

**Zambia
Demographic
and Health
Survey
2007**

Preliminary Report

**Central Statistical Office
Lusaka, Zambia**

**Ministry of Health
Lusaka, Zambia**

**Tropical Diseases Research Centre
Ndola, Zambia**

**University of Zambia
Lusaka, Zambia**

**MEASURE DHS, Macro International Inc.
Calverton, Maryland, USA**

The 2007 Zambia Demographic and Health Survey (2007 ZDHS) was implemented by the Central Statistical Office (CSO) in partnership with the Ministry of Health from April to October 2007. The Tropical Diseases Research Centre (TDRC) provided technical support and implementation of the syphilis and HIV testing. Macro International Inc. provided technical assistance as well as funding to the project through the MEASURE DHS programme, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide. Additional funding for the ZDHS was provided by the Ministry of Health, the Ministry of Finance and National Planning, the United States Agency for International Development (USAID), the Centers for Disease Control and Prevention (CDC), the Malaria Control and Evaluation Partnership in Africa (MACEPA), the European Union (EU), the World Bank through the Zambia National Response to HIV/AIDS (ZANARA) project, the United Nations Population Fund (UNFPA), the United Nations Development Program (UNDP), the Joint United Nations Programmes on HIV/AIDS (UNAIDS), the United Nations Children's Fund (UNICEF), the Japan International Cooperation Agency (JICA), Swedish International Development Assistance (SIDA), United Kingdom Department for International Development (DFID), World Health Organisation (WHO) and Development Cooperation Ireland (DCI).

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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARI	Acute Respiratory Infections
CDC	Centres for Disease Control and Prevention
CHTTS	CSPRO HIV Test Tracking System
CIDRZ	Centre for Infectious Disease Research in Zambia
CPH	Census of Population and Housing of the Republic of Zambia
CPR	Contraceptive Prevalence Rate
CSO	Central Statistical Office
DBS	Dry Blood Spots
DCI	Development Cooperation Ireland
DFID	United Kingdom Department for International Development
EU	European Union
GCVL	Global Clinical Viral Laboratory
GPS	Global Positioning System
HIV	Human Immune Deficiency Virus
IPT	Intermittent Preventive Treatment
ITN	Insecticide-Treated Net
JICA	Japan International Cooperation Agency
LAM	Lactational Amenorrhoea Method
MACEPA	Malaria Control and Evaluation Partnerships in Africa
ORT	Oral Rehydration Therapy
PAHO	Pan-American Health Organisation
SIDA	Swedish International Development Assistance
TDRC	Tropical Diseases Research Centre
TFR	Total Fertility Rate
UNAIDS	Joint United Nations Programmes on HIV and AIDS
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNU	United Nations University
UNZA	University of Zambia
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation
ZANARA	Zambia National Response to HIV and AIDS
ZDHS	Zambia Demographic and Health Survey

I. INTRODUCTION

The 2007 Zambia Demographic and Health Survey (2007 ZDHS) was implemented by the Central Statistical Office (CSO) in partnership with the Ministry of Health, Tropical Diseases Research Centre (TDRC), and the Demography Division at the University of Zambia (UNZA) from April to October 2007. The TDRC provided technical support in the implementation of the syphilis and HIV testing. Macro International Inc. provided technical assistance as well as funding to the project through the MEASURE DHS programme, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide. Additional funding for the ZDHS was provided by the Ministry of Health, the Ministry of Finance and National Planning, the United States Agency for International Development (USAID), the Centres for Disease Control and Prevention (CDC), the Malaria Control and Evaluation Partnership in Africa (MACEPA), the European Union (EU), the World Bank through the Zambia National Response to HIV/AIDS (ZANARA) project, the United Nations Population Fund (UNFPA), the United Nations Development Program (UNDP), the Joint United Nations Programmes on HIV/AIDS (UNAIDS), the United Nations Children's Fund (UNICEF), the Japan International Cooperation Agency (JICA), Swedish International Development Assistance (SIDA), United Kingdom Department for International Development (DFID), World Health Organisation (WHO) and Development Cooperation Ireland (DCI).

While significantly expanded in content, the 2007 ZDHS is a follow-up to the 1992, 1996, and 2001-2002 ZDHS and provides updated estimates of basic demographic and health indicators covered in the earlier surveys. The 2007 ZDHS is the second DHS survey that includes the collection of information on violence against women and testing of individuals for syphilis and HIV. In addition, data on malaria prevention and treatment were also collected.

This preliminary report presents a first look at selected results of the 2007 ZDHS. A comprehensive analysis of the data will be presented in a final report which will be published during the last quarter of 2008. While considered provisional, the results presented here are not expected to differ significantly from those presented in the final report.

The primary objectives of the 2007 ZDHS project are to provide up-to-date information on fertility levels; nuptiality; sexual activity; fertility preferences; awareness and use of family planning methods; breastfeeding practices; nutritional status of mothers and young children; early childhood mortality and maternal mortality; maternal and child health; and awareness, behaviour, and prevalence regarding HIV/AIDS and other sexually transmitted infections.

II. SURVEY IMPLEMENTATION

A. Sample Design

The sample for the 2007 ZDHS was designed to provide population and health indicator estimates at the national and provincial levels. The sample design allowed for specific indicators, such as contraceptive use, to be calculated for each of the 9 provinces (Central, Copperbelt, Eastern, Lusaka, Luapula, Northern, North-Western, Southern, and Western). The sampling frame used for the 2007 ZDHS was the Census of Population and Housing of the Republic of Zambia (CPH) conducted in 2000, provided by the Central Statistical Office (CSO). The frame includes 16,757 standard enumeration areas (SEA) created for the 2000 CPH. An SEA is a convenient geographical area with an average size of 130 households or 600 people. For each SEA, information is available on its location, type of residence, number of households, and number of male and female population. Each SEA has a cartographical map which delimitates the boundaries and shows the main landmarks of the SEA.

A representative probability sample of 8,000 households was selected for the 2007 ZDHS survey. The sample for the 2007 ZDHS was a stratified sample selected in two stages from the 2000 CPH frame. Stratification was achieved by separating every province into urban and rural areas. Samples were selected independently in each of the resulting 18 strata in two stages. Implicit stratification and proportional allocation was achieved at each of the lower geographical/administrative levels by sorting the sampling frame according to the geographical/administrative units and by using a probability proportional to size selection at the first stage of the sampling.

In the first stage, 320 SEAs were selected with probability proportional to the SEA size.¹ Selected SEAs with more than 300 households were segmented with only one segment selected for the survey with probability proportional to the segment size. Therefore, a 2007 ZDHS cluster is either an SEA or a segment of an SEA. A complete listing of households and mapping exercise were carried out for each cluster in August 2006, with the resulting lists of households serving as the sampling frame for the selection of households in the second stage. All private households were listed. The listing excluded people living in institutional households (army barracks, hospitals, police camps, boarding schools, etc.). The CSO listing enumerators were trained to use Global Positioning System (GPS) receivers to take the coordinates of the 2007 ZDHS sample clusters.

In the second stage of the selection, an average of 25 households was selected in every cluster, by equal probability systematic sampling. All women age 15-49 and all men age 15-59 who were either permanent residents of the households in the 2007 ZDHS sample or visitors present in the households on the night before the survey were eligible to be interviewed. HIV testing was performed in each household among eligible women and men who consented to the test. In a sub-sample of one in every three households, syphilis testing was performed among eligible women and men who consented to the test. In addition, a sub-sample of one eligible woman in each household was randomly selected to be asked additional questions about domestic violence.

B. Questionnaires

Three questionnaires were used for the 2007 ZDHS. They are the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. These questionnaires were adapted to reflect the population and health issues relevant to Zambia at a series of meetings with various stakeholders from government ministries and agencies, non-governmental organizations, and international donors. In addition to English, the questionnaires were translated into seven major local languages: Nyanja, Bemba, Kaonde, Lunda, Lozi, Tonga, and Luvale.

¹ The final survey sample included 319 clusters instead of 320 clusters. During fieldwork, access was not granted for the field team to conduct data collection exercises in one cluster.

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, 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. Additionally, if an adult in the household was sick for more than three consecutive months in the 12 months preceding the survey or an adult in the household died, questions were asked related to support for sick people or people who have died. The data on the age and sex of household members obtained in the Household Questionnaire was used to identify women and men who were eligible for the individual interview. Additionally, the Household Questionnaire collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor of the house, ownership of various durable goods, and ownership and use of mosquito nets to assess the coverage of malaria prevention programmes. The Household Questionnaire was also used to record height and weight measurements for children age 0-59 months and women 15-49 years of age.

The Women's Questionnaire was used to collect information from all women age 15-49. These women were asked questions on the following main topics:

- Background characteristics (education, residential history, media exposure, etc.)
- Birth history and childhood mortality
- Knowledge and use of family planning methods
- Fertility preferences
- Antenatal and delivery care
- Breastfeeding and infant feeding practices
- Vaccinations and childhood illnesses
- Marriage and sexual activity
- Women's work and husband's background characteristics
- Women's and children's nutritional status
- Malaria prevention and treatment
- Domestic violence
- Awareness and behaviour regarding AIDS and other sexually transmitted infections (STIs)
- Adult mortality including maternal mortality

The Men's Questionnaire was administered to all men age 15-59 in each household in the 2007 ZDHS sample. The Men's Questionnaire collected much of the same information found in the Women's Questionnaire, but was shorter because it did not contain a detailed reproductive history or questions on maternal and child health or nutrition.

C. HIV and Syphilis Testing

In all households, blood specimens were collected for HIV testing from eligible men and women who voluntarily consented to the testing. Additionally, in every third household, the 2007 ZDHS involved the collection of blood specimens from all eligible women and men who voluntarily consented to the syphilis test. The protocol for the blood specimen collection and testing for syphilis and HIV was reviewed and approved by the TDRC Ethical Review Committee, Institutional Review Board of Macro International, and CDC Atlanta.

HIV Testing

All eligible women and men who were interviewed in the 2007 ZDHS were asked to voluntarily provide five drops of blood for HIV testing. The protocol for the blood specimen collection and analysis was based on the anonymous linked protocol developed for MEASURE DHS. The protocol allows for the merging of the HIV

results to the socio-demographic data collected in the individual questionnaires, provided that information that could potentially identify an individual is destroyed before the linking takes place.

Interviewers explained the procedure, the confidentiality of the data, and the fact that the test results would not be made available to the subject. They also explained the option of DBS storage for use in additional testing. If a respondent consented to the HIV testing, five blood spots from the finger prick were collected on a filter paper card to which a bar code label unique to the respondent was affixed. If the respondent did not consent to additional testing using their sample, it was indicated on the questionnaire that the respondent refused additional tests using their specimen and the words “no further testing” were written on the filter paper card. Each household, whether individuals consented to HIV testing or not, was given an information brochure on HIV/AIDS and a list of fixed sites providing voluntary counselling and testing (VCT) services grouped by province.

Each DBS sample was given a bar code label, with a duplicate label attached to the Individual Questionnaire. A third copy of the same bar code was affixed to the Blood Sample Transmittal Form to track the blood samples from the field to the laboratory. DBS samples were dried overnight and packaged for storage the following morning. Samples were periodically collected in the field along with the completed questionnaires and transported to CSO in Lusaka to be logged in, checked, and transported to the Tropical Disease Research Centre (TDRC) in Ndola.

The processing of DBS samples for HIV testing at TDRC was handled by 8 laboratory personnel. Each DBS sample was logged into the CSPro HIV Test Tracking System (CHTTS) database, given a laboratory number, and stored at -20°C until tested. Testing on all samples was conducted after all of the questionnaire data entry was completed, verified, cleaned, and all unique identifiers removed from the questionnaire file except the barcode number. All samples were tested on the first assay test, an ELISA, Vironostika® HIV Uni-Form II Plus O, Biomerieux. A negative result was considered negative. All positives were subjected to a second ELISA test by Enzygnost® Anti-HIV 1/2 Plus, Dade Behring. Positive samples on the second test were considered positive. If the first and second tests were discordant, the sample was retested with tests 1 and 2. If on repeat of tests 1 and 2, both were negative, the sample was rendered negative. If both were positive, the sample was rendered positive. If there was still a discrepancy in the results after repeating tests 1 and 2, a third confirmatory test, Western Blot 2.2, Abbott Labs, was administered. The final result was rendered positive if the Western Blot (WB) confirmed the result to be positive, and rendered negative if the WB confirmed it to be negative. If the results were still discordant, the sample was rendered indeterminate. External quality control for the 2007 ZDHS HIV samples was conducted by Global Clinical Viral Laboratory (GCVL) in Durban, South Africa.

The HIV test results for the 2007 ZDHS were entered into a spreadsheet with a barcode as the unique identifier to the result. Data from the HIV results and linked demographic and health data will be published in the 2007 ZDHS final report.

Syphilis Testing

For the syphilis testing activities, a nurse/nurse counsellor and a laboratory technician were added to each of the 12 ZDHS field teams. The nurse/nurse counsellors and laboratory technicians were recruited through TDRC and had experience in venous blood collection and testing. According to the protocol, syphilis testing was done in the field by the laboratory technician, using a qualitative Rapid Plasma Reagin (RPR). Those individuals who were found to test positive for syphilis were offered treatment at home with one injection of benzathine penicillin, which is the standard treatment in Zambia. Alternative treatment was given to those allergic to penicillin and to pregnant women (erythromycin capsules for pregnant women and doxycycline capsules for men and non-pregnant women). An emergency kit (epinephrine) was provided to each nurse/nurse counsellor for penicillin-allergic cases. If the respondent tested positive for syphilis and did not want to be treated at home, a referral letter was given for free treatment at the nearest health facility. All RPR reactive sera samples were collected in cryo vials, frozen in liquid nitrogen tanks and transported to TDRC for syphilis confirmatory testing using the Treponema Pallidum Haemagglutination Assay (TPHA).

D. Pre-test Activities

Compared to earlier DHS surveys, the 2007 ZDHS was significantly expanded in content and involved a different methodology for collecting HIV samples. A pre-test was conducted to pilot the procedures and ZDHS questionnaires. The training and field work for the pre-test took place from August 8 to September 4, 2006. Fourteen interviewers (7 females and 7 males) were trained to administer the questionnaires, take anthropometric measurements, and collect blood samples for HIV testing. In addition, 3 laboratory technicians and the 7 female interviewers who were nurses were also trained to collect venous blood samples for syphilis testing. Representatives from the Tropical Diseases Research Centre (TDRC) assisted in training participants on the finger prick for HIV sample collection, venous draws for syphilis sample collection, and proper handling and storage of the dried blood spots (DBS) and venous blood samples. The trainers/resource persons included professionals from UNZA, CSO, TDRC, the MOH, and Macro International. Guest lecturers were also invited from Ministry of Health and the Centre for Infectious Disease Research in Zambia (CIDRZ).

The pre-test fieldwork was conducted in 2 urban and 3 rural clusters, covering 151 households. Debriefing sessions were held with the pre-test field staff, and modifications to the questionnaires were made based on lessons drawn from the exercise. The pre-test field staff was divided into 3 teams of at least 8 field staff. The supervisors and editors were drawn from amongst the resource people.

E. Training of Field Staff

CSO recruited and trained 122 people for the fieldwork to serve as supervisors, field editors, female and male interviewers, and reserve interviewers. Training of field staff for the main survey was conducted during a four-week period in February 2007. The training course consisted of instruction regarding interviewing techniques and field procedures, a detailed review of items on the questionnaires, instruction and practice in weighing and measuring children, mock interviews between participants in the classroom, and practice interviews with real respondents in areas outside the 2007 ZDHS sample points. Field practice in syphilis testing and HIV dried blood spot collection was also conducted. 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. Twelve supervisors, 12 editors, 36 female interviewers and 36 male interviewers were selected to make up 12 data collection teams for the 2007 ZDHS.

F. Fieldwork

Twelve interviewing teams carried out data collection for the 2007 ZDHS. Each team consisted of 1 supervisor (team leader), 1 female field editor, 1 laboratory technician, 3 female interviewers, 3 male interviewers, and 1 driver. Seven senior staff members from CSO coordinated and supervised fieldwork activities. In addition, 3 members of staff from UNZA assisted in the field supervision. Data collection took place over a six-month period, from April 2007 to October 2007.

G. Data Processing

All questionnaires for the 2007 ZDHS were returned to the CSO central office in Lusaka for data processing, which consisted of office editing, coding of open-ended questions, data entry, and editing computer-identified errors. The data were processed by a team of 10 data entry clerks, 6 data editors, one data entry supervisor, and one administrator to receive and check the blood samples received from the field. Data entry and editing were accomplished using the CSPro software. The process of office editing and data processing was initiated in May 2007 and completed in November 2007.

III. RESULTS

A. Response Rates

Table 1 shows response rates for the 2007 ZDHS. A total of 7,969 households were selected for the sample, of which 7,326 were occupied. The shortfall was largely due to households that were away for an extended period of the time and structures that were found to be vacant at the time of the interview. Of the 7,326 existing households, 7,164 were successfully interviewed, yielding a response rate of 98 percent.

In the interviewed households, a total of 7,408 women were identified, of whom 7,146 were successfully interviewed, yielding a response rate of 98 percent. With regard to the male survey results, 7,146 eligible men were identified, of whom 6,500 were successfully interviewed, yielding a 91 percent response rate. The response rates are slightly lower in the urban than rural sample for women, and more markedly for men (88 percent compared with 94 percent).

The principal reason for non-response among eligible men was the failure to find individuals at home despite repeated visits to the household, followed by refusal to be interviewed. The substantially lower response rate for men reflects the more frequent and longer absence of men from the households.

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households selected	2,899	5,070	7,969
Households occupied	2,748	4,578	7,326
Households interviewed	2,694	4,470	7,164
Household response rate	98.0	97.6	97.8
Individual interviews: women			
Number of eligible women	3,320	4,088	7,408
Number of eligible women interviewed	3,178	3,968	7,146
Eligible women response rate	95.7	97.1	96.5
Individual interviews: men			
Number of eligible men	3,225	3,921	7,146
Number of eligible men interviewed	2,831	3,669	6,500
Eligible men response rate	87.8	93.6	91.0

B. Characteristics of the Respondents

Table 2 shows the distribution of women age 15 to 49 years and men age 15 to 59 years in the 2007 ZDHS sample by selected background characteristics. The population distribution shows a high proportion of people in the younger age group 15-19, thereafter the proportions of both women and men decline with increasing age, reflecting the young age structure of the Zambian population. Roughly the same age structure was observed in the 2001-02 ZDHS.

Sixty-two percent of women and 56 percent of men are married or living together. Slightly more than a quarter of women have never been married compared with just under two-fifths of men who have never been married. Proportions of women who are widowed, divorced, or separated are more than double those of men.

With regard to residence, almost six in ten women (58 percent) and men (57 percent) live in rural areas. The distribution of the population by province, shows that the largest proportions are from Copperbelt and the smallest from Northwestern.

In general, men and women have some formal education; only 5 percent of men and 10 percent of women have never attended school. Among those who have attended school, men tend to attain higher levels of education than women. In the 2007 ZDHS, 35 percent of women and 49 percent of men have attended secondary or more than secondary school. This is an increase from the 30 percent and 44 percent observed in the 2001-02 ZDHS for women and men, respectively.

The majority of respondents are Protestants (78 percent of women and 75 percent of men). One in five respondents is Catholic.

Table 2. Background characteristics of respondents
Percent distribution of women age 15-49 and men age 15-59 by background characteristics, Zambia 2007

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	22.0	1,574	1,598	21.8	1,416	1,412
20-24	19.2	1,370	1,405	16.4	1,066	1,065
25-29	19.1	1,363	1,374	15.0	977	987
30-34	14.8	1,056	1,042	14.7	954	940
35-39	10.5	747	732	11.0	717	733
40-44	7.9	561	533	7.3	475	472
45-49	6.6	475	462	6.0	390	396
50-54	na	na	na	4.6	298	292
55-59	na	na	na	3.2	207	203
Marital status						
Never married	26.0	1,856	1,941	39.3	2,557	2,546
Married	60.9	4,351	4,264	55.2	3,590	3,601
Living together	0.7	52	52	0.5	34	29
Divorced/separated	8.1	577	577	3.7	242	246
Widowed	4.4	311	312	1.2	77	78
Residence						
Urban	42.1	3,009	3,178	43.2	2,808	2,831
Rural	57.9	4,137	3,968	56.8	3,692	3,669
Region						
Central	9.2	659	672	9.4	612	600
Copperbelt	17.7	1,264	829	19.1	1,244	812
Eastern	13.6	971	940	13.4	869	857
Luapula	7.4	530	704	6.4	418	560
Lusaka	16.4	1,172	939	17.7	1,152	962
Northern	13.5	966	783	13.4	871	715
Northwestern	5.1	365	685	5.1	329	630
Southern	10.2	727	822	10.2	663	774
Western	6.9	492	772	5.3	342	590
Education						
No education	10.4	744	741	4.6	299	298
Primary	54.4	3,891	3,805	46.3	3,008	2,990
Secondary	29.9	2,140	2,242	41.0	2,666	2,720
More than secondary	5.2	371	358	8.1	527	492
Religion						
Catholic	20.4	1,461	1,368	21.9	1,421	1,347
Protestant	77.8	5,558	5,652	74.6	4,849	4,932
Muslim	0.5	33	26	0.5	35	26
Other	1.2	87	90	2.8	181	185
Missing	0.1	9	10	0.2	14	10
Total	100.0	7,146	7,146	100.0	6,500	6,500

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
na = Not applicable

C. Fertility

All women who were interviewed in the 2007 ZDHS were asked to report the total number of sons and daughters to whom they had ever given birth in their lifetime. To ensure all information was reported, women were asked separately about children still living at home, those living elsewhere, and those who had died. A complete birth history was then obtained, including information on sex, date of birth and survival status of each child and the age at death for dead children.

Table 3 shows age-specific fertility rates to women by five-year age groups and the current fertility for the three-year period preceding the 2007 ZDHS. Age-specific and total fertility rates were calculated directly from the birth history data. The sum of age-specific fertility rates (known as the total fertility rate, or TFR) is a summary measure of the level of fertility. It can be interpreted as the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the current observed age-specific rates. If fertility were to remain constant at current levels, a Zambian woman would bear an average of 6.2 children in her lifetime. This represents an increase of 0.3 children in the 5 year-period since the 2001-02 ZDHS, when the TFR was 5.9 births per woman. This increase is largely due to the increase in TFR for women in rural areas who have 7.5 children in the 2007 ZDHS, an increase from 6.9 in the 2001-02 ZDHS. The TFR for women in urban areas remained stable at 4.3 children.

Figure 1 shows the trends in age-specific fertility rate in the surveys between 1992 and 2007. Fertility has declined since the 1992 survey in all age groups. However, the largest decline is in the youngest age groups (15-19 and 20-24).

Table 3. Current fertility

Age-specific and cumulative fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by urban-rural residence, Zambia 2007

Age group	Residence		Total
	Urban	Rural	
15-19	99	189	146
20-24	201	329	274
25-29	190	314	263
30-34	181	277	240
35-39	127	228	191
40-44	52	114	90
45-49	5	44	29
TFR	4.3	7.5	6.2
GFR	151.0	259.0	214.0
CBR	36.3	47.5	43.6

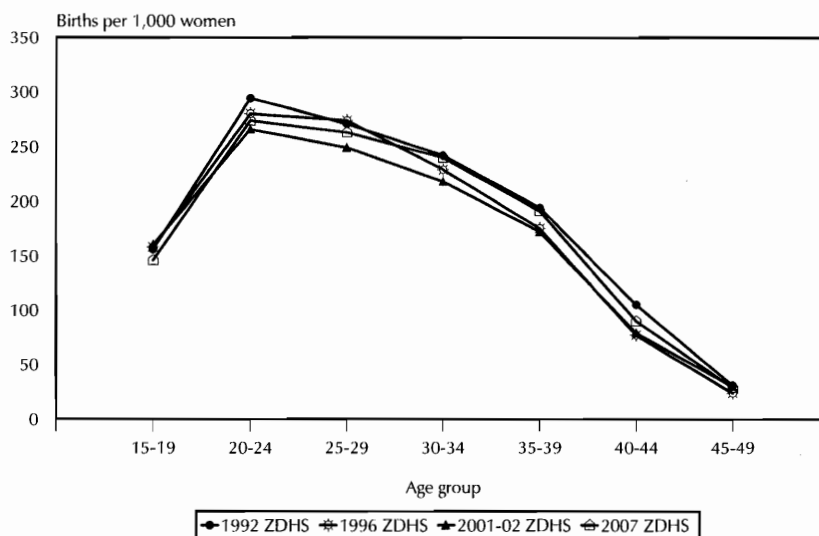
Note: Rates for age group 45-49 may be slightly biased due to truncation.

TFR: Total fertility rate for ages 15-49, expressed per woman

GFR: General fertility rate (births divided by the number of women age 15-44), expressed per 1,000 women

CBR: Crude birth rate, expressed per 1,000 population

Figure 1 Age-Specific Fertility Rates
Zambia 1992-2007



D. Family Planning

Information about knowledge and use of family planning methods was collected from female respondents by asking them to mention any ways or methods by which a couple can delay or avoid a pregnancy. For each method known, the respondent was asked if she had ever used it. Respondents who reported ever use of family planning were asked whether they or their partner were using a method at the time of the survey.

Table 4 shows the percent distribution of currently married women by contraceptive methods currently used, according to background characteristics. Contraceptive methods are grouped into two, namely modern and traditional methods. Modern methods include female sterilisation (tubal ligation), pill, IUD, injectables,

Table 4. Current use of contraception

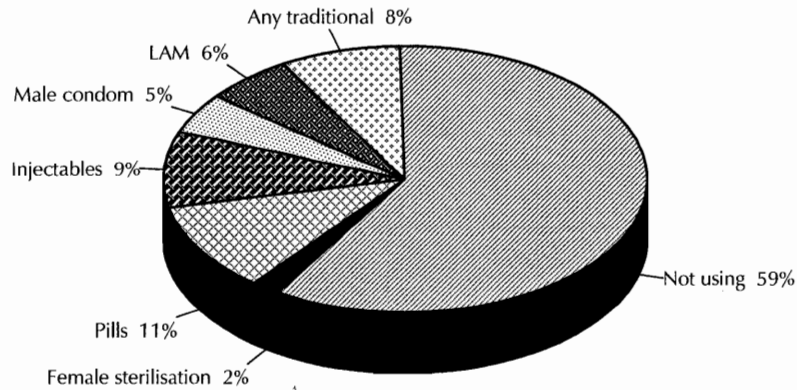
Percent distribution of currently married women by contraceptive method currently used, according to background characteristics, Zambia 2007

Background characteristic	Any method	Any modern method	Modern method								Traditional method			Not currently using	Total	Number of women	
			Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	Female condom	LAM	Any traditional method	Periodic abstinence	Withdrawal				Folk method
Age																	
15-19	28.1	22.0	0.0	7.3	0.0	6.6	0.0	3.4	0.0	4.7	6.1	0.0	4.8	1.3	71.9	100.0	280
20-24	41.8	34.1	0.2	11.5	0.0	10.4	0.0	6.0	0.0	5.9	7.7	1.5	5.5	0.8	58.2	100.0	889
25-29	45.4	37.6	0.3	14.0	0.0	10.2	0.4	4.9	0.0	7.7	7.8	1.1	6.1	0.6	54.6	100.0	1,053
30-34	41.7	34.3	0.5	12.5	0.2	8.1	0.4	5.5	0.0	7.1	7.4	1.0	5.8	0.6	58.3	100.0	826
35-39	42.9	33.7	2.8	11.0	0.0	7.3	0.6	4.3	0.0	7.7	9.3	1.4	6.6	1.3	57.1	100.0	590
40-44	39.9	29.3	6.2	7.0	0.3	7.5	1.1	3.5	0.4	3.4	10.6	2.4	5.9	2.3	60.1	100.0	411
45-49	29.5	21.3	8.7	4.0	0.3	3.5	0.3	2.0	0.2	2.2	8.3	0.3	3.1	4.9	70.5	100.0	353
Residence																	
Urban	48.4	42.0	3.4	18.2	0.1	10.5	0.9	6.2	0.1	2.6	6.3	1.5	4.0	0.8	51.6	100.0	1,540
Rural	36.7	27.6	1.0	7.0	0.1	7.3	0.1	3.9	0.0	8.1	9.0	1.0	6.5	1.5	63.3	100.0	2,863
Region																	
Central	32.8	27.2	0.4	11.4	0.0	8.1	0.2	6.6	0.0	0.5	5.6	1.7	3.0	0.9	67.2	100.0	438
Copperbelt	47.7	41.5	4.8	19.9	0.0	7.7	0.8	4.9	0.0	3.4	6.2	1.4	4.3	0.5	52.3	100.0	699
Eastern	52.6	48.5	2.1	8.7	0.1	9.1	0.2	3.3	0.0	24.9	4.1	0.4	0.5	3.2	47.4	100.0	689
Luapula	15.8	14.0	0.8	2.8	0.0	4.6	0.4	1.8	0.0	3.6	1.8	0.6	1.0	0.3	84.2	100.0	363
Lusaka	46.1	39.8	2.0	15.7	0.2	11.5	0.5	6.5	0.2	3.1	6.4	1.1	4.3	1.0	53.9	100.0	620
Northern	37.7	16.9	0.7	5.2	0.0	5.5	0.1	4.3	0.1	1.1	20.7	0.2	20.5	0.0	62.3	100.0	655
Northwestern	32.0	22.4	3.0	3.1	0.0	11.7	0.1	3.2	0.0	1.3	9.6	0.7	6.7	2.3	68.0	100.0	232
Southern	45.8	39.1	0.6	13.9	0.5	12.2	0.7	5.1	0.0	6.0	6.7	4.3	2.2	0.2	54.2	100.0	447
Western	33.1	23.0	0.7	8.5	0.0	5.5	0.2	5.7	0.0	2.2	10.1	0.6	4.3	5.2	66.9	100.0	258
Education																	
No education	35.0	27.1	1.8	4.9	0.0	5.0	0.2	2.9	0.0	12.2	7.9	0.1	6.3	1.5	65.0	100.0	572
Primary	37.8	28.9	1.0	9.2	0.0	8.1	0.3	3.6	0.0	6.6	8.9	1.0	6.4	1.5	62.2	100.0	2,678
Secondary	49.2	43.0	2.4	17.6	0.1	11.7	0.7	7.7	0.2	2.7	6.2	2.3	3.3	0.6	50.8	100.0	959
More than secondary	57.4	50.0	10.5	19.8	1.0	7.6	0.9	10.0	0.0	0.2	7.4	2.1	4.5	0.7	42.6	100.0	193
Living children																	
0	9.1	6.9	0.0	1.6	0.0	1.9	0.0	3.1	0.0	0.4	2.2	1.7	0.6	0.0	90.9	100.0	315
1-2	39.8	33.1	0.7	13.0	0.1	9.0	0.2	5.7	0.1	4.3	6.7	0.9	4.8	1.0	60.2	100.0	1,458
3-4	46.2	37.4	1.2	13.3	0.0	9.0	0.4	5.6	0.1	7.8	8.9	1.4	6.7	0.8	53.8	100.0	1,352
5+	43.8	33.5	4.3	8.4	0.2	8.9	0.7	2.9	0.0	8.1	10.4	1.2	6.7	2.4	56.2	100.0	1,277
Total 2007	40.8	32.7	1.9	11.0	0.1	8.5	0.4	4.7	0.1	6.2	8.1	1.2	5.6	1.3	59.2	100.0	4,402
Total 2001-02	34.2	22.6	2.0	11.9	.01	4.5	0.3	3.8	0.0	2.7	8.9	1.1	5.1	2.7	65.8	100.0	4,694
Total 1996	25.9	14.4	2.0	7.2	.04	1.0	-	3.5	-	-	11.5	1.9	4.5	5.2	74.1	100.0	4,902
Total 1992	15.2	8.9	2.1	4.3	.05	0.1	-	1.8	-	-	6.3	0.9	3.0	2.2	84.8	100.0	4,457

Note: If more than one method is used, only the most effective method is considered in this tabulation.
LAM = Lactational amenorrhoea method.

implants, male condom, female condom, and lactational amenorrhoea method (LAM). Traditional methods include periodic abstinence, withdrawal, and folk methods. Overall, the 2007 ZDHS found that 41 percent of currently married women reported that they were currently using a method of family planning. Most women use a modern method of contraception (33 percent), while 8 percent use traditional methods. Of the modern methods, the pill and injectables are the most widely used (11 percent and 9 percent, respectively). Figure 2 summarizes current contraceptive use among currently married women.

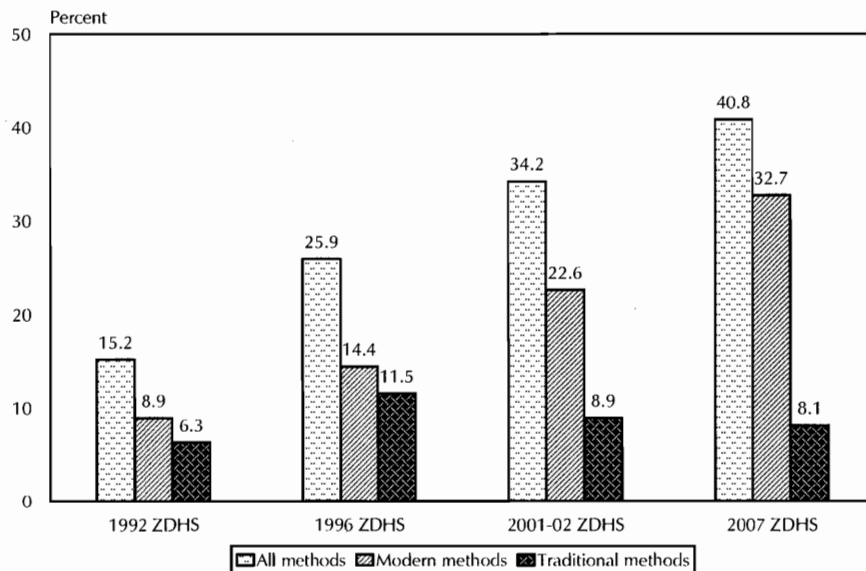
Figure 2 Current Contraceptive Use among Currently Married Women Age 15-49 by Method



ZDHS 2007

The contraceptive prevalence rate (CPR) for use of any method in Zambia has increased steadily in the last 15 years, from 15 percent in 1992 to 41 percent in 2007 (Figure 3). Table 4 also shows that CPR for modern methods increases with age, reaching a peak at age 25-29 years (38 percent), and then declines to 21 percent among women 45-49 years. Urban and higher-educated women have higher CPR generally, and have higher proportions using long-term methods (e.g., female sterilisation and injectables) than their rural and less educated counterparts, respectively.

Figure 3 Contraceptive Use among Currently Married Women Age 15-49, Zambia 1992-2007



There are large differences in levels of contraceptive use by residence. The CPR for modern methods is highest in Eastern Province (49 percent), and lowest in Luapula (14 percent). While the CPR for modern methods is 39 percent or higher for women in Copperbelt, Eastern, Lusaka, and Southern, the corresponding rates in Central, Northern, Northwestern, and Western are 27 percent and below. The use of any method, as well as modern methods, of contraception increases with the woman's educational attainment. Half of women who have more than a secondary education use a modern method of contraception compared with 27 percent of women with no education. Use of contraceptive methods dramatically increases after a woman has at least one child. The CPR peaks for women with 3-4 children (46 percent for any method and 37 percent for modern methods).

E. Fertility Preferences

In order to assess future fertility preferences, respondents in the 2007 ZDHS were asked whether they wanted to have another child, and if so, how soon. The answers to these questions allow for the estimation of the potential demand for family planning services either to limit or space births. Table 5 indicates that 36 percent of currently married women age 15-49 years stated that they want no more children, or have been sterilised, while almost two out of five women (39 percent) want to space their next birth.

Fertility preferences are closely related to the number of living children a woman has. In general, as the number of living children increases, the desire to want another child decreases. As observed in Table 5, the desire to have another child rapidly decreases from 73 percent among currently married women without any children to 2 percent among women with six or more living children. Seventy-two percent of women with six or more children say they do not want another child, while only 4 percent of women with no children prefer not to have any children.

Desire for children	Number of living children ¹							Total
	0	1	2	3	4	5	6+	
Have another soon ²	73.3	25.3	18.1	14.6	7.5	6.1	2.2	15.2
Have another later ³	6.4	59.7	52.8	51.9	40.2	26.9	12.6	38.6
Have another, undecided when Undecided	4.3	2.2	3.6	2.5	1.4	1.7	0.6	2.1
Want no more	4.0	4.7	7.8	6.4	8.6	6.0	6.2	6.6
Sterilised ⁴	4.3	6.4	15.8	23.4	39.8	53.2	72.3	34.1
Declare infecund	0.0	1.1	0.5	0.8	1.7	4.3	3.9	1.9
Missing	7.7	0.7	1.6	0.4	0.2	1.6	1.7	1.4
	0.0	0.0	0.0	0.0	0.6	0.2	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	217	604	819	773	645	447	897	4,402

¹ Includes current pregnancy
² Wants next birth within 2 years
³ Wants to delay next birth for 2 or more years
⁴ Includes both male and female sterilisation

F. Maternity Care

Proper care during pregnancy and delivery is important for the health of both the mother and the baby. In the 2007 ZDHS, women who had given birth in the five years preceding the survey were asked a number of questions about maternal care. For the last live birth in that period, the mothers were asked whether they had received tetanus toxoid injections while pregnant, and whether they had obtained antenatal care during the pregnancy. For each birth in the same period, the mothers were also asked what type of assistance they received at the time of delivery. Table 6 summarizes information on the coverage of these maternal health services.

Antenatal Care

Antenatal care from a trained provider is important in order to monitor the pregnancy and reduce the risks for the mother and child during pregnancy and at delivery. According to the 2007 ZDHS results, 94 percent of women who gave birth in the five years preceding the survey received antenatal care from a trained health professional at least once. Coverage of antenatal care is slightly higher in urban areas than in rural areas (99 percent and 91 percent, respectively). Antenatal care is more common among more educated women and is almost universal for women with higher than secondary education.

Tetanus Toxoid

Tetanus toxoid injections are given during pregnancy to prevent neonatal tetanus, a major cause of early infant death in many developing countries often due to a failure to observe hygienic procedures during delivery. Table 6 indicates that 80 percent of last live births were protected against neonatal tetanus. Protection against neonatal tetanus is lower for women 20 years and younger (72 percent) than older (81 percent) women. There was little difference in the proportion of women receiving tetanus injections in urban and rural areas (79 and 81 percent, respectively). At least 80 percent of mothers in all provinces except Luapula, Lusaka, Northwestern, and Southern received a tetanus toxoid injection. Women in Lusaka have the lowest percentage of women whose last live birth was protected against neonatal tetanus (67 percent).

Iron Supplements

Maternal anaemia is a common cause of both maternal and neonatal mortality (Khan et al., 2006; UNICEF/UNU/WHO, 2001; WHO, 2006). For this reason, women are given iron supplements during pregnancy. The results of the 2007 ZDHS indicate that in the five years preceding the survey, 90 percent of pregnant women received iron supplements.

Delivery Care

Access to proper medical attention during delivery can reduce the risk of complications and infections that may lead to death or serious illness for the mother and/or baby (Van Lerberghe and De Brouwere, 2001; WHO, 2006). Table 6 shows that less than half (47 percent) of women were assisted by a trained health professional at their last birth. This is an increase from 43 percent observed in the 2001-02 ZDHS. Forty-eight percent of pregnant women delivered in a health facility, also an increase from 44 percent in the 2001-02 ZDHS.

For antenatal care, there are very minor variations by mothers' background characteristics. However, Table 6 demonstrates that this is not the case for assistance by a health professional at delivery, which differs greatly by socioeconomic factors, and is linked to whether the woman delivered in a health facility. Urban women were around two and one-half times more likely than rural women to have been assisted by a trained health professional at delivery (83 and 31 percent, respectively). In terms of education status, the proportion of infants delivered by a health professional increases with the mother's education level. At the provincial level, the highest proportions of delivery by a trained health professional are observed in Lusaka and Copperbelt (78 and 75 percent, respectively). Less than half of women were assisted by a health care professional in the remaining provinces, ranging from 29 percent in Northern Province to 43 percent in Eastern Province.

Table 6. Maternal care indicators

Percentage of women who had a live birth in the five years preceding the survey who received antenatal care from a health professional for the last live birth and whose last live birth was protected against neonatal tetanus, and among all live births in the five years before the survey, percentage delivered by a health professional and percentage delivered in a health facility, by background characteristics, Zambia 2007

Background characteristic	Percentage with antenatal care from a health professional ¹	Percentage whose last live birth was protected against neonatal tetanus ²	Number of women	Percentage delivered by a health professional	Percentage delivered in a health facility	Number of births
Mother's age at birth						
<20	94.4	72.3	641	53.6	55.2	1,102
20-34	94.1	81.6	2,838	46.8	48.1	4,485
35+	91.5	81.2	657	35.3	35.8	849
Residence						
Urban	99.0	79.2	1,347	83.0	83.7	1,883
Rural	91.2	80.5	2,789	31.3	32.8	4,553
Region						
Central	91.6	79.7	405	33.5	33.0	632
Copperbelt	96.1	88.1	606	75.3	75.7	880
Eastern	98.3	89.6	629	42.9	44.8	1,022
Luapula	93.2	73.2	346	33.9	35.5	577
Lusaka	99.7	67.3	520	77.5	78.1	736
Northern	91.2	79.5	629	29.4	31.0	1,042
Northwestern	84.9	79.3	243	40.5	42.0	402
Southern	94.7	74.1	446	36.2	37.6	683
Western	84.1	85.4	312	42.1	45.2	461
Education						
No education	88.0	76.6	538	23.4	25.2	870
Primary	93.3	79.9	2,523	41.8	43.0	4,089
Secondary	97.3	82.3	948	69.8	71.0	1,320
More than secondary	99.2	82.2	126	97.8	99.2	157
Total	93.7	80.1	4,136	46.5	47.7	6,435

¹ Doctor, nurse, midwife, or auxiliary midwife
² Includes mothers with two injections during the pregnancy of the last live birth, or two or more injections (the last within three years of the last live birth), or three or more injections (the last within 5 years of the last live birth), or four or more injections (the last within ten years of the last live birth), or five or more injections prior to the last live birth

G. Child Health and Nutrition

The 2007 ZDHS collected data on a number of key child health indicators, including immunization of young children, infant feeding practices, and treatment practices when a child is ill.

Vaccination of Children

According to the World Health Organization, a child is considered fully vaccinated if he or she has received a BCG vaccination against tuberculosis; three doses of DPT vaccine to prevent diphtheria, pertussis, and tetanus (DPT); at least three doses of polio vaccine; and one dose of measles vaccine. These vaccinations should be received during the first year of life. The 2007 ZDHS collected information on the coverage for these vaccinations among all children born in the five years preceding the survey. In addition, the survey obtained information on the coverage of the pentavalent combination vaccine DPT/HB/Hib, which was introduced in the Zambia health care system in 2006 to replace the DPT vaccine. The combination vaccine contains the DPT, Hepatitis B, and Haemophilus influenza type b vaccines.

In the 2007 ZDHS, mothers were asked to show the interviewer the health cards where immunization dates are recorded for all children born since January 2002. The interviewer then recorded from the cards the dates of each vaccination received into the questionnaire. If a child never received a health card, or the mother was unable to show the card to the interviewer, the child's vaccination information was based on the mother's recall. Questions were asked for each vaccine type. A child is considered fully vaccinated if he or she received

a BCG vaccination against tuberculosis; three doses of DPT vaccine to prevent diphtheria, pertussis, and tetanus, or the combination DPT/HB/Hib vaccine to prevent diphtheria, pertussis, and tetanus as well as Hepatitis B, and Haemophilus influenza type b; at least three doses of polio vaccine; and one dose of measles vaccine. The results presented here are based on both health card information and, for those children without a card, information provided by the mother.

Table 7 pertains to children age 12 to 23 months, the age by which they should have received all vaccinations. Mothers were able to produce health cards for 78 percent of these children. Based on both the health cards and the mothers' reports, 68 percent of children have received all of the recommended vaccinations; 6 percent have not received any vaccinations. The majority of children received BCG (92 percent), polio 1 (94 percent), and measles (85 percent) vaccines.

Table 7. Vaccinations by background characteristics

Percentage of children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), and percentage with a vaccination card seen, by background characteristics, Zambia 2007

Background characteristic	BCG	DPT			DPT/HB/Hib ¹			Polio ²				Measles	All ³	No vaccinations	Percentage with a vaccination card	Number of children	
		1	2	3	1	2	3	0	1	2	3						4
Sex																	
Male	92.0	25.4	24.1	20.8	67.0	65.2	59.9	30.2	93.6	89.7	77.5	20.2	84.9	68.0	5.9	78.7	628
Female	92.6	26.7	25.7	20.4	65.9	62.7	58.3	28.3	93.3	89.0	76.6	17.8	84.9	67.2	5.1	77.2	644
Residence																	
Urban	94.7	29.8	29.3	26.8	65.1	63.9	62.6	57.5	96.2	93.5	80.9	15.7	88.5	71.2	3.3	78.5	347
Rural	91.4	24.7	23.3	18.3	67.0	64.0	57.8	18.6	92.4	87.8	75.6	20.2	83.6	66.2	6.3	77.8	925
Region																	
Central	93.0	18.7	17.8	14.4	78.2	74.8	70.0	20.8	94.4	90.4	78.1	26.5	91.6	71.7	3.1	84.4	137
Copperbelt	94.8	26.6	26.6	24.0	66.7	64.1	62.5	56.8	94.8	90.6	81.2	19.8	87.0	73.4	4.7	82.3	169
Eastern	98.0	20.2	20.2	17.9	77.3	75.8	70.5	22.9	98.9	97.5	83.9	17.3	89.0	71.9	1.1	83.5	187
Luapula	84.1	25.7	24.7	22.5	54.0	52.2	45.9	12.5	82.8	80.1	71.4	10.3	75.8	61.3	15.0	64.7	103
Lusaka	94.1	38.1	36.8	33.4	59.0	59.0	58.5	58.9	98.3	96.6	79.7	16.9	91.9	70.3	1.7	76.7	123
Northern	81.9	28.4	26.3	17.9	54.1	51.1	44.4	13.0	84.5	78.1	69.1	9.6	71.1	55.0	14.1	74.9	229
Northwestern	93.7	27.8	23.5	17.7	64.4	54.0	42.9	24.5	95.0	79.9	58.5	18.4	78.0	51.5	3.9	77.8	84
Southern	97.8	25.7	24.3	20.5	73.6	72.9	67.4	21.6	97.7	95.8	81.3	25.1	92.0	74.4	0.7	77.6	145
Western	97.4	25.8	24.9	19.4	71.6	69.8	66.9	39.6	98.3	95.6	86.1	36.3	93.1	80.0	1.7	73.9	94
Education																	
No education	89.6	23.4	22.7	16.1	64.0	59.2	53.6	22.9	91.7	85.7	70.8	20.5	82.4	59.9	7.8	76.0	174
Primary	92.1	25.1	23.7	19.2	67.6	64.9	59.4	25.9	93.2	88.6	77.4	18.5	83.7	66.8	5.5	78.5	828
Secondary+	94.6	30.7	30.1	27.9	64.4	64.0	61.6	43.4	95.3	93.8	80.0	19.5	90.2	75.0	4.1	77.5	270
Total	92.3	26.1	24.9	20.6	66.4	63.9	59.1	29.2	93.5	89.3	77.0	19.0	84.9	67.6	5.5	77.9	1,272

¹ The pentavalent combination vaccine DPT/HB/Hib was introduced in the Zambia health care system in 2006 to replace DPT. The vaccine contains the DPT, Hepatitis B, and Haemophilus influenza type b vaccines.

² Polio 0 is the polio vaccination given at birth.

³ BCG, measles, and three doses each of DPT or DPT/HB/Hib and polio vaccine (excluding polio vaccine given at birth).

In the 2001-02 ZDHS, the proportion of children who received all of the recommended vaccinations was slightly higher than that in 2007 (70 percent). Of equal concern is the trend in the increasing percentage of children who have not received any vaccinations, which has doubled from 3 percent in 2001-02 to 6 percent in the 2007 ZDHS.

Childhood Acute Respiratory Infection, Fever, and Diarrhoea

Acute respiratory infection (ARI), fever, and dehydration from diarrhoea are important contributing causes of childhood morbidity and mortality in developing countries (WHO, 2003). In the 2007 ZDHS, for each child under five years of age, mothers were asked if the child had experienced an episode of diarrhoea, a cough accompanied by short, rapid breathing due to chest congestion (symptoms of ARI), or fever in the two weeks preceding the survey. Information was also collected on the percentage of episodes in which mothers sought treatment for their children.

Table 8 shows that about six in ten children (59 to 68 percent) with symptoms of ARI, fever, or diarrhoea were taken to a health care provider for treatment. There are no notable differentials of child health-seeking behaviour between urban and rural areas. The likelihood of seeking treatment from a health care provider generally increases with the mother's educational level. Overall, 67 percent of children with diarrhoea were given oral rehydration therapy (ORT).

Table 8. Treatment for acute respiratory infection, fever, and diarrhoea

Among children under five years who were sick with a cough accompanied by short, rapid breathing or with difficulty breathing due to chest congestion (symptoms of acute respiratory infection-ARI) or with fever, in the two weeks preceding the survey, percentage for whom treatment was sought from a health facility or provider, and among children under five years who were sick with diarrhoea during the two weeks preceding the survey, percentage for whom treatment was sought from a health facility or provider, percentage given a solution made from oral rehydration salt (ORS) packets or given pre-packaged ORS liquids, and percentage given any oral rehydration therapy (ORT) by background characteristics, Zambia 2007

Background characteristic	Children with symptoms of ARI		Children with fever		Children with diarrhoea			
	Percentage for whom treatment was sought from a health facility/provider ¹	Number with ARI	Percentage for whom treatment was sought from a health facility/provider ¹	Number with ARI/fever	Percentage for whom treatment was sought from a health facility/provider ¹	Percentage given solution from ORS packet	Percentage given any ORT ²	Number with diarrhoea
Age in months								
<6	(59.4)	32	63.6	74	(51.9)	(40.2)	(40.2)	46
6-11	(71.6)	53	69.7	167	64.4	66.8	74.2	183
12-23	78.2	66	65.4	290	58.8	60.9	68.0	316
24-35	70.8	67	62.3	240	57.7	60.0	65.5	200
36-47	(56.7)	44	57.2	159	56.8	54.8	63.8	99
48-59	(59.1)	42	54.0	115	50.9	57.3	67.2	67
Sex								
Male	67.9	173	61.5	552	58.5	60.1	67.1	454
Female	67.4	131	64.2	492	58.6	59.7	66.6	456
Residence								
Urban	67.0	95	65.8	276	56.3	59.3	66.0	291
Rural	68.1	209	61.7	768	59.6	60.2	67.2	619
Region								
Central	(75.4)	33	60.6	152	59.3	57.6	62.5	111
Copperbelt	(64.3)	49	57.1	173	51.5	65.1	68.6	149
Eastern	(77.1)	36	73.1	132	74.5	74.2	78.0	104
Luapula	*	14	52.1	52	46.9	47.2	62.2	55
Lusaka	(66.7)	48	69.7	86	48.7	55.7	68.2	96
Northern	(56.5)	62	52.2	228	50.7	51.7	64.9	168
Northwestern	(66.1)	23	66.9	56	66.6	63.9	68.6	61
Southern	(87.8)	31	80.9	94	70.4	62.3	64.4	109
Western	*	7	67.6	71	65.8	59.6	60.5	58
Education								
No education	(65.9)	41	56.1	136	52.6	50.4	61.6	114
Primary	65.8	205	62.4	692	60.4	61.7	67.7	571
Secondary+	75.7	58	68.0	217	56.9	60.2	67.1	226
Total	67.7	304	62.8	1,044	58.5	59.9	66.8	911

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates a figure is based on fewer than 25 unweighted cases and has been suppressed.

¹ Excludes pharmacy, shop, and traditional practitioner

² Includes ORS from packets, pre-packaged ORS liquids, and recommended home fluid

Infant and Young Child Feeding Practices

Breast feeding is sufficient and beneficial for infant nutrition in the first 6 months of life. Breastfeeding also helps the uterus contract, hence reducing the mother's postpartum blood loss. Supplementing breast milk before the child is 4 months of age is discouraged because it may inhibit breastfeeding and expose the newborn infant to illness. At a later stage of the baby's development, breast milk should be supplemented by other liquids and eventually by solid or mushy food to provide adequate nourishment (PAHO, 2002).

The 2007 ZDHS collected data on infant and young child feeding (IYCF) practices for all children born in the five years preceding the survey. As shown in Table 9, 61 percent of children under 6 months of age are exclusively breastfed. Eight percent of infants age 0-5 months are given plain water only, while 4 percent are breastfed and given juices or non-milk liquids, and 1 percent of children in the same age group are given other milk in addition to breast milk. By age 6-9 months, 93 percent of infants are fed complementary food. Three percent of infants age 6-9 months are fed using a bottle with a nipple, a practice that is discouraged because of the risk of illness to the child.

Table 9. Breastfeeding status by age

Among youngest children under three years living with their mother, percent distribution by breastfeeding status and the percentage currently breastfeeding; and among all children under three years, percentage using a bottle with a nipple, according to age in months, Zambia 2007

Age in months	Not breast-feeding	Exclusively breastfed	Breastfeeding and consuming				Total	Percentage currently breast-feeding	Number of youngest children under three years	Percentage using a bottle with a nipple ¹	Number of all children under three years
			Plain water only	Non-milk liquids/juice	Other milk	Comple-mentary food					
0-1	0.0	86.0	8.7	2.7	0.8	1.8	100.0	100.0	201	2.5	203
2-3	1.1	64.7	7.5	5.1	2.1	19.4	100.0	98.9	206	2.5	210
4-5	1.1	35.0	8.2	3.3	1.3	51.1	100.0	98.9	226	5.0	228
6-8	0.5	2.6	1.6	1.6	0.0	93.7	100.0	99.5	315	2.9	319
9-11	3.8	0.0	2.7	0.0	0.0	93.5	100.0	96.2	322	3.4	329
12-17	8.5	0.0	0.8	0.7	0.0	90.1	100.0	91.5	610	3.3	628
18-23	45.6	0.0	0.0	0.1	0.0	54.2	100.0	54.4	593	2.4	644
24-35	90.8	0.0	0.0	0.0	0.0	9.2	100.0	9.2	757	1.6	1,152
0-3	0.6	75.3	8.1	3.9	1.4	10.7	100.0	99.4	406	2.5	412
0-5	0.8	60.9	8.1	3.7	1.4	25.2	100.0	99.2	632	3.4	641
6-9	1.6	1.9	2.5	1.2	0.0	92.9	100.0	98.4	435	2.5	442
12-15	6.6	0.0	1.0	0.8	0.0	91.6	100.0	93.4	422	3.2	433
12-23	26.8	0.0	0.4	0.4	0.0	72.4	100.0	73.2	1,203	2.9	1,272
20-23	58.3	0.0	0.0	0.0	0.0	41.7	100.0	41.7	395	3.0	438

Note: Breastfeeding status refers to a 24-hour period (yesterday and the past night). Children classified as breastfeeding and consuming plain water only consume no supplements. The categories of not breastfeeding, exclusively breastfed, breastfeeding and consuming plain water, water-based liquids/juice, other milk, and complementary foods (solids and semi-solids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus children who receive breast milk and water-based liquids and who do not receive complementary foods are classified in the water-based liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.

¹ Based on all children under three years

Nutritional Status of Children

Anthropometric indicators for young children were collected in the 2007 ZDHS to provide outcome measures of nutritional status. As recommended by the World Health Organization, evaluation of nutritional status in this report is based on the comparison of three indices for the population of children in a survey with those reported for a reference population of well-nourished children (WHO Multicentre Growth Reference Study Group, 2006). The indices are expressed as standard deviation units from the median for the reference group. Children who fall below minus two standard deviations (-2 SD) from the median of the reference population are regarded as moderately malnourished, while those who fall below minus three standard deviations (-3 SD) from the median of the reference population are considered severely malnourished. Marked differences, especially with regard to height-for-age and weight-for-age are often seen between different subgroups of children within a country.

Table 10 shows nutritional status for children under five years of age, according to three anthropometric indices by background characteristics. Height-for-age is the measure of linear growth. A child who is below minus 2 standard deviations from the reference mean for height-for-age is considered short for his/her age, or stunted, a condition reflecting the cumulative effect of chronic malnutrition. The percentage of children who are stunted (below -2 SD) is 45 percent. In the survey, a higher proportion of males (48 percent) than females (42 percent) are stunted. In rural areas 48 percent of the children are stunted, while 39 percent of children in urban areas are stunted. More than half of the children in the Central (53 percent) and Luapula (56 percent) provinces are stunted.

Table 10. Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Zambia 2007

Background characteristic	Height-for-age (stunting)		Weight-for-height (wasting)		Weight-for-age (underweight)		Number of children
	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage below -3 SD	Percentage below -2 SD ¹	
Age in months							
<6	8.7	18.0	4.4	7.7	1.6	6.6	488
6-8	11.2	26.0	2.4	7.9	3.0	9.9	290
9-11	15.4	32.6	4.8	11.8	3.5	14.5	306
12-17	19.2	42.8	2.3	7.9	2.8	15.3	590
18-23	33.0	58.9	0.8	4.5	4.1	18.3	619
24-35	25.5	53.2	2.0	4.7	3.4	16.3	1,121
36-47	21.1	50.9	1.2	2.3	2.0	14.4	1,098
48-59	20.0	46.5	1.3	3.9	3.1	15.3	1,090
Sex							
Male	23.6	48.4	1.9	5.6	3.2	16.7	2,765
Female	18.4	42.4	2.1	4.8	2.6	12.6	2,836
Residence							
Urban	16.6	39.0	1.6	4.4	2.5	12.8	1,598
Rural	22.7	47.9	2.1	5.5	3.0	15.3	4,004
Region							
Central	25.0	52.7	2.8	5.9	2.4	15.2	546
Copperbelt	20.1	43.8	0.6	2.3	1.8	14.9	760
Eastern	23.9	49.5	1.0	3.6	2.1	12.7	853
Luapula	32.0	56.3	3.1	5.4	3.1	17.7	492
Lusaka	14.7	37.2	1.2	4.4	2.6	9.7	625
Northern	21.9	49.3	2.2	6.0	4.2	17.3	920
Northwestern	21.1	43.6	2.5	7.6	5.3	19.6	369
Southern	15.1	36.2	1.3	4.8	2.9	12.8	615
Western	13.9	36.3	5.4	10.6	1.9	13.0	421
Education							
No education	20.8	44.6	2.9	6.7	4.5	17.3	724
Primary	23.7	48.6	2.0	5.2	3.1	15.4	3,353
Secondary	15.4	38.6	1.6	4.9	1.7	10.3	1,067
More than secondary	3.8	21.0	0.6	4.9	0.0	5.9	123
Mother's interview status							
Mother interviewed	21.2	45.4	2.1	5.4	2.9	14.3	5,140
Mother not interviewed, but in household ²	18.6	45.9	1.4	5.8	4.9	19.3	129
Mother not interviewed, not in household ³	18.0	45.2	1.4	2.4	1.7	17.7	333
Total 2007 WHO standard ⁴	21.0	45.4	2.0	5.2	2.9	14.6	5,602
Total 2007 NCHS/CDC/WHO standard ⁵	15.8	39.2	0.9	4.7	2.9	19.3	5,581

Note: Table is based on children who slept in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards adopted in 2006. The indices in this table are NOT comparable to those based on the previously used NCHS/CDC/WHO standards. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight

¹ Includes children who are below -3 standard deviations (SD) from the International Reference Population median

² For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

³ Includes children whose mothers are dead

⁴ Total includes 1 child whose mother has no information on education and interview status

⁵ This line has been added in the table to show the measure according to NCHS/CDC/WHO standard classification, which was also used in the 2001-02 ZDHS. The data by background characteristics are not presented in this report; however, the totals are presented for comparison with the 2001-02 ZDHS data.

Weight-for-height describes current nutritional status. A child who is below minus two standard deviations from the reference mean for weight-for-height is considered too thin for his/her height, or wasted, a condition reflecting acute or recent nutritional deficit. Overall, 5 percent of children in the 2007 ZDHS are wasted. The Western province has the highest percentage of wasting (11 percent), while Copperbelt has the lowest (2 percent).

Weight-for-age is a composite index of weight-for-height and height-for-age, and thus does not distinguish between acute malnutrition (wasting) and chronic malnutrition (stunting). A child can be underweight for his/her age because s/he is stunted, wasted, or both. Weight-for-age is an overall indicator of a population's nutritional health. Fifteen percent of children in Zambia are below 2 standard deviations for weight-for-age.

A line has been added in the table to show the 2007 ZDHS measures according to NCHS/CDC/WHO standard classification. The data are not presented in this report. Comparison with findings of the 2001-02 ZDHS using the NCHS/CDC/WHO standard classification shows that there has been a mix in the trend of anthropometric measures among children. Stunting has decreased from 47 percent to 39 percent, wasting has stayed at the same level (5 percent), and the proportion of underweight children has declined from 28 percent to 19 percent.

H. Early Childhood Mortality

Infant and child mortality rates are basic indicators of a country's socioeconomic situation and quality of life (UNDP, 2007a). Estimates of childhood mortality are based on information collected in the birth history section of the questionnaire administered to individual women. Table 11 presents estimates for three successive five-year periods prior to the 2007 ZDHS. The rates are estimated directly from the information in the birth history on a child's birth date, survivorship status, and the age at death for children who died. All rates are expressed per 1,000 live births, except for child mortality, which is expressed per 1,000 children surviving to 12 months of age.

For the five years immediately preceding the survey (approximately calendar years 2002-2006), the infant mortality rate is 70 deaths per 1,000 live births, and the neonatal mortality rate is 34 deaths per 1,000 births. The estimate of child mortality (age 12 months to 4 years) is 52 per 1,000 live children. The overall under-five mortality rate for the same period is 119 per 1,000. An examination of the neonatal and post-neonatal rates indicates that 59 percent of early childhood deaths in Zambia take place before a child's first birthday, with 29 percent occurring during the first month of life.

A comparison of mortality estimates obtained from the 2007 ZDHS with the estimates from the 2001-02 ZDHS for the period 0-4 years preceding the survey shows that the rates have decreased for all categories. The largest rate decrease is seen in the drop in under-five mortality from 168 in the 2001-02 ZDHS to 119 deaths per 1,000 live births in the 2007 ZDHS.

Table 11. Early childhood mortality rates

Neonatal, post-neonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey, Zambia 2007

Years preceding the survey	Neonatal mortality (NN)	Post-neonatal mortality ¹ (PNN)	Infant mortality (${}_1q_0$)	Child mortality (${}_4q_1$)	Under-five mortality (${}_5q_0$)
0-4	34	36	70	52	119
5-9	39	56	95	70	158
10-14	28	56	84	80	157

¹ Computed as the difference between the infant and neonatal mortality rates

I. Malaria

Malaria is one of the leading causes of death in developing countries (WHO, 2008). The 2007 ZDHS collected data on measures to prevent malaria including the use of mosquito nets among women and children, and prophylactic use of anti-malarial drugs.

Use of Mosquito Nets

Table 12 shows that 64 percent of households in urban and rural areas are in possession of at least one mosquito net of any type. Over half of urban and rural households have at least one insecticide treated net (ITN) (53 and 54 percent, respectively). Thirty-five percent of children under 5 years in urban areas slept under a mosquito net the night before the survey compared with 33 percent in rural areas. In urban areas, 30 percent of children under 5 years were reported to have slept under an ITN the night before the survey compared with 28 percent in rural areas. Thirty-five percent of pregnant women age 15-49 years in urban areas slept under a mosquito net the night before the survey compared with 40 percent of pregnant women in rural areas. In urban areas, 29 percent of pregnant women reported sleeping under an ITN the night before the survey compared with 34 percent in rural areas.

Table 12. Malaria indicators

Possession and use of mosquito nets, preventive malaria treatment during pregnancy, and treatment of children with fever using anti-malarial drugs, by urban-rural residence, Zambia 2007

Malaria indicators	Residence				Total	
	Urban		Rural		Percent	Number
	Percent	Number	Percent	Number	Percent	Number
Mosquito nets						
Percentage of household with at least one mosquito net (treated or untreated)	64.3	2,479	64.4	4,685	64.4	7,164
Percentage of household with at least one insecticide-treated net (ITN) ¹	52.6	2,479	53.7	4,685	53.3	7,164
Percentage of children under 5 who slept under a mosquito net the night before the survey	35.1	1,774	32.9	4,473	33.5	6,247
Percentage of children under 5 who slept under an insecticide-treated net (ITN) the night before the interview ¹	30.2	1,774	28.0	4,473	28.6	6,247
Percentage of pregnant women age 15-49 who slept under a mosquito net the night before the interview	34.8	236	40.1	537	38.5	773
Percentage of pregnant women age 15-49 who slept under an insecticide-treated net (ITN) the night before the interview ¹	28.7	236	34.4	537	32.7	773
Preventive malaria treatment during pregnancy						
Percentage of last birth in the 5 years preceding the survey for which the mother took anti-malarial drugs for prevention during the pregnancy	91.3	1,357	84.1	2,778	86.5	4,136
Percentage of last birth in the 5 years preceding the survey for which the mother received intermittent preventive treatment (IPT) during an antenatal visit ²	67.9	1,357	61.3	2,778	63.5	4,136
Treatment of fever						
Among children under age 5 with fever in the two weeks preceding the survey, percentage who took anti-malarial drugs	38.8	282	38.2	763	38.4	1,044
Among children under age 5 with fever in the two weeks preceding the survey, percentage who took anti-malarial drugs the same day/next day after developing fever	23.5	282	19.4	763	20.5	1,044

¹ An insecticide-treated net (ITN) is a permanent net that does not require any treatment, a pre-treated net obtained within the past 12 months or a net that has been soaked with insecticide within the past 12 months.

² Intermittent Preventive Treatment is preventive treatment with at least two doses of SP/Fansidar during antenatal visit.

Malaria Treatment during Pregnancy

The 2007 ZDHS also collected data on malaria treatment during pregnancy. WHO recommendations to prevent malaria during pregnancy include intermittent preventive treatment (IPT) with at least two doses of an effective anti-malarial drug, such as sulfadoxine-pyrimethamine (SP), during routine antenatal clinic visits. Table 12 shows that 91 percent of women in urban areas took anti-malarial drugs for malaria prevention during the last pregnancy in the 5 years preceding the survey compared with 84 percent in rural areas. Sixty-eight percent of women in urban areas received IPT during an antenatal visit compared with 61 percent in rural areas.

Treatment of Children with Fever

Table 12 shows that among children under five years of age with fever in the two weeks preceding the survey, similar percentages of children in urban and rural areas took anti-malarial drugs, 39 and 38 percent, respectively. Among children with fever, 24 percent in urban areas and 19 percent in rural areas took anti-malarial drugs the same day or next day after developing a fever.

J. HIV/AIDS Knowledge and Behaviour

The HIV/AIDS epidemic is a serious threat to Zambia's social and economic development (UNDP, 2007b). The 2007 ZDHS included a series of questions that addressed respondents' knowledge about HIV and AIDS, and their awareness of modes of HIV transmission, and behaviours that can prevent the spread of HIV.

Table 13 shows that HIV awareness is almost universal (99 percent). The differentials by background characteristics are negligible.

Table 14 shows that about three quarters of women and men (73 and 74 percent, respectively) know that consistent use of condoms is a means of preventing the spread of HIV. Ninety percent of women and 89 percent of men know that limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of contracting HIV. Eighty-five percent of women and men age 15-49 years know that abstaining from sexual intercourse can reduce the chance of being infected with HIV.

Knowledge of HIV and its transmission is lower among women and men who have never had sex and those with less education. Overall, knowledge levels are lowest among women living in the Northern Province and men living in the Eastern Province.

Table 13. Knowledge of AIDS

Percentage of women and men who have heard of AIDS, by background characteristics, Zambia 2007

Background characteristic	Women		Men	
	Has heard of AIDS	Number	Has heard of AIDS	Number
Age				
15-24	98.6	2,944	99.1	2,482
15-19	98.3	1,574	98.9	1,416
20-24	98.9	1,370	99.3	1,066
25-29	99.2	1,363	99.7	977
30-39	99.5	1,803	99.7	1,671
40-49	98.9	1,036	99.4	865
Marital status				
Never married	98.6	1,856	99.3	2,553
Ever had sex	99.4	904	99.7	1,585
Never had sex	97.8	952	98.5	969
Married or living together	99.0	4,402	99.4	3,168
Divorced/separated/widowed	99.5	888	100.0	274
Residence				
Urban	99.7	3,009	99.7	2,601
Rural	98.4	4,137	99.2	3,395
Region				
Central	96.0	659	99.5	559
Copperbelt	99.8	1,264	99.5	1,140
Eastern	98.8	971	99.2	795
Luapula	98.6	530	99.9	387
Lusaka	100.0	1,172	99.6	1,072
Northern	98.6	966	98.5	805
Northwestern	99.9	365	99.7	303
Southern	98.9	727	99.5	621
Western	99.3	492	99.5	315
Education				
No education	97.2	744	97.8	267
Primary	98.8	3,891	99.2	2,775
Secondary	99.6	2,140	99.7	2,512
More than secondary	100.0	371	99.6	441
Total 15-49	99.0	7,146	99.4	5,995
Men 50-59	na	na	99.9	505
Total men 15-59	na	na	99.4	6,500

na: Not applicable

Table 14. Knowledge of HIV prevention methods

Percentage of women and men age 15-49 who, in response to prompted questions, say that people can reduce the risk of getting the AIDS virus by using condoms every time they have sexual intercourse, by having one uninfected sex partner who has no other partners, and by abstaining from sexual intercourse, by background characteristics, Zambia 2007

Background characteristic	Women					Men				
	Using condoms ¹	Limiting sexual intercourse to one uninfected partner ²	Using condoms and limiting sexual intercourse to one uninfected partner ^{1,2}	Abstaining from sexual intercourse	Number	Using condoms ¹	Limiting sexual intercourse to one uninfected partner ²	Using condoms and limiting sexual intercourse to one uninfected partner ^{1,2}	Abstaining from sexual intercourse	Number
Age										
15-24	71.0	86.6	65.4	82.5	2,944	74.1	86.3	67.2	83.6	2,482
15-19	66.5	83.0	60.2	80.2	1,574	73.0	84.9	65.2	82.2	1,416
20-24	76.3	90.7	71.3	85.3	1,370	75.6	88.1	69.9	85.4	1,066
25-29	76.0	90.8	71.8	85.3	1,363	72.7	89.4	68.9	86.1	977
30-39	75.5	92.6	72.3	88.0	1,803	75.9	90.2	72.3	85.9	1,671
40-49	71.7	91.8	69.2	85.7	1,036	72.0	91.3	68.7	88.2	865
Marital status										
Never married	67.9	84.4	61.9	80.8	1,856	74.0	86.8	67.2	84.4	2,553
Ever had sex	77.1	90.5	72.3	83.8	904	77.2	88.6	70.7	85.6	1,585
Never had sex	59.3	78.6	52.0	77.9	952	68.9	84.0	61.6	82.5	969
Married or living together	75.3	91.8	71.9	86.2	4,402	74.0	89.8	70.4	86.0	3,168
Divorced/separated/widowed	73.7	90.3	68.8	86.9	888	75.7	90.8	71.7	85.9	274
Residence										
Urban	73.1	89.9	68.2	84.0	3,009	76.3	91.5	71.7	86.9	2,601
Rural	73.3	89.6	69.4	85.6	4,137	72.4	86.4	67.1	84.1	3,395
Region										
Central	71.9	90.6	69.5	88.8	659	78.7	93.6	74.7	90.8	559
Copperbelt	72.9	89.7	69.0	79.8	1,264	78.3	93.0	74.1	89.2	1,140
Eastern	79.1	94.9	78.1	93.8	971	61.4	75.9	54.8	78.6	795
Luapula	69.8	91.6	66.2	79.3	530	79.1	96.0	77.2	93.3	387
Lusaka	69.1	89.1	63.4	85.2	1,172	73.3	90.8	69.0	84.6	1,072
Northern	66.4	79.0	56.2	78.8	966	70.9	83.7	62.3	77.6	805
Northwestern	74.7	91.4	71.6	83.7	365	83.2	92.9	80.3	85.5	303
Southern	75.9	91.0	71.9	84.9	727	74.7	91.4	70.4	89.7	621
Western	85.7	95.4	84.5	93.5	492	77.3	82.0	71.6	82.0	315
Education										
No education	66.9	87.8	63.6	83.4	744	67.4	84.3	61.7	82.4	267
Primary	72.6	88.9	68.3	84.4	3,891	71.4	86.4	66.0	83.8	2,775
Secondary	75.0	90.6	70.1	85.2	2,140	75.9	90.4	71.0	86.3	2,512
More than secondary	81.8	96.6	79.0	91.1	371	84.4	95.2	82.2	91.4	441
Total 15-49	73.2	89.7	68.9	84.9	7,146	74.1	88.6	69.1	85.3	5,995
Men 50-59	na	na	na	na	na	69.7	90.6	66.9	85.2	505
Total Men 15-59	na	na	na	na	na	73.7	88.8	68.9	85.3	6,500

na = Not applicable

¹ Using condoms every time they have sexual intercourse

² Partner who has no other partners

Respondents were also asked detailed questions about their sexual behaviour, including the number of partners they had in the 12 months preceding the survey, and whether they had sex with someone who was not a spouse or cohabitating partner. Women and men were also asked about condom use. The results are shown in Table 15.1 for women and Table 15.2 for men.

Among women who had sex in the 12 months before the survey, two percent reported that they had sex with two or more partners in the 12 months during this period. This is considerably lower than the level of 20 percent among men in the same age group (15-49 years). Seventeen percent of women and 38 percent of men who had sexual intercourse in the previous 12 months reported that they had sex during this period with someone who was not their spouse or living with them. Among those having higher-risk sex, 37 percent of women and 50 percent of men reported that they used a condom at the last such sexual encounter.

Among women, the proportion with two or more partners in the past 12 months is higher among younger

women age 15-19 (5 percent); never married women (7 percent); divorced, separated or married women (6 percent); women in urban areas (2 percent); women living in Copperbelt (3 percent), Northwestern (3 percent), and Western (4 percent) provinces; and women with a secondary education (2 percent). In contrast, Table 15.2 shows less variation across subgroups for men and a different pattern from women. The highest proportions of sex with more than two sexual partners are reported by men in the 25-29 year age group (23 percent); divorced, separated or widowed men (27 percent); and those living in Eastern (25 percent), Lusaka (25 percent), and Southern (31 percent) provinces. There is no difference by urban and rural residence and very little difference by education levels, except among men with more than a secondary education. These men are less likely to have 2 or more sexual partners and more likely to use a condom at last higher-risk sex.

Table 15.1 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Women

Among women age 15-49 who had sexual intercourse in the past 12 months, the percentage who had intercourse with more than one partner and the percentage who had higher-risk sexual intercourse in the past 12 months, and among those having higher-risk intercourse in the past 12 months, percentage reporting that a condom was used at last higher-risk intercourse by background characteristics, Zambia 2007

Background characteristic	Among women who had sexual intercourse in the past 12 months			Among women who had higher-risk intercourse in the past 12 months	
	Percentage who had 2+ partners in the past 12 months	Percentage who had higher-risk intercourse in the past 12 months ¹	Number	Percentage who reported using a condom at last higher-risk intercourse ¹	Number
Age					
15-24	2.5	30.7	1,735	38.0	532
15-19	5.0	52.2	601	36.0	314
20-24	1.1	19.2	1,134	40.8	218
25-29	1.2	12.5	1,205	44.4	150
30-39	1.4	9.6	1,543	32.8	148
40-49	0.8	8.1	819	27.6	66
Marital status					
Never married	6.5	99.2	576	40.7	571
Married/living together	0.5	0.7	4,295	(42.2)	29
Divorced/separated/widowed	5.7	68.5	432	30.6	296
Residence					
Urban	2.1	23.4	2,019	47.6	473
Rural	1.3	12.9	3,283	26.0	423
Region					
Central	1.4	10.9	502	33.3	55
Copperbelt	2.5	19.6	854	42.1	167
Eastern	1.2	10.8	783	37.3	85
Luapula	1.3	9.0	405	27.0	37
Lusaka	1.5	21.9	799	49.6	175
Northern	0.1	6.8	700	(32.6)	47
Northwestern	3.1	23.1	302	24.3	70
Southern	0.8	21.3	576	35.5	122
Western	4.1	36.2	382	30.8	138
Education					
No education	1.0	8.5	623	13.9	53
Primary	1.5	12.7	3,076	30.3	389
Secondary	2.4	27.9	1,338	44.0	373
More than secondary	0.7	30.2	265	57.2	80
Total	1.6	16.9	5,302	37.4	896

Note: Figures in parentheses are based on 25-49 unweighted cases.

¹ Sexual intercourse with a partner who neither was a spouse nor lived with the respondent

Table 15.2 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Men

Among men age 15-49 who had sexual intercourse in the past 12 months, the percentage who had intercourse with more than one partner and the percentage who had higher-risk sexual intercourse in the past 12 months, and among those having higher-risk intercourse in the past 12 months, percentage reporting that a condom was used at last higher-risk intercourse, by background characteristics, Zambia 2007

Background characteristic	Among men who had sexual intercourse in the past 12 months			Among men who had higher-risk intercourse in the past 12 months	
	Percentage who had 2+ partners in the past 12 months	Percentage who had higher-risk intercourse in the past 12 months ¹	Number	Percentage who reported using a condom at last higher-risk intercourse ¹	Number
Age					
15-24	19.7	78.0	1,127	47.7	880
15-19	15.4	96.1	419	41.6	403
20-24	22.2	67.3	708	52.9	477
25-29	22.7	40.2	877	55.1	353
30-39	20.5	20.6	1,555	50.8	320
40-49	16.3	12.6	813	49.3	102
50-59	12.3	7.6	458	42.9	35
Marital status					
Never married	19.8	99.6	1,061	48.4	1,057
Married/living together	19.6	14.5	3,126	56.1	453
Divorced/separated/widowed	27.3	78.5	185	42.3	145
Residence					
Urban	19.6	46.6	1,697	55.2	791
Rural	20.2	32.3	2,675	45.2	864
Region					
Central	15.3	35.2	435	60.7	153
Copperbelt	14.9	41.6	701	44.0	292
Eastern	25.0	30.8	636	51.7	196
Luapula	10.1	22.2	308	30.9	68
Lusaka	25.1	51.0	735	62.8	375
Northern	10.1	21.1	590	34.4	125
Northwestern	24.4	39.0	245	41.4	96
Southern	31.4	47.1	462	50.8	218
Western	24.3	51.3	258	41.1	133
Education					
No education	20.5	25.4	233	36.5	59
Primary	20.3	33.0	2,105	41.4	696
Secondary	20.3	46.5	1,668	55.0	775
More than secondary	16.3	34.1	366	72.7	125
Total 15-49	20.0	37.9	4,372	50.0	1,655
Total men 15-59	19.2	35.0	4,829	49.8	1,690

¹ Sexual intercourse with a non-marital, non-cohabiting partner

K. HIV Testing

The 2007 ZDHS included the HIV testing component. All women age 15-49 and men age 15-59 in each household who were eligible to be interviewed were asked if they would consent to give a few drops of blood from a finger prick to be tested anonymously.

An accurate estimation of HIV prevalence is necessary to assess the scope of the HIV epidemic in Zambia and track trends over time. In Zambia, as in many countries, sentinel surveillance data from antenatal care (ANC) clinics has been the principal tool of monitoring the spread of HIV. Additionally, other information derives from surveillance of the level of HIV in special populations, such as individuals treated at health facilities for sexually transmitted infections and sex workers. However, these surveillance data results do not provide an estimate of the HIV prevalence among the general population. To address this issue, a decision was made to test a representative sample of women age 15-49 and men age 15-59 in the 2001-02 ZDHS. Zambia now has the advantage of having HIV prevalence data from both ANC surveillance and two ZDHS surveys (2001-02

ZDHS and 2007 ZDHS), providing more insight into HIV prevalence among the general population. The initial findings are presented below. A more detailed analysis of the results will be included in the 2007 ZDHS final report.

Coverage of HIV Testing

Table 16 shows the percent distribution of women age 15-49 years and men age 15-59 years eligible for HIV testing by residence. Overall, 75 percent of the 2007 ZDHS respondents consented to HIV testing. Coverage of the HIV testing is higher in rural areas (77 percent) than in urban areas (72 percent). Similarly, a higher proportion of women (77 percent) consented to HIV testing than men (72 percent). Refusals were highest among urban men (23 percent) and women of both urban and rural residence (20 percent). One of the challenges in obtaining participation from men is that they were not present at the time of the interview. Seven percent of men in the urban areas and 4 percent in the rural areas were absent at the time of blood collection.

Table 16. Coverage of HIV testing			
Percent distribution of women age 15-49 and men age 15-59 eligible for HIV testing by testing status, according to residence and province (unweighted), Zambia 2007			
Sex/test result	Residence		Total
	Urban	Rural	
Women 15-49			
DBS Tested and interviewed	76.4	77.7	77.1
Refused to provide blood and interviewed	18.3	18.5	18.4
Refused to provide blood and not interviewed	2.0	1.0	1.5
Absent at the time of blood collection and interviewed	0.1	0.0	0.0
Absent at the time of blood collection and not interviewed	1.6	1.2	1.4
Other interviewed	1.0	0.9	0.9
Other not interviewed	0.6	0.7	0.7
Total	100.0	100.0	100.0
Number	3,320	4,088	7,408
Men 15-59			
DBS Tested and interviewed	67.8	75.8	72.2
DBS tested and not interviewed	0.0	0.1	0.0
Refused to provide blood and interviewed	18.9	16.7	17.6
Refused to provide blood and not interviewed	3.8	1.4	2.5
Absent at the time of blood collection and interviewed	0.1	0.1	0.1
Absent at the time of blood collection and not interviewed	6.5	3.7	5.0
Other interviewed	1.0	1.0	1.0
Other not interviewed	1.9	1.3	1.6
Total	100.0	100.0	100.0
Number	3,225	3,921	7,146
Total			
DBS Tested and interviewed	72.2	76.8	74.7
DBS tested and not interviewed	0.0	0.0	0.0
Refused to provide blood and interviewed	18.5	17.6	18.0
Refused to provide blood and not interviewed	2.9	1.2	2.0
Absent at the time of blood collection and interviewed	0.1	0.0	0.1
Absent at the time of blood collection and not interviewed	4.0	2.4	3.2
Other interviewed	1.0	0.9	1.0
Other not interviewed	1.2	1.0	1.1
Total	100.0	100.0	100.0
Number	6,545	8,009	14,554

HIV Prevalence Rates by Socioeconomic Characteristics

Table 17 presents the finding for the HIV testing. The adult HIV prevalence (women and men age 15-49) observed in the 2007 ZDHS is 14 percent. This estimate represents a decrease from the prevalence of 16 percent observed in the 2001-02 Zambia DHS. In 2007, 16 percent of women and 12 percent of men are HIV positive. Among respondents tested, the proportion who are HIV positive increases with age from 5 percent among those age 15-19 to 24 percent in the 35-39 age group, before falling slightly among those in their 40s.

As observed in other countries, there are differences between women and men in the age pattern of HIV infection. The infection rates peak at a later age for men (40-44) than women (30-34), and are lower for men than women at every age group except age 40 and older.

HIV prevalence for women and men is lowest among individuals who have never been married and highest among those who are divorced, separated, or widowed. When observing the type of union in Table 17, women who reported that they are not currently in a union have the highest HIV prevalence at 18 percent. Among men, HIV prevalence is highest for men who reported that they are in a polygynous union at 19 percent.

Table 17. HIV prevalence by socioeconomic characteristics						
Percentage HIV positive among interviewed women age 15-49 and men age 15-59 who were tested, by background characteristics, Zambia 2007						
Background characteristic	Women		Men		Total	
	Percentage HIV positive	Number	Percentage HIV positive	Number	Percentage HIV positive	Number
Age						
15-19	5.7	1,202	3.6	1,162	4.7	2,365
20-24	11.8	1,023	5.2	865	8.7	1,888
25-29	19.9	1,058	11.4	796	16.3	1,854
30-34	26.0	819	17.1	787	21.6	1,607
35-39	24.9	586	22.4	608	23.6	1,194
40-44	18.3	445	24.1	410	21.1	855
45-49	12.1	369	18.6	313	15.1	682
Marital status						
Never married	9.1	1,420	4.5	2,107	6.3	3,527
Ever had sex	14.6	705	5.0	1,349	8.3	2,054
Never had sex	3.7	715	3.5	758	3.6	1,474
Married/living together	14.7	3,375	16.1	2,607	15.3	5,982
Divorced or separated	28.8	466	33.1	176	30.0	642
Widowed	52.5	240	(63.1)	52	54.4	293
Type of union						
In polygynous union	13.5	496	19.0	203	15.1	698
Not in polygynous union	14.8	2,856	15.9	2,404	15.3	5,260
Not currently in union	18.3	2,127	7.9	2,335	12.9	4,462
Residence						
Urban	23.1	2,317	15.9	2,148	19.7	4,464
Rural	11.0	3,185	9.4	2,795	10.3	5,980
Province						
Central	22.0	507	12.6	458	17.5	965
Copperbelt	21.6	973	12.3	949	17.0	1,922
Eastern	11.0	748	9.5	654	10.3	1,402
Luapula	11.5	408	15.3	317	13.2	726
Lusaka	22.4	902	19.0	878	20.8	1,780
Northern	7.7	744	5.7	662	6.8	1,406
Northwestern	9.1	281	4.5	251	6.9	532
Southern	15.8	560	13.2	513	14.5	1,073
Western	16.1	379	13.9	260	15.2	638
Education						
No education	10.8	549	7.7	210	10.0	759
Primary	15.8	2,937	11.0	2,247	13.7	5,184
Secondary	17.4	1,726	13.2	2,121	15.1	3,846
More than secondary	21.3	290	17.6	365	19.3	655
Total 15-49	16.1	5,502	12.3	4,942	14.3	10,444
50-59	na	na	12.7	432	12.7	432
Total men 15-59	na	na	12.3	5,374	12.3	5,374

na = Not applicable
 Figures in parentheses are based on 25-49 unweighted cases.

HIV prevalence in the urban areas is twice that in the rural areas (10 and 20 percent, respectively). Provinces with prevalence levels above the national average are Lusaka (21 percent), Central (18 percent), Copperbelt (17 percent), Western (15 percent), and Southern (15 percent). The lowest levels are found in Northern and Northwestern Provinces (both 7 percent).

For both women and men, HIV prevalence increases with increasing levels of education. HIV prevalence for women and men with more than secondary education (21 and 18 percent, respectively) is two times higher than for women and men with no education (11 and 8 percent, respectively).

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