United Nations
Statistics Division

ESA/STAT/AC.88/35
2 May 2003

English only

Expert Group Meeting on
Setting the Scope of Social Statistics
United Nations Statistics Division
in collaboration with the Siena Group on Social Statistics
New York, 6-9 May 2003

Social Indicators in the Urban Context: Urban Poverty and Health Study in Sub-Saharan Africa * Rationale, Methodology and Instruments

by

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* This document is being issued without formal editing.

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PREFACE

Africa is currently undergoing an urban population explosion. Despite slow economic progress since the 1970s, African cities have experienced the fastest population growth rates in world history, at over five percent a year, and a large proportion of all future population growth in Africa is expected to occur in urban areas (UNCHS, 1996). As a result of rapid urban growth under economic constraints, the majority of residents in Africa's large cities—and an increasing proportion of Africans overall—now live in overcrowded slums and shantytowns where health conditions and livelihood opportunities are poor (Todaro, 1989; Lamba, 1994; UNCHS, 1996).

Available evidence suggests that age-old urban health problems, such as acute respiratory and gastro-intestinal infections resulting from the impact of high population density and mobility on disease transmission, are being exacerbated by the reproductive health consequences of urban poverty in Africa. Among the critical problems facing the most vulnerable groups of slum dwellers, in particular women and children, are exposure to HIV and STIs via poverty-driven commercial sex; domestic violence and child abuse. Other significant problems are unwanted teenage pregnancy and unsafe abortion spurred by high levels of early sexual activity; and poor access to family planning and health services as a result of social marginalization, geographic isolation, low income, and illegal residence (Brockerhoff and Brennan, 1998).

To inform policy-makers on ways to meet the health and livelihood needs of the urban poor in Kenya and other sub-Sahara African countries, the Africa Population and Health Research Center (APHRC) has launched a longitudinal program of research and action that aims to clarify the nature of African urban health and poverty problems, and cost-effective solutions to address them. The "Nairobi Cross-sectional Slums Survey (NCSS, 2000)" is one of the preliminary studies for APHRC's urban research program. The center is currently implementing a Demographic Surveillance System in Nairobi (DSS) covering over 100,000 people for slums in Nairobi and is planning, in collaboration with national and international institutions, to implement several urban poverty and health studies in other countries within Sub-Saharan Africa.

This document is intended to provide a systematic approach to carrying out surveys which aim to better understand poverty and health outcomes in urban slums and to monitor the progress in reaching targets set by Millennium Development Goals (MDG) which aims at improving the lives of 100 million slum dwellers worldwide by the year 2020, and for laying down a base from which to measure change in the next decade and beyond.

The planning and the monitoring of the MDG require appropriate mechanisms for regular and timely collection, analysis and publication of data on poverty and health in urban slums. These data are an essential part of the process, both for providing information for action and for assessing change. Most partners stress the necessity and importance of setting measurable indicators and targets and of improving data collection and assessment concerning the implementation of the MDG. The UPHS program is one of APHRC's contributions to that effort.

INTRODUCTION

The Urban Poverty and Health Study (UPHS) has benefited from experiences gained with Nairobi Cross-sectional Slums Survey (NCSS, 2000), Multiple Indicators Cluster Surveys (MICS), Demographic and Health Surveys (DHS), and Millennium Development Goal (MDG) and UN-HABITAT indicators. During this past decade, MICS and DHS surveys have gathered information on various population, social, and health issues. In these surveys, tremendous efforts have been made to disaggregate indicators by region, and type of residence (urban/rural, or large city/small city-town/countryside). Their results indicate better demographic and health outcomes in the capital city than in any other national area. However, this hides wide disparities in health status between the slum and non-slum parts of capital cities.

In 2000, APHRC carried out, under its urban research program, a cross-sectional slums survey in Nairobi (NCSS), which aims at clarifying the poor living conditions and health outcomes of slum residents (APHRC, 2002). This survey reveals that, compared to other areas of Kenya, including the rural areas, slum residents lack safe water, secure and healthy shelter with basic infrastructure such as piped water and adequate provision for sanitation. Starting with lowest school enrollment rates for both males and females and lack of employment opportunities, children and adolescents in the slums are more vulnerable than their colleagues in other areas of Kenya. Slum residents have worse health and reproductive health outcomes. Not only are morbidity risks for all major childhood illnesses (fever, cough, diarrhea) higher for slum children compared to children elsewhere in Kenya, but slum children have less access to healthcare, and subsequently face higher mortality rates than even their rural counterparts. For instance, infant, child, and under 5 mortality rates are about 20, 65, and 35 percent, respectively, higher in the slum communities of Nairobi compared to rural Kenya. While only 2 % of children living in the non-slum areas of Nairobi had diarrhea (Mboup, 2002), children living in the slums had the highest diarrhea prevalence in Kenya (33 % versus less than 20 % in rural areas and other cities). Further, prevalence of diarrhea is higher among children of the richest household in the slums (25 %) than children of the poorest household in the rural areas (19 %).

NCSS results reveal the need to give particular attention to social and health situation in the slums. However, this situation cannot be comprehensively addressed with nation-wide surveys that already had an ambitious agenda of providing accurate information on various demographic, social, and health issues at national as well as regional levels. Informal settlements that are characterized by absence of safe water, adequate sanitation, and permanent structure have to be related to communities, and therefore require comprehensive assessment.

The Urban Poverty and Health Study developed by APHRC is based on a set of indicators which combines shelter and urban development indicators developed by UNCHS, and health indicators developed through MICS and DHS surveys such as illness prevalence and treatment, and use of health services. Focusing comprehensively on issues related to poverty and health in the slum areas, UPHS surveys aim to supplement MICS

and DHS surveys which provide information at the national and regional levels. UPHS surveys will finally aim to: assist local-level program monitoring; satisfy slum-level goal-monitoring needs; produce rapid findings at low cost; strengthen existing national capacities for monitoring urban poverty and health; and ensure internationally comparable results.

1. The Nairobi Cross-sectional Slum Survey (NCSS)

1.1 Background

Prior to conducting the NCSS, APHRC carried out a qualitative study in 1999 in four slum communities of Nairobi, which aimed at determining the livelihood, health needs and problems of slum residents, as well as at identifying possible solutions, in the residents' views to these problems. The NCSS survey, carried out from February to June 2000, sought to complement and corroborate the findings of the qualitative study by establishing the magnitude of the problems mentioned by slum residents during the qualitative study.

Prior to NCSS, little was known about demographic dynamics in Kenya's slum populations, and no direct evidence was previously available to support policy deliberations on ways to meet the health and livelihood needs of the urban poor. National surveys such as the Kenya DHS surveys, for instance, do not provide representative or sufficiently large samples of slum households to adequately assess the relative magnitude of health and socioeconomic problems in the slums. As a result, no generalizable findings have existed on demographic and health outcomes for the urban poor in any city in sub-Saharan Africa. Very few countries are able to track changes in the slums and they may never be able to attribute such changes to interventions. The NCSS is the first large-scale survey in sub-Saharan Africa that is explicitly designed to provide a monitoring and evaluation system that helps to determine the links between program efforts, resources and goals for the slum populations.

The NCSS documents demographic characteristics and health conditions of Nairobi City's slum residents based on a representative sample survey of urban informal settlement residents carried out from February to June 2000. The aims of the Nairobi Cross-sectional Slums Survey (NCSS) were to determine the magnitude of the general and health problems facing slum residents, and to compare the demographic and health profiles of slum residents to those of residents of other areas in Kenya. Modeled after the Demographic and Health Surveys (DHS), which have been conducted in Kenya and many other developing countries, the study was designed to provide comparable data to the 1998 Kenya DHS so that health indicators in the slums could be contrasted with estimates for Nairobi as a whole, rural areas, and other urban settlements. In addition to general indicators measured in the DHS, the NCSS obtained information on a range of other issues including general, health, and reproductive health problems faced by slum residents.

1.2 Methodology and technical documents

Based on census enumeration areas used in the 1999 Kenya National Census, a weighted cross-sectional sample was designed to be representative of households in all slum clusters of Nairobi. A two-stage stratified sample design was used. Sample points or enumeration areas (EAs) were selected at the first stage of sampling while households were selected from sampled EAs at the second stage. In total, 4564 households, 3256 women of reproductive age (15-49), 1683 adolescent boys, and 1934 adolescent girls were successfully interviewed in the slums.

The NCSS instruments were modified from KDHS instruments. Core sections of the 1998 KDHS were replicated without revision, but the service delivery exposure questions were modified so that questions were more relevant to the urban context. The similarity with the DHS questionnaires permitted direct comparison to national, urban, rural, and Nairobi-city results derived from the 1998 KDHS. The fact that the NCSS was carried out less than two years following the DHS ensured that findings were timely enough for useful comparison.

Three instruments were used in this survey: The first one was the household schedule, which enabled us to conduct a full household census from which all eligible respondents were identified. This instrument solicited information on background characteristics of households. The second instrument was for individual women age 12-49, and it had modules on their background and mobility, reproduction, contraception, pregnancy, ante-natal and post-natal care, child immunization and health, marriage, fertility preferences, husband's background and the woman's work and livelihood activities. Information on AIDS and other sexually transmitted infections was also sought, as was information on general and health matters.

The third instrument was the adolescent questionnaire for young women and men age 12-24. The adolescent questionnaire was designed to investigate health, livelihood, and social issues pertaining to adolescents in the slum communities.

A total of 49 interviewers (37 women and 12 men), 3 office editors and 4 data-entry clerks were trained for two weeks, from February 17 through March 3, 2000. On the last day of training, the instruments were pre-tested and revised before finalizing them for fieldwork. Fieldwork started on March 5, 2000 and ended on June 4, 2000. Fieldworkers were sent to the field in six teams -each with at least one male interviewer, three or four female interviewers, one supervisor, and a field editor. Three trainees were retained as office editors to edit all questionnaires coming from the field before the questionnaires were sent for data entry.

2. Urban Poverty And Health Survey (UPHS) conceptual

A key aim of the UPHS is to obtain timely, quality, urban-coverage data for assessing the situation of poverty and health in the slums. The UPHS aims to supply valuable information for helping communities and governments to understand and monitor urban

poverty and health outcomes, and to efficiently implement interventions. It aims to provide useful information for monitoring goals, for influencing policy and programme design, and for encouraging policy makers and programme managers to allocate resources to social and health priority sectors.

2.1 Background

NCSS data has revealed that morbidity risks for all major childhood illnesses (fever, cough, diarrhea) are higher for slum children compared to children elsewhere in Kenya, and slum children have less access to healthcare, including immunization, and subsequently face higher mortality rates than even their rural counterparts. While only 2 % of children living in the non-slum areas of Nairobi had diarrhea (NCSS, 2002 and Mboup, 2002), children living in the slums had the highest diarrhea prevalence in Kenya (33 % against less than 20 % in any other Kenya area). Further, prevalence of diarrhea is higher among children of the richest household in the slums (25 %) than children of the poorest household in the rural areas (19 %). This indicates that health outcomes should be related to the environment setting instead of only individual characteristics. Informal settlements that are characterized by absence of safe water, adequate sanitation, permanent structure, and proliferation of air pollution may lead to poor health outcomes even for wealthy households.

Poverty should not be seen narrowly in terms of income in relation to costs of living. The ability to maintain a minimum standard of living also depends on access to basic services such as health care, safe drinking water, garbage collection and sewerage. Relevant as well is the concept of 'housing poverty', introduced by UNCHS (Habitat) Global Report on Human Settlements 1996, that '…individuals and households who lack safe water, secure and healthy shelter with basic infrastructure such as piped water and adequate provision for sanitation, drainage and the removal of household waste' (UN-HABITAT, 2001). The shortage of affordable housing for low-income urban household in developing countries has resulted in a proliferation of slums and squatter settlements. In these slums, hunger is increasingly becoming an urban problem, and the supply and distribution of food is placing higher demands on cities.

2.2 Needs for reliable data

Available studies, which point to the global or regional scale of the urban poverty problem, are generally theoretical projections, which indicate that urban poverty will be a severe development issue. These projections at best, serve as an early warning system. As noted in the Global Report on Human Settlements 1996, there is almost complete unanimity among local and national governments and planning agencies that accurate, timely and policy-relevant data are a prerequisite for good governance, good planning and good management. However, the capacity of many countries and cities to design and articulate their data requirements, to access and obtain the appropriate data and to use it for policy design and monitoring is often inadequate (UNCHS, 2001).

The UPHS data are intended to provide baseline information for cities to focus their own poverty and health problems and to provide benchmarks from similar cities that can assist in identifying problem areas. These data may also help in the development and exposition of national strategies or city action and development plans, such as various rapid assessment techniques offered by different agencies.

3. UPHS instruments

3.1 Poverty and Health Monitoring and Evaluation Indicators

An indicator is a basic tool for measuring levels and changes, using a commonly agreed definition of a specific aspect of poverty and health situation. Indicators define the data to be collected, so they should be relatively easy to measure and interpret, and should provide valid and reliable information about the objectives they are meant to measure. The measurement tools to obtain data on these indicators must meet certain qualifications: the data they produce must be valid and reliable, sensitive to changes and specific to each indicator. The data used to calculate each indicator should also be comprehensive, supplying representative urban information and appropriate slums and non-slums breakdowns as required (UNICEF et al., 2001)

Assessing poverty and health situations requires both identifying the core set of indicators, and identifying the most appropriate tool for obtaining the relevant data. One main aspect of poverty, which is uniquely urban, is slum-life. Slums do not exist in the villages. UN-HABITAT seeks to define a slum as an area of settlement, which combines the following characteristics:

- Lack of adequate water supply
- Inadequate sanitation
- Insecure tenure for its inhabitants
- Poor structural quality of housing unites, or unsafe physical environment.
- Insufficient living area

The initial core set of indicators developed with NCSS data has been modified. Experience gained with the NCSS, as well as with MDG and UN-HABITAT agenda, and other partner programs and needs, has been used to have a most comprehensive set of indicators. It includes additional indicators to monitor urban development as well as some of the newly emerging health concerns.

Extensive consultation will take place on this revised set of indicators, both within APHRC, and with national institutions and international organizations in order to minimize duplication and to develop more consistent estimates of common indicators.

The resulting set of indicators for assessing urban poverty and health, in particular in the slums is:

- Land and housing tenure
- Environment
- Transportation
- Violence
- Child health and nutrition
- HIV/AIDS
- Adolescent sexual and reproductive health

Shelter and urban development indicators

UPHS will collect data required for reporting on shelter and urban development consistent with the key areas of commitment in the universal reporting format. Two different types of data will be considered:

- Key indicators, comprising indicators which are both important for policy and relatively easy to collect. They are either numbers, percentages or ratios;
- Qualitative data or checklists, which give an assessment of areas which cannot easily be measured quantitatively. They are audit questions generally accompanied of checkboxes for yes or no answers.

The indicators are classified into eight sections, and according to the type of questionnaire, which will be used to collect data for their measurement, either at household (H), and woman (W) level or at community level (C), and other not specified level (O).

Table 1: Indicators and type of questionnaires for UPHS survey

LAND AND HOUSING TENURE		
Indicators : Security of tenure		
Indicator 1 – Tenure types		H
Rationale: This indicator provides an overview of the share of different tenure status among urban dwellers. Among the safest tenure are ownership, purchasing and tenants in social housing and when rental regulations are protective enough, private tenancy can offer a fairly safe tenure to households.	**Definition**: percentage of woman and man-headed households in the following tenure categories: (a) owned; (b) purchasing; (c) private rental: (d) social housing; (e) sub-tenancy; (f) rent free; (g) squatter no rent; (h) squatter rent paid; (I)	
Indicator 2 – Evictions		H
Rationale : Whether is it legal or illegal, eviction has generally negative social impacts on the concerned population. This indicator measures the degree to which this practice is still in force.	**Definition** : Average annual number of men-headed and women-headed households evicted from their dwellings during the past five years.	

Indicators : Adequate housing		
Indicator 3 – Durability		H
Rationale :	**Definition** : Proportion of slums and non-slums houses on or near hazardous sites	
Indicator 4 – Location		H
Rationale :	**Definition** : Proportion of slums and non-slums population living in a permanent structure	
Indicator 5 – Sufficient living area		H
Rationale :	**Definition** : Average number of persons per room (slums and non-slums areas)	
Indicator 6 – Living in slums		H
Rationale :	**Definition** : Proportion of urban population living in slums	
Indicators : Housing affordability		
Indicator 7 – Housing price and rent-to-income ratios		H
Indicator 8 -Land price-to-income ratio		H
Indicator 9 -Mortgage and non-mortgage		H

WATER AND SANITATION		
Indicators 10 - Access to water		H
Rationale : Water is one of the great necessities of human life, which is taken for granted in the developed world. In many cities, Households in informal settlements are rarely connected to the network and can only rely on water from vendors at up to 200 times the tap price. Improving access to safe water implies fewer burdens on people, mostly women, to collect water from available sources. It also means reducing the global burden of water-related diseases and the improvement of quality of life.	**Definition** : Percentage of households with access to water. Access is defined as having water located within 200 meters of the dwelling.	
Indicator 11 : Water consumption		**H,O**
Rationale : Consumption of water per person depends on the availability and price of water, the climate, and the uses to which water is customarily put by individuals (drinking, bathing, washing, gardening).	**Definition :** average consumption of water in liters per day per person, for all domestic uses (excludes industrial).	
Indicator 12 : Price of water		**H,O**

Rationale : In many cities, households living in informal settlements are not connected to the network and can only rely on water from vendors at up to 200 times the tap price. The price of water may rise to very high levels in some areas at some times, and can take a significant proportion of the household budget.	**Definition :** median price paid per 1000 liters of water in US dollars, at the time of year when water is most expensive.	
Indicator 13 – Wastewater treated		C
Rationale : It has been proved that improvement of water treatment reduces the incidence of a variety of water-borne diseases. A reliable wastewater treatment system is a major indicator of the level of local development and of community health.	**Definition :** percentage of all wastewater undergoing some form of treatment.	
Indicator 14 – Acess to adequate sanitation facilities		H
Rationale :	**Definition :** Proportion of households using adequate sanitation facilities	
Indicator 15 - Solid waste disposal		**C,H**
Rationale : Many cities generate more solid waste than they can collect or dispose of. Even when municipal budgets are adequate for collection, the safe disposal of collected wastes often remains a problem. Dumping and uncollected landfills are sometimes the main disposal methods in many developing countries; sanitary landfills are the norm in only a handful of cities. Inadequate collection and unmanaged disposal present a number of problems for human health and productivity. Uncollected refuse dumped in public areas or in waterways contributes to the spread of disease.	**Definition :** percentage of solid waste: (a) disposed to sanitary landfill; (b) incinerated; (c) disposed to open dump; (d) recycled; (e) burned openly; (f) other.	

OTHER URBAN INDICATORS		
Indicator 17 : Violence		**O**
Rationale : Crime rates provide useful information on the level of security in a city. However, the number of reported murders, rapes and thefts too often only represents the apparent crime. According to recent research on the subject, in many countries, less than 50% of the total crimes are reported to the police and therefore, in official statistics.	**Defintion :** Number of reported crimes (male and female victims) annually per 1000 population, for: (a) homicides; (b) rapes; (c) thefts.	

Indicator 15 : Air pollution		**C,O**
Rationale : Air pollution is directly linked to energy consumption, environmental policy, city density, transport by motor vehicles, concentration of industries, etc. The combustion of wood and of fossil fuels for domestic heating, for power generation, in motor vehicles and in industrial processes and the disposal of solid wastes by incineration, are generally the principal sources of air pollutant emissions to the atmosphere in urban areas. The most common or damaging air pollutants in urban environments include sulphur dioxide (SO2), nitrogen dioxide (NO2), carbon monoxide (CO), ozone (O3) and lead (Pb).	**Definition** : number of days per annum that WHO standards are exceeded, and average annual measured concentrations for the following: (a) sulphur dioxide (SO_2); (b) ozone (O_3); (c) carbon monoxide (CO); (d) nitrogen dioxide (NO_2); (e) lead (Pb).	
Indicator 18 – Travel time		**H**
Rationale : Reducing travel time has become a real challenge for transport planners of fast growing megacities, where commuters spend sometimes more than one hour in average to reach their workplace.	**Definition :** Average time in minutes for a one-way work trip. This is an average over all modes of transport.	
Indicator 19 – Transport modes		H,O
Rationale : Transport can play a determining role in the economy and quality of life of cities. Effective and environmentally friendly transportation systems are revealed through measures of the different travel modes used for work trips.	Definition : percentage of work trips undertaken by: (a) private car; (b) train, tram; (c) bus or minibus; (d) motorcycle; (e) bicycle; (f) foot; (g) other modes.	
Indicators		
Indicator 20-Informal employment		**H,O**
Rationale : The increasing role of the informal sector in a number of economies is a consequence of growth in the labor force without a matching response in the level of formal employment opportunities. The increasing importance of the informal sector would suggest institutional changes for more flexible fiscal policies, better financial credit arrangements for small units of production, and legislation providing limited rights for employees in the sector.	**Definition :** percentage of the employed population, men and women, whose activity is part of the informal sector.	
Indicator 22 – Unemployment		**H**
Rationale : Urban economies are integral to the process of economic transformation and development. They are the prerequisite for the creation of a diversified economic base capable of generating employment opportunities. Many new jobs need to be created in urban areas (Habitat Agenda, paragraph 155). Stimulating productive employment opportunities is also part of the general goal of social development. Employment should generate income sufficient to achieve an adequate standard of living for all people, men and women (Habitat Agenda, paragraph 118a).	**Definition :** average proportion of unemployed (men and women) during the year, as a fraction of the (formal) workforce.	

Health, nutrition, and HIV/AIDS indicators

The set of indicators proposed here draws from and seeks to integrate several streams of research in population and health issues. Previous surveys and studies have generated a substantial body of work on the measurement of fertility, mortality and family planning as well as on maternal and child health, nutrition, and HIV/AIDS (see DHS and MICS surveys). Other emerging programs such as IMCI, child rights also required specific indicators (UNICEF, 1993). The table 2 presents a summary of basic indicators to be measured with UPHS, either at household (H), and woman (W) level or at community level (C).

Health, nutrition and HIV/AIDS indicators		
Infant and child mortality		W
Rationale : Infant and Child mortality is a powerful indicator of quality of life in cities. High infant and child mortality is directly correlated to low environmental indicators such as the level of wastewater treatment and sewerage and sanitation facilities. However, environmental indicators affect more post-neonatal mortality than neonatal mortality which is more related to biological factors and use of antenatal and delivery cares. After the first year, mortality rates are related to environmental factors as well as to interventions variable. Therefore to better capture effect of environmental factors on child mortality, it's recommended to have the main component of this mortality: infant, neonatal, post neonatal, child and under-five mortality.	Definition	
Antenatal care		W
Tetanus Toxoid Vaccine	**Definition**: Proportion of women aged 15-49 attended at least once during pregnancy by skilled health personnel (doctor, nurse, mid-wife)	
Childbirth care		W
Place of delivery	**Definition**: Proportion of births attended by skilled health personnel	
Immunization coverage (DPT, Polio, Measles, all)		W
Virtual elimination of vitamin A deficiency (VAD)		
Children receiving vitamin A supplements Mother receiving vitamin A supplements	Proportion of children aged 6-59 months who received a high-dose vitamin A supplement in the last 6 months Proportion of mothers who received a high-dose vitamin A supplement before infant was 8 weeks old	

Breastfeeding		**W**
Exclusive breastfeeding	Proportion of infants under 6 months who are exclusively breasfed	
Timely complementary feeding rate	Proportion of infants aged 6-9 months who are receiving breastmilk and complementary food	
Diarrhea		**W**
Diarrhea prevalence	Proportion of children aged 0-59 months who had diarrhea in the last two weeks	
ORT use	Proportion of children aged 0-59 months who had diarrhea in the last two weeks and were treated with oral rehydration salts or an appropriate household solution (ORT)	
Home management of diarrhea	Proportion of children aged 0-59 months who had diarrhea in the last two weeks and received increased fluids and continued feeding during the episode	
IMCI initiative and malaria		**W**
Fever prevalence	Proportion of children aged 0-59 months who had fever in the last two weeks	
Malaria treatment **Anti-malaria drugs**	Proportion of children aged 0-59 months who had fever in the last two weeks who received antimalarial drugs	
Health facility	Proportion of children aged 0-59 months who had fever in the last two weeks who was taken to an health facility	
Malaria prevention : Bednets	Proportion of children aged 0-59 months who slept under an insecticide-impregnated bednet during the previous night	
Home management of illness	Proportion of children aged 0-59 months who ill during the last two weeks who received increased fluids and continued feeding	
Care-seeking knowledge	Proportion of mothers of children 0-59 months who know at least two of the following sign for seeking care immediately : child not able to drink or breastfeed, child becomes sicker, child develops a fever, child has fast breathing, child has difficult breathing, child has blood in the stools, and child is drinking poorly	

Acute Respiratory infection (ARI)		**W**
ARI Prevalence	Proportion of children aged 0-59 months who had IRA (cough with fast breathing or difficult breathing) in the last two weeks	
ARI Treatment **Health facility**	Proportion of children aged 0-59 months who had ARI in the last two weeks who was taken to an health facility	
Severe and moderate malnution		**H**
Underweight prevalence	Proportion of under-fives who fall below minus 2 and below minus 3 standard deviations from median weight- for-age of NCHS/WHO reference population	
Stunting prevalence	Proportion of under-fives who fall below minus 2 and below minus 3 standard deviations from median height- for-age of NCHS/WHO reference population	
Wasting prevalence	Proportion of under-fives who fall below minus 2 and below minus 3 standard deviations from median weight-for-height of NCHS/WHO reference population	
Children's rights		**H**
Birth registration	Proportion of children aged 0-59 months whose births are reported registred	
Children's living arrangement	Proportion of children in households aged 0-14 years not living with a biological parent	
Orphans in households	Proportion of children in households aged 0-14 years who are orphans	
Child labor	Proportion of children in households aged 5-14 years who are currently working (paid or unpaid ; inside or outside home)	
HIV/AIDS		**W**
Adolescent sexual behavior		**W**
HIV/AIDS testing (Optional)		**H**
Anemia testing (Optional)		H
Iodine Salt testing (Optional)		**H**

3.2 Questionnaires and manuals

The quality of the data obtained in a survey depends on the proper design of the questionnaire, on the sampling strategy and on good training and supervision of suitable interviewers.

The UPHS questionnaire and manual will be developed specifically to obtain the data for a set of indicators to evaluate urban poverty and health situation. These will draw heavily on experiences with NCSS and on the subsequent NCSS evaluation. The UPHS content will be organized into sections that constitute the core questionnaire. Optional modules will be also developed to only be included in an UPHS survey if they are of particular relevance and use to the country.

The development of the UPHS questionnaire and manual will be drawn on an even wider spread of organizations than the NCSS. They will include national institutions as well as international organizations. A technical advisory group will help coordinate and advise on inputs from many technical experts and researchers. Close collaboration with national institutions will not only improve the commonality and consistency of indicators between UPHS and previous surveys, but will also result in an agreement to work together at country level so as to maximize the usefulness of APHRC and national institutions' survey activities.

Shelter and Urban questionnaires	**Health, Nutrition, and HIV/AIDS questionnaires**
Community questionnaire - Access to transportation - Access to school - Waste disposal - Wastewater treated - Air pollution - Gender equality in human settlements	***Community questionnaire*** - Access to health service - VCT - Immunization - Delivery care
Household questionnaire - Tenure types - Evictions - Housing price - Land price - Mortgage and non-mortgage - Access to water - Household connections - Sanitation - Waste disposal - Transportation	***Household questionnaire*** - Nutrition - Education - Child rights - Living arrangement - Orphanhood

Shelter and Urban questionnaires	Health, Nutrition, and HIV/AIDS questionnaires
Public Facility questionnaire	***Individual questionnaire***
- Evictions	
- House price and rent-to-income	Mortality
- Land price-to-income	Antenatal care
- Mortgage and non-mortgage	Delivery care
- Crime rates	Low birth weight
- Housing legislation	Breastfeeding
- Urban Population Growth	Child Immunization
- Water consumption	Vitamin A supplement
- Price of water	Diarrhea and treatment
- Air pollution	ARI and treatment
- Transport modes	Malaria and treatment
- Informal employment	Care of illness (IMCI)
- City product	HIV/AIDS
	Malaria
	Care of illness (IMCI)
	Infant and Child mortality
	HIV/AIDS
	Adult mortality
	Orphanhood
OPTIONAL MODULES	**OPTIONAL MODULES**
	HIV/AIDS testing
	Anemia testing
	Iodine salt testing

3.3 Sampling

Sample size depends on whether indicators will be measured at the city, slums or sub-slum level. Efforts to obtain sufficient and factual information about the state of the housing and urban sectors should be made in relation to overall economic, social and environmental development. In many countries and areas of life, analysis of the status of women in human settlements is not easy because data do not exist. The contribution that women make to development as well as the discrimination against them, are equally hidden. The availability of statistics and indicators which quantify the specific roles and conditions of life of men and women can influence changes in public perception and hence policies. If collected by countries, such indicators will provide a sound basis for the formulation and implementation of housing and urban development policies that are sensitive to the roles of different members of the society.

Countries are expected to fill major gaps in basic indicators at the slum level so that they can evaluate their needs to fight poverty and health deterioration in the slums. A typical sample for studying slum-level indicators will be around 4,000 households, in around 160 clusters spread across the slums. This will also usually be adequate for providing baseline estimates to compare with data from a repeat survey in several years time (example of the Demographic Surveillance System), in order to measure changes. This will help also to measure health inequality within wealth quintiles or quartiles, or within district across slums. These aggregate estimates will be useful for planning and evaluating interventions: urban project as well as health project. Samples of about 500 households per sub-slum group are sufficient for most urban and health indicators. Only Mortality or Fertility rates or similar indicators required a large sample size, between 800 and 1000 in each sub-slum group. Some indicators may be produced for broader age groups and sub-slum groups. Alternatively, a subgroup could be over-sampled, resulting in an increase in the overall number of households to be surveyed. The potential gains from these options need to be carefully weighed against the additional costs in both time and money that they will inevitably entail.