

# Tanzania - HIV/AIDS and Malaria Indicator Survey 2007-2008

**National Bureau of Statistics (NBS)**

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# Sampling

## Sampling Procedure

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### SAMPLE SIZE AND DESIGN

The sampling frame used for the 2007-08 THMIS is the same as that used for the 2004-05 TDHS, which was developed by NBS after the 2002 Population and Housing Census (PHC). The sample excluded nomadic and institutional populations, such as persons staying in hotels, barracks, and prisons. The THMIS utilised a two-stage sample design. The first stage involved selecting sample points (clusters) consisting of enumeration areas delineated for the 2002 PHC. A total of 475 clusters were selected. The sample was designed to allow estimates of key indicators for each of Tanzania's 26 regions. On the Mainland, 25 sample points were selected in Dar es Salaam and 18 in each of the other 20 regions. In Zanzibar, 18 sample points were selected in each of the five regions, for a total of 90 sample points.

A household listing operation was undertaken in all the selected areas prior to the fieldwork. From these lists, households to be included in the survey were selected. The second stage of selection involved the systematic sampling of households from these lists. Approximately 16 households were selected from each sampling point in Dar es Salaam, and 18 households per sampling point were selected in other regions. In Zanzibar, approximately 18 households were selected from each sampling point in Unguja, and 36 households were selected in Pemba to allow reliable estimates of HIV prevalence for each island group.

Because of the approximately equal sample sizes in each region, the sample is not selfweighting at the national level, and weighting factors have been added to the data file so that the results will be proportional at the national level.

In the selected households, interviews were conducted with all women and men age 15-49. The THMIS also collected blood samples for anaemia and malaria testing among children age 6

## Response Rate

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A total of 9,144 households were selected for the sample, from both Mainland Tanzania and Zanzibar. Of these, 8,704 were found to be occupied at the time of the survey. A total of 8,497 households were successfully interviewed, yielding a response rate of 98 percent. In the interviewed households, 9,735 women were identified as eligible for the individual interview. Completed interviews were obtained for 9,343 women, yielding a response rate of 96 percent. Of the 7,935 eligible men identified, 6,975 were successfully interviewed (88 percent response rate). The differential is likely due to the more frequent and longer absence of men from the households. The response rates for urban and rural areas do not vary much.

Note: See summarized responses rate by urban/rural in Table 1.1 which is provided in this documentation.

# Questionnaires

## Overview

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Two questionnaires were used for the 2007-08 THMIS: the Household Questionnaire and the Individual Questionnaire. The questionnaires are based on the standard AIDS Indicator Survey and Malaria Indicator Survey questionnaires, adapted for the population and health issues relevant to Tanzania. Inputs were solicited from various stakeholders representing government ministries and agencies, nongovernmental organizations, and international partners. After the preparation of the definitive questionnaires in English, questionnaires were translated into Kiswahili.

The Household Questionnaire was used to list all the usual members and visitors of selected households. Some basic information was collected on the characteristics of each person listed, including his or her age, sex, education, and relationship to the head of the household. For children under age 18 years, survival status of the parents was determined. If a child in the household had a parent who was sick for more than three consecutive months in the 12 months preceding the survey or a parent who had died, additional questions related to support for orphans and vulnerable children were asked. The Household Questionnaire also included questions on whether household members were seriously ill and whether anyone in the household had died in the past 12 months. In such cases, interviewers asked whether the household had received various kinds of care and support, such as financial assistance, medical support, social or spiritual support.

The Household Questionnaire was also used to identify women and men who were eligible for the individual interview and HIV testing. The Household Questionnaire also collected information on characteristics of the household dwelling, such as source of water, type of toilet facilities, materials used to construct the house, ownership of various durable goods, and ownership and use of mosquito nets.

Furthermore, the Household Questionnaire was used to record haemoglobin and malaria testing results for children age 6-59 months.

The Individual Questionnaire was used to collect information from all women and men age 15-49. These respondents were asked questions on the following topics:

- Background characteristics (education, residential history, media exposure, employment, etc.);
- Marriage and sexual activity;
- Knowledge about HIV/AIDS and exposure to specific HIV-related mass media programmes;
- Attitudes towards people living with HIV/AIDS;
- Knowledge and experience with HIV testing;
- Knowledge and symptoms of other sexually transmitted infections (STIs); and
- Other health issues including knowledge of TB and medical injections.

Female respondents were asked about their birth history and illnesses of children they gave birth to since January 2002. These questions are used to gauge the prevalence of fever, an important symptom of malaria.

## Data Collection

### Data Collection Dates

Start	End	Cycle
2007-10	2008-02	N/A

### Data Collection Mode

Face-to-face [f2f]

#### DATA COLLECTION NOTES

##### TRAINING OF FIELD STAFF

Field staff training was conducted in Morogoro from 24 September to 12 October 2007. The training was conducted according to the AIS/MIS training procedures, including class presentations, mock interviews, field practice and tests. Participants included 14 team supervisors from NBS, OCGS-Zanzibar, former Ministry of Planning and Economic Empowerment, and the Ministry of Health and Social Welfare. In total, 59 female nurses, 23 male nurses, and 2 office data editors were trained to carry out the survey. Trainers were senior staff from NBS, OCGS-Zanzibar, and NMCP, as well as a laboratory technician from Muhimbili University College of Health Sciences (MUCHS).

Field practice in malaria and anaemia testing and HIV dried blood spot collection were carried out towards the end of the training period. During this period, field editors and team supervisors were provided with additional training in methods of field editing, data quality control procedures, and fieldwork coordination.

##### FIELDWORK

Data collection was carried out by 14 field teams, each consisting of one team leader, four female interviewers, one male interviewer, and one driver. Five senior staff members from NBS and OCGS-Zanzibar coordinated and supervised the fieldwork activities. Fieldwork on the Mainland started on 20 October 2007. Delay in obtaining ethical clearance for the Zanzibar fieldwork resulted in a delay in starting data collection in Zanzibar until 10 November 2007. Data collection took place over a four-month period, from 20 October 2007 to 22 February 2008.

A quality control team periodically visited teams in the field to check their work and reinterview some households.

### Data Collectors

Name	Abbreviation	Affiliation
National Bureau of Statistics	NBS	

# Data Processing

## Other Processing

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All questionnaires collected during the THMIS fieldwork were periodically brought from the field to the NBS headquarters in Dar es Salaam for processing, which consisted of office editing, coding of open-ended questions, data entry, and editing of computer-identified errors. The data were processed by a team of 9 data entry clerks, 2 data editors, and 2 data entry supervisors. An administrator was assigned to receive and check the blood samples coming from the field. Data entry and editing were accomplished using the CSPro software. All data were entered twice (100 percent verification). The concurrent processing of the data was a distinct advantage for data quality because THMIS staff were able to advise the field teams of errors detected during data entry. The process of office editing and data processing was initiated on 8 November 2007 and completed on 7 April 2008. Dried blood spot (DBS) samples received from the field were logged in at NBS, checked, and transported to MUCHS for testing. The processing of DBS samples for HIV testing at MUCHS was handled by six laboratory scientists. The DBS samples were logged into the CSPro HIV Test Tracking System database, each given a laboratory number, and stored at -20C until tested.

# Data Appraisal

## Estimates of Sampling Error

The estimates from a sample survey are affected by two types of errors: (1) nonsampling errors, and (2) sampling errors. Nonsampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the 2007-08 Tanzania HIV/AIDS and Malaria Survey (THMIS) to minimize this type of error, nonsampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2007-08 THMIS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

A sampling error is usually measured in terms of the standard error for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 2007-08 THMIS sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. The computer software used to calculate sampling errors for the 2007-08 THMIS is the ISSA Sampling Error Module. This module used the Taylor linearization method of variance estimation for survey estimates that are means or proportions. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

Note: See detailed sampling error calculation in the APPENDIX B of the final report which is presented in this documentation.



## Related Materials

### Questionnaires

#### HIV/AIDS and Malaria Indicator Survey 2007-2008 - Questionnaire

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Title HIV/AIDS and Malaria Indicator Survey 2007-2008 - Questionnaire  
 Author(s) National Bureau of Statistics  
 Date 2007-09-01  
 Country Tanzania  
 Language English  
 Filename TZA\_2007\_2008\_AIS\_questionnaire.pdf

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### Reports

#### HIV/AIDS and Malaria Indicator Survey 2007-2008 - Report

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Title HIV/AIDS and Malaria Indicator Survey 2007-2008 - Report  
 National Bureau of Statistics, Dares Salaam, Tanzania Tanzania Commission for AIDS, Dar es Salaam, Tanzania  
 Author(s) Zanzibar AIDS Commission, Zanzibar Office of Chief Government Statistician, Zanzibar Macro International Inc., Calverton, Maryland USA  
 Date 2008-11-01  
 Country Tanzania  
 Language English  
 Filename [http://www.measuredhs.com/pubs/pdf/AIS6/AIS6\\_05\\_14\\_09.pdf](http://www.measuredhs.com/pubs/pdf/AIS6/AIS6_05_14_09.pdf)

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#### HIV/AIDS and Malaria Indicator Survey 2007-2008 - HIV Fact Sheet

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Title HIV/AIDS and Malaria Indicator Survey 2007-2008 - HIV Fact Sheet  
 Author(s) MEASURE DHS  
 Date 2008-11-01  
 Country Tanzania  
 Language English  
 Filename <http://www.measuredhs.com/pubs/pdf/HF28/HF28.pdf>

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#### HIV/AIDS and Malaria Indicator Survey 2007-2008 - Other Fact Sheet

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Title HIV/AIDS and Malaria Indicator Survey 2007-2008 - Other Fact Sheet  
 Author(s) MEASURE DHS  
 Date 2008-11-01  
 Country Tanzania  
 Language English  
 Filename <http://www.measuredhs.com/pubs/pdf/OF11/OF11.pdf>

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#### HIV/AIDS and Malaria Indicator Survey 2007-2008 - Key Findings

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Title HIV/AIDS and Malaria Indicator Survey 2007-2008 - Key Findings  
 Author(s) MEASURE DHS

Date 2008-11-01

Country Tanzania

Language English

Filename <http://www.measuredhs.com/pubs/pdf/SR150/SR150.pdf>

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