Multiple Indicator Cluster Survey (1999)

Nigeria

Federal Office of Statistics

&

unicef
United Nations Children's Fund

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CONTENTS

LIST OF ACRONYMS

ARI	Acute Respiratory Infections
AIDS	Acquired Immunodeficiency Syndrome
BCG	Bacille-Calmette-Guerin (Vaccine against tuberculosis)
BFHI	Baby-Friendly Hospital Initiative
DPT	Diphtheria-Pertussis-Tetanus vaccine
EA	Enumeration Area
FGN	Federal Government of Nigeria
FOS	Federal Office of Statistics
HIV	Human Immunodeficiency Virus
ILO	International Labour Organization
IMR	Infant Mortality Rate
MICS	Multiple Indicator Cluster Survey
MMR	Maternal Mortality Rate
MOU	Memorandum of Understanding
NDHS	Nigeria Demographic and Health Survey
NISH	National Integrated Survey of Households
NPA	National Plan of Action
OPV	Oral Polio Vaccine
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WSC	World Summit for Children

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ACKNOWLEDGEMENTS

The Multiple Indicator Cluster Survey (MICS) is conceptualized to monitor the progress of Child Survival, Development, Protection and Participation (CSPPD) Programmes as well as goals set at the World Summit for Children in 1990. Also, at the World Summit for Social Development in 1995, the need was stressed for better social statistics if social development had to move to centre stage for the cause of the children of the world. In 1995, Federal Office of Statistics (FOS) with technical and funding assistance from UNICEF, institutionalized the Multiple Indicator Survey within the National Integrated Survey of Households (NISH) as a process of collection of regular, reliable and timely social statistics. A technical team, the Multiple Indicator Cluster Survey Intersectoral Task Force (MIT), consisting of all stakeholders was put in place for the 1999 survey to plan, conduct and monitor the survey with FOS providing the leadership. This was an innovation over the previous survey, which greatly enhanced the quality of the work and coverage of programmes.

Nevertheless, this report would have been impossible without the commitments of the following organizations and individuals. Firstly, members of the Multiple Indicator Cluster Survey Inter-sectoral Taskforce (MIT) which facilitated the conduct and over-seeing of the survey. UNICEF Nigeria which gave technical support in the areas of data processing and analysis and report writing through hiring of consultants that worked closely with FOS teams. The data processing team included; Mr. A. Adedoyin (the Consultant), Mrs. N. A. Adewinmbi (Assistant Director), Messrs, E. Ekezie (Chief Statistician), I. Olarewaju (Principal Statistician), V. Oriokpa (Senior Statistician). R. F. Busari (Computer Officer) and M. A. Oduola (Senior Data Processing Assistant), while the analytical and report writing team comprised of Dr. A. A. Adeyemo (Consultant), Messrs G. O. Adewoye (Deputy Director); J. K. Balogun (Deputy Director), F. B. Ladejobi (Assistant Director), V. A. Adeyemi (Chief Statistician), R. O. Salawu (Principal Statistician), A. A. Olufolabo (Principal Statistical Officer) and O. Joseph (Senior Statistical Officer). I wish to recognise the significant contributions of UNICEF Nigeria officials on this project, namely: Dr. Christian Voumard (Representative), Dr. Roger Wright (Deputy Representative (Programmes), Dr. S. Braimoh, Chief of Planning, Monitoring and Evaluation Section (now with UNICEF New York); Mrs. May Anyabolu and Mr. O. Olowu (both now with UNICEF, Iraq) and Mr. Johnson Awotunde.

This report is another dream to match deeds with words. This report is also unique in the sense that the findings will allow comparison of performance at sub-national (state) and inter national levels. The report will additionally serve as statistical input into future editions of Progress of Nigerian Children Report and UNICEF's State of the World's Children. It is hoped that it will be widely used by various levels of government, Federal and State for programmes and projects monitoring and evaluation on social development and reengineering for the development of the cause of Nigerian Children. It is also an excellent report for top policy formulators and programme managers in the key social sectors.

Alhaji A. Umaru,
Director-General,
Federal Office of Statistics.

Summary Indicators (MICS 1999 – Nigeria)

World Summit for Children Indicators - Nigeria		
Under-five mortality rate	Probability of dying before reaching age five	168 per 1000
Infant mortality rate	Probability of dying before reaching age one	90 per 1000
Underweight prevalence	Proportion of under-fives who are too thin for their age	30.3 %
Stunting prevalence	Proportion of under-fives who are too short for their age	30.0 %
Wasting prevalence	Proportion of under fives who are too thin for their height	16.0 %
Use of safe drinking water	Proportion of population who use a safe drinking water source	54.2 %
Use of sanitary means of excreta disposal	Proportion of population who use a sanitary means of excreta disposal	56.0 %
Children reaching grade five	Proportion of children entering first grade of primary school who eventually reach grade five	95 %
Net primary school attendance rate	Proportion of children of primary school age attending primary school	56.8 %
Literacy rate	Proportion of population aged 15+ years who are able to read a letter or newspaper	52.7 %
Antenatal care	Proportion of women aged 15-49 attended at least once during pregnancy by skilled personnel	39.7 %
Contraceptive prevalence	Proportion of married women aged 15-49 who are using a contraceptive method	8.6 %
Childbirth care	Proportion of births attended by skilled health personnel	34.4 %
Birth weight below 2.5 kg.	Proportion of live births that weigh below 2500 grams	NA*
Iodized salt consumption	Proportion of households consuming adequately iodized salt	97.9 %
Children receiving Vitamin A supplementation	Proportion of children aged 6-59 months who have received a Vitamin A supplement in the last 6 months	20.1 %**
Mothers receiving Vitamin A supplementation	Proportion of mothers who received a Vitamin A supplement before infant was 8 weeks old	NA*
Exclusive breastfeeding rate	Proportion of infants aged less than 4 months who are exclusively breastfed	12.5 %
Timely complementary feeding rate	Proportion of infants aged 6-9 months who are receiving breast milk and complementary food	43.0 %
Continued breastfeeding rate	Proportion of children aged 12-15 months and 20-23 months who are breastfeeding	72.5 % (12 – 15 mo.) 32.8 % (20 – 23 mo.)
DPT immunization coverage	Proportion of children immunized against diptheria, pertussis and tetanus by age 12 months	33.1 % (DPT3)
Measles immunization coverage	Proportion of children immunized against measles by age 12 months	10.1 %
Polio immunization coverage	Proportion of children immunized against polio by age 12 months	24.2 % (OPV3)
Tuberculosis immunization coverage	Proportion of children immunized against tuberculosis by age 12 months	43.1 % (BCG)
Children protected against neonatal tetanus	Proportion of one year old children protected against neonatal tetanus through immunization of their mother	48.6 %
ORT use	Proportion of under-five children who had diarrhoea in the last 2 weeks who were treated with oral rehydration salts or an appropriate household solution	85.6 %
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	8.4 %

World Summit for Children Indicators		
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	NA*
Preschool development	Proportion of children aged 36-59 months who are attending some form of organized early childhood education program	21.1 %
Indicators for Monitoring Children's Rights		
Birth registration	Proportion of under-five children whose births are reported registered	29.8 %
Children's living arrangements	Proportion of children aged 0-14 years in households not living with a biological parent	NA*
Orphans in household	Proportion of children aged 0-14 years who are orphans living in households	NA*
Child labor	Proportion of children aged 5-14 years who are currently working	NA*
Indicators for Monitoring IMCI and Malaria		
Home management of illness	Proportion of under-five children reported ill during the last 2 weeks who received increased fluids and continued feeding	NA*
Care seeking knowledge	Proportion of caretakers of under-five children who know at least 2 signs for seeking care immediately	41.6 %
Bednets	Proportion of under-five children who sleep under an insecticide impregnated bednet	NA*
Malaria treatment	Proportion of under five children who were ill with fever in the last 2 weeks who received anti-malarial drugs	NA*
Indicators for Monitoring HIV/AIDS		
Knowledge of preventing HIV/AIDS	Proportion of women who correctly state the 3 main ways of avoiding HIV infection	NA*
Knowledge of misconceptions of HIV/AIDS	Proportion of women who correctly identify 3 misconceptions about HIV/AIDS	NA*
Knowledge of mother to child transmission	Proportion of women who correctly identify means of transmission of HIV from mother to child	NA*
Attitude to people with HIV//AIDS	Proportion of women expressing a discriminatory attitude towards people with HIV/AIDS	NA*
Women who know where to be tested for HIV	Proportion of women who know where to get a HIV test	NA*
Women who have been tested for HIV	Proportion of women who have been tested for HIV	NA*

**** = Data Not Available in MICS 1999.***

***** = Field report indicate that some respondents could not differentiate between Vitamin A and multivitamins. Data should be used with caution.***

EXECUTIVE SUMMARY

Background and Objectives

As a means of monitoring progress toward the goals and objectives set at the World Summit for Children for the year 2000, UNICEF in coordination with WHO, UNDP and other international organizations, developed a core set of 75 indicators of specific aspects of the situation of children. Data on these indicators are collected through a Multiple Indicator Cluster Survey (MICS), a global survey developed by UNICEF to measure the output, outcome and impact of implementation of country programmes of cooperation. The first MICS in Nigeria was conducted in 1995 by the Federal Office of Statistics (FOS) with technical assistance from UNICEF. The Nigeria MICS 1999 represents the second MICS in Nigeria and was designed to provide end-decade information on many of the indicators. As in the previous MICS, the present survey was implemented by the Federal Office of Statistics with technical assistance from UNICEF.

The 1999 Nigeria Multiple Indicator Cluster Survey has as its primary objectives:

- To provide up-to-date information for assessing the situation of children and women in Nigeria 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 and a basis for future action;

- To contribute to the improvement of data and monitoring systems in Nigeria and to strengthen technical expertise in the design, implementation, and analysis of such systems.

Study Design and Field Work

The Multiple Indicator Cluster Survey (MICS) 1999 was run as a module of the National Integrated Survey of Households (NISH) design which utilizes a probability sample drawn using a random sampling method at the national and sub-national levels. Two types of questionnaires were used for Nigeria MICS 1999, namely, household and children questionnaires. Information collected on all household members included sex, age, relationship to head of household, school attendance, marital status, literacy and occupation. The household/women's questionnaire contained modules on: Children listing, Water and Sanitation, Salt iodisation, Children education, Fertility and Child Mortality, Tetanus Toxoid, Maternal Mortality, Care of Acute Respiratory Illness, Prenatal/Childbirth/Obstetrics and Family Planning. The questionnaire for children under age five included modules on: Diarrhoea, Vitamin A, Malaria, Breastfeeding, Immunization, Child's Rights, and Anthropometry. The fieldwork began in February 1999 and was completed in all the states in April 1999. Response rates were high, being 98.4 percent for households, 54.4 percent for eligible women for the fertility module and 84 percent for children.

Characteristics of household population

Thirty-two percent of the households (5,419 households) were urban and 68 percent (11,530 households) rural. The zonal representation of surveyed households were South West 33.6 percent, North West 26.4 percent, South East 25.3 percent and North East 14.7 percent. Most (75 percent) of the households had between two and seven members. Seventy-two percent of the households had at least one child (age < 16 years) and 28 percent had at least one child under the age of five years. Sixty-three percent of households had at least one woman aged 15-49 years. Approximately 68 percent of women in the sample were married at the time of the survey and 71 percent had ever had a birth. About one-third (33 percent) of the women had had at least some secondary education while nearly one-half (44 percent) had had no formal education at all.

Findings

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. Based on MICS 1999 data (reference year 1993), infant mortality rate was 90 per thousand. Boys had an infant mortality rate of 100 per thousand while girls had an infant mortality rate of 76 per thousand. Infant mortality rate was considerably higher in rural areas (95 per thousand) than in urban areas (69 per thousand). Zonal figures were 80 per thousand in the South West, 73 per thousand in the South East, 97 per thousand in the North West and 68 per thousand in the North East.

The national under-five mortality estimate was 168 per thousand. Under-five mortality was higher among boys (183 per thousand) than among girls (149 per thousand). Under-five mortality rate was higher in the rural areas (182 per thousand) than in urban areas (126 per thousand). Zonal figures were 117 per thousand in the South West, 138 per thousand in the South East, 220 per thousand in the North West and 151 per thousand in the North East. These figures show that Nigeria still falls far short of the World Summit goal of the reduction of infant and under-five mortality rate by one third or to 50 and 70 per 1000 live births respectively, whichever is less.

Education

Approximately one in five children (21 percent) aged 36-59 months were attending an organized early childhood education programme, such as kindergarten or community childcare with organized learning activities. There were large zonal variations, with the percentage attending organized early childhood education ranging from only four and three percent of children in the North East and North West, respectively, to 41 and 48 percent in the South East and South West, respectively. Children in urban areas were thrice as likely to attend early learning activities as children in rural areas (44 percent compared to 13 percent).

Overall, 57 percent of children of primary school age in Nigeria were attending primary school at the time of the survey. In urban areas, 74 percent of children were attending school compared to 50 percent in rural areas. School attendance in the North West (25 percent) and North East (42 percent) was significantly lower than in the South East (80 percent) and in the South West (82 percent) zones of the country.

The adult (age 15 years and above) literacy rate was 53 percent in Nigeria. Overall, women were less likely than men to be literate (45 compared to 61 percent). The percentage literate was twice as high in the South than in the North. Literacy declined with increasing age, probably reflecting the limited educational opportunities that were accessible to older generations of Nigeria.

Water and Sanitation

Overall, 54 percent of the population had access to safe drinking water. A higher percentage of residents in urban areas had access to safe drinking water when compared to those in rural areas - 71 percent in urban areas and 48 percent in rural areas. There were considerable zonal differences in access to safe drinking water, with the figures for the North West being 67 percent, North East 49 percent, South West 59 percent, and the South East only 39 percent. At the national level, only 7 percent of households had water piped into the dwelling and this was largely in urban households (22 percent of urban households but only 2 percent of rural households). Thus, more than 9 in 10 households in Nigeria still have to go outside the home to obtain water, often from public taps (10 percent), protected wells or springs (22 percent) or boreholes (15 percent).

Fifty-six percent of households surveyed in MICS 1999 lived in households with sanitary means of excreta disposal. The figures were 75 percent in urban areas in contrast to 44 percent in rural areas. Residents of the North East were less likely than those from other zones to use sanitary means of excreta disposal; about 4 in 10 households (41 percent) surveyed in this zone used an open pit or had no facilities at all.

Child Malnutrition

Thirty-two percent of children were stunted or too short for their age and 18 percent were severely stunted. Stunting was more prevalent among boys (35 percent) than girls (31 percent). Rural areas had a higher prevalence of stunting than urban areas (38 percent versus 23 percent). Zonal figures show that the South West had the lowest prevalence of stunting (22 percent), with the other zonal figures being 29 percent in the South East, 39 percent in the North West and 46 percent in the North East.

Sixteen percent were wasted or too thin for their height and 4 percent were severely wasted. Boys and girls had comparative prevalences of wasting (16 percent and 15 percent, respectively). Rural-urban figures for wasting were also similar (16 percent compared to 14 percent). Zonal figures show that the South East had the lowest

prevalence of wasting (12 percent), while the other zonal figures were South West (14 percent), North West (16 percent) and North East (18 percent).

The prevalence of underweight was 30 percent and that of severe underweight 12 percent. Rural figures for underweight (35 percent) were considerably higher than urban figures (20 percent). Zonal figures showed the South West with a prevalence of 21 percent, the South East 24 percent, the North West 35 percent and the North East 40 percent.

By these three measures of child malnutrition, it is obvious that child malnutrition is worse in rural areas than in urban areas and that considerable zonal disparities existed in child malnutrition. These figures indicate that Nigeria had not met the World Summit goal of reduction of severe and moderate malnutrition among under five children by half between 1990 and the year 2000.

Exclusive breastfeeding rate among children less than 4 months of age was 22 percent based on the previous 24 hours and 13 percent based on history since birth. Compared to NDHS 1990, exclusive breastfeeding rates have risen considerably, from less than 2 percent in 1990 to 13 percent (history since birth) and 22 percent (prior 24 hours) in 1999. Among households in which salt was tested, 98 percent had adequately iodized salt.

Child Health

The immunization coverage for all vaccines (or "complete immunization") was only 14 percent at any age and only 2 percent at 12 months of age. Coverage for individual vaccines showed considerable variation. Approximately 43 percent of children aged 12-23 months received BCG vaccination by the age of 12 months. The percentage that received three doses of DPT was 33 percent and the figure for three doses of oral polio vaccine (OPV) was 24 percent. The coverage for measles vaccine by 12 months of age was 10 percent. Immunization coverage showed considerable zonal and urban-rural differences. Coverage for all vaccines and for individual vaccines increased with increasing maternal education.

Overall, 15 percent of under-five children had diarrhoea in the two weeks preceding the survey. Approximately four in five children with diarrhoea received one or more of the recommended home treatments (i.e., were treated with ORS or any recommended home fluid). Fourteen percent received ORS. Only 8 percent of children with diarrhoea received increased fluids and continued eating as recommended.

Reproductive Health

Current use of any method of contraception (modern or traditional) was reported by 9 percent of women who were married or in union. Modern methods were in use by 6 percent and traditional methods by 3 percent of the women. The most common method is the Pill but this was used by only 2 percent of married women in Nigeria. Contraceptive prevalence (any method) was highest in the South East and South West (14 percent and

12 percent, respectively) in contrast to only three percent in the North West and two percent in the North East. Women's educational level was strongly associated with contraceptive prevalence.

One out of two women (49 percent) with recent births in Nigeria are protected against neonatal tetanus. About 48 percent of women with recent births received two or more doses of tetanus toxoid within the last three years.

About 40 percent of women with a birth in the five years prior to the survey received antenatal care from skilled personnel (doctor, nurse, midwife). About 12 percent of women with a birth in the five years prior to the survey received antenatal care from a doctor, 25 percent from a nurse/mid-wife, and 2 percent from an auxiliary midwife. A third (34 percent) of all births occurring in the five years prior to MICS 1999 were delivered by skilled personnel, comprising 5 percent by doctors, 27 percent by nurses/midwives and 2 percent by auxiliary midwives. Both antenatal care from skilled personnel and skilled assistance at delivery were more common in urban compared to rural areas and were strongly associated with how well-educated the woman is.

Summary and Conclusions

The Multiple Indicator Cluster Survey Nigeria 1999 has collected data on a wide variety of indicators used for monitoring progress towards the achievement of the 1990 World Summit for Children. The findings indicate that, at the end of the decade, Nigeria largely fell short of meeting these goals. The only area where the goal was fully met is that of salt iodization. Progress has been made in a few areas, such as exclusive breastfeeding rates and treatment of childhood diarrhoea, but even these fall far short of set targets. Many areas (such as child mortality and contraceptive prevalence) show little or no change while others (such as childhood immunization) show deterioration. In Nigeria, the decade of the 1990s was characterized by extreme political instability, socio-economic hardship and deep poverty at the individual and household levels. Thus, these findings were not surprising and should be considered a snapshot of a country experiencing deep political, economic and social distress. The advent of a democratic system of government in 1999 has brought about changes in the society, which are expected to yield dividends of better performance on these indicators in future surveys.

This survey has also shown a broad number of trends at sub-national levels. In general, rural areas have worse indicators than urban areas. The survey showed zonal variations for all the indicators. Maternal education was strongly associated with a wide variety of indicators. These findings suggest areas where policies and programmes should be focused, preferably after data is collected on *why* some of these differences exist.

There is a clear need for such data as these in planning, monitoring and evaluation. This calls for the institutionalization of surveys (preferably backed by legislation), improvement in routine data collection and analysis, more timely dissemination of data as well as building local capacity to do all these.

CHAPTER 1: INTRODUCTION

1.1 Background of the Survey

At the World Summit for Children held in New York in 1990, the Federal Government of Nigeria pledged itself to the Declaration and Plan of Action for Children. Subsequently, a National Programme of Action for the Survival, Protection, and Development of the Nigerian Child was developed in 1992 and implementation commenced. The Plan of Action called for the establishment of mechanisms for monitoring progress toward the goals and objectives set for the year 2000. Toward this end, UNICEF in coordination with WHO, UNDP and other international organizations, has developed a core set of 75 indicators of specific aspects of the situation of children. Data on these indicators are collected through a Multiple Indicator Cluster Survey (MICS), a global survey developed by UNICEF to measure the output, outcome and impact of implementation of country programmes of cooperation. Thus, the MICS is designed to measure progress towards achievement of goals of the World Summit for Children, including progress at mid-decade (1995) and at end-decade (2000). MICS is also designed to measure progress towards achievement of goals and targets set in the National Programmes of Action.

The first MICS in Nigeria was conducted in 1995 by the Federal Office of Statistics (FOS) with technical assistance from UNICEF. The primary objective was to measure progress towards achievement of the mid-decade goals in various areas, including health, nutrition, education, water and sanitation, and progress of women. The survey was implemented as a supplemental module of the National Integrated Survey of Households (NISH) of the Federal Office of Statistics. The report of this survey was subsequently published and the findings serve as a baseline for most of the indicators against which future surveys could be compared.

The Nigeria MICS 1999 survey represents the second MICS in Nigeria and was designed to provide end-decade information on many of the indicators. As in the previous MICS, the present survey was implemented by the Federal Office of Statistics with technical assistance from UNICEF. Funding was provided by the Nigeria UNICEF office, following a memorandum of understanding (MOU) signed between FOS and UNICEF, Nigeria. The MOU detailed the aim and objectives of the MICS, the expected output/outcome, roles and responsibilities of the various parties, the workplan/schedule of activities and funding.

This report presents the findings of MICS 1999 on the key areas covered in the survey as well as on the indicators of the World Summit.

1.2 Nigeria – Country Background

Nigeria is Africa's most populous nation with an estimated 1999 population of 124 million. The country is located in West Africa, bordered on the west by the Republic of Benin, on the north by the Republic of Niger and on the East by the Republic of Cameroun. The country occupies a land area of 923, 768 square kilometres and the vegetation ranges from mangrove forest on the coast to desert in the far north.

Administratively, Nigeria consists of 36 states and a Federal Capital territory. These are further divided into 774 local government areas (LGA). For most of her history since independence in 1960, Nigeria has been under military rule. Nigeria returned to democratic rule in May 1999 under a presidential system of government with three tiers of government: federal, state and local. The federal government comprises an executive arm (led by the President), a bicameral legislative arm (Senate and House of Representatives) and a judiciary. Each state has its own governor and house of assembly while each local government has a chairman and council.

The country has abundant natural resources. Major agricultural products include cocoa, rubber, groundnuts, palm oil, cotton, cassava, yam, corn, millet and rice. Mineral resources include petroleum, coal, tin, columbite and gold. However, petroleum has been the mainstay of foreign exchange earnings for Nigeria in the last three decades. Indeed, Nigeria is the sixth largest producer of crude oil in the world and earns several billion US dollars annually from sales of crude oil alone. However, this has not translated to a healthy national economy due to decades of mismanagement and corruption under dictatorial government by successive military regimes. Thus, at the end of the decade (1999), GDP was only US $310. Nigeria's external debt stood at about $32 billion and it was estimated that the government spends about 40% of its earnings servicing foreign debts. The economic hardship during the 1990's meant that social sector spending was far less than required. The health and education sectors, in particular, were deprived of much needed support and funding. It is only with the advent of democratic governance at the end of the decade that the social sector started receiving increased attention.

Nigeria has one of the most ethnically-diverse populations in the world, with more than 380 distinct ethnic groups. The major ethnic groups include (in alphabetical order) the Edo, Efik, Fulani, Hausa, Igbo, Ijaw, Kanuri, Tiv, Urhobo and Yoruba. Population growth has been quite rapid, from 55.7 million in the 1963 national census to 88.5 million in the 1991 census. For much of this period, total fertility rate was over 6 per woman. The population is quite young with 47 percent being under 18 years of age. Children under the age of five years comprise about 20 percent of the population and women of child bearing age another 20 percent of the population.

Under-five mortality has remained over 100 per thousand over the 1990's, being 192 per thousand in 1990 (NDHS 1990) and 147 per thousand in 1995 (MICS 1995). Maternal mortality ratio was estimated to be 800 per thousand in 1995 (The Progress of Nations 1995). Over one-third (36 percent) of under-five children were underweight in 1990.

Thus, social indicators show that Nigeria is a country with low GDP, high external debt burden, high child and maternal mortality and high fertility.

1.3 Survey Objectives

The 1999 Nigeria Multiple Indicator Cluster Survey has as its primary objectives:

- To provide up-to-date information for assessing the situation of children and women in Nigeria 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 and a basis for future action;

- To contribute to the improvement of data and monitoring systems in Nigeria and to strengthen technical expertise in the design, implementation, and analysis of such systems.

CHAPTER 2: SURVEY METHODOLOGY

2.1 Sample Design

2.1.1 Introduction of NISH Design 1993/99

The Multiple Indicator Cluster Survey (MICS) 1999 was run as a module of the National Integrated Survey of Households (NISH) design. NISH is the Nigerian version of the United Nations National Household Survey Capability Programme and is a multi-subject household based survey system. It is an ongoing programme of household based surveys enquiring into various aspects of households, including housing, health, education and employment. The programme started in 1981 after a pilot study in 1980. The design utilizes a probability sample drawn using a random sampling method at the national and sub-national levels.

The main features of the NISH design are:

(a) **Multi-Phase Sampling**: In each state 800 EAs were selected with equal probability as first phase samples. A second phase sample of 200 EAs was selected with probability proportional to size.

(b) **Multi-Stage Sampling Design**: A two-stage design was used. Enumeration Areas were used as the first stage sampling units and Housing Units (HUs) as the second stage sampling units.

(c) **Replicated Rotatable Design**: Two hundred EAs were selected in each state in 10 independent replicates of 20 EAs per replicate. A rotation was imposed which ensured 6 replicates to be studied each survey year but in subsequent year a replicate is dropped for a new one, that is, a rotation of 1/6 was applied. This means in a survey year, 120 EAs will be covered in each state. In the Federal Capital Territory (Abuja), 60 EAs are covered.

(d) **Master Sample**: The EAs and HUs selected constitute the Master Sample and subsets were taken for various surveys depending on the nature of the survey and the sample size desired. In any one-year, the 120 EAs are randomly allocated to the 12 months of the year for the survey. The General Household Survey (GHS) is the core module of NISH. Thus, every month 10 EAs are covered for the GHS. For other supplemental modules of NISH, subsets of the master sample are used. The MICS 1999 was run as a module of NISH.

2.1.2 Sample Size

The global MICS design anticipated a sample of 300-500 households per district (domain). This was based on the assumption of a cluster design with design effect of about 2, an average household size of 6, children below the age of 5 years constituting 15 percent of the population and a diarrhoea prevalence of 25 percent. Such a sample would give estimates with an error margin of about 0.1 at the district level. Such a sample would usually come from about 10 clusters of 40 to 50 households per cluster.

In Nigeria, the parameters are similar to the scenario described above. Average household size varied from 3.0 to 5.6 among the states, with a national average of about 5.5. Similarly, children below 5 years constituted between 15-16 percent of total population. Diarrhoea prevalence had been estimated at about 15 percent. These figures have led to sample sizes of between 450 and 660 for each state.

It was decided that a uniform sample of 600 households per state be chosen for the survey. Although non-response, estimated at about 5 percent from previous surveys reduced the sample further, most states had 550 or more households. The MICS sample was drawn from the National Master Sample for the 1998/99 NISH programme implemented by the Federal Office of Statistics (FOS).

The sample was drawn from 30 EAs in each state with a sub-sample of 20 households selected per EA. The design was more efficient than the global MICS design which anticipated a cluster sub-sample size of 40-50 households per cluster. Usually, when the sub-sample size was reduced by half and the number of clusters doubled, a reduction of at least 20 percent in the design effect was achieved. This was derived from DEFF = 1 + (m-1) *rho* where m is sub-sample size and *rho* is intra-class correlation. Therefore, the design effect for the Nigerian MICS was about 1.6 instead of 2. This means that for the same size of 600 households, the error margin was reduced by about 10 percent, but where the sample was less than 600 the expected error margin would be achieved.

It should be noted that sampling was based on the former 30 states plus a Federal Capital Territory administrative structure [there are now 36 states and a Federal Capital Territory].

2.1.3 Selection of Households

The global design anticipated either the segmenting of clusters into small areas of approximate 40-45 households and randomly selecting one so that all households within such area was covered or using the random walk procedure in the cluster to select the 40-45 households. Neither of the two procedures was employed. For the segmentation method, it was not difficult to see that the clustering effect could be increased, since, in general, the smaller the cluster the greater the design effect. With such a system, DEFF would be higher than 2, even if minimally. The random walk method, on the other hand,

could be affected by enumerator bias, which would be difficult to control and not easily measurable.

For NISH surveys, the listing of all housing units in the selected EAs was first carried out to provide a frame for the sub-sampling. Systematic random sampling was thereafter used to select the sample of housing units. The GHS used a sub-sample of 10 housing units but since the MICS required 20 households, another supplementary sample of 10 housing units was selected and added to the GHS sample. All households in the sample housing units were interviewed, as previous surveys have shown that a housing unit generally contained one household.

2.1.4 Estimation Procedure

The Nigeria MICS 1999 design was not self-weighting therefore the need for appropriate weighting in the estimation procedure. Using the following notations:

N_i	=	No. of total EAs in i^{th} state
n_i	=	No. of total sample EAs in i^{th} state
M_{ij}	=	No. of housing units in j^{th} EA of i^{th} state.
m_{ij} (=20)	=	No. of selected housing units in j^{th} EA of i^{th} state
Y_{ijk}	=	The observation of the k housing units in j^{th} EA of i^{th} state

$$Y = \sum \frac{N_i}{n_i} \sum \frac{M_{ij}}{m_{ij}} \sum Y_{ijk}$$

Other estimates were similarly derived. The weighting thus takes care of the disproportionate allocation.

2.2 Questionnaires

Two types of questionnaires were used for Nigeria MICS 1999, namely, household questionnaires and children questionnaires. The questionnaires were based on the MICS model questionnaires, which were adapted to be country specific. An Instruction Manual was developed in line with the model questionnaires to assist interviewers, editors and supervisors on how to complete and edit questionnaires in the field.

The household questionnaire was actually a combined household and women's questionnaire and was administered in each household and for women aged 15-49. Information collected on all household members included sex, age, relationship to head of household, school attendance, marital status, literacy and occupation. The household/women's questionnaire contained modules on:

- Children listing
- Water and sanitation

- Salt iodisation
- Children education
- Fertlity and Child Mortality
- Tetanus Toxoid
- Maternal Mortality
- Care of Acute Respiratory Illness
- Prenatal/Childbirth/Obstetrics, and
- Family Planning

The children's questionnaire was administered in each household for all children under the age of five years. In this case, the questionnaire was administered to the mother or caretaker of the child. The questionnaire for children under age five included modules on:

- Diarrhoea
- Vitamin A
- Malaria
- Breastfeeding
- Immunization
- Child's Rights, and,
- Anthropometry

The English questionnaire was translated into three major Nigerian languages: Igbo, Hausa and Yoruba. The questionnaires were then back-translated into English by different set of translators to ensure that the qualities of the questions were retained. The questionnaires were subsequently pretested. Based on the results of the pretest, modifications were made to the wordings and translation of the questionnaires.

2.3 Field Work

2.3.1 Pretest

The pretest exercise for MICS 1999 was conducted in November 1998. The objective of the pretest was to test the adequacy of the survey instruments and capability of the FOS staff who are involved in the training and data collection for the survey.

Pretest training was conducted from 26th to 30th October 1998 with 12 trainees from four states namely: Lagos, Oyo, Enugu and Kebbi in attendance. Each state presented a team comprising of 2 interviewers and 1 supervisor who are literate in the major language of their state. The Lagos state team used the English Language questionnaire while teams from Oyo, Enugu and Kebbi states tested the Yoruba, Igbo and Hausa versions, respectively. The training, which lasted one week, comprised classroom training, role-play, demonstration interviews (in English and the indigenous languages) and field practice. Pretest fieldwork was conducted from 2nd to 6th November 1998 and covered

one urban and one rural EA were covered in each state. The teams met again in Ibadan for debriefing between 8th and 11th November 1998 where their experiences and problems were discussed. The review helped in the review and finalisation of the language questionnaires before the main survey.

2.3.2 Main Survey Training

Briefing and training of FOS Zonal Controllers and state officers on MICS 1999 was held on the 27th November, 1998 while Training of Trainers (TOT) took place from 1st to 2nd February, 1999.

Training of field staff was carried out in two phases and in five different centres. The training lasted one week in each centre. The first phase training (for the Southern zones) took place between 1st and 6th February, 1999 at three centres, two centres in Ibadan, Oyo state and one in Enugu, Enugu state. The second phase (for the Northern zones) training took place between 15th and 20th February, 1999 in two centres, Kaduna and Jos respectively. A total of 256 participants were trained at the five centres while 248 were selected for the field work as shown in the table below:

Zone	Location	Number of centres	States	Number of trainees	Number selected for field work
SOUTH	IBADAN	1	Oyo, Ondo, Edo, Anambra, Osun Kogi	49	48
		2	Lagos, Ogun, Kwara, Delta, Abuja, Niger	49	48
	ENUGU	1	Enugu, Imo, Abia C/River, River, A/Ibom	50	48
NORTH	KADUNA	1	Kaduna, Katsina, Kano, Kebbi, Sokoto, Jigawa	50	48
	JOS	1	Plateau, Bauchi, Adamawa, Borno, Yobe, Benue, Taraba	58	56
	4	5	30 + FCT	256	248

For the training to be conducted effectively and considering the number of trainees at each centre, three senior and experienced FOS staff were the trainers in each centre while UNICEF staff were present at each centre to observe the training. A detailed training programme was developed for each level of training and transparencies were prepared to aid training.

The one-week training was devoted to classroom training, role-play, demonstration interviews and field practices in non-sampled EAs. A series of tests was administered on the trainees which assisted the trainers to select the best candidates and assign them to posts as enumerators, supervisors and editors based on their performances while others were dropped from the exercise.

At the end of the training, two teams were formed in each state with each team comprising two interviewers, one supervisor and one editor. The roles and duties of each member of the team were discussed in detail and the necessary questionnaires, forms and survey equipment were distributed to the teams for the field work. The fieldwork arrangements, detailed information on the survey design and the MICS work plan were discussed with the teams.

2.3.3 Field work

Two mobile teams, each consisting of two female enumerators, one supervisor (male or female) and one editor (male or female) carried out fieldwork in each state while one team worked in the Federal Capital Territory (FCT). The interviewers were responsible for conducting interviews with eligible respondents, while the supervisors were responsible for the smooth running of the survey in the EAs as well as administrative arrangements. The editors checked the completed questionnaires thoroughly in each EA and they also carried out independent quality checks. Each team spent two days in each EA and one day for travelling between EAs. A period of 6 weeks was earmarked for covering 30 EAs in each state. Most states were able to meet the deadline for the data collection while it took up to 8 weeks in some states due to boundary disputes in some EAs, some EAs not being accessible during the rainy season or lack of transportation to some EAs.

The fieldwork began in February 1999 and was completed in all the states in April 1999.

2.3.4 Quality Control

In order to ensure reliability, acceptability and good quality of data collected, some quality control measures were designed for the survey. One of them was the involvement of the major stakeholders from relevant ministries, agencies and parastatals in the planning and implementation of the survey. This led to the formation of the MICS Inter-Sectoral Task-Force Committee comprising members drawn from ministries and agencies including Health, Education, Women Affairs, Water Resources, Planned Parenthood Federation of Nigeria (PPFN), National Planning Commission, ILO and UNICEF. Members met periodically to design and review the questionnaires before the main survey commenced. The members were involved in the monitoring of the survey in some states and carried out independent quality checks in the field. They were also involved in the review of tables generated for the survey and the analysis.

Quality control forms such as interviewer assignment sheet, supervisors' control and assignment sheets were used and retrieval forms were designed to monitor the survey.

2.4 Data Processing

MICS 1999 data were processed in 4 stages namely, manual editing and coding, data entry, data cleaning and tabulation.

2.4.1 Manual Processing

Completed questionnaires started arriving at the FOS headquarters two weeks after training in each of the two zones. The records were sent in two batches from each of the zones. The first batch from Southern zone was received on 8th March 1999 while the second batch was received on 5th April 1999. The Northern zone records were received on 22nd March 1999 and 12th April 1999 respectively.

Manual processing started with the development of editing/coding guidelines which were used to train the officers on manual editing. The training, which took place in March 1999, involved officers selected from different levels in the office. The guidelines include errors that could be found in the completed questionnaires and how they could be corrected. These likely errors include omissions, inconsistencies, unreasonable entries, impossible entries, double entries, transcription errors and others found in the questionnaires.

After the completion of the training, which lasted for 3 days, the officers were tested and based on their performances, 9 officers were selected as supervisors while 20 officers were made editors. Four key officers on the survey served as co-ordinators.

2.4.2 Data Preparation

The data for MICS 1999 was prepared to meet the criteria of timeliness and quality in a number of unique ways. These include data collection, manual editing, data capture programs and regular meetings of various interest groups. Data for the survey was collected through FOS network of field offices located in the 31 states of the federation, including the Federal Capital Territory (FCT) Abuja and retrieved to the headquarters in Lagos. Upon arrival, the questionnaires were subjected to manual editing by a team of editors (8) headed by group supervisor (2) and coordinators (2). Data entry programs were written for each questionnaire and the data were captured independently. The data entry version of the questionnaire using EPI Info 6.0 with error checks and skip instructions was prepared to capture the data by the data processing team led by a supervisor and a coordinator. There were also regular meetings of various stakeholders both internal (within FOS) and external (between FOS, UNICEF and/or other agencies) at intervals during the survey to oversee the data preparation.

2.4.3 Data Entry

The data entry started with a trial entry by the data entry clerks to acquaint them with the modalities and/or procedures for the data entry after which substantive data entry began. A total of about 30 operators working in two locations were involved. They worked in two groups, one group worked during the day while the other group worked during the night. This arrangement was resorted to in order to ensure efficient use of computer systems and personnel given the erratic electricity supply at the time. The data entry was completed within 2 weeks. Data entry supervisors working under the Data Processing Coordinator supervised data entry at each location.

2.4.4 Data Cleaning

Data entry was followed by trial tabulation to check for and to correct inconsistencies in the data. A frequency check was done on the values of the variables in all the modules to examine quality of the data. All inconsistencies found were reconciled and all errors found were corrected.

UNICEF also provided a Consultant from Macro International, New York, who evaluated the data and all inconsistencies discovered at this stage were also corrected. Analysis similarly benefited from the various workshops organized by the WCARO specifically for MICS 2

Data processing began in March 1999 and draft tables produced by August, 1999. The final tables were produced in September 2001. The delay in producing the final tables was due to the need to conduct extensive data verification and to the necessity to undertake a series of evaluations to ensure consistency and comparability of figures with those of other countries in the region.

CHAPTER 3: SAMPLE CHARACTERISTICS AND DATA QUALITY

3.1 Sample Coverage

With the design of 30 EAs for each state (with 15 EAs for the Federal Capital Territory) and 20 housing units in each EA, 18,300 households in 915 EAs were expected to be covered overall. Table 1 shows that 16,962 housing units were sampled of which 15,883 (94 percent) were occupied and respondents from 15,580 households (92 percent of the sampled number) were interviewed. There were no urban-rural differences in response rate.

In the interviewed households, 19,514 eligible women aged 15-49 were identified. Of these, 11,004 had children and thus were eligible for the fertility module interview (Table 3); 10,606 of these 11,004 women were successfully interviewed, yielding a response rate of 96 percent. A total number of 12,072 children under-five were listed in the household questionnaires. Of these, questionnaires were completed for 10,086 children for a response rate of 84 percent.

3.2 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 4 presents the percent distribution of households in the sample by background characteristics. Thirty-two percent of the households (5,419 households) were urban and 68 percent (11,530 households) rural. The zonal representation of households were: South West 33.6 percent, North West 26.4 percent, South East 25.3 percent and North East 14.7 percent of the households surveyed. Most (75 percent) of the households had between two and seven members. Seventy-two percent of the households had at least one child (age < 16 years) and 28 percent had at least one child under the age of five years. Sixty-three percent of households had at least one woman aged 15-49 years.

Table 5 shows the characteristics of the female respondents aged 15-49. Women aged 15-19 years comprised 21 percent of the sample. This percentage declined with increasing age such that women aged 45-49 years comprised 8 percent of the sample. This pattern is typical of countries in the region. Approximately 68 percent of women in the sample were married at the time of the survey and 71 percent had ever had a birth. About one-third (33 percent) of the women had had at least some secondary education while nearly one-half (44 percent) had had no formal education at all.

Table 6 shows the characteristics of children under the age of five years. Fifty-two percent of the children were male and 47 percent were female. The zonal distribution was: South West 25 percent, South East 19 percent, North West 37 percent and North

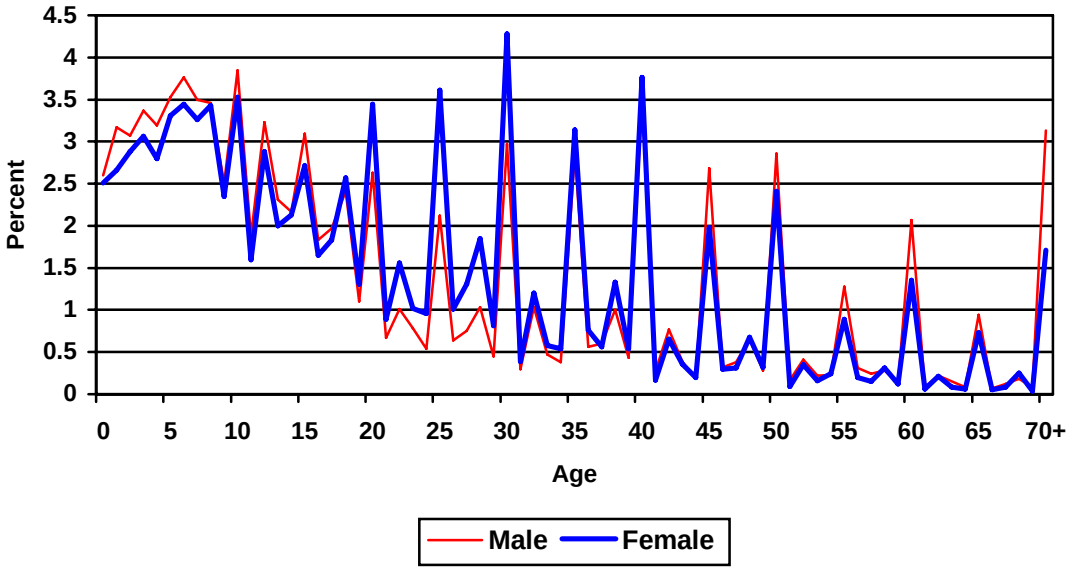
East 19 percent. Approximately 57 percent of the mothers of these under-five children had had no education, a percentage that is higher than the overall percentage of women with no education (44 percent) in the sample. This is probably because many of the younger women who had not yet given birth were more likely to have received some education than the older women with children.

3.3 Data Quality

3.3.1 Single –year age distribution

The single year age distribution of household members by sex is shown in Table 2 and Figure 3.1. There is some digit preference for ages ending in the digits 0 and 5, a pattern typical of populations in which exact ages or dates of birth are not always known. There appears to be an excess of men age 70 years and above (3.1 percent of the men) when compared to the women (1.7 percent of the women). This is unusual in a population where women have a slightly longer life expectancy than men – 53.8 years among women in contrast to 52.6 years among men (National Census 1991).

Figure 3.1: Single year age distribution of the household population by sex, Nigeria, 1999



3.3.2 Missing Data

As a basic check on the quality of the survey data, the percentage of respondents with missing information on selected questions is shown in Table 3. Fewer than two percent of household members have missing information on their level of education and the years of education. Among female respondents, two percent did not report a complete birth date (i.e., month and year) while the comparative figure among children was 2.5 percent. These low levels of missing data suggest that there were no significant problems with responses to the questions or the fieldwork.

The data on weight and height are the least likely among the selected information to be missing. Approximately one percent of children had missing information, which may be the result of the child not being present, refusal, or some other reason. By international standards, this percentage is quite low in comparison to other surveys in which anthropometric measurements are taken (Sommerfelt and Boerma, 1994).

CHAPPER 4: RESULTS

4.1. 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 MICS, infant and under five mortality rates were calculated based on an indirect estimation technique (the Brass method). The data used in the estimation were 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. This was also done for five-year age groups of women. The technique converts these data into probabilities of dying by taking account of both the mortality risks to which children are exposed and their length of exposure to the risk of dying.

The data used for mortality estimation are shown in Table 7. The reference year is 1993. Overall, the mean number of children ever born was 2.4 and the mean proportion dead was 0.170. The mean number of children ever born rose from 0.14 among 15-19 year olds to 5.39 among 45-49 year olds as expected. Mortality estimates were obtained using the United Nations QFIVE program.

Based on MICS 1999 data (reference year 1993), infant mortality rate was 90 per thousand (Table 8). In other words, 90 children out of every 1,000 children born were dead by the first birthday. There was a considerable difference in infant mortality rates between male and female children, with boys having an IMR of 100 per thousand compared to 76 per thousand among girls. Infant mortality rate was considerably higher in rural areas (95 per thousand) than in urban areas (69 per thousand). Zonal figures were 80 per thousand in the South West, 73 per thousand in the South East, 97 per thousand in the North West and 68 per thousand in the North East.

The national under-five mortality estimate was 168 per thousand. In other words, 168 children out of every 1,000 children were dead by the fifth birthday. Under-five mortality was higher among boys (183 per thousand) than among girls (149 per thousand). Under-five mortality rate was higher in the rural areas (182 per thousand) than in urban areas (126 per thousand). Zonal figures were 117 per thousand in the South West, 138 per thousand in the South East, 220 per thousand in the North West and 151 per thousand in the North East.

It should be noted that these figures are based on indirect estimates of infant and child mortality. As such, they are subject to a number of factors, such as the completeness of reporting deaths, the extent to which age at death is accurately reported and the degree of the displacement of dates of birth of living and surviving children. Recall bias may be a problem, especially among illiterate people who do not have written records or where numeracy skills are poor. Cultural attitudes towards child death in some parts of Nigeria may lead to under-reporting of deaths. This bias may be further exaggerated by the survey conditions, where people are required to recollect the deaths of their children and

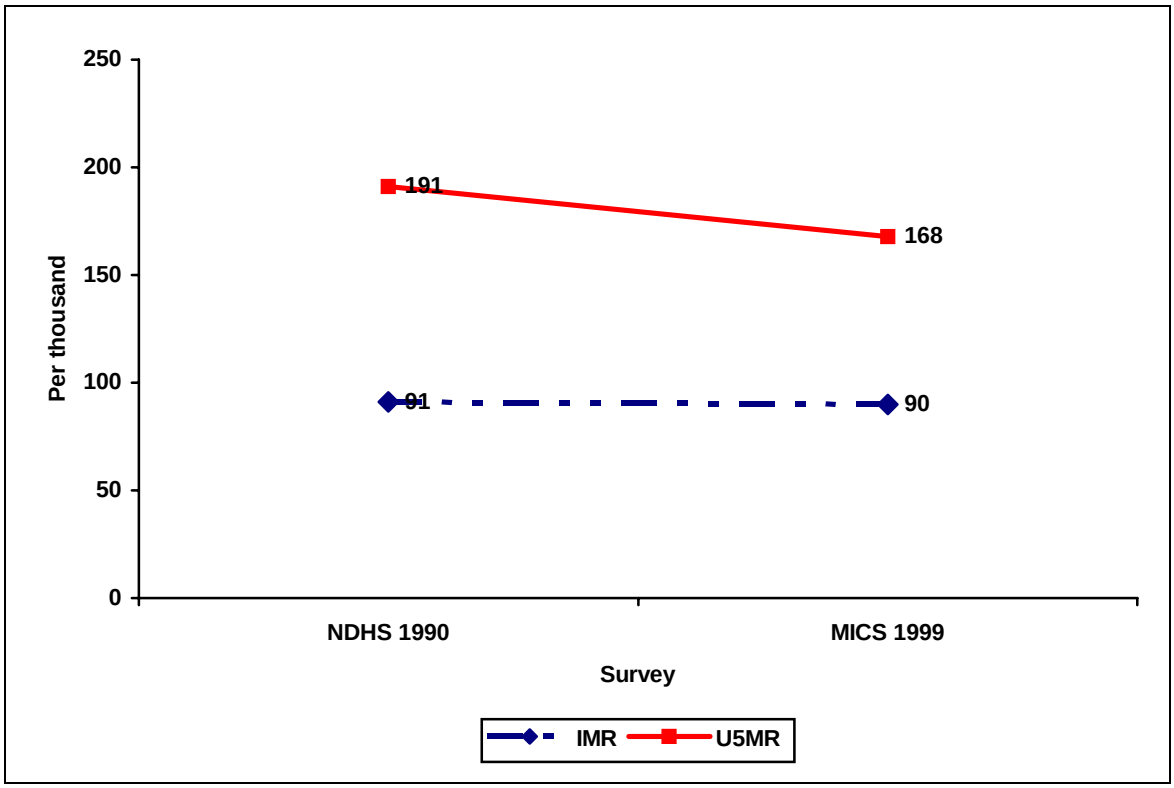
describe the details to relative or complete strangers. Heaping of ages suggest that respondents (and maybe interviewers) round up ages. Despite these limitations, these figures provide reasonable estimates of mortality.

These figures indicate clearly that both infant mortality rate and under five mortality rate remained exceedingly high in Nigeria. Important urban-rural differences exist in infant and under-five mortality, with rural areas having worse mortality figures. Zonal differences also exist and figures for the two Southern zones are clearly lower than in the other zones.

The figures also show that Nigeria fell far short of the World Summit goal of the reduction of infant and under-five mortality rate by one third or to 50 and 70 per 1000 live births respectively, whichever is less. Compared to the NDHS 1990, infant mortality rate has not changed, 91 per thousand compared to 90 per thousand. Under-five mortality rate has fallen from 191 per thousand to 168 per thousand, but the reduction was not up to one third of the initial figure and is over twice the goal of 70 per thousand live births.

Estimates of infant and under-five mortality from the NDHS 1990 and the current survey are plotted in Figure 4.1.

Figure 4.1 : Estimates of infant and under-five mortality, MICS 1999 compared with NDHS 1990



4.2 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, exploitative labor, sexual exploitation, promoting human rights and democracy, protecting the environment and influencing population growth.

4.2.1 Early childhood education

Approximately one in five children (21 percent) aged 36-59 months were attending an organized early childhood education programme, such as kindergarten or community childcare with organized learning activities (Table 9). Approximately equal percentages of girls (20.9 percent) and boys (21.4 percent) were attending these programmes. There were large variations according to area, with the percentage attending organized early childhood education ranging from only four and three percent of children in the North East and North West, respectively, to 41 and 48 percent in the South East and South West, respectively. In addition, children in urban areas were thrice as likely to attend early learning activities as children in rural areas (44 percent compared to 13 percent). Relatively few children (18 percent) aged 36-47 months were attending and this only increased to 24 percent among children aged 48-59 months.

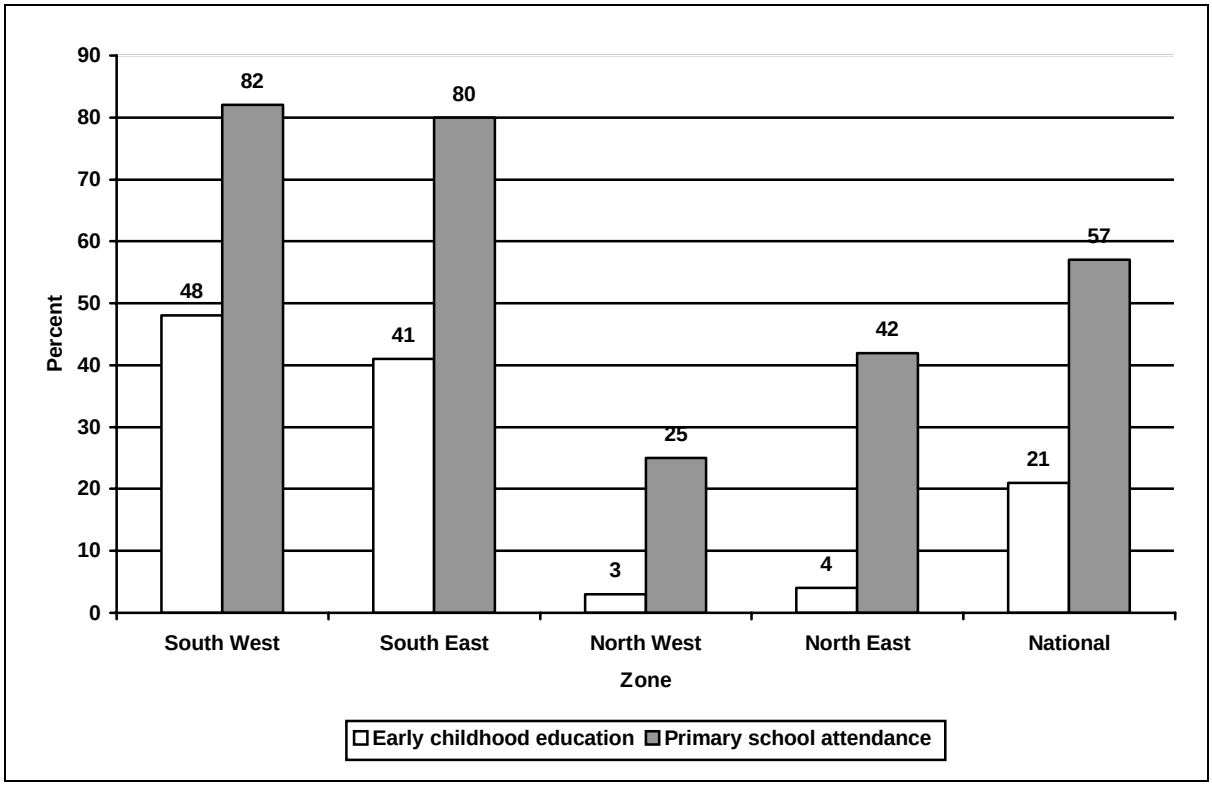
The education of the mother is strongly related to the likelihood that a child will attend an organized early childhood education programme. The percentage of children attending an organized early childhood education programme increased from 5 percent among children of mothers with no education to 31 percent among those with primary education and 61 percent among those with secondary or higher education.

4.2.2 Basic education

Overall, 57 percent of children of primary school age (6-11 years) in Nigeria were attending primary school at the time of the survey (Table 11). In urban areas, 74 percent of children were attending school while in rural areas, 50 percent were attending. School attendance in the North West (25 percent) and North East (42 percent) was significantly lower than in the South East (80 percent) and in the South West (82 percent) zones of the country. At the national level, there is a slight difference between male (59 percent) and female (54 percent) children in primary school attendance.

The zonal patterns of early childhood education and net primary school attendance are shown in Figure 4.2.

Figure 4.2: Early childhood education and net primary school attendance by zone, MICS1999



At least nine of ten children who enter the first grade of primary school eventually reach grade five (Table 10). There was also little or no regional or urban-rural disparities noted in the percentage of children who eventually reach grade five. Approximately 95 percent of both urban and rural children who enter grade one reach grade five. In the North West and North East the figure was 91 and 94 percent respectively. Similarly, it was 97 percent and 96 percent in the South East and South West respectively. Thus, while only about one-half (57 percent) of children of primary school age are actually attending school, most (95 percent) of those attending *remain* in school for at least the first five years.

4.2.3 Literacy

Literacy was assessed in MICS 1999 by asking all those aged 15 years and older whether the person could "read easily", "read with difficulty" or "cannot read at all". The literate population includes those who are reported to "read easily" or "read with difficulty". By this measure, only about half of the population over age 15 years (53 percent) in Nigeria was literate at the time of the survey (Table 12). Overall, females were less likely than

males to be literate (45 percent compared to 61 percent). The percentage literate was about twice as high in the South (South West 68 percent, South East 67 percent) than in the North (North West 33 percent, North East 35 percent). Literacy declined with increasing age, probably reflecting the limited educational opportunities that were accessible to older generations of Nigeria. The percentage literate declined from 67 percent among those aged 15-24 years to 23 percent among the population aged 65 years and older.

4.3 Water and Sanitation

4.3.1 Access to safe drinking water

Safe drinking water is a basic necessity for good health. Unsafe drinking water can be a means of transmission of diarrhoeal diseases (including cholera), typhoid, guinea-worm and schistosomiasis. Drinking water can also be contaminated with chemical, physical and radioactive substances with harmful effects on human health. In addition to its association with disease, access to drinking water may be particularly important for women and children, who often bear the primary responsibility for fetching water.

The population using *safe drinking water* sources are those who use any of the following types of supply: piped water, public tap, borehole with pump, protected well, protected spring or rainwater. Overall, 54 percent of the population had access to safe drinking water. A higher percentage of residents in urban areas had access to safe drinking water when compared to those in rural areas - 71 percent in urban areas and 48 percent in rural areas. There were considerable zonal differences in access to safe drinking water, with the figures for the North West being 67 percent, North East 49 percent, South West 59 percent, and the South East only 39 percent.

At the national level, only 7 percent of households had water piped into the dwelling and this was largely in urban households (22 percent of urban households but only 2 percent of rural households). Water from public taps was used by only 10 percent of households; 21 percent of urban in contrast to 6 percent of rural households. Twenty-two percent of households use drinking water from protected wells or springs and 15 percent use water from borehole with pump.

The source of drinking water for the population varied considerably by region (Table 13). For example, the two primary sources of drinking water in the North West were borehole with pump and protected well/spring (26 percent each) in contrast to the North East where the primary sources of drinking water were protected well/spring (29 percent) and pond/river/stream (24 percent).

4.3.2 Access to sanitary means of excreta disposal

Inadequate disposal of human excreta, apart from being aesthetically displeasing, is associated with a range of diseases including diarrhoeal diseases and polio. *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.

Fifty-six percent of households surveyed in MICS 1999 lived in households with sanitary means of excreta disposal (Table 14). The figures were 75 percent in urban areas in contrast to 44 percent in rural areas. Residents of the North East were less likely than others to use sanitary means of excreta disposal; nearly one-half (41 percent) of households surveyed in this zone used an open pit or had no facilities at all. The traditional pit latrine was the single most common means of excreta disposal available to households, irrespective of zone. The flush-to-sewage system or septic tank was relatively uncommon and was found in only 12 percent of households, with zonal figures being South West 19 percent, South East 13 percent, North West 10 percent and North East 7 percent. The percentage of households with no sanitary facilities was quite high (31 percent) and varied with zone from 36 percent in the South West and 34 percent in the North East to 29 percent and 25 percent in the South East and North West, respectively.

4.4 Child Malnutrition

4.4.1 Nutritional status

Children's nutritional status is a reflection of their overall health. It is only when children have access to an adequate food supply, are not exposed to repeated illness, and are well cared for that they can achieve their optimum growth potential.

Nutritional status is usually assessed by measuring children's weight, height and other parameters and comparing these measurements with a standard distribution of such measurements (e.g. height and weight) developed from a well-nourished population. The standard or reference population used in MICS 1999 is the NCHS standard, which is recommended for use by UNICEF and the World Health Organization. Each of the three nutritional status indicators is expressed in standard deviation units (z-scores) from the median of this reference population.

Height-for-age is a measure of linear growth. Children whose height-for-age is more than two standard deviations below the median of the reference population are considered short for their age and are classified as *moderately or severely stunted.* Those whose height-for-age is more than three standard deviations below the median are classified as *severely stunted.* Stunting is a reflection of chronic malnutrition as a result of failure to receive adequate nutrition over a long period and/or the presence of recurrent or chronic illness.

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 disease prevalence.

Weight-for-age is a measure of both acute and chronic malnutrition. Children whose weight-for-age is more than two standard deviations below the median of the reference population are considered *moderately or severely underweight* while those whose weight-for-age is more than three standard deviations below the median are classified as *severely underweight.*

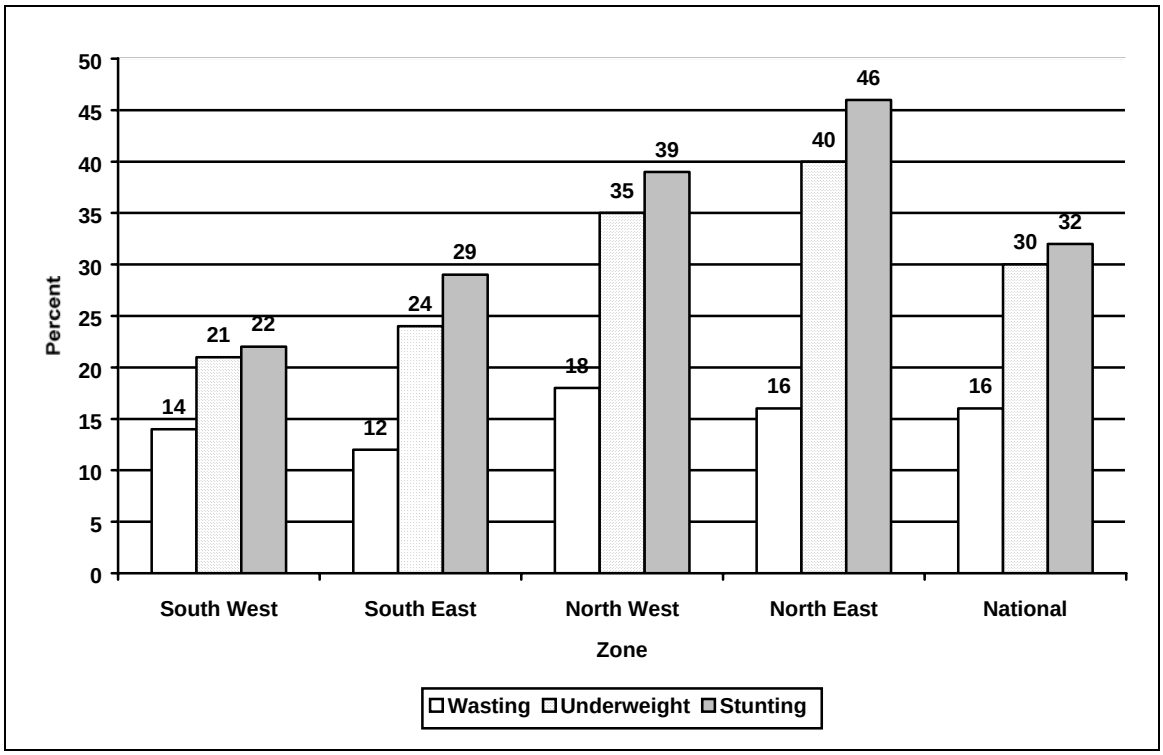
Thirty-two percent of children were stunted or too short for their age and 18 percent were severely stunted (Table 15). Stunting was more prevalent among boys (35 percent) than girls (31 percent). Rural areas had a higher prevalence of stunting than urban areas (38 percent versus 23 percent). Zonal figures show that the South West had the lowest prevalence of stunting (22 percent), with the other zonal figures being 29 percent in the South East, 39 percent in the North West and 46 percent in the North East.

Sixteen percent were wasted or too thin for their height and 4 percent were severely wasted. Boys and girls had comparative prevalence of wasting (16 percent and 15 percent, respectively). Rural-urban figures for wasting were also similar (16 percent compared to 14 percent). Zonal figures show that the South East had the lowest prevalence of wasting (12 percent), while the other zonal figures were South West (14 percent), North East (16 per cent) and North West (18 percent).

The prevalence of underweight was 30 percent and that of severe underweight 12 percent (Table 15). Rural figures for underweight (35 percent) were considerably higher than urban figures (20 percent). Zonal figures showed the South West with a prevalence of 21 percent, the South East 24 percent, the North West 35 percent and the North East 40 percent.

By these three measures of child malnutrition, it is obvious that child malnutrition is worse in rural areas than in urban areas and that considerable zonal disparities existed in child malnutrition. In general, the northern zones had higher prevalence of wasting, stunting and underweight than the southern zones. There was a higher prevalence of stunting among boys than girls (35 percent compared to 31 percent) but there were no significant gender disparities in the prevalence of underweight and wasting.

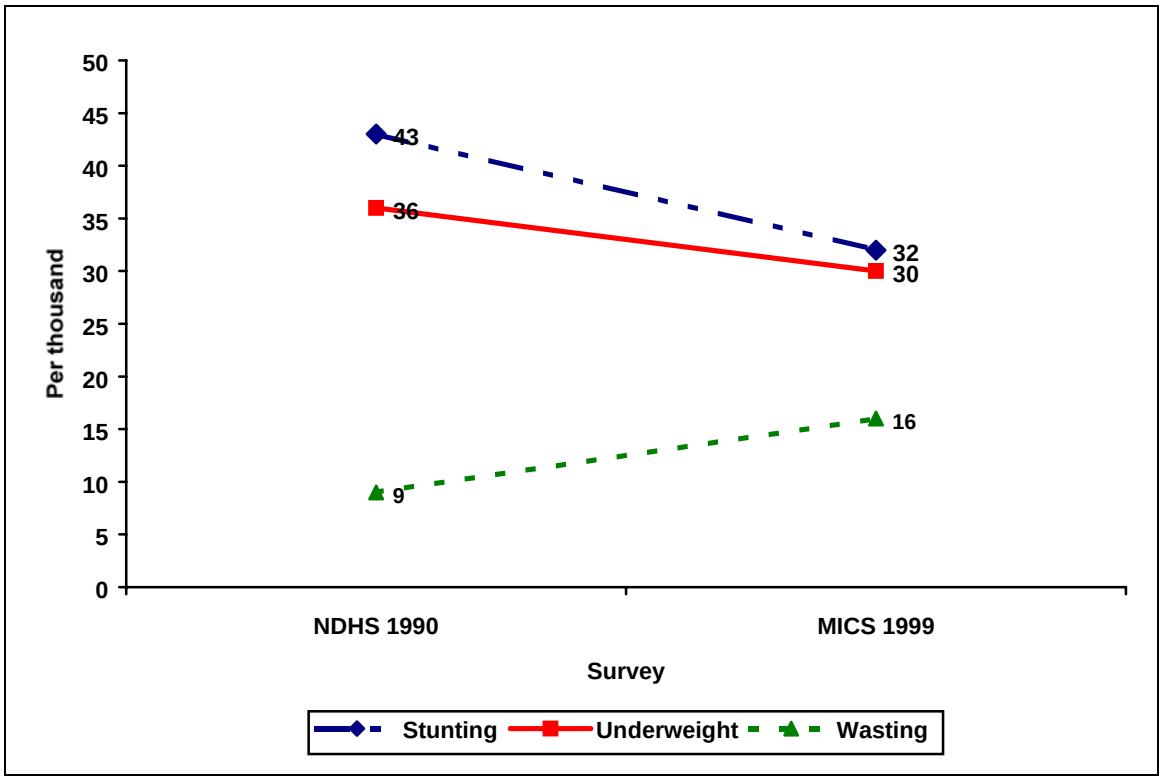
Figure 4.3 : Child nutrition by zone, MICS 1999



An examination of the distribution of malnutrition by age group showed that the peak age for underweight was 12-23 months while the peak age for wasting was 6-11 months. This pattern is expected and is related to the age at which many children undergo weaning and are exposed to infections from water, food, and the environment. On the other hand, the prevalence of stunting reached 40 percent at 24-35 months and showed little change after that age. The peak age of wasting was 6-11 months after which it fell.

When compared with the situation at the beginning of the decade as described in NDHS 1990, stunting had decreased from 43 percent in 1990 to 32 percent in 1999 and underweight had decreased from 36 percent to 30 percent over the same period. In contrast, wasting had increased from 9 percent to 16 percent over the same period (Figure 4.4). Thus, Nigeria had not met the World Summit goal of reduction of severe and moderate malnutrition among under five children by half between 1990 and the year 2000.

Figure 4.4 : Levels of child malnutrition, MICS 1999 compared with NDHS 1990



Mother's education showed a consistent pattern of association with all three measures of child malnutrition. Children of mothers with no education had the highest figures, followed by those with primary education. Children of mothers with secondary or higher education had the lowest figures for child malnutrition (Table 15).

4.4.2 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, which can contribute to growth faltering and micronutrient deficiencies. The World Summit for Children goal on breastfeeding states that children should be exclusively breastfed for four to six months, and that breastfeeding should continue with complementary food, well into the second year of life. Many countries, including Nigeria, have adopted the recommendation of exclusive breastfeeding for six months.

In MICS 1999, breastfeeding status of children less than 4 months old was asked for, based on mothers' reports of the child's feeding in the 24 hours prior to the interview and on feeding since birth. *Exclusive breastfeeding* refers to children who receive only breast milk (although they could also have been given vitamins, mineral supplements, or medicine but not water). *Complementary feeding* refers to children who receive breast milk and solid or semi-solid food.

Exclusive breastfeeding rate among children less than 4 months of age was 22 percent based on the previous 24 hours and 13 percent based on history since birth (Table 16). There were no wide gender gaps in exclusive breastfeeding and no rural-urban differences but significant zonal disparities were found. The South East Zone had the lowest exclusive breast feeding rates (6 percent in the previous 24 hours and 8 percent since birth) while the other zones were between 23 and 28 percent for exclusive breastfeeding in the previous 24 hours and between 12 and 15 percent for exclusive breastfeeding since birth.

Compared to NDHS 1990, exclusive breastfeeding rates have risen considerably, from less than 2 percent in 1990 to 13 percent (history since birth) and 22 percent (prior 24 hours) in 1999. This is most likely as a result of the success of the Baby-Friendly Hospital Initiative (BFHI). From only 4 health facilities certified as baby-friendly in 1992, Nigeria had 1,147 health facilities certified by the end of 1999. It should be noted, however, that the exclusive breastfeeding rates still fall considerably short of the World Summit goal of *all* women exclusively breatfeeding for the first four to six months of life and the national goal of all women exclusively breastfeeding for the first six months of life.

Concerning continued breastfeeding rates, 73 percent of children were still being breastfed at 12-15 months of age and 33 percent were still being breastfed 20-23 months of age (Table 16). Continued breastfeeding rates were higher in rural than in urban areas (77 percent compared with 59 percent at 12-15 months; 43 percent compared with 15 percent at 20-23 months). Female children had higher continued breastfeeding rates than male children (74 percent compared to 71 percent at 12-15 months and 34 percent compared to 32 percent at 20-23 months). Continued breastfeeding rates were higher in the two northern zones than in the southern zones.

Examining the timely complementary feeding rate showed that at age 6-9 months, 43 percent of children were receiving breast milk and solid or semi-solid foods. Timely complementary feeding rates were similar for boys (43 percent) and girls (43 percent), and for rural (43 percent) and urban (42 percent) areas. Considerable zonal disparities exist in timely complementary feeding rates, with the South East zone having the highest figure of 56 percent while the figures for the other zones were 46 percent for the North East, 40 percent for the North West and 36 percent for the South West.

Considering all three indicators of breastfeeding and complementary feeding together, it is quite clear that in the South East, exclusive breastfeeding rates are very low, the

children are breastfed for the shortest duration of all the zones and complementary foods are introduced earliest.

4.4.3 Salt iodization

Deficiency of iodine in the diet is the world's single greatest cause of preventable mental retardation and can lower the average intelligence quotient (IQ) of a population by as much as thirteen points. Salt iodization is an effective, low-cost way of preventing iodine deficiency disorders (IDD). *Adequately iodized salt* contains 15 parts per million (ppm) of iodine or more. In MICS 1999, interviewers tested household salt for iodine levels using a testing kit.

Approximately 97 percent of households surveyed during MICS 1999 had salt in the house and 91 percent of households had a sample of their salt tested during the survey (Table 17). Among households in which salt was tested, 98 percent had adequately iodized salt. The percentage of households with adequately iodized salt showed little zonal variation, ranging from 96 percent in the North East to 99 percent in both the North West and South West. No rural-urban differences in the percentage of households consuming adequately iodized salt was found; 99 percent of urban households had adequately iodized salt compared to 98 percent of rural households.

4.4.4 Vitamin A supplementation

Vitamin A deficiency (VAD) impairs children's immune systems, increasing their chances of dying of common childhood diseases and undermines the health of pregnant and lactating women. It can also cause eye damage and blindness in children. Yet it can be easily prevented through vitamin A supplementation or food fortification. UNICEF and WHO recommend that all countries with an under five mortality rate exceeding 70 per 1000 live births, or where vitamin A deficiency is a public health problem, should implement a programme for control of vitamin A deficiency. Based on UNICEF/WHO guidelines, the Federal Ministry of Health in Nigeria recommends that children aged 6-12 months be given a high dose of vitamin A of 100,000 IU every six months, and children older than one year be given a high dose of 200,000 IU every six months. The global guidelines for MICS required reporting the proportion of children aged 6-59 months who received a high dose vitamin A supplement in the *6 months* period prior to the survey. The Nigeria MICS 1999, however, sought data on those receiving such a supplement in the *24 months* period prior to the survey.

Within the 24 months period prior to MICS 1999, 20 percent of children aged 6-59 months received a high dose Vitamin A supplement, 75 percent did not receive such a supplement while it was uncertain if 5 percent did or did not get such a supplement (Table 18). Monitoring reports during the fieldwork indicate that mothers and care takers of under fives could not distinguish clearly between vitamin A and multivitamin preparations. Again, the dosage of the vitamin A received was not classified as being high or low. As such, caution should be exercised in using the information in this section

as it probably overestimates the proportion of children who received high dose vitamin A supplementation.

The age pattern of Vitamin A supplementation shows that supplementation in the 24 months prior to the survey rose from 20 percent among children aged 6-11 months to 24 percent among children aged 12-23 months and then declined with age to 19 percent among the oldest children (age 48-59 months).

The mother's level of education was also related to the likelihood of Vitamin A supplementation. The percentage who received a supplement in the 24 months prior to the survey increased from 13 percent among children whose mothers have no education to 29 percent of those whose mothers have primary education and to 36 percent among children of mothers with secondary or higher education.

4.4.5 Low birth weight

Infants who weigh less than 2500 grams (2.5 kg.) at birth are categorized 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 birthweight among all children. Therefore, the percentage of births weighing below 2500 grams can be estimated from two items in the questionnaire: the mother's assessment of the child's **size** at birth (i.e., very small, smaller than average, average, larger than average, very large) and 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. This number is divided by the total number of live births to obtain the percentage with low birth weight.

No data on birth weight was collected in the Nigeria MICS 1999.

4.5 Child Health

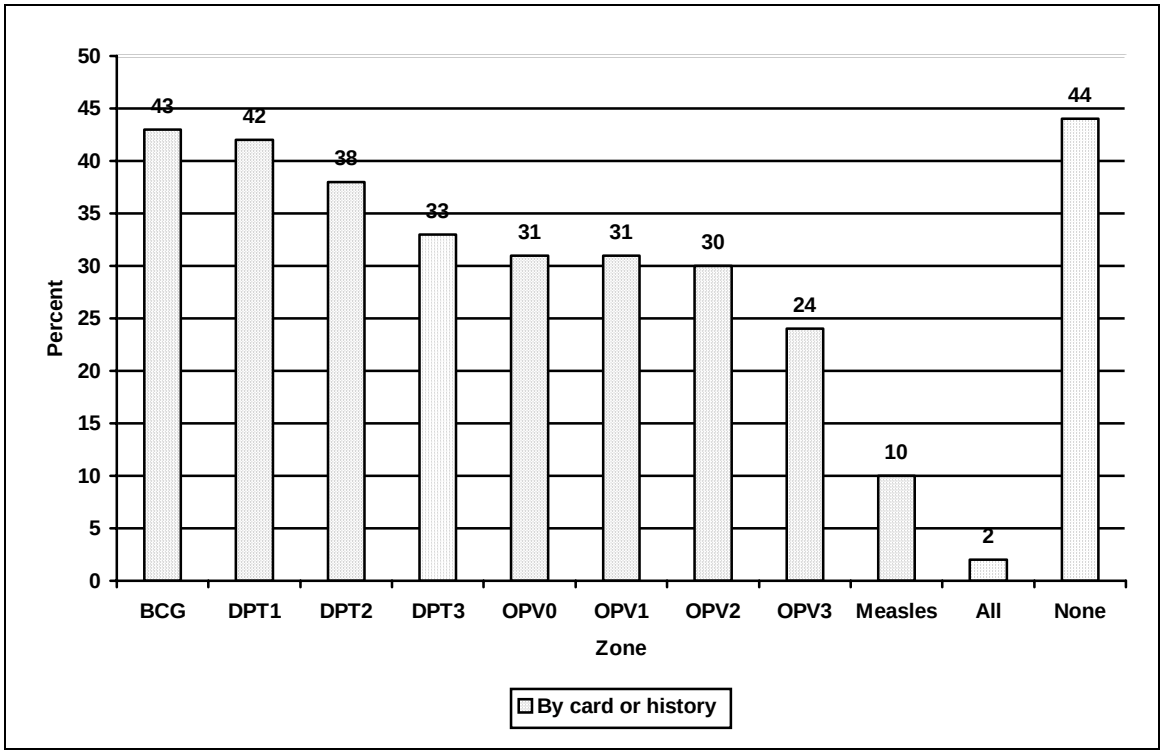
4.5.1 Immunization coverage

According to UNICEF and WHO guidelines, a child should receive a BCG vaccination to protect against tuberculosis, three doses of DPT to protect against diptheria, pertussis, and tetanus, three doses of polio vaccine, and a measles vaccination by the age of 12 months. In MICS 1999, 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 asked about any vaccinations the child received that did not appear on the card. Overall, 26 percent of children had health cards. If the child did not have a card, the mother was read a short description of each vaccine and asked to recall whether or not the child had received it and, for BCG, DPT and Polio, how many times the vaccine was received.

Table 21 shows the percentage of children aged 12 to 23 months who received each of the vaccinations. Approximately 43 percent of children aged 12-23 months received BCG vaccination by the age of 12 months (by either card or report). The percentage that received the first dose of DPT was 42 percent but declined for subsequent doses of DPT to 38 percent for the second dose and 33 percent for the third dose (Figure 4.5). Similarly, 31 percent of children received Polio 1 by age 12 months and this declined to 24 percent by the third dose. The coverage for measles vaccine by 12 months is lower than for the other vaccines, being only 10 percent. In other words, only 1 in 10 children was immunized against measles by 12 months of age. The South West zone had the highest coverage for each of the vaccinations, except measles (Table 22).

Figure 4.5 : Percentage of children aged 12-23 months who received individual vaccines by the age of 12 months, MICS 1999



The immunization coverage for all vaccines (or "complete immunization") was only 2 percent at 12 months of age and 14 per cent between 12 and 23 months (Table 21).

In Table 22, 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.

Immunization coverage for all vaccines (or "complete immunization") was defined as the percentage of children who had BCG, 3 doses of DPT, 3 doses of OPV (excluding OPV0) and measles vaccines. Male and female children had similar immunization coverage for all vaccines (15 percent and 13 percent, respectively). Urban children were more than twice as likely to have had all the vaccines than rural children (27 percent compared to 10 percent). The zonal figures for coverage for all vaccines were: South West 28 percent, South East 20 percent, North West 4 percent and North East 11 percent. Vaccination coverage for all vaccines was highest among children whose mothers have secondary or higher education (31 percent), in contrast to 21 percent for children of mothers with primary education and only 8 percent among children of mothers with no education.

It should be noted that up to 48 percent of 12-23 month old children had not received any vaccines at all. There was a small gender disparity in this indicator (47 percent of male children, 50 percent of female children) but the rural prevalence of no immunization (56 percent) was more than twice that of the urban areas (25 percent). Significant zonal disparities also existed, with the zonal figures being 25 percent for the South West, 28 percent for the South East, 47 percent for the North East and 72 percent for the North West.

4.5.2 Diarrhoea

Dehydration caused by diarrhoea is a major cause of mortality among children in Nigeria. Home management of diarrhoea – either through oral rehydration salts (ORS) or a recommended home fluid (RHF) - can prevent most 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, 15 percent of under-five children had diarrhoea in the two weeks preceding the survey (Table 23). Diarrhoea prevalence was highest in the North East and North West (19 percent each), was 12 percent in the South East and was 9 percent in the South West.

Table 23 also shows the percentage of children receiving various types of recommended liquids during the episode of diarrhoea. Twenty nine percent of children received gruel and 14 percent received ORS prepared from pre-packaged ORS sachets. Children of

mothers with secondary education and higher were most likely than other children to receive ORS, but less likely to receive breast milk and gruel. Approximately four in five children with diarrhoea received one or more of the recommended home treatments (i.e., were treated with ORS or RHF).

One fifth (20 percent) of under-five children with diarrhoea drank more than usual while 73 percent drank the same or less (Table 24). About 45 percent of the children ate a little less, the same, or more than usual while 49 percent ate much less than usual or not at all. Overall, only 8 percent of children with diarrhoea received increased fluids and continued eating as recommended.

4.5.3 Acute respiratory infection

Acute lower respiratory infections, particularly pneumonia, are one of the leading causes of child deaths in Nigeria. In the MICS 1999 questionnaire, children with acute respiratory infection (ARI) are 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, or whose mother did not know the source of the problem.

Data collected on ARI in 1999 MICS did not use this definition but used "cold, cough or catarrh" as a proxy. Tabulation of this proxy indicator gave implausibly low figures (Table 25), which are, therefore, not described further. Also, MICS99 did not collect data on treatment providers.

4.5.4 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, diarrhoeal dehydration, measles, malaria, and malnutrition. The programme focuses on the improvement of case management skills by health workers, improvement of the health system, and improvement of family and community practices in the prevention and early management of childhood illnesses. Appropriate home management of illness is one component of IMCI. The approach teaches mothers that appropriate home management of diarrhoea or any other illness requires giving more fluids and continuing to feed sick children as they are normally fed.

About 4 in 10 children (40 percent) were reported to have had any illness in the two weeks preceding the survey. *MICS 1999 did not collect information on the drinking and eating behavior of sick children.*

Promoting knowledge among caretakers about when it is appropriate to seek care for ill children is another important component of the IMCI programme. In the Nigeria MICS 1999, mothers or caretakers of children were asked to identify from a list the symptoms

that would cause them to take a child to a health facility right away. The most common response, given by 65 percent of mothers, was that they would take their child to a health facility right away if he/she developed a fever (Table 27). Thirty nine percent said that the child's inability to drink or breastfeed would cause them to take the child to a health facility. Difficulty with breathing and fast breathing were cited by 18 and 16 percent of mothers, respectively, as reasons for taking a child to a health facility immediately.

Overall, 42 percent of mothers know at least two signs for seeking care. The zonal figures were 49 percent of mothers in the North West, 40 percent in the North East, and 31 percent in the South West and 43 percent in the South East. Mothers in rural areas were more likely than those in urban areas (44 percent compared to 37 percent) to mention at least two signs for seeking care.

4.5.5 Malaria

Malaria is a leading cause of death among Nigerian children. 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 tablets. 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.

Questions on the prevalence and treatment of fever were asked for all children under age five. One in five (19 percent) under five children was ill with fever in the two weeks prior to MICS 1999 (Table 29).

Fever in the two weeks prior to the survey was less common among children whose mothers have secondary or higher education (15 percent) than among children of mothers with primary education (18 percent) and those with no formal education (21 percent). Zonal differences in fever prevalence ranged from 13 per cent in the South West to 25 per cent in the North East.

The MICS 1999 questionnaire did not incorporate questions or collect data on the treatment given to under five children with fever. The MICS 1999 questionnaire also did not incorporate questions or collect data on the use of bednets among children.

4.6 HIV/AIDS

4.6.1 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.

Data on HIV/AIDS knowledge is not available in MICS 1999. However, such data were collected during NDHS 1999. From the data, 74 percent have heard of HIV/AIDS, 61 percent know a healthy-looking person can have HIV infection, 55 percent know that HIV could be transmitted from mother to child, 32 percent know someone with AIDS or who had died of AIDS and 68 percent know condoms can prevent HIV/AIDS and STIs. Further details can be obtained from the Nigeria Demographic and Health Survey (NDHS) 1999 Report.

4.6.2 AIDS testing

Voluntary testing for AIDS, accompanied by counseling, 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.

Data was not collected on AIDS testing in MICS 1999 or knowledge of where to get tested for HIV. However, national data on HIV seroprevalence is available from the 1999 HIV/Syphilis Sentinel Seroprevalence Survey in Nigeria Technical Report of the National AIDS/STD Control Programme of the Federal Ministry of Health. The overall national prevalence of HIV seropositivity in that survey was 5.4 percent. Further details are available from the report of that survey.

4.7 Reproductive Health

4.7.1 Contraception

Current use of any method of contraception (modern or traditional) was reported by 9 percent of women who were married or in union (Table 36). Modern methods were in use by 6 percent and traditional methods by 3 percent of the women. The most common method is the oral contraceptive pill (the Pill) but this was used by only 2 percent of married women in Nigeria. The next most common method is periodic abstinence, which accounts for only 3 percent of married women. About one percent of women aged 15-49 years reported the use of injectable contraception or the intra-uterine contraceptive device (IUCD). Less than one percent used diaphragm/foam/jelly or withdrawal and only 0.1 percent have experienced female sterilization. There was no reported instance of male sterilization.

Contraceptive prevalence (any method) was highest in the South East and South West (14 percent and 12 percent, respectively). This was in stark contrast to only three percent in

the North West and two percent in the North East. Adolescents were far less likely to use contraception than older women. About 3 percent of married or in union women aged 15-19 years used a method of contraception at the time of the survey compared to 10 percent of 20-24 year olds and 10 percent of older women.

Use of a modern method of contraception (the Pill, IUCD, injectables, condom, diaphragm/foam/jelly) showed both zonal and rural-urban differences. For each of these methods, use was more prevalent in the southern zones than in the northern zones while use in urban areas was more prevalent than in rural areas (Table 36).

Women's educational level was strongly associated with contraceptive prevalence. The percentage of women using any method of contraception rose from 3 percent among those with no education to 12 percent among women with primary education and to 16 percent among women with secondary or higher education. Use of any modern contraceptive method also followed the same trend. The percentage of women using any *modern* method of contraception rose from 2 percent among those with no education to 9 percent among women with primary education and to 11 percent among women with secondary or higher education.

4.7.2 Prenatal care

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

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.

One out of two women (49 percent) with recent (in the previous 12 months) births in Nigeria are protected against neonatal tetanus (Table 37). About 48 percent of women with recent births received two or more doses of tetanus toxoid within the last three years. Among the zones, women living in the South East were most likely to be protected (73 percent) while those living in the North East were the least likely to be protected (21 percent). Women with secondary or higher education (69 percent) were more likely to be protected against tetanus than those with either primary education (54 percent) or no education (28 percent). However, it should be noted that the number of women who had births in the 12 months prior to the survey was rather small (only 724). As such, these figures may not be an accurate reflection of the true situation.

Female respondents who had had a birth in the year prior to the Nigeria MICS 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 38 presents the percent distribution of women with a birth in 1998, the year prior to MICS 1999, by the type of personnel who delivered antenatal care based on birth(s) in the preceding 5 years. If more than one provider was mentioned by the respondent, she is categorized as having seen the most skilled person she mentioned.

About 40 percent of women with a birth in the five years prior to the survey received antenatal care from skilled personnel (doctor, nurse, midwife). About 12 percent of women with a birth in the five years prior to the survey received antenatal care from a doctor, 25 percent from a nurse/mid-wife and 2 percent from an auxiliary midwife.

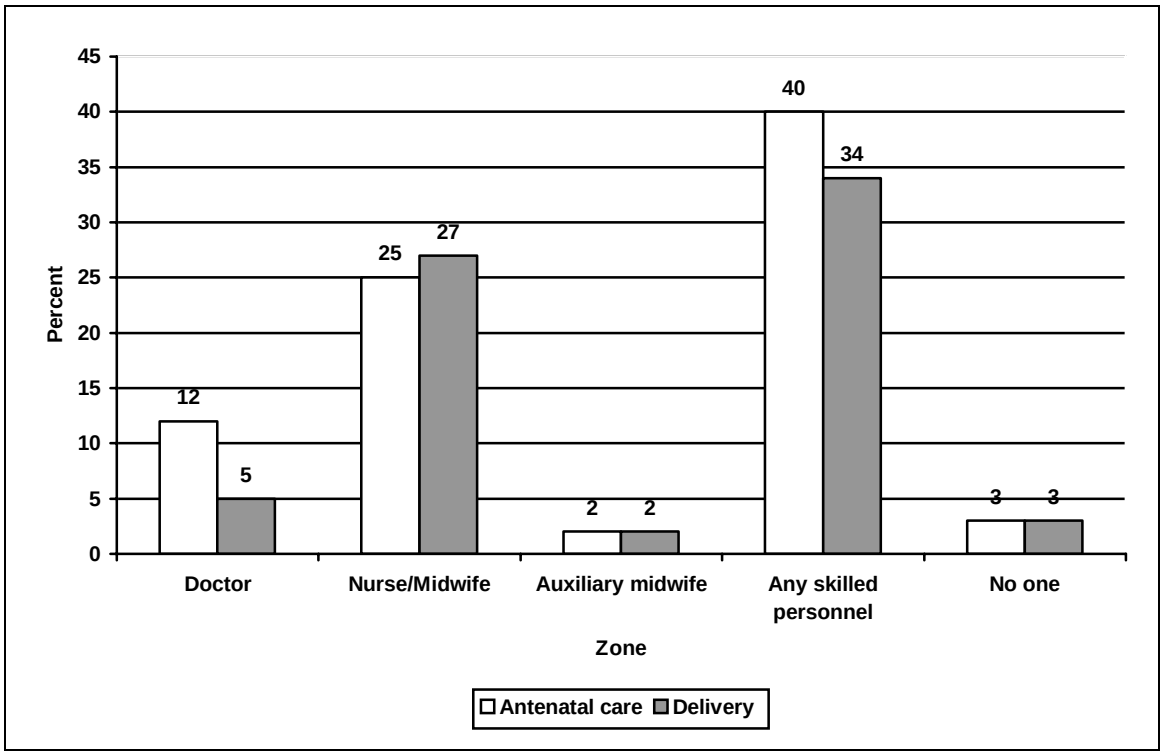
4.7.3 Assistance at delivery

The provision of delivery assistance by skilled attendants can greatly improve outcomes for mothers and children by the use of technically appropriate procedures, and accurate and speedy diagnosis and treatment of complications. *Skilled assistance at delivery* is defined as assistance provided by a doctor, nurse, or midwife.

One third (34 percent) of all births occurring in the five years prior to MICS 1999 were delivered by skilled personnel (Table 39). This percentage was highest in the South West at 50 percent and lowest in the North East at 22 percent. Rural-urban disparities were found, with only 29 percent of women in rural areas being delivered by any skilled personnel compared with 49 percent in urban areas. The more educated a woman was, the more likely she was to have delivered with the assistance of a skilled person. Only 24 percent of women with no education were delivered by skilled personnel, compared with 40 percent among women with primary education and 58 percent among women with secondary or higher education.

One in four (27 percent) of the births in the five years prior to the MICS 1999 survey were delivered with assistance from a nurse. Doctors assisted with the delivery of 5 percent of births while auxilliary mid-wives assisted with 2 percent. Overall, traditional birth attendants (TBAs), religious birth attendants (RBAs), and village health workers (VHWs) assisted with delivery in 13, 2, and 3 percent of births, respectively (Table 39A).

Figure 4.6 : Antenatal care by skilled personnel and skilled assistance at delivery, MICS 1999



4.8 Child Rights

4.8.1 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. Only 30 percent of children under five years of age in Nigeria had their births registered (Table 40). There was no significant variation in birth registration by gender. However, the births of children in the urban areas (53 percent) were more likely to be registered than those in the rural areas (20 percent). Birth registration was much lower in the northern zones than in the southern zones. The figure ranged from 8 percent and 18 percent in the North West and North East, respectively, to 48 percent and 53 percent in the South East and South West, respectively. There was a strong correlation between birth registration and mother's education. The percentage of births registered increased from 17 percent for mothers with no education to 43 percent among mothers with primary education and 61 percent among mothers with secondary or higher education. There was little variation of birth registration with age, suggesting that the level of birth registration has been stable over a few years, neither improving nor worsening.

Data was not collected on reasons why births were not registered in MICS 1999.

4.8.2 Orphanhood 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 their labor or sexuality. 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.

There is no data from MICS 1999 on orphanhood and living arrangements of children. However, limited data on orphanhood is available from the Nigeria Demographic and Health Survey (NDHS) 1999.

4.8.3 Child labor

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.

There is no data from MICS 1999 on Child Labor. However, a national survey on child labour is being undertaken by the Federal Office of Statistics and the International Labour Organization (ILO) in late 2000.

CHAPTER 5: SUMMARY AND CONCLUSIONS

The Multiple Indicator Cluster Survey Nigeria 1999 has collected data on a wide variety of indicators used for monitoring progress towards the achievement of the 1990 World Summit for children. The findings indicate that, at the end of the decade, Nigeria largely fell short of meeting these goals. The only area where these goals were met is that of salt iodization, where Nigeria has achieved 98 percent salt iodization. Progress has been made in a few areas, such as exclusive breastfeeding rates and treatment of childhood diarrhoea, but even these fall far short of set targets. Many areas (such as child mortality and contraceptive prevalence) show little or no change while others (such as childhood immunization) show deterioration. In Nigeria, the decade of the 1990s was characterized by extreme political instability, socio-economic hardship and deep poverty at the individual and household levels. Thus, these findings were not surprising and should be considered a snapshot of a country experiencing deep political, economic and social distress. The advent of a democratic system of government in 1999 has brought about changes in the society which are expected to yield dividends of better performance on these indicators in future surveys. Only time will tell whether this hope will be realized.

This survey has also shown a broad number of trends at sub-national levels. In general, rural areas have worse indicators than urban areas. Zonal differences also exist for most indicators. Maternal education was strongly associated with a wide variety of indicators, ranging from immunization to nutrition to contraceptive prevalence. These suggest areas where policy and programmes should be focused, preferably after studies of *why* some of these differences exist.

There is a clear need for such data as these in planning, monitoring and evaluation. This calls for the institutionalization of surveys (preferably backed by legislation), improvement in routine data collection and analysis, more timely dissemination of data as well as building local capacity to do all these.

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APPENDICES

Appendix A: Statistical Tables

Appendix B: Data Quality

Appendix C: Maps

Appendix D: Sampling errors for key indicators

Appendix E: List of Personnel Involved in the Nigeria MICS 1999

Appendix F: Questionnaires