having only one uninfected sex partner could prevent HIV transmission. Eleven percent in northern Sudan and 16 percent in the towns of the south knew that using condoms can prevent HIV transmission and only 8 percent in northern Sudan and 12 percent in the towns of the south agreed that abstaining from sex prevents HIV transmission. Overall, 9 percent in northern Sudan and 13 percent in the towns of the south knew two ways; and 25 percent and 31 percent, respectively were aware of at least one of the ways of preventing transmission.

Accurate knowledge of the means of HIV/AIDS transmission was substantially less among women in West Kordofan, North Darfur and Blue Nile than among other women of other states. Also, education was key in AIDS knowledge. The percentage that knew two means of preventing transmission among women with secondary or more education is more than nine times greater than that among women with no education. Differences across age groups are not particularly large; except for the percentage in age group 15-19 years.

Eighteen percent of women in northern Sudan and 13 percent in the towns of the south correctly stated that AIDS couldn't be transmitted by supernatural means whereas. Analogously, 17 percent in northern Sudan and 26 percent in the towns of the south stated that AIDS couldn't be spread by mosquito bites (Table 31A and 31B). Fifteen percent of the women in northern Sudan and 26 percent in the towns of the south correctly believed that a healthy looking person might actually be infected. Women in the urban areas are more likely to believe misconceptions about AIDS transmission than in rural women. Women in Khartoum and Gazira are most likely to recognise all three misconceptions. Still, only six percent of these women in northern Sudan and five percent in the towns of the south correctly identified all three misconceptions.

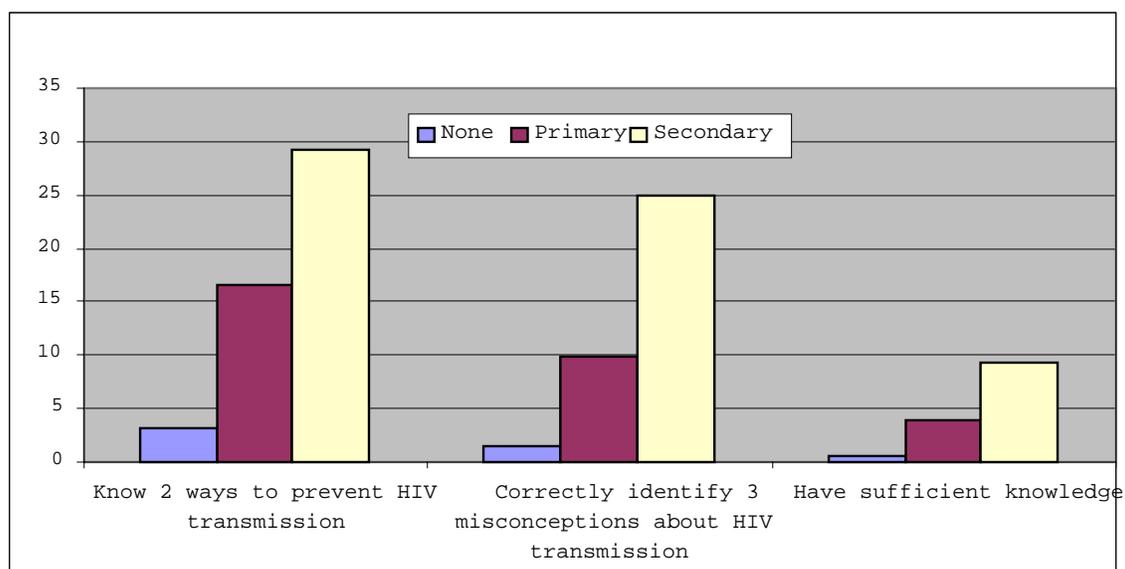
Twenty two percent of women in northern Sudan and 29 percent of women in the towns of the south know that AIDS can be transmitted from mother to child (Table 32A and 32B). When asked specifically about the mechanisms through which mother to child transmission can take place, 20 percent said that transmission during pregnancy was possible, 17 percent said that transmission at delivery was possible, and 16 percent agreed that AIDS can be transmitted through breast milk. In the towns of the south, the percentages were 25 and 20. Slightly less than one in seven in northern Sudan and less than one in 6 women in the towns of the south women knew all three modes of transmission. This percentage does not vary much across background categories.

The MICS survey also attempted to measure discriminatory attitudes towards people living with HIV/AIDS. In this regards, respondents were asked whether they agreed with two questions. The first asked whether a teacher who has the AIDS virus but is not sick should be allowed to continue teaching in school. The second question asked whether the respondent would buy food from a shopkeeper or food seller who the respondent knew to be infected with AIDS. Thirteen percent of the respondents believe that a teacher with HIV/AIDS should not be allowed to work. This percentage is highest in the Khartoum State at 26 percent and lowest in Western Darfur at 6 percent and it is also high in Juba town 49 percent. Urban women and those with secondary or higher education are more likely to express this discriminatory attitude than rural women and those with no or only primary education. Eleven percent of women in the north and 31 percent in southern towns would not buy food from a person infected with AIDS. Overall, 16 percent of women in northern Sudan and 38 percent in the towns of the south agree with at least one of the discriminatory statements. The full results are presented in Table 33A and 33 B.

Table 34A and 34 B summarise information from two previous tables on AIDS knowledge (Tables 30A, 30B and 31A, 31B). The second column shows the percentage of women who know all three means of preventing HIV transmission – having one faithful uninfected partner, using a condom every time, and abstaining from sex. Nine percent of women know two ways. The third column shows the percentage of women who correctly identified all three misconceptions about HIV transmission – that HIV can be transmitted through supernatural means, that it can be transmitted through mosquito bites, and that a healthy looking person cannot be infected. Only six percent of women in northern Sudan and five percent in the towns of the south correctly identified these misconceptions. Finally, the fourth column shows the percentage of women who have 'sufficient knowledge' of HIV/AIDS transmission. These are women who know two ways of preventing HIV transmission **and** correctly identified all three misconceptions. Only 2 percent of women aged 15-49 in northern Sudan and the towns of the south fall into this category.

Knowledge of HIV/AIDS transmission varies dramatically by level of education (Figure 6). Women with secondary or higher education are more than nine times as likely to know all three ways to prevent transmission than women with no education. They are also fifteen times more likely to correctly identify all three misconceptions about AIDS and 18 times more likely to have sufficient knowledge of HIV/AIDS transmission.

**Figure 6: Percentage of women aged 15-49 by level of knowledge of HIV/AIDS transmission by level of education, Sudan, 2000.**



### AIDS testing

Voluntary testing for AIDS, accompanied by counselling, allows those infected to seek health care and to prevent the infection of others. Testing is particularly important for pregnant women who can then take steps to prevent infecting their babies. The indicators shown in Tables 35A and 35B are designed to monitor whether women are aware of places to get tested for HIV/AIDS, the extent to which they have been tested, and the extent to which those tested have been told the result of the test. In some places, a relatively large proportion of people who are tested do not return to get their results due to fear of having the disease, fear that their privacy will be violated, or for other reasons.

Only eight percent of women of reproductive age in Sudan know a place where to get tested for AIDS. Women living in Khartoum are most likely to know a place, followed by those in the River Nile State. Only three percent of the uneducated women in northern Sudan and five percent in the towns of the south know of a place to get tested. Conversely, 12 percent of women with primary school education and 29 percent of women with secondary or higher education in northern Sudan and 10 percent and 25 percent, respectively in the towns of the south knew where to get tested for HIV.

About one percent of women in northern Sudan and 6 percent in the towns of the south have been tested for AIDS. The percentage is highest in Khartoum (4%) and Juba (16%) and lowest in Gadarif at 0.3 percent. Half of the women who have been tested in northern Sudan and 68 percent in the towns of the south were told the result. However, there is some variation across states, age groups, and education levels. Finally, women with no education are less likely to be tested and least likely to have been told the result of the test.

## G. Reproductive Health

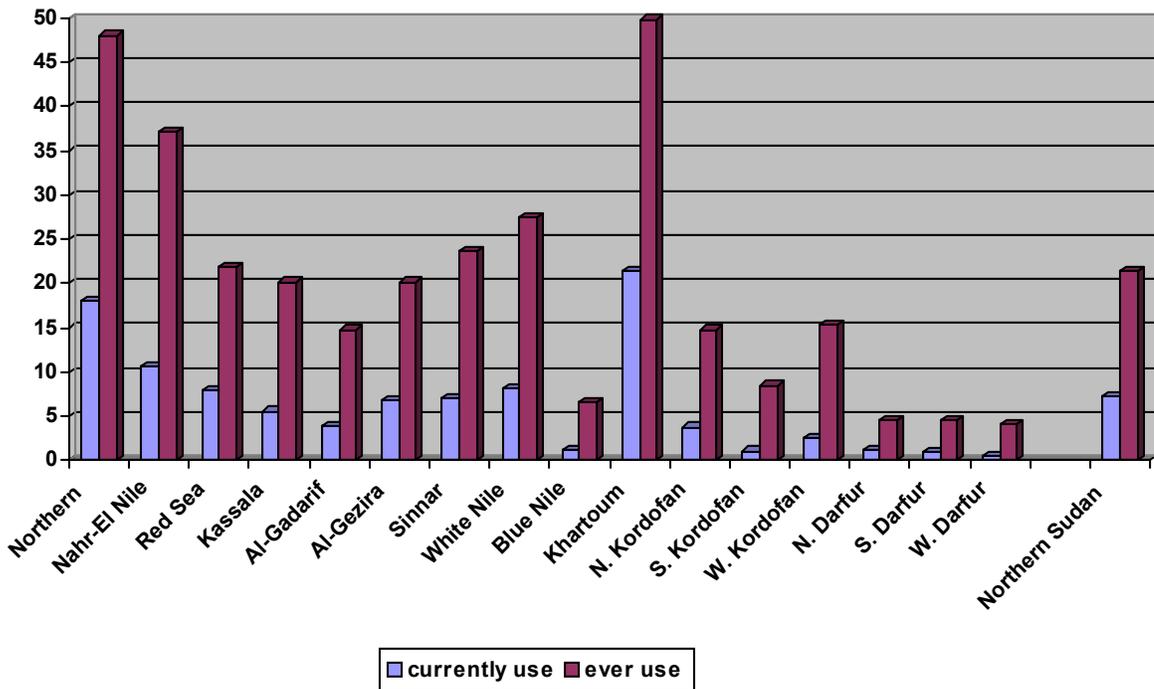
### Contraception

Sixty-six percent of ever married women in northern Sudan and 64 percent in the towns of the south and 61 percent of currently married women knew at least one method of family planning. (Table 36A and 36B Safe Motherhood Survey). The most popular method known is the pill, followed by the injection and the IUD. The knowledge of the female sterilisation appeared to be the least.

Only 21 percent of currently married women have ever used a method of family planning and 7 percent are currently using a method. The pill is the most widely used method (4 percent), followed by periodic abstinence (2 percent).

However, the level of family planning methods used varies by States. 15 percent of currently married women in urban areas are using a method of contraception compared with only three percent in rural areas. 19 percent of women with at least high secondary education are using contraceptives compared with only 2 percent of illiterate women. The current use of contraception varies from less than 1 percent in Western Darfur to 21 percent in Khartoum. Northern State and Nahr Al-Nile have a contraceptive use rate of 10 percent.

**Figure 7: Percentage of currently married women who currently or ever use any method of contraception (SMS 1999):**



**Prenatal Care**

Quality prenatal care can contribute to the prevention of maternal mortality by detecting and managing potential complications and risk factors, including pre-eclampsia, anaemia, and sexually transmitted diseases. Antenatal care also provides opportunities for women to learn the danger signs of pregnancy and delivery, to be immunised against tetanus, to learn about infant care, and be treated for existing conditions, such as malaria and anaemia.

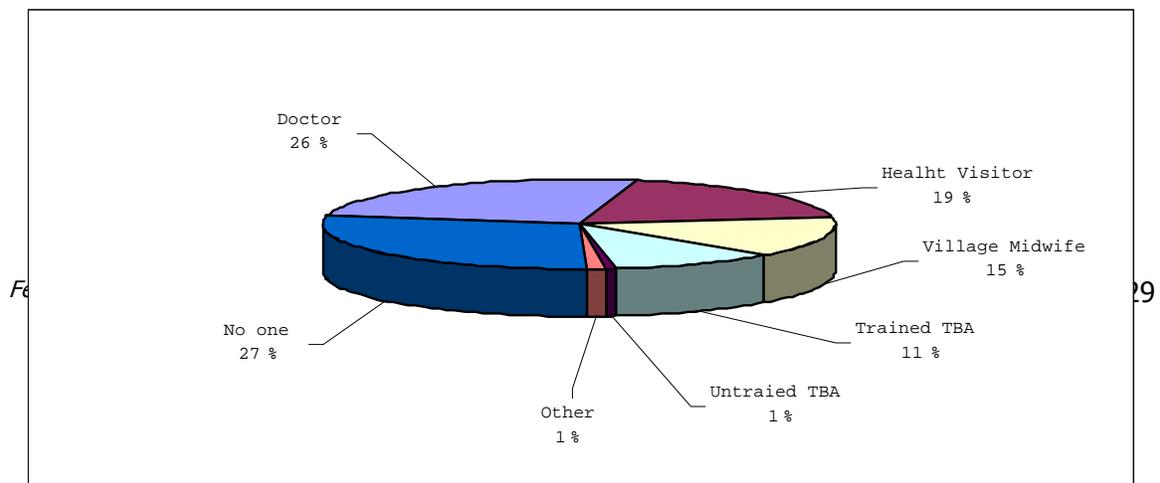
Tetanus toxoid injections are given to women during pregnancy to protect infants from neonatal tetanus, a major cause of infant death that is due primarily to unsanitary conditions during childbirth. Two doses of tetanus toxoid during pregnancy offer full protection. However, if a woman was vaccinated during a previous pregnancy, she may only need a booster to give full protection. Five doses are thought to provide lifetime protection.

Forty two percent of women in northern Sudan and 56 percent in southern towns with recent births in Sudan are protected against neonatal tetanus (Table 37A and 37B). The vast majority of these women received two or more doses of tetanus toxoid within the last three years. Among the states, women living in Khartoum are most likely to be protected (65 percent) while those living in Western Darfur are the least likely to be protected (24 percent). Women with primary education are more likely to be protected against tetanus than those with either no education or secondary or higher education.

Female respondents who had had a birth in the year prior to the survey, (Sudan Safe Motherhood 1999) were asked whether they had received antenatal care for the birth and, if so, what type of person provided the care. If the woman saw more than one type of provider, all were recorded in the questionnaire. Table 38A and 38B presents the percent distribution of women with a birth in the year prior to the survey by the type of personnel who delivered antenatal care. If the respondent mentioned more than one provider, she is categorised as having seen the most skilled person she mentioned.

About 70 percent of the women in northern Sudan and 90 percent in the three Southern towns receive antenatal care from skilled personnel (doctor, health visitor, midwife trained TBA). A little over one quarter of women with a birth in the year prior to the survey in northern Sudan and only 4 percent in the towns of the south received antenatal care from a doctor. 19 percent in northern Sudan and 66 percent in the towns of the south received antenatal care from a health visitor. 15 percent, and 10 percent respectively from a midwife, and 11 percent from trained TBA (Figure 8).

**Figure 8: Percent distribution of women with a birth in the last year by type of personnel delivering antenatal care, Sudan, 2000.**



## **Assistance at delivery**

The provision of delivery assistance by trained attendants can greatly improve outcomes for mothers and children by the use of technically appropriate procedures, accurate, timely diagnosis and treatment of complications. *Skilled assistance at delivery* is defined as assistance provided by a doctor, nurse, or midwife. Skilled personnel (Table 39A and 39B Safe Motherhood) delivered about 87 percent of births occurring in the year prior to the survey. This percentage is highest in Khartoum at 93 percent and lowest in Western Darfur at 70 percent. The more educated a woman is, the more likely she is to have delivered with the assistance of a skilled person.

In northern Sudan 44.4 percent of women and 16.3 percent in the towns of the south women delivered with the assistance of mid-wife. Doctors assisted with the delivery of 6 percent of births and health visitors assisted with 8 percent, and trained TBA assisted with 29 percent in northern Sudan. In The towns of the south: Juba, Wau, and Malakal the percentage is 3.9 percent for doctors, 65.9 for health visitors, 9.5 percent for mid-wife and 11.1 percent trained TBAs.

## **H. Child Rights**

### **Birth registration**

The International Convention on the Rights of the Child states that every child has the right to a name and a nationality and the right to protection from being deprived of his or her identity. Birth registration is a fundamental means of securing these rights for children. The births of 58.5 percent of children under five years in Sudan have been registered (Table 40A and 40B). There are no significant variations in birth registration across sex, age, but registration of children whose mothers have no education is significantly low as compared to mothers of primary or secondary education. Children in Western Kordofan and Darfur are somewhat less likely to have their births registered than other children but this appears to be due primarily to a relatively large proportion of mothers who do not know if their child's birth was registered. Among those whose births are not registered, it appears that this is due primarily to a relatively large proportion of mothers who do not know if their child's birth should be registered, or who do not know where to register, rather than the cost or the distance to be travelled.

### **Orphaned and living arrangements of children**

Children who are orphaned or living away from their parents may be at increased risk of impoverishment, discrimination, denial of property rights and rights to inheritance, various forms of abuse, neglect, and exploitation of child labor or sex. Monitoring the level of orphanhood and the living arrangements of children assists in identifying those who may be at risk and in tracking changes over time.

In northern Sudan 90 percent of children aged 0-14 are living with both parents (Table 41A). In the towns of the south this percent is 81 percent. Thirteen 13 percent of children in the same age in the towns of the south are living with their mother only although their father is

alive. Only 1 percent in northern Sudan and 3 percent in the towns of the south are living with neither parent although both parents are alive. Children who are not living with a biological parent comprise 1 percent in northern Sudan and 2 percent in Southern three towns. Children who have one or both parent's dead amount to 4 percent of all children aged 0-14 in northern Sudan and to 16 percent in the towns of the south. Older children are more likely to live away without their biological parents than younger children are. While only less than half percent of children under age five are not living with a biological parent, 1.5 percent of children aged 10-14 do so in North ern State. Situation as living with both parents does not vary much as between states, urban/rural, and male/female.

### **Child labour**

It is important to monitor the extent to which children work and the type of work in which they participate for several reasons. Children who are working are less likely to attend school and more likely to drop out. This pattern can trap children in a cycle of poverty and disadvantage. Working conditions for children are often unregulated with few safeguards against potential abuse. In addition, many types of work are intrinsically hazardous and others present less obvious hazards to children, such as exposure to pesticides in agricultural work, carrying heavy weights and scavenging in garbage dumps.

In Sudan, the MICS survey estimates that only about one percent of children aged 5-14 years in northern Sudan and the towns of the south engage in paid work (Table 42A and 42B). About three times as many only 3 percent participate in unpaid work for someone other than a household member.

'Domestic work' is defined as cooking, shopping, cleaning, washing clothes, fetching water, and caring for children. The vast majority of children in Sudan do these tasks for less than four hours a days (97 percent in northern Sudan and 99 percent in The towns of the south), while only 3 percent spend more than four hours a day on such tasks in northern Sudan and only 1 percent in the three towns in The towns of the south. There are no significant differences between girls and boys, older and younger children, in doing domestic work. However, variations across the states are greatest in the percentage of children who engage in more than four hours of domestic work a day. This percentage ranges from less than half percent in Khartoum State to 25 percent.

Children who have done any paid or unpaid work for someone who is not a member of the household or who did more than four hours of housekeeping chores in the household or who did other family work are considered to be 'currently working'. Overall, 14 percent of children in northern Sudan and 5 percent in the towns of the south are classified as currently working. There is virtually no difference between boys and girls (14 percent of boys and 13 percent of girls). State wise, the percentage of children working is lowest in Khartoum at less than one percent and highest in North Darfur State at 34 percent. Rural children are far more likely to work than urban children.

### **Female Genital Mutilation**

Although there are disparities in prevalence, type of circumcision, risks and complications, female circumcision is extensively practised in all regions of northern Sudan. Female

circumcision is called *Khifad* and *Tahour* in classical and popular Arabic meaning reduction and purity respectively.

In Sudan there are six types of female circumcision, which are primarily based on culture and traditions rather than on religious origins. These are the Sounna circumcision; the mildest type, the Pharonic and the Matawasit, or the intermediate circumcision. Traditionally, some tribes in northern Sudan did not have female circumcision, but the practice was assumed after getting in touch with tribes that did. The circumcision operation is act upon girls of different ages ranging from only few days old up to a maximum of ten to eleven years.

In 1946, legislation was conceded prohibiting Pharonic circumcision, but the law was not adopted. From 1947 through, a number of committees, seminars, workshops and conferences were held including governmental and non-governmental organisations for fighting female circumcision. Nevertheless, no explicit policy or specific laws were instigated by the government to eliminate female circumcision, although the government supports private efforts to discontinue the practice.

*Pharonic circumcision* is sometimes known as infibulation. It involves the removal of the clitoris, the labia minora and labia majora and the stitching of the vulva skin leaving a narrow opening for urine, menstrual blood and sexual intercourse.

Clitoridectomy is commonly known in Sudan as Sounna Circumcision, although it is not clearly stated in the religious texts. There are different types within this category ranging from the removal of the foreskin of the clitoris to its complete excision.

The *Intermediate* type of circumcision lies between the two extremes of the Pharonic and Sounna. Both the clitoris and the labia minora are either partially or completely removed while remaining parts of the labia minora or the inner surface of the labia majora are stitched. A wide range of variations of intermediate circumcision exists between different regions and ethnic groups within Sudan.

The MICS questionnaire fitted a series of questions on female circumcision. The main objective was to collect data and measure women's attitudes and behaviour regarding the practice. Data were collected on the type of circumcision practised on the respondents and on who performed the operation. Women were asked if their daughters were circumcised and tools used for the operation..

**Table 2-Annex A: Types of Circumcision in percentage**

	Pharonic	Sounna	Intermediate	Don't Know
Urban	74	23	2	1
Rural	77	19	1	2

93 and 78 percent of the urban and rural women in Sudan have heard about FGM respectively. In general the MICS data represent no significant differences in women awareness about the subject although some regional disparities exist. Only 52 and 71 percent of the women of the Western Darfur and Southern Darfur have heard about FGM respectively while North Kordofan, the Northern State, River Nile, Red Sea and Southern Kordofan states are indicating high percents with regard to awareness and perception of FGM. The differentials by education are not considered because women are circumcised at early young age of education to have any effect.

Table 2-Annex A revealed that Pharonic circumcision (74% urban and 77% rural) is more favoured than Sounna (23% urban and 19% rural) and only 1% urban and 2% rural better than the intermediate type. Disparities among states regarding the Pharonic, the Intermediate and Sounna types of female circumcision exist as well.

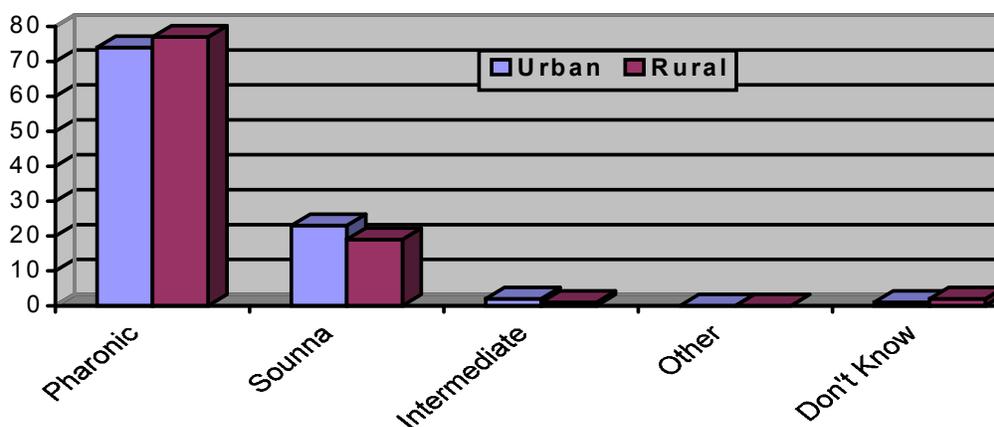
Northern State is favouring the Pharonic type of circumcision while it is only 24% in Western Darfur. On the other hand, only 3% are favouring the Sounna type of circumcision in the Northern State while it is a 71% in Western Darfur.

The proportion of Sounna type of circumcision vary greatly between 3 percent (Northern state) to 71 percent (Western Darfur). Table 3 -Annex A points out that, there are no significant disparities among the various states with regard to the circumcised females in the household between urban and rural settings. The proportions of circumcision in relation to the number of daughters along the various states are almost identical. The table compares circumcision approval rates for respondent's own daughters whereby the tendency is decreasing along with the increase of daughters per a household.

**Percentage of persons who performed circumcision and tools used by State/rural/urban**

State	TBA	Village Midwife	Trained person	H- Other Specify	DK	Blade	Scissors	Other
Urban	79	99	97	58	91	93	98.2	81
Rural	97	99	95	68	94	98	98.8	92

**Figure 10. Percentage of persons who performed circumcision by rural/urban**



The table shows that the village midwives perform most circumcisions (99% urban and rural each) followed by the trained H-personnel (97% and 95% for urban and rural respectively) while the TBAs constitute percentages of 79 and 97 for urban and rural settings respectively.

**Percentage of girls exposed to any kind of risks and complications**

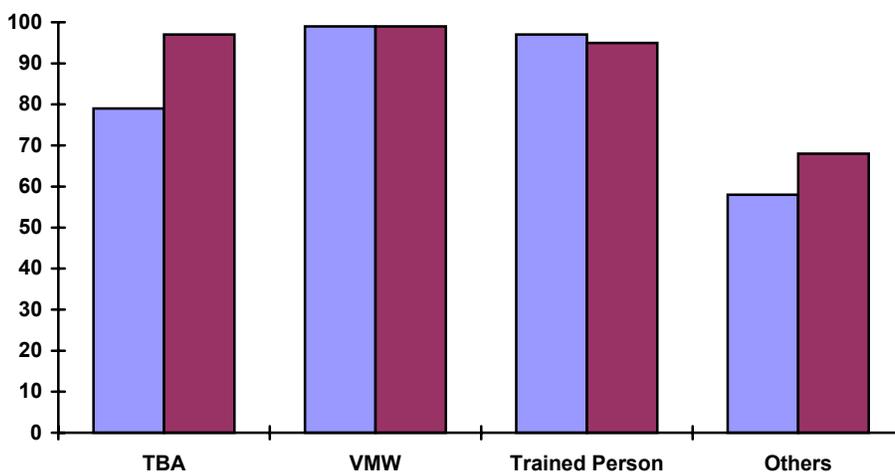
State	Bleeding	Infections	Shock	All Above	No Complications	DK
Urban	30	25	5	9	38	14
Rural	23	16	3	5	45	22

The above figures reveal that, more than one-fourth of rural and urban women in Sudan is subject to risks and complications in forms

**Disability among children in Sudan**

**Background**

Article 23 of the CRC stresses the disabled child’s right to special care, education and training to help him or her enjoy a full and decent life in dignity and achieve the greatest degree of self-reliance and social integration possible.



Disabled people do not constitute a homogeneous group. For instance, the mentally ill, mentally retarded, physically disabled, speech impaired, are different categories of the disabled with different needs. All of them encounter different barriers of different nature. By necessity, these barriers have to be overcome through different strategies.

The number of the disabled is growing all over the world. It is estimated that 500 million persons are disabled and that at least one person out of ten is disabled by physical, mental or sensory impairment. Also, it is said that at least 25 percent of any population is adversely affected by the presence of disability. The causes of impairment vary through the world as do the prevalence and consequences of disability. These variations are conditioned by different socio-economic circumstances. Generally, the factors responsible for disability and the increasing numbers of the disabled could be summarised as follows:

- War and its consequences: violence, destruction, poverty, hunger and epidemics.
- Impoverishment, over-crowds, unhealthy housing and living conditions.
- Illiteracy and little awareness of basic social services.
- Absence of adequate programmes of primary health cares and services.
- Absence of accurate knowledge about disability, its causes and treatment.
- Discrimination, stigma and misconceived perception on disability.
- Low priority in social and economic development for activities related to equality in opportunities, disability prevention and rehabilitation.
- Stress and other psychological problems.
- Imprudent use of medications misuses of therapeutic substances and illicit use of drugs and stimulants.

The question of disability and the plight of the disabled did not receive any concern in previous population censuses. It is only in the 1993 population census that the question of disability has been included. However, the data and information available by the census covers northern Sudan only. Ravaging war, since 1983, necessarily increases both the incidence of disability and number of disabled, particularly physical disability.

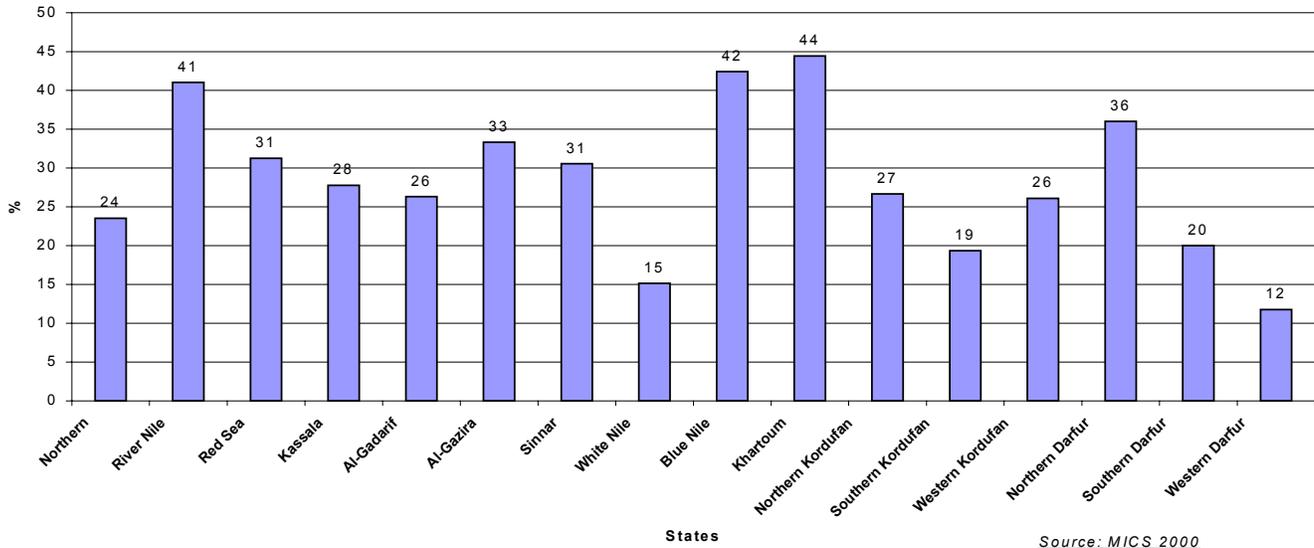
In reporting on disability the Multiple Indicator Cluster Survey, 2000 (MICS) focuses on Northern States, as data from Southern States is currently non-existent with the exception of the three southern major towns namely; Juba, Wau and Malakal. According to the MICS, types of disability are caused by the following factors; (1) diseases; (2) acquired-causes; and (3) inheritance (genetic causes). War, as a factor causing disability was not mentioned.

The total population of the sample size for the northern and the towns of the south used by the MICS were 147,552 and 8,922 respectively.

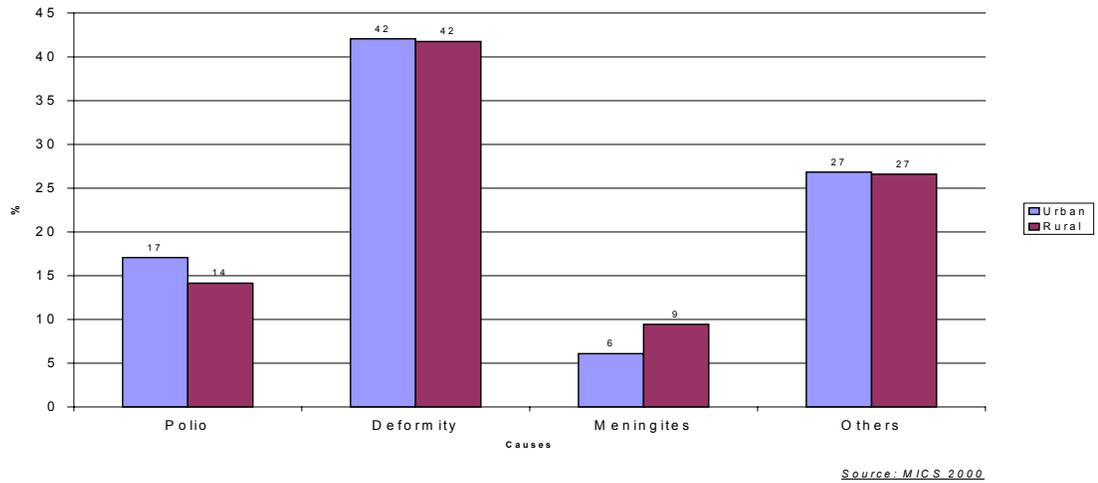
The highest enrolment rate among the disabled children is in Khartoum State (44) % with the lowest in Western Darfur 12% far below the enrolment rate among school children in the two states. Please figure (11).

**Figure (11)**

**Disable Children Enrollment Rate  
Sudan 2000**



**Figure (12) Causes of Disability, Sudan 2000**

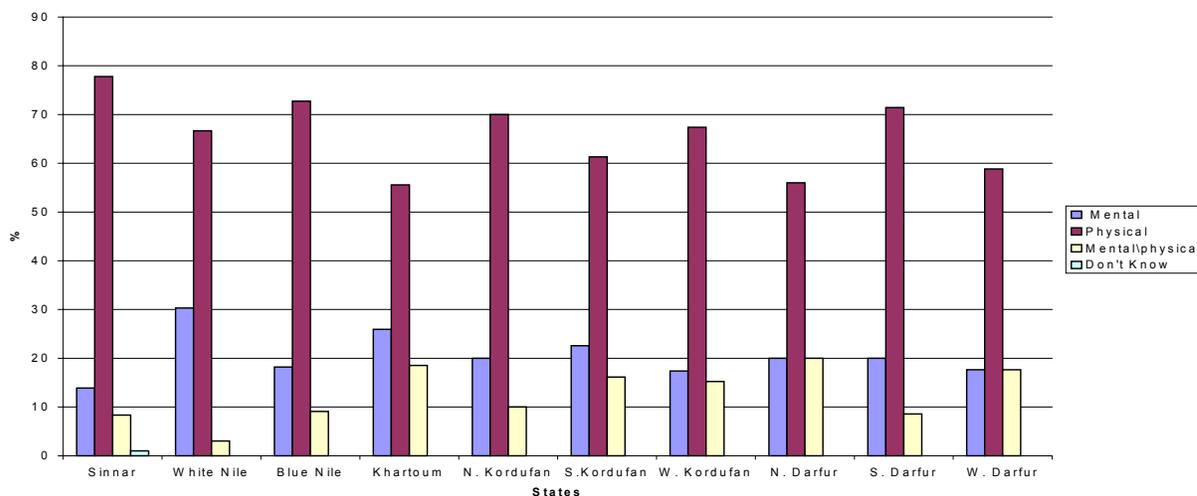


Whether rural or urban, and irrespective of gender, disability is positively correlated with poverty. According to the MICS, the most disadvantaged states were ranked as follows:

West Darfur, Blue Nile, West Kordofan, Kassala, Gadariaf, North Kordofan, South Darfur,  
Federal Ministry of Health, Central Bureau of Statistics and UNICEF, Sudan 2001

North Darfur and North Kordofan. (See the graphs/ annexes). One indication of this state of affairs is that disability is prevalent in particular parts of the country, parts that are suffering mounting problems and many socio-economic setbacks. While there is no rural related data on the South, the war is indicative of the situation of disability. The war increases vulnerability and incidents of physical disability. Other types of disability are also expected to increase as basic services and primary health care had largely been destroyed by the devastating war.

**Figure 13. Types of Disability by States, Sudan 2000**



Source: MICS 2000

The overall physical disability in the northern Sudan is found to be 67 percent and 62.7 percent in the towns of the south whilst the mental disability was 19.5 percent and 20.2 percent in the Northern and The towns of the south respectively. Causes of disability are various. In the northern Sudan it was found that, deformity amounted to 41.7 percent, Polio 15.8 percent, Meningitis 11.2 percent and others 25.1 percent. In the towns of the south the MICS has revealed that, deformity was amounted to 22.3 percent, Polio 20.4 percent, Meningitis 11.7 percent and Guinea worm 14.6 percent.

Despite some variations among Northern states, as will be shown in the annexed tables, disability is concentrated in rural areas as 71.7 percent of the physical disabled are found there. This indicates that there is some kind of relationship between disability and poverty as indicated above. The highest percentages of physical disability exist in El Gadarif and Gazira states (81.6% and 81.0% respectively), while that of mental disability was found in White Nile and then Northern state (30.3% and 29.4%).

While the socio-cultural background of the disabled has not been accounted for by the MICS, it is believed that, for Khartoum state, the majority of the disabled are migrants from areas undergoing strains. As the urban disabled in general and in Khartoum in particular is almost the same as that of their rural counterparts, it can be said that Khartoum/urban has largely been "rural", and rural ills, including disability, have been transformed structurally to urban areas.

The disabled are, in a sense, socially and economically marginalized and excluded from society. One obvious manifestation of this exclusion is that disabled people are, more often than not, viewed as unproductive or even useless.

The MICS has revealed that, in northern Sudan, 50.7 percent of the disabled were participating in daily activities such as cleaning, playing and cooking, 28.5 percent were enrolled in schools whilst that of the towns of the south were 51.8 and 49.8 percents respectively.

Participation of disabled in social life was found to be 27.7 and 51.8 percents in Northern and the towns of the south respectively.

## Wealth Index

### A- Characteristics of the Household Population

Information on the characteristics of the household (HH) population and the survey respondents is provided to assist in the interpretation of the survey findings to serve as a basic check on the sample implementation.

MICS II survey contains a sample of 25,200 households (HH); of which 11,819 (47 percent) are classified as poor; 5,252 (21 percent) as middle, and 8,129 (32 percent) as rich families. Table (1) shows that, West Darfur, North Kordofan and Gedarif States have the largest percentage of poor families (67.1, 66.8 and 60.1 percent respectively) among all states. On the other hand, Khartoum, Northern, and River Nile, are the richest states as they contain 68.3, 61.9 and 60.5 percent, respectively of the rich families.

**Fig. (14) Percentage of Poor and Rich HH in Different States**

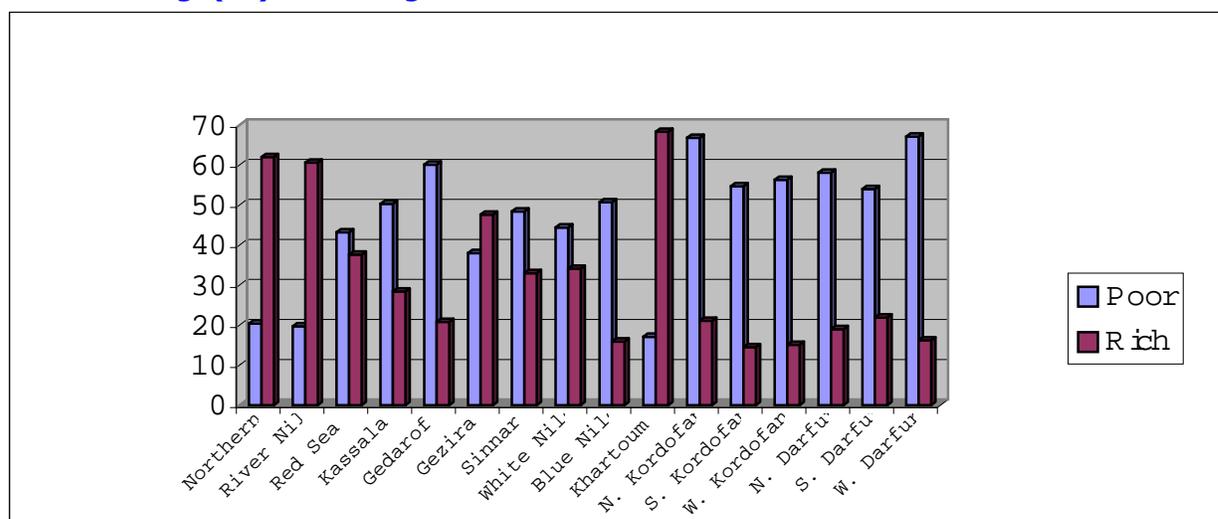
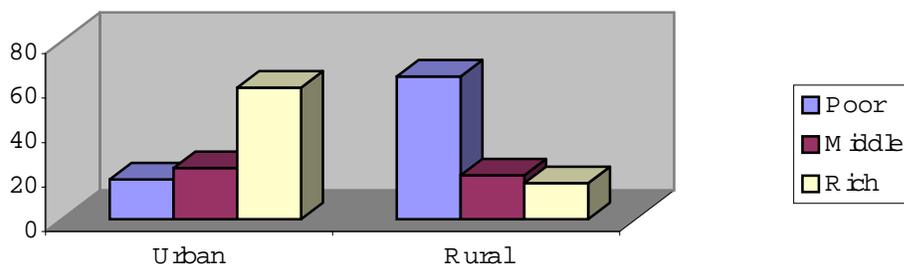


Figure 14 shows that urban population in the sample constitutes about 37 percent and rural areas 63 percent of total sample. In the rural areas the poor HH constitute 64.2 percent while in urban areas the poor are 17.9 percent. On the other hand, in the urban areas the rich HH constitute 59 percent and in the rural areas the rich HH or only 16.2 percent. This indicates that the poor are concentrated in rural areas while the rich are in urban areas. See Table 1-Annex A

**Fig. (15) Percentage of HH in Rural/Urban by Standard of Living**



## B. Housing Conditions

### *Floor Material*

The housing condition usually serves as an indicator of poverty. It is a major component of a good quality of life and level of living. A wealth index includes many indicators of housing conditions. Of all families, only 6.2 percent have a floor of wood/tile or concrete, 89.1 percent dirt/straw, and 3.1 percent dafra (brick cover). The dirt/straw floor is predominant. None of the poor families has a floor wood/tile or concrete, or dafra; as all HHs have dirt/straw. Among the rich families, 22 percent have wood/tile or concrete; 10 percent dafra, and 67 percent dirt/straw (table 2-Annex C).

### **Number of Rooms**

72.9 percent of the families in the sample have one or two rooms in the house about 24 percent have 3-4 rooms, and only 3% have five or more rooms. The poor constitute 54 percent of those who have one or two rooms, while the rich constitute 25 percent.

There is a significant variation between the poor and the rich. Among the poor 84 percent of the HHs have one or two rooms; while among the rich the percentage is 56 percent. Only one percent of the poor has five or more rooms and 6 percent of the rich have five or more rooms (table 3-Annex C).

### **Fuel Type**

Of all households in the sample, about 12 percent have gas/electricity as a source of energy; the majority (87.6 percent) has firewood/charcoal/dung. None of the poor families have

gas/electricity; while 36 percent of the rich have (table 4-Annex C). Almost all-poor families use wood/charcoal/dung, but also 63 percent of rich use wood/charcoal/dung.

### **Electricity**

All families who have electricity within dwellings are about 23 percent of total families (table 5-Annex C). 94 percent of those who said that they have electricity are rich compared to 0.5% of the poor. The table shows that about 99.7 percent of the poor have no electricity, compared to 33 percent of the rich HHs.

## **B- Possession of Durable Goods**

### **Radio**

More than one-third (36.5 percent) of the households in the sample mentioned that they have a radio set. Within the poor households 86 percent has no radios; while within the rich 66 percent said that they have radios (table 6-Annex C).

### **TV Set**

Of all households in the survey, only 17.6 percent have TV set. Almost all of these are rich families. None of the poor and only 53% of the rich have TV set (table 7-Annex C).

### **Wall Clock**

About 14 percent of all families have a wall clock with minor differences between the rich and poor HHs. Thus, about 87 percent of the poor HHs and 82% of the rich HHs have no wall clock (table 8-Annex C).

### **Refrigerator**

Table (9) - Annex C shows that about 12.8 percent of the families have a refrigerator. Approximately 90 percent of the poor, and 80 of the rich have no refrigerator.

### **Bicycle**

From the sample taken, 88.4 percent of the families do not have a bicycle. Four percent of the poor and 25 percent of the rich HHs have bicycles. Despite the fact that the bicycle is not a major means of transportation in Sudan, one would expect the poor to have bicycles in a percentage greater than the rich. But (table 10-Annex C) shows exactly the opposite, meaning that the poor cannot even afford to buy bicycles.

### **Motorcycle**

Table (11) -Annex C shows that those who have motorcycles constitute less than one percent of the samples; none of the poor families have motorcycle. All those who have motorcycles are rich 92 percent) and middle HHs (8%). However only 2% of the rich HHs have motorcycles.

**Motorcar**

Table 12-Annex C presents the percentages of all households and of the rich and the poor who have cars. In all HH of the sample only 4.6 percent have cars. About 13 percent of the rich have cars, while less than 0.5% of the poor have cars; i.e. 99.7 percent of the poor do not have a car. The difference between the rich and the poor is clearly significant in the question of car ownership.

**Foam Mattress**

Eight percent of the families have foam mattress (table 13-Annex C). However 98 percent of the poor do not have foam mattresses, while 83 of the rich do not have foam mattress.

**D- Possession of Land and Animals****Cultivated Land**

Approximately half of the families in MICS survey have cultivated land (table 14-Annex C). The poor constitute about 66 percent of those who have the land, the middle 19 percent and the rich only 15 percent. However, 30 percent of the poor do not have cultivated land, and 77 percent of the rich do not have. This indicates that the bulk of the poor families (70 percent) involve in agriculture, and about 23 percent of the rich involve in land cultivation.

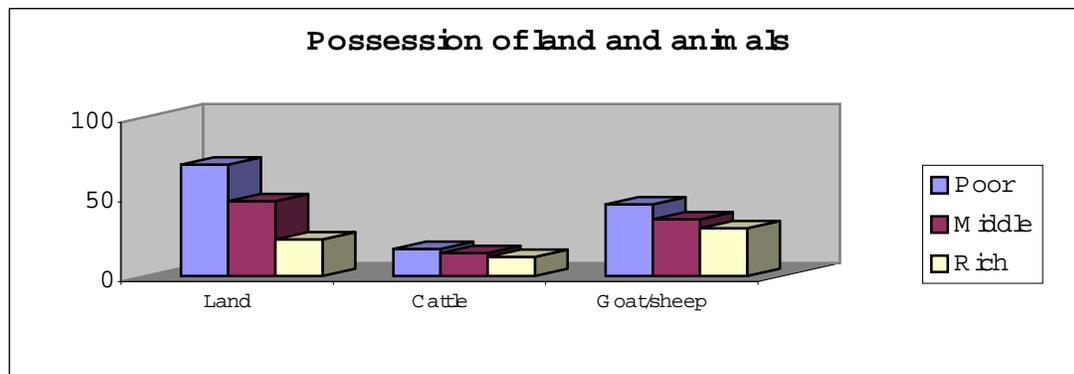
**Cattle**

Table (15-Annex C) presents the households with cattle. The overall percentage of those having cattle in the sample is 15 percent. Seventeen percent of the poor and 12 percent of the rich HHs own cattle.

**Goat/Sheep**

More than one third of the families (38 percent) have goat/sheep in the house. The number of households having goat/sheep is more than double that of HHs having cattle. Nearly half the poor HHs (45 percent) and slightly less than one third (30 percent) of the rich HHs have goat/sheep (table 16-Annex C).

**Fig. (16)**



### **E- Access to necessities**

#### **Meat**

Three-quarters of the Sudanese families (75.2 percent) consume meat as an important component of the diet (table 17-Annex ). The overwhelming majority of the rich HHs (95 percent) does so, while only 55% of the poor families use it. The significant difference between the two percentages indicates the inability of the poor to buy meat.

#### **Milk**

Table (18\_Annex C) shows that almost four-fifth (78.7 percent) of the Sudanese families use milk; only 21.3% of the families do not. The percentages of those who use milk are 94, 85 and 65 for the rich, middle, and poor HHs respectively. The small percentage of the poor who use milk tallies with that for consumption of meat.

#### **Sugar**

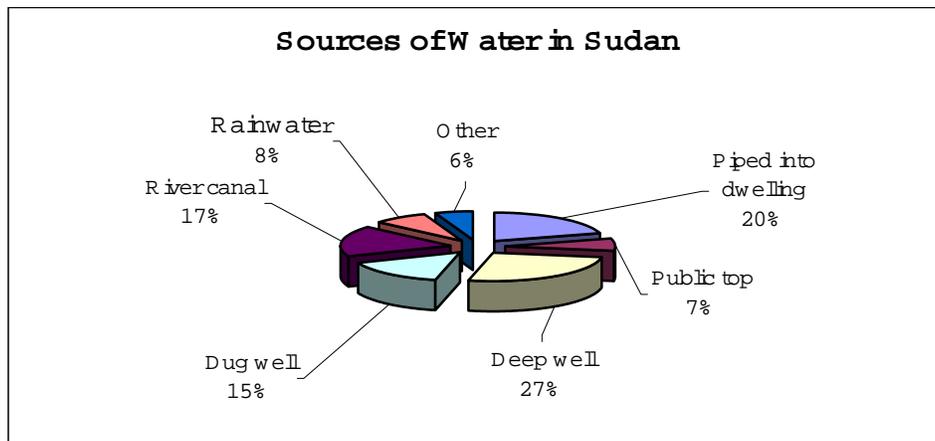
Almost all-Sudanese families (97.7 percent) of the respondents use sugar (table 19-Annex C). Variations between the different levels of livings are negligible.

### **Wealth Index- Water and Sanitation**

#### **Water**

Slightly less than one quarter of the population uses drinking water piped into their dwelling and 28 percent use water piped into their yard or plot (deep/well pump). Rain water collection and rivers and streams are also important source of drinking water (table 21-Annex C). The source of drinking water for the population varies strongly by the standard of living i.e. poor or rich. About 63 percent of the rich families have piped water into dwelling, while only 1% of the poor has that advantage. About 72% of the poor use river/canal/rain water as a source of drinking water, only 4% of the rich use this source.

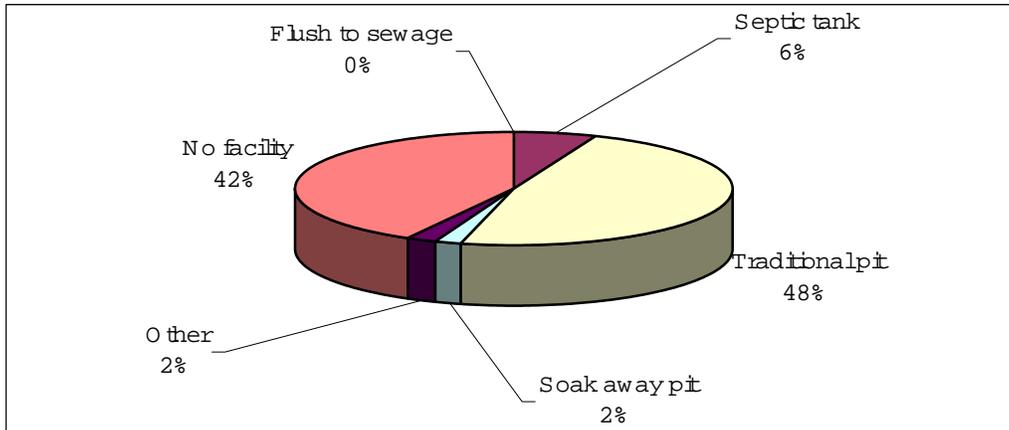
**Fig. (17)**



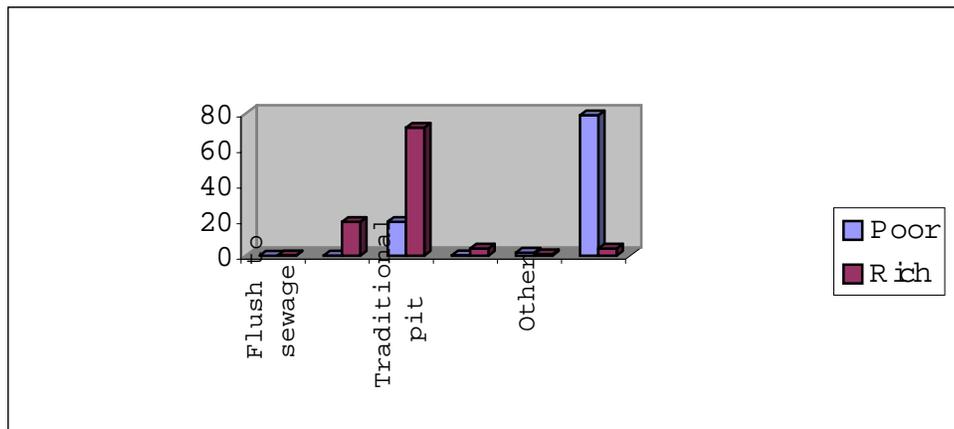
***Wealth Index Sanitation***

Fifty-eight percent of the population in Sudan is living in household with sanitary means of excreta disposal (table 22-Annex C). About 95 percent of the rich households; and only 19 percent of the poor HHs have sanitary means of excreta disposal. Most of the poor population (79%) uses rivers, bush, fields, or has no facilities. In contrast the most common facilities in the rich households are the traditional pit latrine (72 percent).

**Fig. (18) Toilet Facility in Sudan**



**Fig. (19) Toilet Facilities Poor/Rich**



**Wealth Index: Education**

***Ever-attended School***

About 56 percent of the people ever-attended school (table 23-Annex C). There is a variation according to the mode of living ranging from 80 percent in the rich HHs to 36% in poor ones.

***Highest School Level***

Table (24-Annex C) shows that overall, three-quarters of Sudanese (75.4 percent) have pre-school and primary level as the highest school level attended; 19.3 percent have secondary schooling, and only 4 percent university and higher education. Education for ninety percent of the poor stops at pre-school or primary education while 67% of the rich have that level. It is noted that the percentage of the poor (7.5) for the secondary level as the highest education is significantly lower than that of the rich (29 percent). Analogously, less than one

percent of the poor have university or above as the highest school level, while the percentage for the rich is 7 percent.

## **Wealth Index-Household Health**

### ***Breastfeeding***

Breastfeeding for the first few years of life protects children from infection, provides an ideal source of nutrients, and is economical and safe. However, many mothers stop breastfeeding too soon, and there are often pressures to switch to infant formula, while can contribute to growth faltering and micronutrient malnutrition and is unsafe if clean water is not readily available. Children should be exclusively breastfed for four to six months, and appropriate food should be implemented at age six month while breastfeeding is continued for two or more years.

Table (26-Annex C) shows that about nine percent of Sudanese children are ever breastfed, a level considerably lower than recommended. Eleven percent of children in the poor HH who are ever breastfed while 22.3 percent who are breastfed are the very poor families.

### ***Vitamin A Supplementation***

Vitamin A deficiency (VAD) can cause eye damage and blindness in children. It also impairs children's immune systems, increasing their chance of dying of common childhood diseases.

Within the six months prior to the MICS, 47 percent of children aged 6-23 months received the high dose vitamin A supplement (table 27). Vitamin A supplementation coverage is almost the same in the poor families (47 percent) and the rich families (46 percent), and in the middle class is also 47.4 percent.

### ***Diarrhoea***

Dehydration caused by diarrhoea is a major cause of mortality especially among children in Sudan. Overall, nine percent of the respondents had diarrhoea in the two weeks preceding the survey (table 28-Annex C). There are no significant differences in diarrhoea prevalence as between the poor (11 percent) and the rich (9 percent).

## **Vaccination Card**

In MICS 2000, mothers were asked to provide vaccination cards for children under the age of five, or to report any vaccination. Over all, 34 percent of children had vaccination card for all vaccinations. About 64 percent of the mothers reported that their children had all vaccinations. Only 2.5 percent mentioned that they have not had all vaccinations (table 29-Annex C).

There are some slight variations between the poor and the rich HHs in this regard. About 48 percent and 36 percent of the poor and rich HHs, respectively, mentioned that they had a vaccination card for all vaccinations. Among the poor, 4.5% did not have all vaccinations; and among the rich the percentage was 2.1%.

## **Disabled Children**

The percentage of disabled children in Sudan is almost 1.8% (table 30-Annex C). It is very interesting to note that all three levels of living have almost the same percentage 1.8, 2 and 1.7 percent for the poor, middle class, and rich HHs, respectively. This indicates that disability is not associated with the wealth of the household.

## **Birth Certificate**

In Sudan, the percentage of children having birth certificate which was seen during MICS 2000 is 18.8 percent; those having but not seen, 22.8 percent, and those who do not have 57.8 percent (table 31-Annex A). Of the poor HHs, 16.8 percent have birth certificates that were seen compared to 20 percent for the rich HHs. Conversely, those who do not have birth certificates constituted 61% of the poor and 56 percent from the rich HHs. It appears that there is no significant variation in possession of birth certificate across wealth levels.

## **Working Children**

It is important to monitor the extent to which children, work and the type of work in which they participate. Children who are working are less likely to attend school and more likely to drop out. This pattern can trap children in a cycle of poverty and disadvantage.

In Sudan the MICS survey estimates that only 3.7 percent of the children engaged in paid work (table 32-Annex C). About the same percentage (3.9) engage in unpaid work for someone other than a HH member. Children of poor HHs are more likely to engage in paid or unpaid work (9.6 percent) than those rich HHs (4 percent).

# **ANNEX A: Sample Design**

## **1. Introduction**

The multiple indicator survey is an adaptation of the EPI cluster sampling methodology that was introduced in 1974, by the World Health Organisation. The EPI survey was intended to address a very limited scope estimating only the immunisation rate coverage.

Over the years the design has been used for other purposes. While MICS is widely acclaimed for its low cost and simplicity and ease of operation, there have been various criticism levels at the technique mainly dealing with issues of bias and reliability. Through time these shortcoming have been addressed by various modifications to the design.

The survey design consists of a series of modules designed to provide data for some service indicators that include vaccine coverage, Vitamin A status, ORT, diarrhoea, malnutrition, education, safe water and sanitation. New modules will be added to the text e.g. gender, CRC and FGM.

The survey offers rapid dependable, low cost and easily replicable system for monitoring the end decade goals. As a household survey, the MICS gives the opportunity to conduct

national surveys that accommodate the required data at sectoral level and be disaggregated by region and by gender.

## 2. COVERAGE

The multiple Cluster Survey was first implemented at a national level in Sudan in 1995 to enable SCO report on mid-decade goals. The country was divided into seven zones. In each zone, systematic random sampling was used to select 30 clusters. Fifty households (HHs) were selected in each cluster (total 1500 HH per zone).

The MICSII for 2000 is considering the state as stratum instead of the 1995 zones. For the southern states a special sampling arrangement will be presented later in this report. Administratively, each state is divided into urban local councils and rural councils. The councils are again subdivided into village council, and quarter councils for both rural and urban areas.

The sample design for MICSII will depend entirely on the administrative structure of the federal system. In the present federal system, the state is considered as a semiautonomous entity mandated to run the affairs of their citizens, provide governance and be responsible for planning, policy formulation and implementation of the annual programme. The state governments become the main users for MICSII results for purpose of monitoring the situation of children. Moreover, the results of MICS II will allow preparing the situation analysis in a right-based frame consistent with the thrust of the country programme of co-operation between the Government and UNICEF. Further analysis is possible again to reflect the regional disparities and ranking of the states according to the socio-economic conditions. Paradoxically, the better methodology adopted for MICS II is its shortcoming, as it will not allow comparing its results with the 1995 data. However a major merit of conducting MICSII at state level is a real opportunity for better planning and evaluation.

### **Sample Size**

Among others, the sample size is normally determined by two major factors: available resources needed for the implementation of the survey and the degree of precision required in the survey results.

The formula used for the calculation of the sample size is

$$n = \frac{4 (r) (1-r) (f)}{(e^2) (p) (nh)}$$

Where

N = The required sample size (number of the HHs) for rarest key indicators

4 = The factor to achieve the 95 percent level of confidence

r = The predicted or anticipated prevalence of the key indicator DPT/OPV coverage of 0.5

f = Design effect or "deff" equal 2

e = The margin of error to be tolerated (.05)

p = The proportion of the total population from which the prevalence of r is measured (population aged 12-23 month) equal .03.

n<sub>h</sub> = The average household size equal 5.9

By substitution

$$n = \frac{4 (.5) (1-.5) \times 2}{[(0.05)^2 \times (.03) (5.9)]} = 4520$$

Therefore the estimated sample size of 4520 is the most appropriate sample size to provide the bulk of the survey indicators and with the required precision and reliability at the national level. This necessitates that the estimate of the national level be increased to enable representation at state level. This is to be done by multiplying the national sample size by a factor taken from the standard table<sup>2</sup>.

The new sample size for MICSII will be computed as follows:

$$4520 \times 5.75 = 25990 \text{ HHS.}$$

Further adjustment with 3% none response rate the sample size will be 26,775 HHs and the state sample size = 26775/17 = 1575. This is on the assumption that the sample size for all the southern states be treated as one state.

### 3. Stratification and Allocation

- A two-stage stratified cluster sampling will be adopted. First the village council (VC) in rural quarter council and the quarter council in the urban areas are taken as the primary sampling units (PSU) in stage one. Secondly, a fixed number of households is taken from each selected PSU as secondary sampling units (SSU) in stage two.
- As mentioned earlier, the sample will cover all the 16 northern states and selected areas in the south. The southern state sample will consist of the three main towns and accessible rural areas around them. For sampling purposes, the south is considered as one state, hence its sample size.
- Each state is further stratified into urban and rural using the population size in each setting. Actual proportion of urban and rural population based on the projection of 1993 Census to the year 2000 were used for the stratification of the sample size into the urban and rural for each state (table 1)

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<sup>2</sup> The multiplying factor is computed from a standard table of multipliers by using 17 domains (see Turner G lecture Notes for OIC sampling workshop, Sannaa, Yemen, Nov-Dec. 1999).  
*Federal Ministry of Health, Central Bureau of Statistics and UNICEF, Sudan 2001*

- However in many of the states some modifications were made from the PPS general rules. In the states where the allocated sample size, based on the PPS between urban and rural, is very small i.e. less than 500 HHs for either one then the sample size is raised purposively to 500 HHs. Accordingly, each setting should be represented by one third of the sample size. This will enable comparison between rural and urban within each state.
- For the final allocation of the sample clusters (PSU) between urban and rural areas for the states ( see table 2)
- In the south the stratification of the sample between urban and rural will be finalised in the field after obtaining the information on accessible rural areas around the main towns: Juba, Malakal and Wau. The allocation of PSU in table 2 for the southern areas is based on the proportional distribution of 1993 Census results.

#### **4. Sampling Frame.**

In probability sampling, one of the important elements that add to the efficiency of the sample is the availability of a complete adequate and updated sample frame. For the purpose of this survey, the 1993 National Census is the only and most recent and will be taken as the main frame for the survey.

From the Census results two separate frames are obtained for each state; one for the rural setting having the list of all the village councils with corresponding population (number of households) and the other for the urban setting with quarter councils and their respective population. Accordingly the sample will be drawn separately for urban and rural in each state.

#### **5. Urban Frame Update**

The rural frame will be taken as it is without update. Updating the rural frame is a big task and takes time given the time limits for MICS implementation. The Central Bureau of Statistic updates the frame usually before the population census (every ten years). For the urban setting a partial update will be carried to cover the main towns: Khartoum, Madani, Kosti, Kassala, Elobied, Port Sudan, Elfasher, Nyala, Kadugli, Dilling each of which has a population of more than 100,000.

- A. Collecting information from the official sources and checking the estimates provided from the projects and related government institutions (new settlement after the Census)
- B. Take records for the areas demolished or evacuated after the Census.
- C. Data to be collected from councils and state government (official records)

#### **6. The Sample Selection**

The quarter council (QC) and the village council (VC) as PSU will be selected using probability proportionate to the size of the population using PPS procedures. For every state two separate lists will be prepared, one for the rural areas showing provinces, local councils and village councils with corresponding number of households in each village council. The second list shows the same information for urban areas.

In the second stage a fixed number of households (35) using systematic sampling selection procedures. The second stage will be done in the field. The teams are required to carry out household listing in the selected PSU. From these HH list the 35 households will be selected as final sampling units

**Proportional Distribution of the Population between Urban and Rural by State According To the Population Projection for Year2000**

INDEX	STATE	PROPORTION URBAN	PROPORTION RURAL
1	NORHERN STATE	12.0	88.0
2	NAHR EL NEEL	33.2	66.8
3	RED SEA	59.7	40.3
4	KASSALA	33.9	66.1
5	GADARIF	28.3	71.7
6	KHARTOUM	85.9	14.1
7	QEZIRA	21.9	78.1
8	SINNAR	27.9	72.3
9	WHITE NILE	38.0	62.0
10	BLUE NILE	29.4	74.4
11	N. KORDOFAN	25.6	70.4
12	W. KORDOFAN	20.2	79.8
13	S. KORDOFAN	22.9	77.1
14	N. DARFUR	18.9	81.1
15	W. DARFUR	12.2	87.8
16	S DARFUR	19.6	80.4
17	SOUTHERN STATES	20.4	79.6

SOURCE: CENTRAL BUREAU OF STATISTICS-POPLUATION PROJECTION 93-2018

**Distribution of Primary Sampling Units (PSU) Into Urban and Rural Areas by State**

INDEX	STATE	NO.OF URBAN PSU	NUMBER OF RURAL PSU	TOTAL
1	NORHERN STATE	15	30	45
2	NAHR EL NEEL	15	30	45
3	RED SEA	27	18	45
4	KASSALA	15	30	45
5	GADARIF	15	30	45
6	KHARTOUM	30	15	45
7	QEZIRA	15	30	45
8	SINNAR	15	30	45
9	WHITE NILE	17	28	45
10	BLUE NILE	15	30	45
11	N. KORDOFAN	15	30	45
12	W. KORDOFAN	15	30	45
13	S. KORDOFAN	15	30	45
14	N. DARFUR	15	30	45

15	W. DARFUR	15	30	45
16	S DARFUR	15	30	45
	TOTAL NORTH	269	451	720
	EQUATORIA			20
	BHR ELGHAZAL			14
	UPPER NILE			11

## **ANNEX B: LIST OF PERSONNEL INVOLVED IN MICS2**

### **A. Steering Committee Members**

- |                               |  |
|-------------------------------|--|
| 1. Dr. Beshir Abraham Mukhtar | First Under Secretary , FMHO (Chiarperson) |
| 2. Mr. Hassan Abdel Salam     | DG. Central Bureau of Statistics           |
| 3. Dr. Siddig Mohmed Ahmed    | University of Khartoum                     |
| 4. Mr. Hassan Ahmed Babiker   | National Water Corporation                 |
| 5. Dr. Adil Sagyroun          | UNFPA                                      |
| 6. Mr Ibrahim El Dasis        | Ministry of Education                      |
| 7. Mr. Mohammed Osman Hilali  | Ministry of International Co-operation     |
| 8. Dr. Ahmed El Bashir        | PME, UNICEF                                |
| 9. Dr. Rafah Aziz             | Health Section, UNICEF                     |
| 10. Dr Alwia Gamal            | National population Centre                 |
| 11. Fadel El Mula Dargail     | Planning – FMOH                            |
| 12. Dr. Attiat Mustafa        | S.G. NCCW                                  |
| 13. Mr. Wasfi El Gamri        | State Support Fund                         |

14. Dr Ahmed Farah Shadol Ex-PHC DG  
 15. Dr. Ahmed A/Rahman FMOH

**B. Technical Committee Members**

1. Dr Abdel-Ghaffar Ali Adam MICS National co-ordinator  
 2. Mr Mohammed Ahmed Yousif Deputy Co-ordinator  
 3. Mr. Abdel-Bari Nasr UNICEF  
 4. Mr Ibrahim Abbas CBS  
 5. Mr. El Naeem Suliaman CBS  
 6. Ms Duria Mohmed Osman FMOH\_PHC  
 7. EL Sheik Yousif FMOH  
 8. Mr. Ibrahim El Hassan FMOH  
 9. Dr. Abdel Hailm EL Tahir UNICEF

**C. List Of Field Monitors**

Serl. #	NAME	STATE	INSTITUTION
1.	Osman Mohammed Ali	Khartoum	CBS
2.	Babiker Ahmed Mohammed	Khartoum	FMOH
3.	Hussein Mohammed El Amin	Gezira	CBS
4.	Abdel Rahman Ali Hamad	Gezira	MOH
5.	Mansour Mohammed Ismail	White Nile	CBS
6.	Ahmed Hassieb	White Nile	MOH
7.	Mohammed Yacoub Khalifa	Sinnar	CBS
8.	Siddig El Amin	Sinnar	MOH
9.	Babiker Ibrahim Mohammed	Blue Nile	CBS
10.	Siddig Abdalla	Blue Nile	MOH
11.	Adam Salih Kabbashi	Gedarif	CBS
12.	Abdel Azim Abdel Rahim	Gedarif	MOH
13.	Ahmed Mohammed Osman	Kassala	CBS
14.	Ahmed Sadouk	Kassala	MOH
15.	Ibrahim Mohmoud Mohammed	Red Sea	CBS
16.	Nour Gamir	Red Sea	MOH
17.	Abdel Azim Ahmed Abdalla	Northern State	CBS
18.	Mohammed Abdel Rahman	Northern State	MOH
19.	El Fatih Sir El Khatim	Nahr al Niel	CBS
20.	Salah Mohammed Zein	Nahr al Niel	MOH
21.	Salah A. Mohammed Saeed Khayal	North Kordofan	CBS
22.	Bastawi Tag El Din	North Kordofan	MOH
23.	El Tayeb Gumaa Mohammed	West Kordofan	CBS
24.	Mohammed Ibrahim Hamad	West Kordofan	CBS
25.	Abdalla Kadnour	South Kordofan	MOH
26.	Mohammed El Nur Bandas	South Kordofan	MOH
27.	Salah Mohammed Ahmed Adam	North Darfur	CBS
28.	Hassan Mohammed El Ahnaf	North Darfur	MOH
29.	Osman Mohammed Ahmed Abujoud	South Darfur	CBS
30.	Adam Ali	South Darfur	MOH
31.	Isam Iddris Mohammed Salih	West Darfur	CBS
32.	Mohammed Barakat	West Darfur	MOH
33.	Bayen Oklein	Equatoria	Juba MOH
34.	James Lowbay Andrea	Equatoria	Juba MOH
35.	Hydar Yousif	Bahr al Gazzal	Wau MOH

**D. List Of Federal Supervisors**

<b>Serl #</b>	<b>NAME</b>	<b>STATE</b>	<b>INSTITUTION</b>
1.	Hassan Abdel Salaam Sulieman	Khartoum State	CBS
2.	Ali Hassan Mohammed Ahmed	Gezira State	CBS
3.	El Sheikh El Tigani	White Nile	MOH
4.	Galal El Din Ahmed El Amin	Sinnar	CBS
5.	Ibrahim Mohammed El Hassan	Blue Nile	MOH
6.	Salih Hamza Abu El Yamen	Gedarif	CBS
7.	Julius Sabit	Kassala	CBS
8.	Amna Omer	Red Sea	CBS
9.	Isam Abdel Bir	Northern State	MOH
10.	El Naiem Suliman Abbas	Nahr al Niel	CBS
11.	Hassan Ibrahim	North Kordofan	CBS
12.	Kamal El Din Ahmed Ismail	West Kordofan	CBS
13.	El Amin El Faki Gammam	South Kordofan	CBS
14.	Ibrahim Abbas Seif El Nasr	North Darfur	CBS
15.	Mukhtar Ibrahim	South Darfur	CBS
16.	El Sheikh Yousif	West Darfur	MOH
17.	Abdel Wahab Ali Medawi	Equatoria	CBS Juba
18.	Gaafar Mohammed Saeed	Malakal	CBS Malakal
19.	Issa Ali Babiker	Bahr al Ghazal	CBS Wau

**E. List Of State Co-Ordinators**

<b>Serl #</b>	<b>NAME</b>	<b>STATE</b>	<b>INSTITUTION</b>
1.	Zein El Abdin Ahmed El Mahgoub	Khartoum State	CBS
2.	Mustafa El Jack Mustafa	Gezira State	CBS
3.	Hussein Mohammed Bakhiet	White Nile	CBS
4.	Abdel Hameed Hassan A/Galil	Sinnar	CBS
5.	Hannan Ali El Sheikh	Blue Nile	CBS
6.	Mahgoub Oshikl Gaafar	Gedarif	CBS

7.	Mustafa Hassan Ali	Kassala	CBS
8.	El Amin Osman Mohd El Hassan	Red Sea	CBS
9.	Taj El Sir Hassan Gabra	Northern State	CBS
10.	Salah El Din A/Rahman Majid	Nahral Neil	CBS
11.	Sulieman Adam Al Dai	North Kordofan	CBS
12.	Siddig Kheiri Ismail	West Kordofan	CBS
13.	Ali Toor Boush	South Kordofan	CBS
14.	Alallah Gabu Ahmed	North Darfur	CBS
15.	Taj El Din Bakhiet Ibrahim	South Darfur	CBS
16.	Hydar Abdalla Rehan	West Darfur	CBS
17.		Equatoria	CBS Juba
18.	Gaafar Mohammed Saeed	Upper Nile	CBS Malakal
19.	Issa Ali Bakr	Bahr al Ghazal	CBS Wau

## Annex C: Sudan Questionnaire

### Household questionnaire

Household information panel

Household listing form (all residents) and orphanhood questions (birth to 14)

Education module: educational attainment (age 5 or over), school attendance (age 5-17)

Child labour module (age 5-14\*)

Water and sanitation module (all households)

Salt iodization module (all households)

\* Upper limit beyond age 14 may be set by individual country

### Questionnaire for individual women (women of reproductive age, 15-49)

Women's information panel (all eligible women, 15-49)

Child mortality module (all eligible women)

Tetanus toxoid module (all mothers with last birth within last year)

Maternal and newborn health module (all mothers with last birth within last year)

Contraceptive use module (currently married women, 15-49)

*Federal Ministry of Health, Central Bureau of Statistics and UNICEF, Sudan 2001*

HIV/AIDS module (all women, 15-49)

- Questionnaire for children under five**
- Birth registration and early learning module
- Vitamin A module
- Breastfeeding module
- Care of illness module
- Malaria module (for high-risk areas)
- Immunization module
- Anthropometry module

## Design Features

Changes in font are used to indicate the various components of the questionnaire. Questions that the interviewer will be asking appear in small capital letters in Arial font (QUESTIONS VERBALIZED BY INTERVIEWERS), to distinguish them from responses and general instructions. With the exception of skip instructions, general instructions to the interviewer are provided in italics, Times New Roman font (*instructions to interviewers*). Skip instructions are provided in a 'skip column' in Arial (⇒Q.6) and at the end of modules in bold capitals, Times New Roman (GO TO NEXT MODULE). For purposes of saving space, DK are used to abbreviate "doesn't know" and HH is sometimes used to abbreviate "household". The questionnaires that follow are not intended to be completely self-explanatory; detailed instructions for the interviewer are provided in Appendix One.

Throughout this model questionnaire, two asterisks (\*\*) and bold italics, Arial (***note for country adaptation***) indicate where country adaptation may be necessary. See adaptation notes in the Instructions for Interviewers, Appendix One. Each country should tailor identification information (including indicators of household socio-economic status in the Household Information Panel) and the interviewer's introduction as appropriate. The introduction should assure respondents that answers would remain confidential. A pre-test will be necessary to estimate the time it takes to administer the questionnaire.

## HOUSEHOLD QUESTIONNAIRE

WE ARE FROM (***country-specific affiliation***). WE ARE WORKING ON A PROJECT CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO TALK TO YOU ABOUT THIS. THE INTERVIEW WILL TAKE ABOUT (***number***) MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE IDENTIFIED. DURING THIS TIME I WOULD LIKE TO SPEAK WITH ALL MOTHERS OR OTHERS WHO TAKE CARE OF CHILDREN IN THE HOUSEHOLD.  
MAY I START NOW? *If permission is given, begin the interview.*

HOUSEHOLD INFORMATION PANEL **			
1. State ... Mahlia...	Province..... Village .....	Area: Urban (1)      Rural (2)	
3. Day/Month/Year of interview: ____ / ____ / _____		4. Interviewer number: _____	
5. Name of head of household:			

<p>.....</p>	
<p>6. Household number .....</p>	<p>7. Cluster number .....</p>
<p>8. Material of dwelling floor:** Wood/tile ..... 1 Planks/concrete..... 2 Dirt/straw ..... 3  Other(<i>specify</i>) ..... 4</p> <p><b>Sample question to ascertain household socioeconomic status.</b></p>	<p>9. Number of rooms in dwelling:** _____</p> <p><b>Sample question to ascertain household socioeconomic status.</b></p>
<p>10. WHAT TYPE OF FUEL DOES YOUR HOUSEHOLD MAINLY USE FOR COOKING? Electricity/Gas/Kerosene ..... 1 Firewood, Charcoal, Dung..... 2</p>	<p>11. DOES YOUR HOUSEHOLD HAVE (____) ? <i>Read each item aloud and record response before proceeding to the next item.</i> Electricity? A Radio? A Television A Clock or Watch ? A Refrigerator ? A Foam mattress ? A Bicycle ? A Motorcycle ? A Car / Truck ?</p>
<p>PLEASE TELL ME ABOUT ANY LAND AND LIVESTOCK THAT YOU POSSESS ? 12.a. How many Feddans of farmland are owned by the Household? 12.b. How many heads of Cattle are owned currently by the Household ? 12.c. How many Sheep and Goats are owned currently by the Household ?</p>	<p>13. HAS YOUR HOUSEHOLD CONSUMED ANY OF THE FOLLOWING ITEMS IN THE PAST 7 DAYS ? Meat ? Milk ? Sugar ?</p>
<p>14. Result of HH interview: Completed ..... 1 Refused ..... 2 Not at home ..... 3 HH not found/destroyed ..... 4  Other (<i>specify</i>) ..... 5</p>	<p>15. No. of women eligible for interview:</p>
<p>16. No. of women interviews completed:</p>	<p>17. No. of children under age 5:  18. No. of child interviews completed:</p>
<p>19. Total Family Members</p>	<p>20. Data entry clerk name and No.:</p>

Interviewer/supervisor notes: *Use this space to record notes about the interview with this household, such as call-back times, incomplete individual interview forms, number of attempts to re-visit, etc.*

HOUSEHOLD LISTING FORM													
FIRST, PLEASE TELL ME THE NAME OF EACH PERSON WHO USUALLY LIVES HERE, STARTING WITH THE HEAD OF THE HH. (Use survey definition of HH member). List the first name in line 01. List adult HH members first, then list children. Then ask: ARE THERE ANY OTHERS WHO LIVE HERE, EVEN IF THEY ARE NOT AT HOME NOW? (THESE MAY INCLUDE CHILDREN IN SCHOOL OR AT WORK). If yes, complete listing. Then, ask and record answers to questions as described in Instructions for Interviewers. Add a continuation sheet if there is not enough room on this page. Tick here if continuation sheet used <input type="checkbox"/>													
				Eligible for:			For persons age 15 or over ask Qs. 8 and 9		For children under age 15 years ask Qs. 10-13				
1. Line no.	2. Name	3. IS (name) MALE OR FEMALE ?		4. HOW OLD IS (name)?  HOW OLD WAS (name) ON HIS/HER LAST BIRTHDAY?  Record in completed years 99=DK*	5. Circle Line no. if woman is age 15-49	6. For each child age 5-14: WHO IS THE MOTHER OR PRIMARY CARETAKER OF THIS CHILD?  Record Line no. of mother/ caretaker	7. For each child under 5: WHO IS THE MOTHER OR PRIMARY CARETAKER OF THIS CHILD?  Record Line no. of mother/ caretaker	8. CAN HE/SHE READ A LETTER OR NEWSPAPER EASILY, WITH DIFFICULTY OR NOT AT ALL?  1 EASILY 2 DIFFICULT 3 NOT AT ALL 9 DK	9. WHAT IS THE MARITAL STATUS OF (name)?**  1 CURRENTLY MARRIED/ IN UNION 2 WIDOWED 3 DIVORCED 4 SEPARATED 5 NEVER MARRIED	10. IS (name's) NATURAL MOTHER ALIVE?  1 YES 2 NO 9 DK	11. If alive: DOES (name's) NATURAL MOTHER LIVE IN THIS HOUSEHOLD?  1 YES 2 NO	12. IS (name's) NATURAL FATHER ALIVE?  1 YES 2 NO 9 DK	13. If alive: DOES (name's) NATURAL FATHER LIVE IN THIS HOUSEHOLD?  1 YES 2 NO
LINE	NAME	M	F	AGE	15-49	MOTHER	MOTHER	E D N DK	M W D S N	Y N DK	Y N	Y N DK	Y N
01		1	2	___	01	___	___	1 2 3 9	1 2 3 4 5	1 2 9	1 2	1 2 9	1 2
02		1	2	___	02	___	___	1 2 3 9	1 2 3 4 5	1 2 9	1 2	1 2 9	1 2
03		1	2	___	03	___	___	1 2 3 9	1 2 3 4 5	1 2 9	1 2	1 2 9	1 2
04		1	2	___	04	___	___	1 2 3 9	1 2 3 4 5	1 2 9	1 2	1 2 9	1 2
05		1	2	___	05	___	___	1 2 3 9	1 2 3 4 5	1 2 9	1 2	1 2 9	1 2
06		1	2	___	06	___	___	1 2 3 9	1 2 3 4 5	1 2 9	1 2	1 2 9	1 2
07		1	2	___	07	___	___	1 2 3 9	1 2 3 4 5	1 2 9	1 2	1 2 9	1 2
ARE THERE ANY OTHER CHILDREN LIVING HERE – EVEN IF THEY ARE NOT MEMBERS OF YOUR FAMILY OR DO NOT HAVE PARENTS LIVING IN THIS HOUSEHOLD? INCLUDING CHILDREN AT WORK OR AT SCHOOL? If yes, insert child's name and complete form.													
* See instructions: to be used only for elderly household members (code meaning "do not know/over age 50").													

Q.55

EDUCATION MODULE													
If interview takes place between two school years, use alternative wording found in Appendix 1.													
For persons age 5 or over ask Qs. 15 and 16						For children age 5 through 17 years, continue on, asking Qs. 17-22							
14. Line no.	15. HAS (name) EVER ATTENDED SCHOOL?	16. WHAT IS THE HIGHEST LEVEL OF SCHOOL (name) ATTENDED? WHAT IS THE HIGHEST GRADE (name) COMPLETED AT THIS LEVEL? LEVEL: 1 PRIMARY 2 SECONDARY 3 HIGHER 4 NON-STANDARD CURRICULUM 9 DK GRADE: 99 DK <i>If less than 1 grade, enter 00.</i>		17. IS (name) CURRENTLY ATTENDING SCHOOL?	18. DURING THE CURRENT SCHOOL YEAR, DID (name) ATTEND SCHOOL AT ANY TIME?	19. SINCE LAST (day of the week), HOW MANY DAYS DID (name) ATTEND SCHOOL?	20. WHICH LEVEL AND GRADE IS/WAS (name) ATTENDING?  LEVEL: 1 PRESCHOOL 2 PRIMARY 3 SECONDARY 4 NON-STANDARD CURRICULUM 9 DK  GRADE: 99 DK		21. DID (name) ATTEND SCHOOL LAST YEAR?			22. WHICH LEVEL AND GRADE DID (name) ATTEND LAST YEAR?  LEVEL: 1 PRESCHOOL 2 PRIMARY 3 SECONDARY 4 NON-STANDARD CURRICULUM 9 DK  GRADE: 99 DK	
	1 YES ⇒ Q.16  2 NO ⇨ NEXT LINE			1 YES ⇒ Q.19  2 NO	1 YES  2 NO ⇒ Q.21	<i>Insert number of days in space below.</i>					1 YES  2 NO ⇨ NEXT LINE 9 DK ⇨ NEXT LINE		
LINE	Y NO	LEVEL	GRADE	YES NO	YES NO	DAYS	LEVEL	GRADE	Y N DK	LEVEL	GRADE		
01	1 2⇒NEXT LINE	1 2 3 4 9	___	1 2	1 2	___	1 2 3 4 9	___	1 2 9	1 2 3 4 9	___		
02	1 2⇒NEXT LINE	1 2 3 4 9	___	1 2	1 2	___	1 2 3 4 9	___	1 2 9	1 2 3 4 9	___		
03	1 2⇒NEXT LINE	1 2 3 4 9	___	1 2	1 2	___	1 2 3 4 9	___	1 2 9	1 2 3 4 9	___		
04	1 2⇒NEXT LINE	1 2 3 4 9	___	1 2	1 2	___	1 2 3 4 9	___	1 2 9	1 2 3 4 9	___		
05	1 2⇒NEXT LINE	1 2 3 4 9	___	1 2	1 2	___	1 2 3 4 9	___	1 2 9	1 2 3 4 9	___		
06	1 2⇒NEXT LINE	1 2 3 4 9	___	1 2	1 2	___	1 2 3 4 9	___	1 2 9	1 2 3 4 9	___		
07	1 2⇒NEXT LINE	1 2 3 4 9	___	1 2	1 2	___	1 2 3 4 9	___	1 2 9	1 2 3 4 9	___		
<p>Now for each woman age 15-49 years, write her name and line number at the top of each page in the Women's Questionnaire.                      For each child under age 5, write his/her name and line number AND the line number of his/her mother or caretaker at the top of each page in the Children's Questionnaire.                      You should now have a separate questionnaire for each eligible woman and child in the household.</p>													

Q.56

**CHILD LABOUR MODULE**

To be administered to caretaker of each child resident in the household age 5 through 14 years. \*\* Country-specific adaptation may change age range through to age 17.

Copy line number of each eligible child from household listing.

NOW I WOULD LIKE TO ASK ABOUT ANY WORK CHILDREN IN THIS HOUSEHOLD MAY DO.

1. Line no.	2. Name	3. DURING THE PAST WEEK, DID (name) DO ANY KIND OF WORK FOR SOMEONE WHO IS NOT A MEMBER OF THIS HOUSEHOLD?  <i>If yes: FOR PAY?</i>  1 YES, FOR PAY (CASH OR KIND) 2 YES, UNPAID 3 NO ⇒ TO Q.5	4. <i>If yes:</i> SINCE LAST (day of the week), ABOUT HOW MANY HOURS DID HE/SHE DO THIS WORK FOR SOMEONE WHO IS NOT A MEMBER OF THIS HOUSEHOLD?  <i>If more than one job, include all hours at all jobs.</i>  <i>Record response then ⇒ Q.6</i>	5. AT ANY TIME DURING THE PAST YEAR, DID (name) DO ANY KIND OF WORK FOR SOMEONE WHO IS NOT A MEMBER OF THIS HOUSEHOLD?  <i>If yes: FOR PAY?</i>  1 YES, FOR PAY (CASH OR KIND) 2 YES, UNPAID 3 NO	6. DURING THE PAST WEEK, DID (name) HELP WITH HOUSEKEEPING CHORES SUCH AS COOKING, SHOPPING, CLEANING, WASHING CLOTHES, FETCHING WATER, OR CARING FOR CHILDREN?  1 YES 2 NO ⇒ TO Q.8	7. <i>If yes:</i> SINCE LAST (day of the week), ABOUT HOW MANY HOURS DID HE/SHE SPEND DOING THESE CHORES?	8. DURING THE PAST WEEK, DID (name) DO ANY OTHER FAMILY WORK (ON THE FARM OR IN A BUSINESS)?  1 YES 2 NO ⇒ NEXT LINE	9. <i>If yes:</i> SINCE LAST (day of the week), ABOUT HOW MANY HOURS DID HE/SHE DO THIS WORK?
LINE NO.	NAME	YES PAID UNPAID NO	NO. HOURS	YES PAID UNPAID NO	YES NO	NO. HOURS	YES NO	NO. HOURS
___		1 2 3	___	1 2 3	1 2	___	1 2	___
___		1 2 3	___	1 2 3	1 2	___	1 2	___
___		1 2 3	___	1 2 3	1 2	___	1 2	___
___		1 2 3	___	1 2 3	1 2	___	1 2	___
___		1 2 3	___	1 2 3	1 2	___	1 2	___
___		1 2 3	___	1 2 3	1 2	___	1 2	___
___		1 2 3	___	1 2 3	1 2	___	1 2	___

When all children in the age range have been covered, GO TO WATER AND SANITATION MODULE ⇒

**CHILDREN IN NEED OF SPECIAL PROTECTION MODULE ( SUDAN)**

Are there any disabled children in the family?							
To be administered to caretaker of each child resident in the household age 5 through 17 years.							
NOW I WOULD LIKE TO ASK ABOUT ANY DISABLED CHILDREN IN THIS HOUSEHOLD.							
1. Line No. Disabled Children	2. Name	3. TYPE OF DISABILITY (NAME): 1. MENTAL 2. PHYSICAL 3. MENTAL / PHYSICAL 9 I DON'T KNOW	4. Causes of Disability : 1. Polio 2. Deformity 3. Meninges 4. Gina worm 5. Others (determine ) 9. Don't know	5. DID (name) ENROLLED IN A SCHOOL 1. YES 2. NO 9. DON'T KNOW	6. DID (name) PARTICIPATE IN THE DAILY ACTIVITIES : 1. YES 2. NO 3. DON'T KNOW	7. If yes: WHICH ACTIVITY : 1. CLEANING THE HOUSE 2. PLAYING 3. PRPARINING FOOD 4. MORE THAN ACTIVITY 5. ALL ABOVE 6. OTHERS (DTERMINE) 9. DON'T KNOW	8. DID (name) PARTICIPATE IN SOCIAL ACTIVITES : 1. YES 2. NO 3. DON'T KNOW
Line No	NAME			YES NO DON'T	YES NO DON'T		YES NO DON'T
		1 2 3 9	1 2 3 4 5 9	1 2 9	1 2 9	1 2 3 4 5 6 9	1 2 9
		1 2 3 9	1 2 3 4 5 9	1 2 9	1 2 9	1 2 3 4 5 6 9	1 2 9
		1 2 3 9	1 2 3 4 5 9	1 2 9	1 2 9	1 2 3 4 5 6 9	1 2 9
		1 2 3 9	1 2 3 4 5 9	1 2 9	1 2 9	1 2 3 4 5 6 9	1 2 9

WHEN COMPLETE ALL INFORMATION FOR THE CHILDREN IN THE AGE GROUP PLS GO TO THE WATER AND SANITATION MODULE

Q.58

**WATER AND SANITATION MODULE**

*This module is to be administered once for each household visited.*

*Record only one response for each question.*

*If more than one response is given, record the most usual source or facility.*

<p>1. WHAT IS THE MAIN SOURCE OF DRINKING WATER FOR MEMBERS OF YOUR HOUSEHOLD?</p>	<p>Piped into dwelling..... 01                  Piped into yard or plot..... 02                  Public tap..... 03                  Tubewell/borehole with pump..... 04                  Protected dug well ..... 05                  Protected spring ..... 06                  Rainwater collection ..... 07                  Bottled water..... 08                  Unprotected dug well..... 09                  Unprotected spring ..... 10                  Pond, river or stream ..... 11                  Tanker-truck, vendor ..... 12                    Other (<i>specify</i>) _____ 13                    No answer or DK ..... 99</p>	
<p>2. HOW LONG DOES IT TAKE TO GO THERE, GET WATER, AND COME BACK?</p>	<p>No. of minutes ..... _____                    Water on premises ..... 888                    DK..... 999</p>	
<p>3. WHAT KIND OF TOILET FACILITY DOES YOUR HOUSEHOLD USE?</p>	<p>Flush to sewage system or septic tank..... 1                  Pour flush latrine (water seal type)..... 2                  Improved pit latrine (e.g., VIP)..... 3                  Traditional pit latrine ..... 4                  Open pit..... 5                  Bucket..... 6                    Other (<i>specify</i>) _____ 7                    No facilities or bush or field ..... 8</p>	<p>8⇒Q.5</p>
<p>4. IS THIS FACILITY LOCATED WITHIN YOUR DWELLING, OR YARD OR COMPOUND?*</p>	<p>Yes, in dwelling/yard/compound..... 1                  No, outside dwelling/yard/compound..... 2                    DK..... 9</p>	
<p>5. WHAT HAPPENS WITH THE STOOLS OF YOUNG CHILDREN (0-3 YEARS) WHEN THEY DO NOT USE THE LATRINE OR TOILET FACILITY?</p>	<p>Children always use toilet or latrine..... 1                  Thrown into toilet or latrine ..... 2                  Thrown outside the yard ..... 3                  Buried in the yard ..... 4                  Not disposed of or left on the ground ..... 5                    Other (<i>specify</i>) _____ 6                    No young children in household ..... 8</p>	

Q.59

**GO TO NEXT MODULE ⇒**

Cluster no. \_\_\_\_\_ Household no. \_\_\_\_\_

SALT IODIZATION MODULE		
<p>1. WE WOULD LIKE TO CHECK WHETHER THE SALT USED IN YOUR HOUSEHOLD IS IODIZED. MAY I SEE A SAMPLE OF THE SALT USED TO COOK THE MAIN MEAL EATEN BY MEMBERS OF YOUR HOUSEHOLD LAST NIGHT?</p> <p><i>Once you have examined the salt, circle number that corresponds to test outcome.</i></p> <p><b>Categories correspond to test kit recommended by UNICEF to be used in all MICS surveys.</b></p>	<p>Not iodized 0 PPM (no colour)..... 1 Less than 15 PPM (weak colour)..... 2 15 PPM or more (strong colour) ..... 3</p> <p>No salt in home..... 8 Salt not tested..... 9</p>	

GO TO WOMEN'S QUESTIONNAIRE ⇨

Q.60

Cluster no. \_\_\_\_\_ Household no. \_\_\_\_\_ Woman line no. \_\_\_\_\_

### QUESTIONNAIRE FOR INDIVIDUAL WOMEN

WOMEN'S INFORMATION PANEL		
<p><i>This module is to be administered to all women age 15 through 49 (see column 5 of HH listing). Fill in one form for each eligible woman.</i></p>		
<p>1. Woman's line number (from HH listing).</p>	<p>Line number..... ____</p>	
<p>2. Woman's name.</p>	<p>Name _____</p>	
<p>3A. IN WHAT MONTH AND YEAR WERE YOU BORN?</p> <p><i>Or:</i></p> <p>3B. HOW OLD WERE YOU AT YOUR LAST BIRTHDAY?</p>	<p>Date of birth Month/Year ..... ____ / ____</p> <p>DK date of birth..... 999999</p> <p><i>Or:</i></p> <p>Age (in completed years)..... ____</p>	<p>DK⇨3B</p>

GO TO NEXT MODULE ⇨

<b>CHILD MORTALITY MODULE ( DATA FROM SAFE MOTHER HOOD SURVEY)</b>		
<p><i>This module is to be administered to all women age 15-49. All questions refer only to LIVE births. Follow instructions as provided in training. See Instructions for Interviewers.</i></p>		
<p>1. NOW I WOULD LIKE TO ASK ABOUT ALL THE BIRTHS YOU HAVE HAD DURING YOUR LIFE. HAVE YOU EVER GIVEN BIRTH?</p> <p><i>If "NO" probe by asking: I MEAN, TO A CHILD WHO EVER BREATHED OR CRIED OR SHOWED OTHER SIGNS OF LIFE – EVEN IF HE OR SHE LIVED ONLY A FEW MINUTES OR HOURS?</i></p>	<p>Yes ..... 1 No ..... 2</p>	<p>2⇒ CONTRA- CEPTIVE USE MODULE</p>
<p>2A. WHAT WAS THE DATE OF YOUR FIRST BIRTH? I MEAN THE VERY FIRST TIME YOU GAVE BIRTH, EVEN IF THE CHILD IS NO LONGER LIVING, OR IS THE CHILD OF A MAN OTHER THAN YOUR CURRENT PARTNER.</p> <p><i>Or:</i></p> <p>2B. HOW MANY YEARS AGO DID YOU HAVE YOUR FIRST BIRTH?</p>	<p>Date of first birth Day/Month/Year..... _/ _/ _</p> <p>DK date of first birth..... 99999999</p> <p><i>Or:</i> Completed years since first birth .....</p>	<p>DK⇒2B</p>
<p>3. DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE NOW LIVING WITH YOU?</p>	<p>Yes ..... 1 No ..... 2</p>	<p>2⇒Q.5</p>
<p>4. HOW MANY SONS LIVE WITH YOU?  HOW MANY DAUGHTERS LIVE WITH YOU?</p>	<p>Sons at home ..... _ _ Daughters at home ..... _ _</p>	
<p>5. DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE ALIVE BUT DO NOT LIVE WITH YOU?</p>	<p>Yes ..... 1 No ..... 2</p>	<p>2⇒Q.7</p>
<p>6. HOW MANY SONS ARE ALIVE BUT DO NOT LIVE WITH YOU?  HOW MANY DAUGHTERS ARE ALIVE BUT DO NOT LIVE WITH YOU?</p>	<p>Sons elsewhere ..... _ _ Daughters elsewhere..... _ _</p>	
<p>7. HAVE YOU EVER GIVEN BIRTH TO A BOY OR GIRL WHO WAS BORN ALIVE BUT LATER DIED?</p>	<p>Yes ..... 1 No ..... 2</p>	<p>2⇒Q.9</p>
<p>8. HOW MANY BOYS HAVE DIED?  HOW MANY GIRLS HAVE DIED?</p>	<p>Boys dead..... _ _ Girls dead ..... _ _</p>	
<p>9. <i>Sum answers to Q. 4, 6, and 8.</i></p>	<p>Sum ..... _ _</p>	
<p>10. JUST TO MAKE SURE THAT I HAVE THIS RIGHT, YOU HAVE HAD IN TOTAL (<i>total number</i>) BIRTHS DURING YOUR LIFE. IS THIS CORRECT?</p> <p><input type="checkbox"/> Yes ⇒ <i>Go to Q.11</i> <input type="checkbox"/> No ⇒ <i>Check responses and make corrections before proceeding to Q.11</i></p>		

19 Q

<p>11. OF THESE (<i>total number</i>) BIRTHS YOU HAVE HAD, WHEN DID YOU DELIVER THE LAST ONE (EVEN IF HE OR SHE HAS DIED)?</p>	<p>Date of last birth Day/Month/Year..... _ _ / _ _ / _ _ _ _</p>	
<p><i>Did the woman's last birth occur within the last year, that is, since (<b>insert date</b>)?</i></p> <p><input type="checkbox"/> <i>Yes, live birth in last year. ⇒ GO TO TETANUS TOXOID MODULE</i></p> <p><input type="checkbox"/> <i>No live birth in last year. ⇒ GO TO CONTRACEPTIVE USE MODULE</i></p>		

<b>TETANUS TOXOID (TT) MODULE</b>		
<i>This module is to be administered to all women with a live birth in the year preceding date of interview.</i>		
1. DO YOU HAVE A CARD OR OTHER DOCUMENT WITH YOUR OWN IMMUNIZATIONS LISTED?  <i>If a card is presented, use it to assist with answers to the following questions.</i>	Yes (card seen) ..... 1 Yes (card not seen) ..... 2 No ..... 3  DK ..... 9	
2. WHEN YOU WERE PREGNANT WITH YOUR LAST CHILD, DID YOU RECEIVE ANY INJECTION TO PREVENT HIM OR HER FROM GETTING CONVULSIONS AFTER BIRTH (AN ANTI-TETANUS SHOT, AN INJECTION AT THE TOP OF THE ARM OR SHOULDER)?	Yes ..... 1 No ..... 2 DK ..... 9	2⇒Q.4 9⇒Q.4
3. <i>If yes:</i> HOW MANY DOSES OF TETANUS TOXOID (ANTI-TETANUS INJECTIONS) DID YOU RECEIVE DURING YOUR LAST PREGNANCY?	No. of doses ..... __ __ DK ..... 99	
<i>How many TT doses were reported during last pregnancy in Q.3?</i>		
<input type="checkbox"/> <i>At least two TT injections during last pregnancy. ⇒ GO TO MATERNAL AND NEWBORN HEALTH MODULE</i>		
<input type="checkbox"/> <i>Fewer than two TT injections during last pregnancy. ⇒ CONTINUE WITH Q.4</i>		
4. DID YOU RECEIVE ANY TETANUS TOXOID INJECTION ( <i>additional probes</i> ) AT ANY TIME BEFORE YOUR LAST PREGNANCY, INCLUDING DURING A PREVIOUS PREGNANCY OR BETWEEN PREGNANCIES?	Yes ..... 1 No ..... 2 DK ..... 9	2⇒Q.7 9⇒Q.7
5. <i>If yes:</i> HOW MANY DOSES DID YOU RECEIVE?	No. of doses ..... __ __	
6A. WHEN WAS THE LAST DOSE RECEIVED?	Date of last dose Month/Year ..... __ __ / __ __ __ __  DK date ..... 999999	DK⇒6B
<i>Or:</i>	<i>Or:</i>	
6B. HOW MANY YEARS AGO DID YOU RECEIVE THE LAST DOSE?	Years ago ..... __ __	
7. <i>Add responses to Q.3 and Q.5 to obtain total number of doses in lifetime.</i>	Total no. of doses ..... __ __	

**GO TO MATERNAL AND NEWBORN HEALTH MODULE ⇒**

<b>MATERNAL AND NEWBORN HEALTH MODULE ( SAFE MOTHERHOOD SURVEY )</b>		
<i>This module is to be administered to all women with a live birth in the year preceding date of interview.</i>		
<b>Use Q.7 and Q.8 only in countries where a local term for night blindness exists.</b>		
<p>1. IN THE FIRST TWO MONTHS AFTER YOUR LAST BIRTH, DID YOU RECEIVE A VITAMIN A DOSE LIKE THIS?</p> <p><i>Show 200,000 IU capsule or dispenser.</i></p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	
<p>2. DID YOU SEE ANYONE FOR ANTENATAL CARE FOR THIS PREGNANCY?</p> <p><i>If yes: WHOM DID YOU SEE? ANYONE ELSE?</i></p> <p><i>Probe for the type of person seen and circle all answers given.</i></p>	<p>Health professional:</p> <p>Doctor ..... 1</p> <p>Nurse/midwife..... 2</p> <p>Auxiliary midwife..... 3</p> <p>Other person</p> <p>Traditional birth attendant..... 4</p> <p>Other (<i>specify</i>) ..... 6</p> <p>No one ..... 0</p>	
<p>3. WHO ASSISTED WITH THE DELIVERY OF YOUR LAST CHILD (<i>or name</i>)?</p> <p>ANYONE ELSE?</p> <p><i>Probe for the type of person assisting and circle all answers given.</i></p>	<p>Health professional:</p> <p>Doctor ..... 1</p> <p>Nurse/midwife..... 2</p> <p>Auxiliary midwife..... 3</p> <p>Other person</p> <p>Traditional birth attendant..... 4</p> <p>Relative/friend ..... 5</p> <p>Other (<i>specify</i>) ..... 6</p> <p>No one ..... 0</p>	
<p>4. WHEN YOUR LAST CHILD (<i>name</i>) WAS BORN, WAS HE/SHE VERY LARGE, LARGER THAN AVERAGE, AVERAGE, SMALLER THAN AVERAGE, OR VERY SMALL?</p>	<p>Very large ..... 1</p> <p>Larger than average ..... 2</p> <p>Average ..... 3</p> <p>Smaller than average ..... 4</p> <p>Very small ..... 5</p> <p>DK..... 9</p>	
<p>5. WAS (<i>name</i>) WEIGHED AT BIRTH?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	<p>2⇒Q.7</p> <p>9⇒Q.7</p>
<p>6. HOW MUCH DID (<i>name</i>) WEIGH?</p> <p><i>Record weight from health card, if available.</i></p>	<p>From card ..... 1 (grams) __ , ____</p> <p>From recall..... 2 (grams) __ , ____</p> <p>DK..... 99999</p>	
<p>7. WHEN YOU WERE PREGNANT WITH YOUR LAST CHILD, DID YOU HAVE DIFFICULTY WITH YOUR VISION DURING THE DAYLIGHT?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	
<p>8. DURING THAT PREGNANCY, DID YOU SUFFER FROM NIGHT BLINDNESS (<i>insert local term</i>)?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	

Q.64

GO TO NEXT MODULE ⇒

<b>CONTRACEPTIVE USE MODULE (DATA FROM THE SAFE MOTHERHOOD SURV.)</b>		
<p><i>Ask Q.1 for all women age 15-49 and then follow the skip instruction carefully.</i>  <i>Questions on pregnancy and contraception are to be asked only of women who are currently married or in union.</i></p>		
<p>1. ARE YOU CURRENTLY MARRIED OR LIVING WITH A MAN?</p>	<p>Yes ..... 1                      No, widowed, divorced, separated ..... 2                      No, never married ..... 3</p>	<p>2⇒NEXT MODULE                      3⇒NEXT MODULE</p>
<p>2. NOW I AM GOING TO CHANGE TOPICS.                      I WOULD LIKE TO TALK WITH YOU ABOUT ANOTHER SUBJECT – FAMILY PLANNING – AND YOUR REPRODUCTIVE HEALTH.                      I KNOW THIS IS A DIFFICULT SUBJECT TO TALK ABOUT, BUT IT IS IMPORTANT THAT WE OBTAIN THIS INFORMATION.                      OF COURSE, ALL THE INFORMATION YOU SUPPLY WILL REMAIN STRICTLY CONFIDENTIAL. YOU WILL NEVER BE IDENTIFIED WITH THE ANSWERS TO THESE QUESTIONS.</p> <p>ARE YOU PREGNANT NOW?</p>	<p>Yes, currently pregnant ..... 1                      No ..... 2                      Unsure or DK ..... 3</p>	<p>1⇒NEXT MODULE</p>
<p>3. SOME COUPLES USE VARIOUS WAYS OR METHODS TO DELAY OR AVOID A PREGNANCY.                      ARE YOU CURRENTLY DOING SOMETHING OR USING ANY METHOD TO DELAY OR AVOID GETTING PREGNANT?</p>	<p>Yes ..... 1                      No ..... 2</p>	<p>2⇒NEXT MODULE</p>
<p>4. WHICH METHOD ARE YOU USING?</p> <p><i>Do not prompt.</i>  <i>If more than one method is mentioned, circle each one.</i></p>	<p>Female sterilization..... 01                      Male sterilization..... 02                      Pill ..... 03                      IUD ..... 04                      Injections ..... 05                      Implants ..... 06                      Condom ..... 07                      Female condom ..... 08                      Diaphragm ..... 09                      Foam/jelly ..... 10                      Lactational amenorrhoea method (LAM)..... 11                      Periodic abstinence ..... 12                      Withdrawal ..... 13                      Other (<i>specify</i>) ..... 14</p>	

Q.65

**GO TO NEXT MODULE ⇨**

**HIV/AIDS MODULE**

*This module is to be administered to all women age 15-49.  
See Instructions for Interviewers for further discussion of these questions.*

<p>1. NOW I WOULD LIKE TO TALK WITH YOU ABOUT WHAT YOU KNOW ABOUT SERIOUS ILLNESS, IN PARTICULAR, ABOUT HIV AND AIDS.</p> <p>HAVE YOU EVER HEARD OF THE VIRUS HIV OR AN ILLNESS CALLED AIDS?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p>	<p>2⇒Q.18</p>
<p>2. IS THERE ANYTHING A PERSON CAN DO TO AVOID GETTING HIV, THE VIRUS THAT CAUSES AIDS?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	<p>2⇒Q.8</p> <p>9⇒Q.8</p>
<p>3. NOW I WILL READ SOME QUESTIONS ABOUT HOW PEOPLE CAN PROTECT THEMSELVES FROM THE AIDS VIRUS. THESE QUESTIONS INCLUDE ISSUES RELATED TO SEXUALITY WHICH SOME PEOPLE MIGHT FIND DIFFICULT TO ANSWER. HOWEVER, YOUR ANSWERS ARE VERY IMPORTANT TO HELP UNDERSTAND THE NEEDS OF PEOPLE IN (<b>country name</b>). AGAIN, THIS INFORMATION IS ALL COMPLETELY PRIVATE AND ANONYMOUS. PLEASE ANSWER YES OR NO TO EACH QUESTION.</p> <p>CAN PEOPLE PROTECT THEMSELVES FROM GETTING INFECTED WITH THE AIDS VIRUS BY HAVING ONE UNINFECTED SEX PARTNER WHO ALSO HAS NO OTHER PARTNERS?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	
<p>4. DO YOU THINK A PERSON CAN GET INFECTED WITH THE AIDS VIRUS THROUGH SUPERNATURAL MEANS?*</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	
<p>5. CAN PEOPLE PROTECT THEMSELVES FROM THE AIDS VIRUS BY USING A CONDOM CORRECTLY EVERY TIME THEY HAVE SEX?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	
<p>6. CAN A PERSON GET THE AIDS VIRUS FROM MOSQUITO BITES?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	
<p>7. CAN PEOPLE PROTECT THEMSELVES FROM GETTING INFECTED WITH THE AIDS VIRUS BY NOT HAVING SEX AT ALL?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	
<p>8. IS IT POSSIBLE FOR A HEALTHY-LOOKING PERSON TO HAVE THE AIDS VIRUS?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK..... 9</p>	

Q.66

9. CAN THE AIDS VIRUS BE TRANSMITTED FROM A MOTHER TO A CHILD?	Yes ..... 1 No ..... 2 DK..... 9	2⇒Q.13 9⇒Q.13
10. CAN THE AIDS VIRUS BE TRANSMITTED FROM A MOTHER TO A CHILD DURING PREGNANCY?	Yes ..... 1 No ..... 2 DK..... 9	
11. CAN THE AIDS VIRUS BE TRANSMITTED FROM A MOTHER TO A CHILD AT DELIVERY?	Yes ..... 1 No ..... 2 DK..... 9	
12. CAN THE AIDS VIRUS BE TRANSMITTED FROM A MOTHER TO A CHILD THROUGH BREAST MILK?	Yes ..... 1 No ..... 2 DK..... 9	
13. IF A TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD HE OR SHE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes ..... 1 No ..... 2 DK..... 9	
14. IF YOU KNEW THAT A SHOPKEEPER OR FOOD SELLER HAD AIDS OR THE VIRUS THAT CAUSES IT, WOULD YOU BUY FOOD FROM HIM OR HER?	Yes ..... 1 No ..... 2 DK..... 9	
15. I AM NOT GOING TO ASK YOU ABOUT YOUR HIV STATUS ( <i>use term understood locally</i> ), BUT WE ARE INTERESTED TO KNOW HOW MUCH DEMAND THERE IS IN YOUR COMMUNITY FOR HIV TESTING AND COUNSELLING. So, I WOULD LIKE TO ASK YOU:  I DO NOT WANT TO KNOW THE RESULTS, BUT HAVE YOU EVER BEEN TESTED TO SEE IF YOU HAVE HIV, THE VIRUS THAT CAUSES AIDS?	Yes ..... 1 No ..... 2	2⇒Q.17
16. I DO NOT WANT YOU TO TELL ME THE RESULTS OF THE TEST, BUT HAVE YOU BEEN TOLD THE RESULTS?	Yes ..... 1 No ..... 2	
17. AT THIS TIME, DO YOU KNOW OF A PLACE WHERE YOU CAN GO TO GET SUCH A TEST TO SEE IF YOU HAVE THE AIDS VIRUS?	Yes ..... 1 No ..... 2	

**FEMALE GENITAL MUTLATION (NEW MODULE)**

*This module is to be administered to all ever married women age 15-49.*

1. DO YOU KNOW ANY TYPE OF FEMALE CIRCUMCISION	Yes..... 1 No..... 2	2⇒ Q.3
2. <i>IF YES</i> : MENTION THOSE TYPES (MULTIPLE RESPONSE IS A ALLOWED)	1. Pharaonic 2. Sunna 3. Intermediate 4. others (identify)	
3. DO YOU RECIVED CIRCUMCISION	Yes..... 1 No..... 2	2⇒Q.5
4. WHICH TYPE DID YOU RECIVE?	1. Pharaonic 2. Sunna 3. Intermediate 4. Others (identify) 9- I don't know	
5. HOW MANY DOUGHTERS DO YOU HAVE	Number ..... If no daughters write (0)	0⇒Q.7
6. HOW MANY WERE CIRCUMCISED	Number.. ..	
7. PERSON WHO PREFORMED CIRCUMCISION	1. Traditional birth attendant 2. Village midwife 3. Trained medical staff 4. Others (determine) 5. I don't know	
8. AGE OF THE GIRL WHEN CIRCUMCISED	1. Less than 3 years 2. 3-7 years 3. above 7 years 9. I don't know	
9. TOOLS USED IN CIRCUMCISION	1. Blade 2. Scissors 3. Others (identified)	
10. WHAT KINDS OF COMPLICATION THE GIRL EXPOSED WHEN CIRCUMCISED	1. Bleeding 2. infections 3. shock 4. all above 5. no complications 6. I don't know	
11. <i>what kind of risks the</i> CIRCUMCISED GIRL WOULD SUFFER DURING DELEVARY	1. Festula 2. Obstructive labour 3. others (determine ) 4. no risks 5. don't know	

12. DO YOU APPRECIATE FEMALE CIRCUMCISION	1. yes 2. No	2⇒Q.14
13. WHY DO YOU APPRECIATE FEMALE CIRCUMCISION	1. Preservation of virginity 2. Demanded by Men 3. Custom 4. Religion 5. Other (identify) 9. I don't know	
14.WHY YOU DON'T ACCEPT FEMALE CIRCUMCISION	1. I know from the orientation sessions it's bad habit 2. Not in the religion 3. I know from mass media 4. My husband didn't accept it 5. Others (identify)	
15.DO YOU EVER TALK ABOUT CIRCUMCISION WITH YOUR HUSBAND	1. Yes 2. No	
16. WHAT IS YOUR HUSBAND OPINION ABOUT CIRCUMCISION	1. Agree 2. Disagree 9. I don't know	
17.DO YOU EVER HEAR ABOUT THE FEMALE GENITAL MUTILATION CAMPAIGNS	1. Yes 2. No	
<p>18. <i>Is the woman a caretaker of any children under five years of age?</i></p> <p><input type="checkbox"/> Yes. ⇒ <i>GO TO QUESTIONNAIRE FOR CHILDREN UNDER FIVE and administer one questionnaire for each child under five for whom she is the caretaker.</i></p> <p><input type="checkbox"/> No. ⇒ <i>CONTINUE WITH Q.19</i></p>		
<p>19. <i>Does another eligible woman reside in the household?</i></p> <p><input type="checkbox"/> Yes. ⇒ <i>End the current interview by thanking the woman for her cooperation and GO TO QUESTIONNAIRE FOR INDIVIDUAL WOMEN To administer the questionnaire to the next eligible woman.</i></p> <p><input type="checkbox"/> No. ⇒ <i>End the interview with this woman by thanking her for her cooperation. Gather together all questionnaires for this household and tally the number of interviews completed on the cover page.</i></p>		

Cluster no. \_\_\_\_\_ Household no. \_\_\_\_\_ Caretaker line no. \_\_\_\_\_ Child line no. \_\_\_\_\_

## QUESTIONNAIRE FOR CHILDREN UNDER FIVE

*This questionnaire is to be administered to all women who care for a child that lives with them and is under the age of 5 years (see Q.4 of the HH listing).*

*A separate form should be used for each eligible child.*

*Questions should be administered to the mother or caretaker of the eligible child (see Q.7 of the HH listing).*

*Fill in the line number of each child, the line number of the child's mother or caretaker,*

*and the household and cluster numbers in the space at the top of each page.*

Q.70

<b>BIRTH REGISTRATION AND EARLY LEARNING MODULE</b>		
1. Child's name.	Name _____	
2. Child's age (copy from Q.4 of HH listing).	Age (in completed years)..... ____	
3. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE HEALTH OF EACH CHILD UNDER THE AGE OF 5 IN YOUR CARE, WHO LIVES WITH YOU NOW. NOW I WANT TO ASK YOU ABOUT (name). IN WHAT MONTH AND YEAR WAS (name) BORN? <i>Probe:</i> WHAT IS HIS/HER BIRTHDAY?  <i>If the mother knows the exact birth date, also enter the day; otherwise, enter 99 for day.</i>	Date of birth Day/Month/Year..... ____/____/____	
4. DOES (name) HAVE A BIRTH CERTIFICATE? MAY I SEE IT?  <i>If certificate is presented, verify reported birth date.            If no birth certificate is presented, try to verify date using another document (health card, etc.).            Correct stated age, if necessary.</i>	Yes, seen..... 1 Yes, not seen..... 2 No..... 3  DK..... 9	1⇒Q.8
5. <i>If no birth certificate is shown, ask:</i>  HAS (name's) BIRTH BEEN REGISTERED?	Yes ..... 1 No ..... 2 DK..... 9	1⇒Q.8  9⇒Q.7
6. WHY IS (name's) BIRTH NOT REGISTERED?	Costs too much** ..... 1 Must travel too far..... 2 Did not know it should be registered ..... 3 Late, and did not want to pay fine..... 4 Does not know where to register ..... 5  Other (specify) ..... 6 DK..... 9	
7. DO YOU KNOW HOW TO REGISTER YOUR CHILD'S BIRTH?	Yes ..... 1 No ..... 2 No answer ..... 8	

8. Check age. If child is 3 years old or more, ask: DOES (name) ATTEND ANY ORGANIZED LEARNING OR EARLY CHILDHOOD EDUCATION PROGRAMME, SUCH AS A PRIVATE OR GOVERNMENT FACILITY, INCLUDING KINDERGARTEN OR COMMUNITY CHILD CARE?	Yes .....	1	2⇒NEXT MODULE
	No .....	2	
	DK.....	9	
9. WITHIN THE LAST SEVEN DAYS, ABOUT HOW MANY HOURS DID (name) ATTEND?	Number of hours.....	__ __	

GO TO NEXT MODULE ⇒

Cluster no. \_\_\_ Household no. \_\_\_ Caretaker line no. \_\_\_ Child line no. \_\_\_

VITAMIN A MODULE			
<b>Further optional questions are found in Appendix Two.</b>			
1. HAS (name) EVER RECEIVED A VITAMIN A CAPSULE (SUPPLEMENT) LIKE THIS ONE?  <i>Show capsule or dispenser.</i>	Yes .....	1	2⇒NEXT MODULE
	No .....	2	
	DK.....	9	
2. HOW MANY MONTHS AGO DID (name) TAKE THE LAST DOSE?	Months ago.....	__ __	
	DK.....	99	
3. WHERE DID (name) GET THIS LAST DOSE?	On routine visit to health centre .....	1	
	Sick child visit to health centre .....	2	
	National Immunization Day campaign .....	3	
	Other (specify) .....	4	
	DK.....	9	

GO TO NEXT MODULE ⇒

Q.71

Cluster no. \_\_\_\_\_ Household no. \_\_\_\_\_ Caretaker line no. \_\_\_\_\_ Child line no. \_\_\_\_\_

<b>BREASTFEEDING MODULE</b>		
1. HAS ( <i>name</i> ) EVER BEEN BREASTFED?	Yes ..... 1 No ..... 2 DK ..... 9	2⇒Q.4 9⇒Q.4
2. IS HE/SHE STILL BEING BREASTFED?	Yes ..... 1 No ..... 2 DK ..... 9	2⇒Q.4 9⇒Q.4
3. SINCE THIS TIME YESTERDAY, DID HE/SHE RECEIVE ANY OF THE FOLLOWING:  <i>Read each item aloud and record response before proceeding to the next item.</i>		
		Y N DK
3A. VITAMIN, MINERAL SUPPLEMENTS OR MEDICINE?	A. Vitamin supplements ..... 1 2 9	
3B. PLAIN WATER?	B. Plain water ..... 1 2 9	
3C. SWEETENED, FLAVOURED WATER OR FRUIT JUICE OR TEA OR INFUSION?	C. Sweetened water or juice ..... 1 2 9	
3D. ORAL REHYDRATION SOLUTION (ORS)?	D. ORS ..... 1 2 9	
3E. TINNED, POWDERED OR FRESH MILK OR INFANT FORMULA?	E. Milk ..... 1 2 9	
3F. ANY OTHER LIQUIDS?	F. Other liquids ( <i>specify</i> ) ..... 1 2 9	
3G. SOLID OR SEMI-SOLID (MUSHY) FOOD?	G. Mushy food ..... 1 2 9	
4. SINCE THIS TIME YESTERDAY, HAS ( <i>name</i> ) BEEN GIVEN ANYTHING TO DRINK FROM A BOTTLE WITH A NIPPLE OR TEAT?	Yes ..... 1 No ..... 2 DK ..... 9	

Q.72

**GO TO NEXT MODULE ⇒**

Cluster no. \_\_\_\_\_ Household no. \_\_\_\_\_ Caretaker line no. \_\_\_\_\_ Child line no. \_\_\_\_\_

CARE OF ILLNESS MODULE		
<p>1. HAS (<i>name</i>) HAD DIARRHOEA IN THE LAST TWO WEEKS, THAT IS, SINCE (<i>day of the week</i>) OF THE WEEK BEFORE LAST?</p> <p><i>Diarrhoea is determined as perceived by mother or caretaker, or as three or more loose or watery stools per day, or blood in stool.</i></p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK ..... 9</p>	1⇒Q.3
<p>2. IN THE LAST TWO WEEKS, HAS (<i>name</i>) HAD ANY OTHER ILLNESS, SUCH AS COUGH OR FEVER, OR ANY OTHER HEALTH PROBLEM?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK ..... 9</p>	1⇒Q.4 2⇒Q.11 9⇒Q.11
<p>3. DURING THIS LAST EPISODE OF DIARRHOEA, DID (<i>name</i>) DRINK ANY OF THE FOLLOWING:</p> <p><i>Read each item aloud and record response before proceeding to the next item.</i></p> <p>3A. BREAST MILK?</p> <p>3B. CEREAL-BASED GRUEL OR GRUEL MADE FROM ROOTS OR SOUP?</p> <p>3C. <b>other locally-defined acceptable home fluids (e.g., SSS, yogurt drink)?</b></p> <p>3D. ORS PACKET SOLUTION?</p> <p>3E. OTHER MILK OR INFANT FORMULA?</p> <p>3F. WATER WITH FEEDING DURING SOME PART OF THE DAY?</p> <p>3G. WATER ALONE?</p> <p>3H. <b>defined “unacceptable” fluids (e.g., cola, etc. (insert local names))</b></p> <p>3I. NOTHING</p>	<p style="text-align: right;">Y N DK</p> <p>A. Breast milk ..... 1 2 9</p> <p>B. Gruel ..... 1 2 9</p> <p>C. Other acceptable ..... 1 2 9</p> <p>D. ORS packet ..... 1 2 9</p> <p>E. Other milk ..... 1 2 9</p> <p>F. Water with feeding ..... 1 2 9</p> <p>G. Water alone ..... 1 2 9</p> <p>H. Unacceptable fluids ..... 1 2 9</p> <p>I. Nothing ..... 1 2 9</p>	1⇒Q.5
<p>4. DURING (<i>name</i>'s) ILLNESS, DID HE/SHE DRINK MUCH LESS, ABOUT THE SAME, OR MORE THAN USUAL?</p>	<p>Much less or none ..... 1</p> <p>About the same (or somewhat less) ..... 2</p> <p>More ..... 3</p> <p>DK ..... 9</p>	
<p>5. DURING (<i>name</i>'s) ILLNESS, DID HE/SHE EAT LESS, ABOUT THE SAME, OR MORE FOOD THAN USUAL?</p> <p><i>If “less”, probe:</i></p> <p>MUCH LESS OR A LITTLE LESS?</p>	<p>None ..... 1</p> <p>Much less ..... 2</p> <p>Somewhat less ..... 3</p> <p>About the same ..... 4</p> <p>More ..... 5</p> <p>DK ..... 9</p>	
<p>6. HAS (<i>name</i>) HAD AN ILLNESS WITH A COUGH AT ANY TIME IN THE LAST TWO WEEKS, THAT IS, SINCE (<i>day of the week</i>) OF THE WEEK BEFORE LAST?</p>	<p>Yes ..... 1</p> <p>No ..... 2</p> <p>DK ..... 9</p>	2⇒Q.11 9⇒Q.11

Q.73

7. WHEN ( <i>name</i> ) HAD AN ILLNESS WITH A COUGH, DID HE/SHE BREATHE FASTER THAN USUAL WITH SHORT, QUICK BREATHS OR HAVE DIFFICULTY BREATHING?	Yes ..... 1 No ..... 2 DK..... 9	2⇒Q.11 9⇒Q.11
8. WERE THE SYMPTOMS DUE TO A PROBLEM IN THE CHEST OR A BLOCKED NOSE?	Blocked nose ..... 1 Problem in chest..... 2 Both ..... 3  Other ( <i>specify</i> ) ..... 4 DK..... 9	1⇒Q.11 4⇒Q.11
9. DID YOU SEEK ADVICE OR TREATMENT FOR THE ILLNESS OUTSIDE THE HOME?	Yes ..... 1 No ..... 2 DK..... 9	2⇒Q.11 9⇒Q.11
10. FROM WHERE DID YOU SEEK CARE?  ANYWHERE ELSE?  <i>Circle all providers mentioned, But do NOT prompt with any suggestions.</i>	Hospital..... 01 Health centre ..... 02 Dispensary..... 03 Village health worker ..... 04 MCH clinic ..... 05 Mobile/outreach clinic ..... 06 Private physician ..... 07 Traditional healer..... 08 Pharmacy or drug seller ..... 09 Relative or friend ..... 10  Other ( <i>specify</i> ) ..... 11	
11. SOMETIMES CHILDREN HAVE SEVERE ILLNESSES AND SHOULD BE TAKEN IMMEDIATELY TO A HEALTH FACILITY. WHAT TYPES OF SYMPTOMS WOULD CAUSE YOU TO TAKE YOUR CHILD TO A HEALTH FACILITY RIGHT AWAY?  <i>Keep asking for more signs or symptoms until the caretaker cannot recall any additional symptoms. Circle all symptoms mentioned, But do NOT prompt with any suggestions.</i>	Child not able to drink or breastfeed ..... 01 Child becomes sicker ..... 02 Child develops a fever ..... 03 Child has fast breathing..... 04 Child has difficult breathing ..... 05 Child has blood in stool ..... 06 Child is drinking poorly ..... 07  Other ( <i>specify</i> ) ..... 08 Other ( <i>specify</i> ) ..... 09 Other ( <i>specify</i> ) ..... 10	

GO TO NEXT MODULE ⇒

Cluster no. \_\_\_\_ Household no. \_\_\_\_ Caretaker line no. \_\_\_\_ Child line no. \_\_\_\_

<b>MALARIA MODULE</b>		
<b><i>This module is for use in countries or regions at high risk of malaria. See manual for definition.</i></b>		
1. IN THE LAST TWO WEEKS, THAT IS, SINCE ( <i>day of the week</i> ) OF THE WEEK BEFORE LAST, HAS ( <i>name</i> ) BEEN ILL WITH A FEVER?	Yes ..... 1 No ..... 2 DK..... 9	2⇒Q.8 9⇒Q.8
2. WAS ( <i>name</i> ) SEEN AT A HEALTH FACILITY DURING THIS ILLNESS?	Yes ..... 1 No ..... 2 DK..... 9	2⇒Q.6 9⇒Q.6
3. DID ( <i>name</i> ) TAKE A MEDICINE FOR FEVER OR MALARIA THAT WAS PROVIDED OR PRESCRIBED AT THE HEALTH FACILITY?	Yes ..... 1 No ..... 2 DK..... 9	2⇒Q.5 9⇒Q.5
4. WHAT MEDICINE DID ( <i>name</i> ) TAKE THAT WAS PROVIDED OR PRESCRIBED AT THE HEALTH FACILITY?  <i>Circle all medicines mentioned.</i>	Paracetamol ..... 1 Chloroquine ..... 2 Fansidar..... 3 <b>Develop categories to include locally-used drugs, then pre-test</b> Other ( <i>specify</i> ) ..... 4 DK..... 9	
5. WAS ( <i>name</i> ) GIVEN MEDICINE FOR THE FEVER OR MALARIA BEFORE BEING TAKEN TO THE HEALTH FACILITY?	Yes ..... 1 No ..... 2 DK..... 9	1⇒Q.7 2⇒Q.8 9⇒Q.8
6. WAS ( <i>name</i> ) GIVEN MEDICINE FOR FEVER OR MALARIA DURING THIS ILLNESS?	Yes ..... 1 No ..... 2 DK..... 9	2⇒Q.8 9⇒Q.8
7. WHAT MEDICINE WAS ( <i>name</i> ) GIVEN?  <i>Circle all medicines given before visiting a health facility or if no visit was made to a health facility.</i>	Paracetamol ..... 1 Chloroquine ..... 2 Fansidar..... 3 <b>Develop categories to include locally-used drugs, then pre-test</b> Other ( <i>specify</i> ) ..... 4 DK..... 9	
8. DID ( <i>name</i> ) SLEEP UNDER A BEDNET LAST NIGHT?	Yes ..... 1 No ..... 2 DK..... 9	2⇒NEXT MODULE 9⇒NEXT MODULE

Q.75

9. WAS THIS BEDNET EVER TREATED WITH A PRODUCT TO KILL MOSQUITOS?	Yes .....	1	2⇒NEXT MODULE
	No .....	2	
	DK.....	9	9⇒NEXT MODULE
10. WHEN WAS THE BEDNET LAST TREATED?	Months ago.....	__ __	
	DK.....	99	

**GO TO NEXT MODULE** ⇨

Cluster no. \_\_\_\_\_ Household no. \_\_\_\_\_ Caretaker line no. \_\_\_\_\_ Child line no. \_\_\_\_\_

IMMUNIZATION MODULE										
<p>If an immunization card is available, copy the dates in Qs.2-5 for each type of immunization recorded on the card. Qs.7-15 are for recording vaccinations that are not recorded on the card. Qs.7-15 will only be asked when a card is not available.</p>										
1. IS THERE A VACCINATION RECORD FOR (name)?				Yes, seen..... 1				2⇒Q.7		
				Yes, not seen..... 2						
				No..... 3				3⇒Q.7		
(a) Copy dates of all vaccinations from the card. (b) Write '44' in day column if card shows that vaccination was given but no date recorded.				Date of Immunization						
				DAY		MONTH		YEAR		
2. BCG		BCG								
3A. OPV0		OPV0								
3B. OPV1		OPV1								
3C. OPV2		OPV2								
3D. OPV3		OPV3								
4A. DPT1		DPT1								
4B. DPT2		DPT2								
4C. DPT3		DPT3								
5. MEASLES		MEASLES								
6. IN ADDITION TO THE VACCINATIONS SHOWN ON THIS CARD, DID (name) RECEIVE ANY OTHER VACCINATIONS - INCLUDING VACCINATIONS RECEIVED IN A NATIONAL IMMUNIZATION DAY?				Yes ..... 1				1⇒Q.15		
				(Probe for vaccinations and write '66' in the corresponding day column on Q. 2 to Q. 5.)						
Record 'Yes' only if respondent mentions BCG, OPV 0-3, DPT 1-3, and/or Measles vaccine(s). Go to Q.15 after you finish.				No..... 2				2⇒Q.15		
				DK..... 9				9⇒Q.15		
6. HAS (name) EVER RECEIVED ANY VACCINATIONS TO PREVENT HIM/HER FROM GETTING DISEASES, INCLUDING VACCINATIONS RECEIVED IN A NATIONAL IMMUNIZATION DAY CAMPAIGN?				Yes ..... 1						
				No..... 2				2⇒Q.15		
				DK..... 9				9⇒Q.15		
8. HAS (name) EVER BEEN GIVEN A BCG VACCINATION AGAINST TUBERCULOSIS – THAT IS, AN INJECTION IN THE LEFT SHOULDER THAT CAUSED A SCAR?				Yes ..... 1						
				No..... 2						
				DK..... 9						

Q.77

<p>9. HAS (<i>name</i>) EVER BEEN GIVEN ANY “VACCINATION DROPS IN THE MOUTH” TO PROTECT HIM/HER FROM GETTING DISEASES – THAT IS, POLIO?</p>	<p>Yes ..... 1  No ..... 2  DK..... 9</p>	<p>2⇒Q.12  9⇒Q.12</p>
<p>10. HOW OLD WAS HE/SHE WHEN THE FIRST DOSE WAS GIVEN – JUST AFTER BIRTH OR LATER?</p>	<p>Just after birth..... 1  Later ..... 2</p>	
<p>11. HOW MANY TIMES HAS HE/SHE BEEN GIVEN THESE DROPS?</p>	<p>No. of times ..... _ _</p>	
<p>12. HAS (<i>name</i>) EVER BEEN GIVEN “VACCINATION INJECTIONS” – THAT IS, AN INJECTION IN THE THIGH OR BUTTOCKS – TO PREVENT HIM/HER FROM GETTING TETANUS, WHOOPING COUGH, DIPHTHERIA?  (SOMETIMES GIVEN AT THE SAME TIME AS POLIO)</p>	<p>Yes ..... 1  No ..... 2  DK..... 9</p>	<p>2⇒Q.14  9⇒Q.14</p>
<p>13. HOW MANY TIMES?</p>	<p>No. of times ..... _ _</p>	
<p>14. HAS (<i>name</i>) EVER BEEN GIVEN “VACCINATION INJECTIONS” – THAT IS, A SHOT IN THE ARM AT THE AGE OF 9 MONTHS OR OLDER - TO PREVENT HIM/HER FROM GETTING MEASLES?</p>	<p>Yes ..... 1  No ..... 2  DK..... 9</p>	
<p>15. PLEASE TELL ME IF (<i>name</i>) HAS PARTICIPATED IN ANY OF THE FOLLOWING NATIONAL IMMUNIZATION DAYS:</p> <p><b><i>Date/type of campaign A</i></b>  <b><i>Date/type of campaign B</i></b>  <b><i>Date/type of campaign C</i></b></p> <p><b><i>Insert date and type of vaccination given in the most recent NID campaigns.</i></b></p>	<p style="text-align: right;">Y N DK</p> <p><b><i>Campaign A</i></b>..... 1 2 9  <b><i>Campaign B</i></b>..... 1 2 9  <b><i>Campaign C</i></b>..... 1 2 9</p>	

GO TO NEXT MODULE ⇒

Cluster no. \_\_\_\_ Household no. \_\_\_\_ Caretaker line no. \_\_\_\_ Child line no. \_\_\_\_

<b>ANTHROPOMETRY MODULE</b>		
<p><i>After questionnaires for all children are complete, the measurer weighs and measures each child. Record weight and length/height below, taking care to record the measurements on the correct questionnaire for each child. Check the child's name and line number on the HH listing before recording measurements.</i></p>		
<p>1. Child's weight.</p>	<p>Kilograms (kg) ..... ____ . ____</p>	
<p>2. Child's length or height.</p> <p><i>Check age of child:</i></p> <p><input type="checkbox"/> Child under 2 years old. ⇨ Measure length (lying down).</p> <p><input type="checkbox"/> Child age 2 or more years. ⇨ Measure height (standing up).</p>	<p>Length (cm) Lying down ..... 1 ____ . ____</p> <p>Height (cm) Standing up ..... 2 ____ . ____</p>	
<p>3. Measurer's identification code.</p>	<p>Measurer code..... ____</p>	
<p>4. Result.</p>	<p>Measured..... 1 Not present..... 2 Refused ..... 3 Other (specify) ..... 4</p>	
<p>5. Is there another child in the household who is eligible for measurement?</p> <p><input type="checkbox"/> Yes. ⇨ Record measurements for next child.</p> <p><input type="checkbox"/> No. ⇨ End the interview with this household by thanking all participants for their cooperation. Gather together all questionnaires for this household and check that identification numbers are at the top of each page. Tally on the Household Information Panel the number of interviews completed.</p>		

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