

# Jordan - Interim Demographic and Health Survey 2009, Population and Family Health Survey (JPFHS)

**Department of Statistics (DoS)**

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# Sampling

## Sampling Procedure

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### SAMPLE DESIGN

The 2009 JPFHS sample was designed to produce reliable estimates of major survey variables for the country as a whole, urban and rural areas, each of the 12 governorates, and Badia and non-Badia areas. To ensure comparability with the previous surveys, the sample was also designed to provide estimates for the three regions, North, Central and South. The grouping of the governorates into the regions is as follows: the North region consists of Irbid, Jarash, Ajloun, and Mafraq; the Central region consists of Amman, Madaba, Balqa, and Zarqa; and the South region consists of Karak, Tafiela, Ma'an, and Aqaba.

The 2009 JPFHS sample was designed using the 2004 Population and Housing Census as the sampling frame. The sampling frame was stratified by governorate, major cities, other urban, and other rural within each stratum. A two-stage sampling procedure was employed. First, blocks were selected systematically as primary sampling units (PSUs) with a probability proportional to the size of the PSU. A total of 930 PSUs were selected at this stage. In the second stage, a fixed number of 16 households were selected as final sampling units in each PSU, resulting in a sample size of about 15,000 households. Blood testing (for anemia) and the measurements of height and weight were conducted among eligible individuals in the selected households in 465 PSUs (half of the sample).

### UPDATING OF SAMPLING FRAME

Prior to the main fieldwork, mapping operations were carried out and the sample units/blocks were selected and then identified and located in the field. The selected blocks were delineated, and the outer boundaries were demarcated with special signs. During this process, the numbers on buildings, housing units, and households were updated, listed, and documented, along with the name of the owner/tenant of the housing unit and the name of the household head. These activities were completed during the second quarter of 2009.

Note: See detailed description of sample design in APPENDIX A of the final report which is presented in this documentation.

## Response Rate

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A total of 14,872 households were selected for the survey from the sampling frame; among those selected households, 13,959 households were found. Of those households, 13,577 (97 percent) were successfully interviewed. In those households, 10,401 eligible women were identified, and complete interviews were obtained with 10,109 of them (97 percent of all eligible women). The overall response rate (the household's response rate multiplied by the eligible woman response rate) was about 95 percent.

Note: See summarized response rates by place of residence in Table 1.1 of the final report which is presented in this documentation.

# Questionnaires

## Overview

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The 2009 JPFHS used two questionnaires—namely, the Household Questionnaire and the Individual Questionnaire. Both questionnaires were developed in English and Arabic, based on the questionnaires used in the 2007 survey, in collaboration with ICF Macro. The Household Questionnaire was used to list all usual members and visitors of the sampled households and to obtain information on each household member's age, sex, educational attainment, relationship to the head of household, and marital status. In addition, questions were included on the socioeconomic characteristics of the household, such as source of water, sanitation facilities, and availability of durable goods.

The Household Questionnaire was also used to identify women who were eligible for the individual interview: ever-married women age 15-49. In addition, in half of the households, all women age 15-49 and children under five years of age were measured to determine nutritional status. Children age 6-59 months and women age 15-49 were tested for anemia.

The household and women's questionnaires were based on the DHS standard questionnaire. Additions and modifications to the model questionnaire were made in order to provide detailed information specific to Jordan, using experience gained from the 1990, 1997, 2002, and 2007 JPFHS. For each ever-married woman age 15-49, information on the following topics was collected:

- Respondent's general background
- Birth history
- Family planning
- Marriage
- Fertility preferences
- Respondent's employment

In addition, information on births and pregnancies, contraceptive use and discontinuation, and marriage during the five years prior to the survey was collected using a monthly calendar for this purpose.

As previously mentioned, anthropometric data were collected during the 2009 JPFHS in a subsample of 50 percent of clusters. All women age 15-49 and children age 0-4 in these households were measured using Shorr height boards and weighed using electronic Seca scales. In addition, a drop of capillary blood was taken from these women and children age 6-59 months to measure, in the field, their hemoglobin level using the HemoCue system. Hemoglobin testing was used to estimate the prevalence of anemia.

# Data Collection

## Data Collection Dates

Start	End	Cycle
2009-10	2009-12	N/A

## Data Collection Mode

Face-to-face [f2f]

### DATA COLLECTION NOTES

#### Recruitment of Staff

Different supervisory and executive levels of survey staff members were recruited according to certain criteria, such as experience, educational and personal qualifications, and familiarity with geographic areas. Fieldworkers for the main survey were recruited from among those who participated in other demographic surveys conducted by the Department of Statistics (DoS), especially the 2007 JPFHS. The interviewers were all highly qualified women. Supervisors and field editors were selected from the DoS permanent staff or from those with good past experience in such surveys.

#### Training and Pretest

Training of the interviewers took place in Amman for three weeks in September and October 2009. The training course consisted of instructions regarding interviewing techniques and field procedures, a detailed review of items on the questionnaires, instructions and practice in weighing and measuring children and women, anemia testing, mock interviews between participants in the classroom, and practice interviews. After the training, pretest fieldwork was conducted over a one-week period in 15 urban clusters and 4 rural clusters.

Field practice in anemia testing was carried out during the pretest by the assigned team health technicians. In addition, team members practiced weighing and measuring the height of women and children. Also 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. Training was conducted in the Ministry of Health centers, as the interviewers who were assigned to take measurements of height and weight and conduct blood testing for anemia were able to practice with outpatients in these centers. Debriefing sessions were held with the pretest field staff, and modifications to the questionnaires and instructions were made based on lessons drawn from the exercise. The survey technical staff and experts from ICF Macro participated and lectured in the training program.

#### Main Fieldwork

The survey fieldwork was organized in such a way as to ensure control over field logistics by DoS field offices all over the country. The workload, the dispersion of sample units, and transportation facilities served as criteria for identifying the number of field staff in each area. The field staff consisted of 18 teams that consisted of 18 controllers, 11 editors, 65 interviewers, and 11 female health technicians (for blood testing). All teams were supervised by three supervisors. During field work, these teams were combined or reformulated as necessary. Fieldwork was carried out between October 7 and December 28, 2009.

To facilitate data collection, each interviewing team was assigned a number of blocks in the sample area. Each supervisor, in collaboration with the controller, divided the team so as to ensure that all adjacent sampled households were completed by one interviewer. To ensure good data quality, interviewers were asked to conduct fewer interviews during the first three days of data collection; the completed questionnaires were then checked by the field editor, the supervisor, or both to ensure completeness and consistency of data. Under the supervision of controllers and supervisors, the field editor, the controller, or both conducted spot checks by randomly visiting some sampled households and re-interviewing some respondents. The original questionnaires were then matched to the re-interview questionnaires, and any differences were discussed.

Interviewers made repeated attempts to obtain the responses of eligible respondents by calling back to interview eligible women who were not home at the time of the first visit or by attempting to persuade eligible women who were reluctant to be interviewed. Once a cluster was finished, the questionnaires were delivered to the central office in Amman for processing.

## Data Processing

### Other Processing

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Fieldwork and data processing activities overlapped. After two weeks of data collection, and after field editing of questionnaires for completeness and consistency, the questionnaires for each cluster were packaged together and sent to the central office in Amman where they were registered and stored. Special teams were formed to carry out office editing and coding of the open-ended questions.

Data entry and verification started after two weeks of office data processing. The process of data entry, including one hundred percent re-entry, editing, and cleaning, was done by using PCs and the CSPro computer package, developed specially for such surveys. The CSPro program allows data to be edited while being entered. Data processing operations were completed by the end of January 2010. A data processing specialist from ICF Macro made a trip to Jordan in January 2010 to follow up on data editing and cleaning and to work on the tabulation of results for the survey preliminary report. The preliminary report was then published in February 2010. The tabulations for the present final report were completed in March 2010.

# Data Appraisal

## Estimates of Sampling Error

The estimates from a sample survey are affected by two types of errors: non-sampling errors and sampling errors. Non-sampling 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 2009 Jordan Population and Family Health Survey (JPFHS) to minimize this type of error, non-sampling 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 2009 JPFHS 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 among 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 2009 JPFHS 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 2009 JPFHS is a Macro SAS procedure. This procedure 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 estimate of sampling error calculation in APPENDIX B of the report which is presented in this documentation.

## Other forms of Data Appraisal

### Data Quality Tables

- Household age distribution
- Age distribution of eligible and interviewed women
- Completeness of reporting
- Births by calendar years
- Reporting of age at death in days
- Reporting of age at death in months
- Nutritional status of children (JPFHS 2002 based on the WHO Child Growth Standards)

Note: See for the detail in APPENDIX C of the final report which is presented in this documentation.





## Related Materials

### Questionnaires

#### Jordan Population and Family Interim Survey 2009 - Questionnaire

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Title Jordan Population and Family Interim Survey 2009 - Questionnaire  
Author(s) Department of Statistics (DoS)  
Date 2009-01-01  
Country Jordan  
Language English  
Filename JOR\_2009\_IDHS\_questionnaire.pdf

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### Reports

#### Jordan Population and Family Survey 2009 - Report

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Title Jordan Population and Family Survey 2009 - Report  
Author(s) Department of Statistics, Amman, Jordan ICF Macro, Calverton, Maryland, USA  
Date 2010-05-01  
Country Jordan  
Language English  
Filename <http://www.measuredhs.com/pubs/pdf/FR238/FR238.pdf>

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#### Jordan Population and Family Survey 2009 - Fact Sheet

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Title Jordan Population and Family Survey 2009 - Fact Sheet  
Author(s) MEASURE DHS  
Date 2010-05-01  
Country Jordan  
Language English  
Filename <http://www.measuredhs.com/pubs/pdf/GF18/GF18.pdf>

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