

SM2015-Panama

Baseline Household Census & Survey

Data Quality Report

February 2014

Table of Contents

TABLES AND FIGURES	5
Tables.....	5
Figures	7
CHAPTER 1: INTRODUCTION	9
1.1 Objectives	9
1.2 Design	9
1.2.1 Sample selection.....	9
1.2.2 Instruments for data collection	11
1.2.3 Training of data collectors	12
1.2.4 Data collection	13
1.2.5 Data entry and data analysis	14
1.2.6 Final sample description	14
CHAPTER 2: CHARACTERISTICS OF HOUSEHOLDS.....	17
2.1 Characteristics of non-participating households	17
2.2 Characteristics of participating households	17
2.3 Household Composition	17
2.3.1 Age and sex composition	17
2.3.2 Housing composition	18
2.4 Drinking water access and treatment.....	20
2.4.1 Sanitation facilities and waste disposal	20
2.4.2 Cooking fuel sources.....	22
2.4.3 Household wealth.....	23
2.5 Household expenditures.....	27
2.5.1 Total expenditures by type	27
2.5.2 Health expenditures	29
2.5.3 Source of health expenditure financing	31
2.6 Household Water Quality	33
CHAPTER 3: GENERAL CHARACTERISTICS OF RESPONDENTS.....	34
3.1 Demographic Characteristics.....	34
3.1.1 Age, marital status, relation to head of household	34
3.1.2 Residence.....	35
3.2 Educational attainment and literacy.....	36
3.3 Employment.....	38
3.4 Exposure to mass media	39
3.5 Access to health services	41
3.5.1 Proximity to health care facilities	41
3.6 Health Status	44
3.6.1 Current health status.....	44
3.6.2 Recent illness	44
3.6.3 Utilization of health services	45
3.6.4 Insurance coverage.....	48
3.6.5 Other barriers to health care access.....	49
CHAPTER 4: FERTILITY	52
4.1 Fertility Rates.....	52
4.1.1 Age-specific fertility rates	52
4.1.2 Total fertility rate.....	52
4.2 Age at first birth.....	53
4.2.1 Age at first birth	53
4.3 Birth Intervals	54

4.3.1 Intervals between births.....	54
4.4 Fertility Preferences.....	56
4.4.1 Desire for more children.....	56
4.4.2 Ideal birth interval	57
CHAPTER 5: FAMILY PLANNING	59
5.1 Knowledge of the fertile period.....	59
5.2 Use of family planning methods	60
5.2.1 Current use	60
5.3 Sources of family planning methods	63
5.4 Non-use and interruption of use of family planning methods	68
5.4.1 Prevalence	68
5.4.2 Reasons.....	70
5.5 Family planning intentions and decision-making	72
5.5.1 Participation in family planning decision.....	73
5.5.2 Informed choice.....	74
5.6 Exposure to family planning information	74
5.6.1 Family planning messages delivered by health care providers	74
CHAPTER 6: MATERNAL HEALTH CARE.....	76
6.1 Antenatal care	76
6.1.1 Antenatal care coverage.....	76
6.1.2 Frequency of antenatal care visits.....	79
6.1.3 Content of antenatal care.....	80
6.1.4 Coverage of tetanus toxoid vaccinations during pregnancy.....	82
6.1.5 Exposure to safe pregnancy messages	84
6.2 Delivery Care.....	86
6.2.1 Place of delivery.....	86
6.2.2 Assistance at delivery	88
6.2.3 Complications	91
6.2.4 Birth size and weight	93
6.3 Postnatal care	94
6.3.1 Postnatal checkup for the mother.....	94
6.3.2 Postnatal checkup for the baby.....	97
CHAPTER 7: CHILD HEALTH	99
7.1 Health status.....	99
7.1.1 Current health status.....	99
7.1.2 Recent illness	101
7.1.3 Utilization of health services for recent illness.....	103
7.2 Acute respiratory infection.....	105
7.2.1 Prevalence of acute respiratory infection and fever	105
7.2.2 Utilization of health services for acute respiratory infection	107
7.2.3 Utilization of medications for acute respiratory infection	108
7.2.4 Feeding practices during acute respiratory infection.....	110
7.3 Diarrhea	112
7.3.1 Prevalence	112
7.3.2 Utilization of health services for diarrhea	113
7.3.3 Utilization of treatments for diarrhea	113
7.3.4 Feeding practices during diarrhea	119
7.4 Immunization against common childhood illnesses.....	119
7.5 Deworming treatment.....	123
CHAPTER 8: INFANT AND YOUNG CHILDREN FEEDING PRACTICES	124
8.1 Breastfeeding.....	124
8.1.1 Early initiation of breastfeeding	124

8.1.2 Exclusive breastfeeding	124
8.1.3 Continued breastfeeding at 1 year	124
8.2 Solid Foods.....	126
8.2.1 Introduction of solid, semi-solid, or soft foods.....	126
8.2.2 Dietary diversity.....	126
8.2.3 Meal frequency.....	126
8.2.4 Minimum acceptable diet.....	126
8.2.5 Consumption of iron-rich or iron-fortified foods.....	126
8.3 Micronutrient Supplementation.....	128
8.3.1 Vitamin A	128
8.3.2 Iron.....	128
8.3.3 Packets of micronutrients.....	128
CHAPTER 9: NUTRITIONAL STATUS IN CHILDREN	130
9.1 Weight-for-age.....	132
9.1.1 Distribution of weight-for-age z-scores	132
9.1.2 Prevalence of underweight.....	133
9.2 Height-for-age.....	133
9.2.1 Distribution of height-for-age z-scores	133
9.2.2 Prevalence of stunting	134
9.3 Weight-for-height	134
9.3.1 Distribution of weight-for-height z-scores.....	134
9.3.2 Prevalence of wasting.....	135
9.4 Anemia	135
9.4.1 Distribution of hemoglobin values	136
9.4.2 Prevalence of anemia	136
CHAPTER 10: EXPOSURE TO HEALTH SYSTEM INTERVENTIONS.....	138
10.1 Exposure to community health workers.....	138
10.2 Exposure to breastfeeding interventions	141
10.3 Exposure to child nutrition interventions.....	141
10.4 Exposure to child health interventions	141
10.5 Satisfaction with community health workers.....	142
CHAPTER 11: NEONATAL, INFANT, AND CHILD MORTALITY	144
11.1 Neonatal mortality.....	144
11.2 Infant mortality.....	144
11.3 Mortality in children under 5 years of age	145
APPENDIX A. SAMPLING DESIGN AND METHODOLOGY	148
A.1 Sample size and statistical power calculations.....	148
A.1.1 Sample sizes	148
A.1.2 Prior levels of indicators.....	148
A.1.3 Statistical power calculation.....	149
A.2 Sampling Procedures.....	149
A.2.1 Primary sample.....	149
A.2.2 Alternate sample	149
APPENDIX B. SURVEY WEIGHTS, SAMPLING ERRORS, AND DESIGN EFFECTS	151
B.1 Weighting methodology	151
B.2 Sampling Errors.....	152
B.3 Design effects for key indicators	152
APPENDIX C. SM2015 HOUSEHOLD INDICATORS	154

TABLES AND FIGURES

Tables

Table 1.2.1 Number of segments, by district.....	10
Table 1.2.6 Number of households, number of eligible women, number of eligible children, and response rates by district.....	16
Table 2.3.1 Household composition: age and sex	18
Table 2.3.2 Household composition	19
Table 2.4.1a Household characteristics: water source	21
Table 2.4.1b Household characteristics: sanitation.....	22
Table 2.4.2 Household characteristics: cooking fuel	23
Table 2.4.3a Availability of assets: household effects	24
Table 2.4.3b Availability of assets: means of transportation	25
Table 2.4.3c Availability of assets: other assets	26
Table 2.5.1a Total household expenditures per person	27
Table 2.5.1b Household expenditures by type	28
Table 2.5.1c Household health care expenditures by type	29
Table 2.5.2 Household medical expenditures by type.....	30
Table 2.5.3 Household medical expenditures by source of financing	32
Table 2.6 Quality of drinking water	33
Table 3.1.1 Demographic characteristics of respondents	35
Table 3.1.2 Province and district of residence of respondents	36
Table 3.2.1 Educational attainment and literacy.....	37
Table 3.3 Employment.....	38
Table 3.4.1 Exposure to mass media	40
Table 3.5.1a Proximity to health care facilities: nearest health facility.....	42
Table 3.5.1b Proximity to health care facilities: usual health facility	42
Table 3.5.1c Proximity to health care facilities: health facility for delivery.....	43
Table 3.5.1d Proximity to health care facilities: health facility for recent illness.....	43
Table 3.6.1 Current health status	44
Table 3.6.2 Recent illness	45
Table 3.6.3 Utilization of health services.....	47
Table 3.6.4 Insurance coverage	48
Table 3.6.5 Other barriers to health care utilization	50
Table 4.1.1 Age-specific fertility rates	52
Table 4.1.2 Total fertility rate	53
Table 4.2.1 Parity and age at first birth	54
Table 4.3.1 Intervals between births	55
Table 4.4.1 Desire for more children	56
Table 4.4.2 Ideal interval for most recent birth.....	58
Table 5.1.1 Knowledge of the fertile period	60
Table 5.2.1a Current use of family planning methods.....	61
Table 5.2.1b Current use of family planning methods, by type of method.....	62
Table 5.2.1c Current use of modern family planning methods	63
Table 5.3.1a Source of family planning methods	64
Table 5.3.1b Source of family planning methods	65
Table 5.3.1c Source of family planning methods.....	66
Table 5.3.1d Source of family planning methods	67
Table 5.4.1 Interruption and non-use of family planning methods.....	69
Table 5.4.2a Reasons for interruption and non-use of family planning methods	71
Table 5.4.2b Reasons for interruption and non-use of family planning methods.....	71
Table 5.5.1 Participation in family planning decision-making	73

Table 5.5.2a Family planning decision-making – informed choice	74
Table 5.6.1 Family planning messages delivered by health care providers.....	75
Table 6.1.1a Antenatal care coverage for the most recent birth in the last two years.....	77
Table 6.1.1b Antenatal care coverage for the most recent birth in the last two years.....	78
Table 6.1.1c Antenatal care coverage for the most recent birth in the last two years	79
Table 6.1.2 Frequency of antenatal care visits	80
Table 6.1.3a Content of antenatal care visits - best practices.....	81
Table 6.1.3b Content of antenatal care visits - other services provided	82
Table 6.1.4 Coverage of tetanus toxoid vaccinations during pregnancy.....	83
Table 6.1.5 Exposure to safe pregnancy messages	85
Table 6.2.1 Place of delivery	87
Table 6.2.2a Assistance at delivery: type of attendants.....	89
Table 6.2.2b Assistance at delivery: number of attendants	90
Table 6.2.2c Assistance at delivery: in-facility delivery with skilled birth attendant.....	91
Table 6.2.3 Mode of delivery and complications.....	92
Table 6.2.4 Birth size and weight.....	93
Table 6.3.1a Postnatal checkup for the mother	95
Table 6.3.1b Postnatal checkup for the mother: providers.....	96
Table 6.3.2a Postnatal checkup for the neonate.....	97
Table 6.3.2b Postnatal checkup for the neonate: providers	98
Table 7.1 Age and sex of children	99
Table 7.1.1 Current health status	100
Table 7.1.2 Recent illness	102
Table 7.1.3 Utilization of health services for recent illness	104
Table 7.2.1 Prevalence of acute respiratory infection and fever	106
Table 7.2.2 Utilization of health services for acute respiratory infection	107
Table 7.2.3a Utilization of medications for acute respiratory infection.....	109
Table 7.2.4 Feeding practices during acute respiratory infection	111
Table 7.3.1 Prevalence of diarrhea	112
Table 7.3.2 Utilization of health services for diarrhea.....	113
Table 7.3.3a Utilization of treatments for diarrhea.....	114
Table 7.3.3b Utilization of oral rehydration solution and zinc for diarrhea	118
Table 7.3.4 Feeding practices during diarrhea	119
Table 7.4a Immunization against common childhood illnesses	120
Table 7.4b Immunization against common childhood illnesses, according to age group	122
Table 7.5 Deworming treatment	123
Table 8.1 Breastfeeding.....	125
Table 8.2 Solid foods.....	127
Table 8.3 Micronutrient supplements	129
Table 9 Age and sex of children measured	131
Table 9.2 Prevalence of underweight in children aged 0-59 months.....	135
Table 9.4.2 Prevalence of anemia in children aged 0-59 month	137
Table 10.1.1 Exposure to community health workers.....	138
Table 10.1.2 Services provided by community health workers.....	139
Table 10.1.2 Continued.....	139
Table 10.4.1 Exposure to breastfeeding, child nutrition, and child health interventions	141
Table 10.4.2 Exposure to child health interventions, by source.....	142
Table 10.5 Satisfaction with community health workers	143
Table 11.3a Mortality in children under 5 years of age in the target area of the initiative	146
Table 11.3b Mortality in children under 5 years of age at the national-level	146
Table B Design effects, SM2015-Panama Baseline Household Survey, 2013	154

Table C.1 SM2015 indicators among intervention areas, SM2015-Panama Baseline Household Survey, 2013155

Table C.2 SM2015 indicators among intervention areas, SM2015-Panama Baseline Household Survey, 2013155

Figures

Figure 1.1 Map of Mesoamerica with Panama highlighted9

Figure 1.2.1 Map of Panama with targeted provinces highlighted10

Figure 1.2.2 Schematic diagram of SM2015 survey implementation11

Figure 9.1.1 Distribution of weight-for-age z-scores among children aged 0-59 months132

Figure 9.2.1 Distribution of height-for-age z-scores among children aged 0-59 months133

Figure 9.3.1 Distribution of weight-for-height z-scores among children aged 0-59 months134

Figure 9.4.1 Distribution of hemoglobin values among children aged 0-59 months136

Figure 11.1 Neonatal mortality estimated from complete birth history data obtained from the SM2015-Panama Baseline Household Survey, 2013144

Figure 11.2 Infant mortality estimated from complete birth history data obtained from the SM2015-Panama Baseline Household Survey, 2013145

Figure 11.3 Mortality in children under 5 years of age estimated from complete birth history data obtained from the SM2015-Panama Baseline Household Survey, 2013145

This Data Quality Report on the SM2015-Panama Baseline Household Census and Survey was produced in agreement with the Inter-American Development Bank (IDB). All analyses and report writing were performed by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. This report is meant as a descriptive analysis to explore the most significant aspects of the information gathered for Salud Mesoamérica 2015. Its purpose is to ensure that collected data is of the highest possible quality.

About IHME

IHME monitors global health conditions and health systems and evaluates interventions, initiatives, and reforms. Our vision is that better health information will lead to more knowledgeable decision-making and higher achievements in health. To that end, we strive to build the needed base of objective evidence about what does and does not improve health conditions and health systems performance. IHME provides high-quality and timely information on health, enabling policymakers, researchers, donors, practitioners, local decision-makers, and others to better allocate limited resources to achieve optimal results.

Lead authors

Marielle C. Gagnier, BS
Post-Bachelor Fellow, IHME

K. Ellicott Colson, BA
Post-Bachelor Fellow, IHME

Bernardo Hernandez, MS, DSc
Associate Professor, IHME

Rafael Lozano, MD, MS
Professor, IHME

Ali H. Mokdad, PhD
Professor, IHME

Contributing authors

Brent Anderson, BA
Project Officer, IHME

Annie Haakenstad, MA
Project Officer II, IHME

Erin Palmisano, BA
Data Analyst, IHME

Dharani Ranganathan, BA
Data Analyst, IHME

Gulnoza Usmanova MPH, MD
Post-Graduate Fellow, IHME

Acknowledgments

We would like to extend our gratitude to Fundación FES for their participation in data collection for this project.

CHAPTER 1: INTRODUCTION

This chapter provides a general overview of the objectives, design, and implementation of the SM2015-Panama Baseline Household Census and the SM2015-Panama Baseline Household Survey.

1.1 Objectives

The Salud Mesoamérica 2015 Initiative (SM2015) is an innovative public/private partnership that seeks to reduce health equity gaps in Mesoamerica faced by those living in extreme poverty.

The principal objective of the SM2015-Panama Baseline Household Survey was to collect baseline data on household characteristics, household expenditures, and numerous reproductive health, maternal and neonatal health, immunization, and nutrition indicators (including physical measurements) related to the strategic areas of the Initiative in Panama (Figure 1.1).



Figure 1.1 Map of Mesoamerica with Panama highlighted

1.2 Design

1.2.1 Sample selection

The sample for the SM2015-Panama Baseline Household Survey was designed to provide estimates of the coverage of key health interventions and indicators among the lowest wealth quintile of the population.

The primary administrative units in Panama are provinces and indigenous jurisdictions called comarcas. The Inter-American Development Bank (IDB) has identified two intervention comarcas (Kuna Yala and Emberá) in which to conduct the baseline SM2015 Household Survey for the Initiative on the basis of their high concentration of residents in the country's lowest wealth quintile (Figure 1.2.1). From these areas, a random sample of eligible households was selected to reach the sample size of 1,650 households. A detailed description of the sampling procedure can be found in Appendix A.

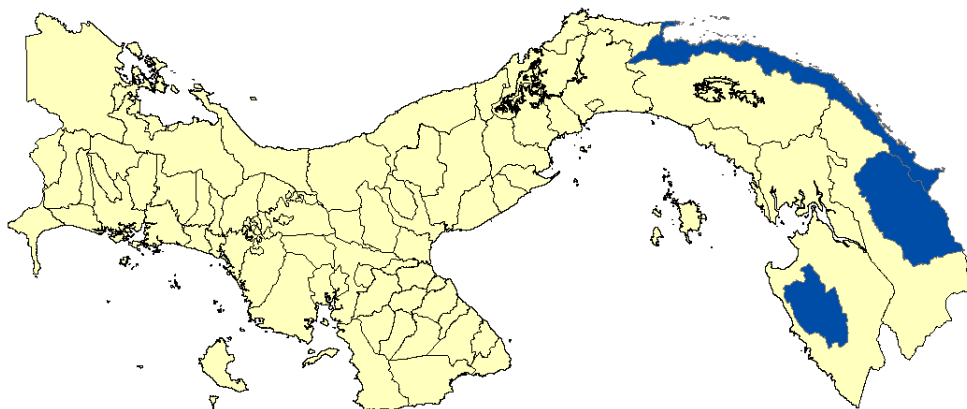


Figure 1.2.1 Map of Panama with targeted provinces highlighted

Briefly, the two targeted comarcas were divided into segments. From this list, a representative sample of 61 segments was selected. Segments were randomly selected with probability proportional to size, where size was represented by the number of occupied households within the segment, as captured on the 2010 Panama Population Census. In addition, a set of alternate segments was selected using identical methodology, to be surveyed in the event that any of the selected segments could not be surveyed and needed to be replaced for any reason (e.g., security concerns or high proportion of absent households). The total number of segments represented in the final dataset is shown in Table 1.2.1.

Table 1.2.1 Number of segments, by district

Province	District	Number of segments
Comarca Embera	Cémaco	13
Comarca Embera	Sambú	4
Comarca Kuna Yala	Comarca Kuna Yala	34

Immediately prior to the SM2015-Panama Baseline Household Survey, the SM2015-Panama Baseline Household Census was conducted in order to identify eligible women and children for the survey. The SM2015-Panama Baseline Household Census was carried out in each of the randomly selected segments. Using demographic data collected during the household listing exercise, households were then systematically selected for participation in the survey (i.e., if age-eligible women and children were listed as residents). All women aged 15-49 years who were residents of the selected household were eligible to be interviewed, and all children aged 0-59 months who were residents of the selected household were eligible for the physical measurement module. A schematic diagram of survey implementation is shown in Figure 1.2.2.

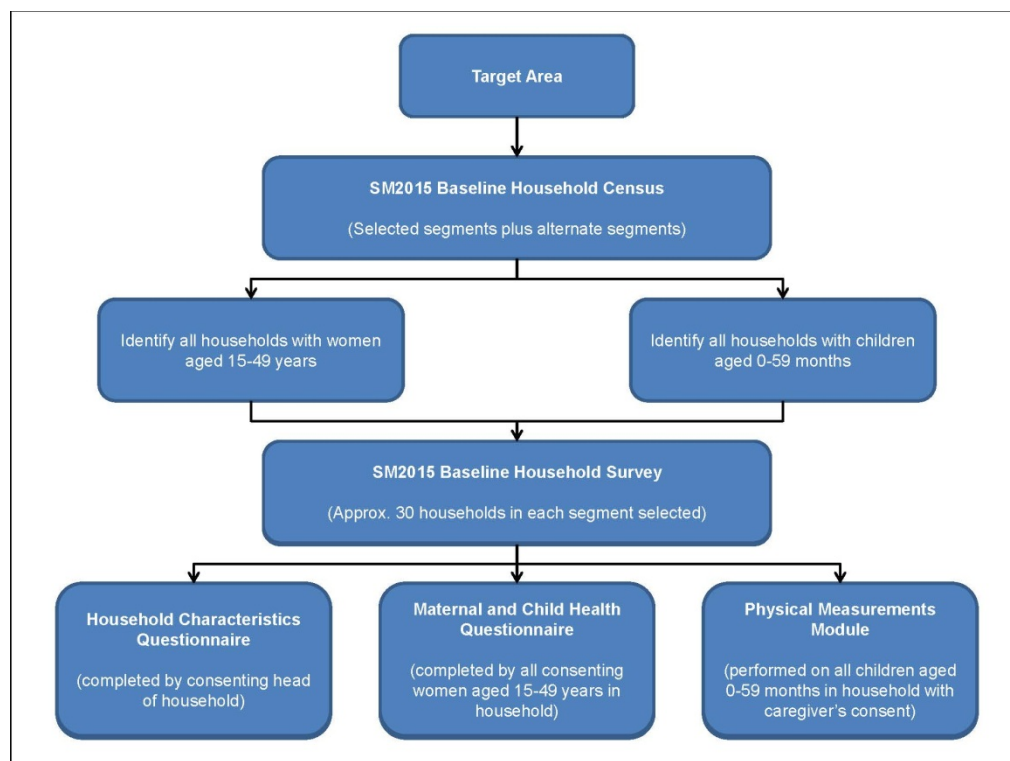


Figure 1.2.2 Schematic diagram of SM2015 survey implementation

Additional details pertaining to eligibility and selection for the survey are summarized in Appendix A.

1.2.2 Instruments for data collection

The baseline SM2015 Household Survey was used to generate a rapid assessment of current coverage rates of health interventions in the strategic areas of the Initiative (reproductive, maternal and neonatal health, immunization, and nutrition). Standardized questionnaires as well as surveys of health facilities and data from the health information systems were used to provide the information needed to establish the baseline.

There were three components to the SM2015-Panama Baseline Household Survey (in addition to the SM2015 Household Census): the Household Characteristics Questionnaire, the Maternal and Child Health Questionnaire, and the Physical Measurements Module.

The household questionnaires were developed to measure the coverage of key health interventions and indicators, and many items were adapted from existing Demographic and Health Surveys (DHS). The questionnaires were initially developed in English and then translated to Spanish. To best reflect the issues most relevant to the region under study and the local language, the Spanish-language questionnaires were revised following input from key stakeholders and at the conclusion of the pilot study (described below). The revised Spanish-language surveys were then back-translated to English. Study areas included a substantial proportion of indigenous populations, many of them also Spanish speakers. Although applying most of the surveys in Spanish was expected to be possible, the household survey was also translated and back-translated to the most common indigenous languages in the study areas.

The SM2015-Panama Household Census and Household Survey were conducted using a computer-assisted personal interview (CAPI). CAPI is programmed using DataStat Illume and installed on computer netbooks which are used by the surveyors at all times of the interview. CAPI supports skip patterns, inter-question answer consistency, and data entry ranges. The aim of introducing CAPI to the field is to reduce survey time by prompting only relevant questions, to maintain a logical answering pattern across different questions, and to decrease data entry errors. The use of CAPI also allows instantaneous data transfer via a secure link to IHME. Data can be continuously monitored, and modifications to the instrument can be updated remotely.

The SM2015 Household Census was used to capture the age and sex distribution of all of the usual members of all of the households in the selected segments. Basic information including relationship to the head of the household and marital status was also collected. Children aged 0-59 months who had one or more parent residing in the same household were linked to their mother and/or father by way of unique household member identification codes.

As previously mentioned, data from the SM2015 Household Census were then used to systematically select households for the detailed interviews and the physical measurements module (Figure 1.2.2). Selected households were re-visited, typically within one month of the census, and these questionnaires were completed during this visit.

The Household Characteristics Questionnaire collected information on the source of water; type of toilet facilities; exposure to secondhand smoke; ownership of various assets including durable goods, agricultural land, and livestock; and household expenses and sources of health care financing.

The Maternal and Child Health Questionnaire was used to collect information from all women of reproductive age (15-49 years). These women were asked questions on the following topics: background characteristics (including education, occupation, and exposure to media); access to health care; current health status; recent history of illness and associated medical expenses; birth history (including relevant questions about pregnancies that ended in miscarriage, stillbirth, or abortion); antenatal, delivery, and postpartum care; fertility preferences; knowledge and use of family planning methods (including barriers to use); exposure to health system interventions, and satisfaction with community health workers. Those with children aged 0-5 years were asked detailed questions in reference to each child born in the past five years on topics such as birth spacing; antenatal care; labor and delivery; postpartum care; breastfeeding and infant feeding practices; child's current health status; recent history of illness including diarrhea, fever, and acute upper respiratory infection, and associated medical expenses; child's exposure to health system interventions; immunization and supplementation history.

The Physical Measurements Module captured weight, height/length, and hemoglobin levels of children aged 0-59 months. Portable scales and stadiometers were used for the anthropometric measurements, and hemoglobin levels were assessed in the field using a portable HemoCue machine. Medically trained personnel (i.e., professional nurses) performed all assessments. In addition, three randomly selected households in each segment had water quality tests performed for chlorine concentrations and the presence of coliforms.

1.2.3 Training of data collectors

A total of 25 people (male and female) were recruited and trained to serve as supervisors, interviewers or conductors of physical measures, and reserves for the household census and survey. All field staff were required to have formal education through high school and to exhibit suffi-

cient literacy and speaking abilities in the language of the survey, as well as basic arithmetic skills. Personnel in charge of physical measures were nurses, who were required to have previous medical training and experience.

A five-day training exercise was undertaken in March 2013 in the communities of Huahuco y Arimae, Panama. The first three days were devoted to classroom training for all field staff, including application of questionnaires and physical measurement practices. The final two days were devoted to field training and pilot testing. Staff from Fundación FES, the agency in charge of data collection in Panama, and invited experts from IHME led the training, which was conducted in Spanish and included a variety of lectures, presentations, demonstrations, and role-playing exercises. Nutrition experts from IHME and FES led the training sessions on height and weight measurements and hemoglobin testing for the professional nurses who were hired to perform the physical assessments of children. A practice session took place during the second day with children attending a nursery. These personnel were trained to perform anthropometric and hemoglobin measurements using standard techniques.

During the classroom training sessions, supervisors and interviewers were briefed on the Salud Mesoamérica 2015 Initiative (SM2015) and the specific survey instruments developed for the Initiative. Supervisors and interviewers then received training on survey implementation using electronic devices (including use of the CAPI and interviewing skills) and fieldwork procedures (including map reading for locating selected households); reviewed the content of the household questionnaires in close detail; and received basic instruction on the principles of, and strategies for, data quality monitoring, team communication, and problem-solving. Household teams engaged in role-playing scenarios to practice administering the initial census survey and the full household questionnaire. A specialized team was trained in anthropometry and collection of a blood specimen. Trainers and supervisors provided feedback on the practice interviews. Specific issues noted during observation of the practice interviews were discussed with the whole group.

Field training and pilot sessions were initiated on day four of the training period in the localities of Huahuco and Arimae. Household teams and anthropometry teams spent two days in the field collecting data. This field practice provided the interviewers with an opportunity to become aware of any issues with the survey that they did not previously understand. The field training sessions also provided an opportunity to conduct cognitive testing of the survey among target respondents. At the end of each day, the trainers and trainees reviewed the questionnaires and discussed any problems that arose. Minor revisions to the questionnaires were implemented based on feedback from the field training sessions.

All field staff were evaluated on survey concepts and procedures by means of short tests following completion of the classroom training sessions and field training sessions. In addition to these evaluations, all field staff were observed by the trainers in order to fully assess their ability to administer the questionnaires.

1.2.4 Data collection

The SM2015-Panama Baseline Household Census, which captured basic demographic characteristics of all usual household occupants, was carried out between April 2, 2013, and June 27, 2013, in each of the randomly selected segments. For quality assurance, the data collected during the SM2015 Baseline Census were compared to data from the 2010 Panama Population Census on an ongoing basis. When 20% fewer than expected households or people were captured on the SM2015 Baseline Census, or when more than 5% of households were classified as “absent,” field staff were instructed to return to segments and attempt to capture missing households.

Data collection for the SM2015-Panama Baseline Household Survey began on April 23, 2013, and was completed on August 31, 2013. To assure completeness of the sample, field staff were instructed to return to selected households up to three times (on different days, and at different times during the day) in an attempt to complete the Household Characteristics Questionnaire, the Maternal and Child Health Questionnaire, and the Physical Measurements Module.

Five data collection teams, consisting of a total of four interviewers and a person in charge of physical measures (male and female), as well as a community liaison, were deployed to conduct the SM2015 Household Census and the SM2015 Household Survey. Supervisors were responsible for reviewing all questionnaires for quality and consistency prior to departing each segment. Five supervisors oversaw the SM2015 Household Census and SM2015 Household Survey.

The research protocol was approved by the Internal Review Board of the University of Washington. All data collection instruments and procedures were approved by the National Ethics Committee of the Ministry of Health of Panama.

1.2.5 Data entry and data analysis

Information collected by each survey component was monitored by both field supervisors and analysts at IHME to ensure data quality and adherence to survey protocols. Data files were uploaded to a secure File Transfer Protocol (FTP) site where they could be accessed by the data analysis team at IHME. After census, household, and health facility data were received, data were rigorously reviewed for consistency, clarity, and completeness. Prompt evaluation of data quality allowed for clarification from data collectors regarding inadequacies and irregularities, and rapid correction of procedural errors.

1.2.6 Final sample description

Table 1.2.6 shows the total number of completed interviews with heads of households and women of reproductive age, and the total number of physical measurements of children aged 0-59 months performed, with corresponding response rates, by district. Response rates were calculated using the following formula: $(\text{[# complete]} \div \text{[# eligible participants]})$. High non-response may affect the reliability of the estimates.

According to the 2010 Panama Population Census, we expected a total of 7,003 occupied households in the 61 selected segments. The SM2015 household listing exercise found 4,947 households that were occupied in the segments that were ultimately interviewed. Of the 4,947 occupied households, 4,945 completed the SM2015 Household Census, yielding a response rate of essentially 100% for this portion of the survey.

Based on information collected during the SM2015 Household Census, a subset of households were visited for individual interviews. A total of 1,808 households were visited for the individual interviews. Of these, a total of 1,710 Household Characteristics Questionnaires were completed with heads of households, yielding a household response rate of 95%.

Using the household roster completed as part of the SM2015 Household Survey, 2,987 women of reproductive age (15-49 years) were identified from the sub-sample of interviewed households as eligible for the Maternal and Child Health Questionnaire. Of these, 2,453 successfully completed the questionnaire (82%). In three selected segments, a partial interview of the Maternal and Child Health Questionnaire was administered and surveyors were unable to return to com-

plete the questionnaire due to problems in the access to communities. Thus, information is presented as missing for 70 women from these segments in Chapter 3 and Chapter 4.

The household roster completed as part of the SM2015 Household Survey was also used to identify 2,426 children aged 0-59 months as eligible for the Physical Measurements Module among the interviewed households. 2,253 of these children were measured (93%).

Among those households that were occupied but did not complete the SM2015 Household Census, the majority of the non-response for households and individuals was due to household members refusing the interview or being absent.

Table 1.2.6 Number of households, number of eligible women, number of eligible children, and response rates by district

Questionnaire type	Kuna Yala	Cémaco	Sambú
Household census			
No. of households	3677	854	442
No. of households occupied	3656	850	441
No. of households censused ^a	3655	849	441
Response rate ^b , %	100	99.9	100
Household characteristics questionnaire			
No. of households visited	1320	368	120
No. of households interviewed ^a	1238	351	120
Response rate ^b , %	93.8	95.4	100
Women's questionnaire			
No. of eligible women ^c	2361	480	146
No. of eligible women interviewed ^a	1900	419	134
Response rate ^b , %	80.5	87.3	91.8
Child questionnaire and measurements			
No. of eligible children ^d	1846	430	150
No. of eligible children measured	1706	405	142
Response rate ^b , %	92.4	94.2	94.7
^a Includes only units with completed interviews. ^b Number of completes out of total number of eligible units (i.e., occupied households or age-eligible women and children). ^c Women aged 15-49 years who reside in the interviewed households, based on the household roster completed as part of Household Characteristics Questionnaire. ^d Children aged 0-59 months who reside in the interviewed households, based on the household roster completed as part of Household Characteristics Questionnaire.			

CHAPTER 2: CHARACTERISTICS OF HOUSEHOLDS

This chapter provides a descriptive summary of the basic demographic, socioeconomic, and environmental characteristics of the households sampled for the SM2015-Panama Baseline Household Survey.

2.1 Characteristics of non-participating households

Data on selected households that were absent or declined to participate in the SM2015 Household Survey are drawn from the SM2015 Household Census. A total of 99 (5%) of the 1,808 households that were visited did not complete the SM2015 Household Survey. This non-response varies by district, from a low of 0% to a high of 6% non-response. Those households that did not complete the SM2015 Household Survey are hereafter referred to as “replaced” households because they were replaced by other households in the segment when possible.

Replaced households consisted of one to 18 members (median six members). Sixty-nine percent of these households were headed by a man, and the remaining households were headed by a woman. Nearly all replaced households (96%) had a woman of reproductive age as a usual member, and most (71%) of households had a child under the age of 5 as a usual member.

2.2 Characteristics of participating households

A total of 1,710 households in Panama completed the household characteristics questionnaire. The remainder of this chapter is dedicated to a summary of the basic demographic, socioeconomic, and environmental characteristics of the households completing the household characteristics questionnaire.

2.3 Household Composition

2.3.1 Age and sex composition

The distribution of the de facto household population in the surveyed households in Panama is shown in Table 2.3.1 by five-year age groups and by sex. A larger proportion of Panama’s population is in the younger age groups than in the older age groups. Table 2.3.1 indicates that 42% of the population is under age 15 years, 50% of the population is in the economically productive age range (15-64), and the remaining 8% is age 65 and above.

Table 2.3.1 Household composition: age and sex

Percent distribution of the de facto household population by five-year age groups based on the household roster completed as part of the SM2015 Household Survey			
Age	Male (%)	Female (%)	Total (%)
<5	14.2	13.5	13.8
5-9	15.2	13	14.1
10-14	15.1	12.7	13.9
15-19	9.8	8.7	9.2
20-24	5.5	6.7	6.1
25-29	4.7	6	5.4
30-34	4.8	5.5	5.1
35-39	4.3	5.6	5
40-44	4.2	5.1	4.7
45-49	4.2	4.5	4.3
50-54	3.3	4.2	3.8
55-59	3	3.7	3.4
60-64	3.3	2.7	3
65-69	2.8	2.8	2.8
70-74	2.5	2.4	2.4
75-79	1.7	1.5	1.6
80+	1.4	1.6	1.5
Total	100	100	100
	15263	16355	31621

2.3.2 Housing composition

The number of households, women, and children in the sample, and the percent distribution of households by sex of head of the household, number of usual members, and marital status are shown in Table 2.3.2.

Males are the head of the household in 75% of surveyed households in Panama, with females as the head of household in the remaining 25%. Approximately 40% of households have six or fewer members, with another 36% of households having nine or more members. Among household members aged 15 years and older, the majority are married or partnered (66%), with the rest being single (24%) or widowed, divorced, or separated (10%).

Table 2.3.2 Household composition

Number of households, women and children; and percent distribution of households by sex of head of the household, number of usual members, and marital status of members 15 years or older			
Household characteristic	N	%	SE
Number of households	1710		
Number of women	2453		
Number of children	2126		
Sex of the head of the household			
Male	1285	75.2	1
Female	423	24.8	1
DK/DTR	0		
Missing	2		
Total	1710	100	
Number of usual members			
1	8	0.5	0.2
2	32	1.9	0.3
3	71	4.2	0.5
4	155	9.1	0.7
5	184	10.8	0.8
6	219	12.8	0.8
7	236	13.8	0.8
8	190	11.1	0.8
9+	613	35.9	1.2
DK/DTR	0		
Missing	2		
Total	1710	100	
Marital status of members of the household			
Single	1674	23.6	0.5
Married	778	10.9	0.4
Open union/partnered	3930	55.3	0.6
Widow/divorced/separated	723	10.2	0.4
Other	2	0	
DK/DTR	10		
Missing	9		
Total	7126	100	

2.4 Drinking water access and treatment

2.4.1 Sanitation facilities and waste disposal

A household's source of drinking water is an important determinant of household members' health status. Contaminated drinking water can spread waterborne diseases, such as diarrhea or dysentery. Piped water, protected wells, and protected springs are expected to be relatively free of these diseases, whereas other sources, like unprotected wells, rainwater, or surface water, are more likely to carry disease-causing agents.

The percent distribution of households by source of drinking water and location of water source is shown in Table 2.4.1a. The majority of surveyed households (64%) use piped water, and 23% of households have to go outside their home or yard to a water source.

Table 2.4.1b includes information about sanitation facilities. Three-quarters of surveyed households use a facility type not provided by the survey, and nearly all of these households (99%) are in Kuna areas. Based on our fact-finding visits and the interviewers' observations, we have seen that most households use toilets that drain over the sea. Among households in Embera, most use latrines/pit toilets or do not have a toilet and use bushes or fields. Most households do not share toilet facilities with other households (88%).

Table 2.4.1a Household characteristics: water source

Percent distribution of households by source of drinking water, location of water source, and round-trip time to obtain drinking water			
Household characteristic	N	Weighted %	Weighted SE
Source of drinking water			
Pipes that lead to the house	636	39.8	4.9
Pipes that lead to the patio/yard	335	24.6	4.1
Public pump	1	0	
Tube or drilled well	14	0.6	0.4
Protected dug well	12	0.5	0.3
Unprotected dug well	24	1.2	0.7
Protected spring	0	0	
Unprotected spring	50	2.6	1.2
Rainwater	118	5.2	1.9
Water tank truck	0	0	
Car with a small tank	0	0	
Surface water	438	23.2	4.3
Bottled water	1	0.1	0.1
Water jug	0	0	
Other	44	2.2	0.6
DK/DTR	2		
Missing	35		
Total	1710	100	
Location of water source			
In own house/home	693	44.6	4.8
In own patio/yard	499	32.2	3.6
Elsewhere	473	23.2	5.6
DK/DTR	10		
Missing	35		
Total	1710	100	
Time to obtain drinking water (round-trip)			
Water on premises	1190	80.4	5
Less than 30 minutes	263	13.7	3.8
30 minutes or longer	121	5.9	2.3
DK/DTR	0		
Missing	136		
Total	1710	100	

Table 2.4.1b Household characteristics: sanitation

Percent distribution of households by sanitation facility type and if the facility is shared			
Household characteristic	N	Weighted %	Weighted SE
Sanitation facility			
Flushing toilet	34	2.1	1
Toilet with water poured from gourds	9	0.7	0.3
Latrine/pit toilet	325	14.1	3.8
Dry toilet	7	0.4	0.3
No toilet, bushes, field	200	10	2.8
Other	1090	72.6	6.1
DK/DTR	10		
Missing	35		
Total	1710	100	
Shared toilet/facilities, among households using any type of toilet			
Yes	41	12.3	3.7
No	334	87.7	3.7
DK/DTR	0		
Missing	0		
Total	375	100	

2.4.2 Cooking fuel sources

Cooking fuel source and the location for cooking food are included in Table 2.4.2. The percentage of households with a separate kitchen is also shown. The most commonly reported cooking fuel source used in households is wood (70%). Among those households with non-missing responses about cooking fuel sources, 61% report normally cooking food in a separate building, 37% normally cook food in the house, and 1% normally cook food outside. Approximately half of households that cook in the home have a separate kitchen.

Table 2.4.2 Household characteristics: cooking fuel

Percent distribution of households by cooking fuel source and the location for cooking food; and percentage of households with a separate kitchen			
Household characteristic	N	Weighted %	Weighted SE
Cooking fuel source (the respondent was to select all sources that applied)			
Electricity	27	1.6	0.5
Gas tank	969	54.5	4
Coal	321	23.5	3.2
Wood	1137	69.9	3.4
Straw/twigs/grass	3	0.3	0.2
Agricultural crops	2	0.1	0.1
No food is cooked at home	2	0.1	0.1
Other	2	0.1	0.1
DK/DTR	0		
Missing	35		
Total	1710		
Location for cooking food, among those who reported a cooking fuel source			
In the house	695	37.1	4.4
In a separate building	931	60.7	4.4
Outside	13	0.6	0.2
Other	27	1.6	0.4
DK/DTR	5		
Missing	0		
Total	1671	100	
Separate kitchen, among those who reported a cooking fuel source and cook in the home			
Yes	361	51.9	3.2
No	333	48.1	3.2
DK/DTR	1		
Missing	0		
Total	695	100	

2.4.3 Household wealth

The availability of durable consumer goods is a good indicator of a household's socioeconomic status. Table 2.4.3 shows the availability of selected consumer goods by household. Half of households have electricity, and the most commonly owned items are radios (64%), cell phones (64%), and wristwatches (41%). No households own a car, and only one household has a truck. Five percent of households own a bicycle.

Most households have one (53%) or two (24%) rooms used for sleeping. Approximately half of the households own agricultural land, and 10% of households own animals. Nine percent of households have a bank account.

Table 2.4.3a Availability of assets: household effects

Percent distribution of households with specific household effects							
Household characteristic	N	Weighted %	Weighted SE	Household characteristic	N	Weighted %	Weighted SE
Electricity				Refrigerator			
Yes	876	48.4	4.9	Yes	274	15.8	2.2
No	794	51.6	4.9	No	1393	84.2	2.2
DK/DTR	4			DK/DTR	7		
Missing	36			Missing	36		
Total	1710	100		Total	1710	100	
Radio				Computer			
Yes	1040	64.3	2.8	Yes	116	7.8	1.3
No	632	35.7	2.8	No	1554	92.2	1.3
DK/DTR	2			DK/DTR	3		
Missing	36			Missing	37		
Total	1710	100		Total	1710	100	
Television				Wristwatch			
Yes	562	31.6	3.5	Yes	636	41.1	2.5
No	1107	68.4	3.5	No	1031	58.9	2.5
DK/DTR	5			DK/DTR	7		
Missing	36			Missing	36		
Total	1710	100		Total	1710	100	
Cell phone				Guitar			
Yes	990	63.6	4.4	Yes	11	0.7	0.3
No	681	36.4	4.4	No	1658	99.3	0.3
DK/DTR	3			DK/DTR	5		
Missing	36			Missing	36		
Total	1710	100		Total	1710	100	
Telephone (landline)							
Yes	3	0.2	0.1				
No	1667	99.8	0.1				
DK/DTR	4						
Missing	36						
Total	1710	100					

Table 2.4.3b Availability of assets: means of transportation

Percentage of households with specific means of transport			
Household characteristic	N	Weighted %	Weighted SE
Bicycle			
Yes	108	5	1.4
No	1559	95	1.4
DK/DTR	7		
Missing	36		
Total	1710	100	
Motorcycle/scooter			
Yes	0	0	
No	1670	100	
DK/DTR	4		
Missing	36		
Total	1710	100	
Animal-driven cart			
Yes	0	0	
No	1671	100	
DK/DTR	3		
Missing	36		
Total	1710	100	
Car			
Yes	0	0	
No	1664	100	
DK/DTR	10		
Missing	36		
Total	1710	100	
Truck			
Yes	1	0.1	0.1
No	1666	99.9	0.1
DK/DTR	7		
Missing	36		
Total	1710	100	

Table 2.4.3c Availability of assets: other assets

Percentage distribution of number of rooms used for sleeping, and percentage of households with ownership of bank account, agricultural land and animals			
Household characteristic	N	Weighted %	Weighted SE
Rooms used exclusively for sleeping			
Zero	256	15.4	1.6
One	875	53.3	1.9
Two	363	23.5	1.4
Three or more	147	7.8	1.1
DK/DTR	33		
Missing	36		
Total	1710	100	
Ownership of bank account			
Yes	132	9	1.8
No	1525	91	1.8
DK/DTR	18		
Missing	35		
Total	1710	100	
Ownership of agricultural land			
Yes, own	788	48.7	3.5
Yes, rent	5	0.2	0.1
Yes, share/community share	14	1	0.3
No	817	50.2	3.5
DK/DTR	51		
Missing	35		
Total	1710	100	
Ownership of animals (bull or cow, mule, goat, chicken, or pig)			
Yes	179	10.3	1.3
No	1489	89.7	1.3
DK/DTR	6		
Missing	36		
Total	1710	100	

2.5 Household expenditures

2.5.1 Total expenditures by type

Households were surveyed about the amount the family unit living in the household spent over the last month. Table 2.5.1a shows the monthly expenditures per person living in the household. All data are presented in Dólares/Balboas. Forty-five percent of households spent under B20 per person over the last month. The median expenditure per person is B27 and the mean is B41, which is affected by a few households with high expenditure.

After reporting total household expenditures, households were then asked how much was spent on specific categories (e.g., food, housing, education, and medical care) over the last four weeks. Table 2.5.1b shows the expenditures on each category as a percentage of the total household expenditures, and Table 2.5.1c shows health care expenditures as a percentage of total household expenditures. For example, if a household spent B100 in the last month and reported spending B20 on food, then that household would have spent 20% of its total household expenditure on food and would therefore fall into the 10%-24% category.

Table 2.5.1b shows that 86% of households spend more than half of their monthly expenditures on food. Sixty-six percent of households spent money on education, but it totaled less than 25% of their monthly expenditure. Table 2.5.1c shows that most households spent no out-of-pocket money on medical care (84%), social security (99%), private insurance (more than 99%), or other expenses for access to health care such as transportation, housing, or childcare services needed to get health care (99% of households).

Table 2.5.1a Total household expenditures per person

Percent distribution of households by monthly total expenditure per person			
Characteristic	N	Weighted %	Weighted SE
Monthly expenditure per person (Dólares/Balboas)			
Less than B20	666	45.4	4
B20 - <40	333	18.7	2.1
B40 - <60	276	14.9	1.5
B60 - <80	150	8.3	1
B80 - <100	93	4.5	0.9
B100 - <120	37	2	0.6
B120+	103	6.1	1
Missing	52		
Total	1710	100	

Table 2.5.1b Household expenditures by type

Percent distribution of household expenditures by type, as a proportion of total household monthly expenditure											
Expenditure category	N	Weighted %	Weighted SE	Expenditure category	N	Weighted %	Weighted SE	Expenditure category	N	Weighted %	Weighted SE
Food			Housing, gas, electricity, and water			Transportation					
0%	34	4.3	1	0%	217	15.3	2.2	0%	1187	86.5	2.5
0.1% - 9%	7	0.4	0.2	0.1% - 9%	862	54.5	2.9	0.1% - 9%	141	8.5	1.6
10% - 24%	17	1.3	0.4	10% - 24%	165	11.8	1.9	10% - 24%	64	3.8	0.9
25% - 49%	108	8.1	1.6	25% - 49%	65	4.4	0.8	25% - 49%	15	1.1	0.4
50% - 74%	339	26.4	2.2	50% - 74%	20	2	0.6	50% - 74%	2	0.1	0.1
75% - 89%	403	34.1	2	75% - 89%	5	0.5	0.3	75% - 89%	0	0	
≥90%	314	25.4	2.3	≥90%	117	11.5	2.4	≥90%	1	0.1	0.1
DK/DTR	428			DK/DTR	146			DK/DTR	163		
Missing	60			Missing	113			Missing	137		
Total	1710	100		Total	1710	100		Total	1710	100	
Alcoholic beverages, tobacco, and narcotics			Clothing and footwear			Communication					
0%	1272	93.2	1.2	0%	940	72	2.7	0%	861	66.6	3.4
0.1% - 9%	52	3.1	0.9	0.1% - 9%	214	14.3	1.6	0.1% - 9%	434	27.9	2.7
10% - 24%	32	2.1	0.6	10% - 24%	143	9.7	1.3	10% - 24%	38	2.3	0.6
25% - 49%	14	1.1	0.4	25% - 49%	45	2.6	0.7	25% - 49%	16	1.3	0.4
50% - 74%	4	0.2	0.1	50% - 74%	15	1	0.3	50% - 74%	2	0.1	0.1
75% - 89%	3	0.1	0.1	75% - 89%	1	0.1	0.1	75% - 89%	4	0.2	0.1
≥90%	1	0.1	0.1	≥90%	4	0.2	0.1	≥90%	15	1.5	0.7
DK/DTR	154			DK/DTR	217			DK/DTR	206		
Missing	178			Missing	131			Missing	134		
Total	1710	100		Total	1710	100		Total	1710	100	
Education tuition, fees, and school supplies			Furniture, household equipment, and routine household maintenance			Recreation, culture, restaurants, and hotels					
0%	193	15.8	1.6	0%	1288	93.9	1	0%	1291	93.3	1.1
0.1% - 9%	521	40.2	2.9	0.1% - 9%	82	5.3	0.9	0.1% - 9%	86	6	1
10% - 24%	291	25.7	2.7	10% - 24%	14	0.6	0.2	10% - 24%	3	0.2	0.2
25% - 49%	70	6.9	1.2	25% - 49%	3	0.1	0.1	25% - 49%	2	0.4	0.3
50% - 74%	33	3.4	1	50% - 74%	2	0.1	0.1	50% - 74%	0	0	
75% - 89%	21	2.7	0.6	75% - 89%	0	0		75% - 89%	0	0	
≥90%	64	5.4	1	≥90%	0	0		≥90%	0	0	
DK/DTR	451			DK/DTR	183			DK/DTR	188		
Missing	66			Missing	138			Missing	140		
Total	1710	100		Total	1710	100		Total	1710	100	

Table 2.5.1c Household health care expenditures by type

Percent distribution of household health care expenditures by type, as a proportion of total household monthly expenditure							
Expenditure category	N	Weighted %	Weighted SE	Expenditure category	N	Weighted %	Weighted SE
Out-of-pocket health care				Private insurance premiums			
0%	1182	84.4	2.2	0%	1471	99.8	0.1
0.1% - 9%	165	10.6	1.5	0.1% - 9%	1	0.1	0.1
10% - 24%	42	2.6	0.6	10% - 24%	1	0	
25% - 49%	13	0.6	0.2	25% - 49%	0	0	
50% - 74%	6	0.3	0.1	50% - 74%	0	0	
75% - 89%	2	0.1	0.1	75% - 89%	0	0	
≥90%	9	1.3	1	≥90%	0	0	
DK/DTR	150			DK/DTR	80		
Missing	141			Missing	157		
Total	1710	100		Total	1710	100	
Social security premiums				Other costs associated with accessing health care			
0%	1411	98.7	0.4	0%	1444	98.9	0.3
0.1% - 9%	17	1	0.3	0.1% - 9%	12	0.7	0.2
10% - 24%	7	0.3	0.2	10% - 24%	6	0.3	0.1
25% - 49%	0	0		25% - 49%	2	0.1	0.1
50% - 74%	0	0		50% - 74%	0	0	
75% - 89%	0	0		75% - 89%	0	0	
≥90%	0	0		≥90%	0	0	
DK/DTR	119			DK/DTR	94		
Missing	156			Missing	152		
Total	1710	100		Total	1710	100	

2.5.2 Health expenditures

Of the 1,710 total households in the survey, 243 (14%) reported having health expenditures in the last four weeks. Among these households, health expenditures over the last four weeks ranged from a minimum of B1 to a maximum of B860. The weighted median expenditure was B11, and the weighted mean was B34, which was inflated by a few households that paid very high medical expenses.

Table 2.5.2 shows the expenditures on each category of medical care as a percentage of the total household monthly medical expenditures. Drugs and medicine represents the largest percentage of total medical spending for many households. Thirty percent of all households with medical expenditures report spending 90% or more of their medical expenditures on prescribed drugs or medicines.

Table 2.5.2 Household medical expenditures by type

Percent distribution of household health expenditures by type of care as a proportion of total household monthly health expenditure, among households with any reported out-of-pocket health care expenses or health care access expenses															
Expenditure category	N	Weighted %	Weighted SE	Expenditure category	N	Weighted %	Weighted SE	Expenditure category	N	Weighted %	Weighted SE	Expenditure category	N	Weighted %	Weighted SE
Care that required overnight stay in a hospital or health facility				Care by traditional or alternative healers, or traditional birth attendants				Care by pharmacists or medications bought from a pharmacy without a prescription				Diagnostic and laboratory tests such as X-rays or blood tests			
0%	215	94.4	1.8	0%	176	73.2	5.2	0%	203	91.1	2.6	0%	210	90.8	2.2
0.1% - 9%	0	0		0.1% - 9%	3	1	0.6	0.1% - 9%	2	0.6	0.4	0.1% - 9%	2	0.9	0.6
10% - 24%	0	0		10% - 24%	6	5.2	3.5	10% - 24%	6	2.9	1.5	10% - 24%	2	1.8	1.7
25% - 49%	0	0		25% - 49%	6	2.1	0.9	25% - 49%	4	1.7	1	25% - 49%	8	4.5	1.9
50% - 74%	3	0.8	0.5	50% - 74%	5	2.8	1.8	50% - 74%	0	0		50% - 74%	1	0.2	0.2
75% - 89%	0	0		75% - 89%	2	0.7	0.5	75% - 89%	0	0		75% - 89%	0	0	
≥90%	14	4.8	1.7	≥90%	33	15.1	3.8	≥90%	10	3.8	1.4	≥90%	6	1.7	1
DK/DTR	8			DK/DTR	7			DK/DTR	15			DK/DTR	12		
Missing	3			Missing	5			Missing	3			Missing	2		
Total	243	100		Total	243	100		Total	243	100		Total	243	100	
Other costs associated with staying overnight in a hospital or health facility				Dentists				Health care products such prescription glasses, hearing aids, prosthetic devices, etc.				Other health care products or services			
0%	218	95.5	1.4	0%	218	96	1.4	0%	228	99.4	0.4	0%	225	98.3	0.9
0.1% - 9%	1	0.6	0.6	0.1% - 9%	2	0.6	0.4	0.1% - 9%	1	0.2	0.2	0.1% - 9%	2	0.8	0.6
10% - 24%	1	0.3	0.3	10% - 24%	4	1.4	0.9	10% - 24%	1	0.3	0.3	10% - 24%	0	0	
25% - 49%	2	0.6	0.4	25% - 49%	1	0.3	0.3	25% - 49%	0	0		25% - 49%	1	0.6	0.6
50% - 74%	2	0.5	0.4	50% - 74%	1	0.2	0.3	50% - 74%	0	0		50% - 74%	0	0	
75% - 89%	0	0		75% - 89%	0	0		75% - 89%	0	0		75% - 89%	0	0	
≥90%	6	2.5	1	≥90%	4	1.4	0.7	≥90%	0	0		≥90%	1	0.4	0.4
DK/DTR	10			DK/DTR	8			DK/DTR	10			DK/DTR	12		
Missing	3			Missing	5			Missing	3			Missing	2		
Total	243	100		Total	243	100		Total	243	100		Total	243	100	
Care by doctors, nurses, or other health workers that did not require overnight stay				Medications prescribed by health personnel											
0%	218	93.7	2	0%	122	53.8	5.2								
0.1% - 9%	2	0.6	0.4	0.1% - 9%	3	1.1	0.7								
10% - 24%	0	0		10% - 24%	11	4.4	1.6								
25% - 49%	2	0.8	0.6	25% - 49%	18	7.7	1.8								
50% - 74%	0	0		50% - 74%	5	1.6	0.8								
75% - 89%	0	0		75% - 89%	3	1	0.8								
≥90%	8	4.9	1.9	≥90%	64	30.4	5								
DK/DTR	10			DK/DTR	13										
Missing	3			Missing	4										
Total	243	100		Total	243	100									

2.5.3 Source of health expenditure financing

Of the 1,710 total households in the survey, 139 (8%) reported that members of the household went to a hospital and stayed overnight at least once during the last 12 months. Of those 139 households with overnight stays, 87 reported a non-zero amount paid for all of the expenses associated with the overnight stays. Among these 87 households, the amount paid for overnight stays over the last 12 months ranged from a minimum of B4 to a maximum of B2,000. The weighted median amount paid was B50, and the weighted mean was B131, which was inflated by a few households that paid very high expenses. Overall, 90% of households with expenditures for overnight stays reported paying B300 or less.

Table 2.5.3 shows the source of financing for medical expenditures as a percentage of the total household medical expenditures for overnight hospital stays. Nearly one-third of all households (31%) use current income to fund a portion or all of the household's medical expenditures, with 24% of households using current income to fund 90% or more of the total medical expenses. Approximately 15% of households used money from friends and relatives in order to pay for hospital care, 14% reduced household spending, and 13% used money from savings. Thirty-six percent of households used a source of funding other than the options provided to pay for care.

Table 2.5.3 Household medical expenditures by source of financing

Percent distribution of households by source of medical expenditures as a percentage of reported total household medical expenditures for overnight hospital stays in the last 12 months, among those households with overnight hospital stays															
Financing source	N	Weighted %	Weighted SE	Financing source	N	Weighted %	Weighted SE	Financing source	N	Weighted %	Weighted SE	Financing source	N	Weighted %	Weighted SE
Any of the household members' current income				Health insurance plan payment or reimbursement				Property sold				Political donations or grants			
0%	42	69.4	7.1	0%	71	94.7	3.3	0%	73	96.5	2.2	0%	69	92.3	4.1
0.1% - 9%	2	1.6	1.1	0.1% - 9%	1	1.4	1.4	0.1% - 9%	0	0		0.1% - 9%	0	0	
10% - 24%	0	0		10% - 24%	0	0		10% - 24%	1	1.8	1.8	10% - 24%	0	0	
25% - 49%	1	1.3	1.4	25% - 49%	0	0		25% - 49%	0	0		25% - 49%	0	0	
50% - 74%	3	4	2.4	50% - 74%	0	0		50% - 74%	0	0		50% - 74%	1	1.4	1.4
75% - 89%	0	0		75% - 89%	0	0		75% - 89%	0	0		75% - 89%	1	1.2	1.2
≥90%	21	23.6	5.9	≥90%	3	3.8	3	≥90%	2	1.7	1.2	≥90%	4	5.1	2.6
DK/DTR	18			DK/DTR	12			DK/DTR	11			DK/DTR	12		
Missing	0			Missing	0			Missing	0			Missing	0		
Total	87	100		Total	87	100		Total	87	100		Total	87	100	
Savings (e.g., bank account)				Items sold (e.g., furniture, animals, or jewelry)				Money from relatives or friends who do not belong to the household				Another source			
0%	68	87	5	0%	68	92.6	3.4	0%	65	85.3	5.3	0%	53	64.4	8
0.1% - 9%	0	0		0.1% - 9%	1	1.4	1.4	0.1% - 9%	1	0.8	0.8	0.1% - 9%	1	0.8	0.8
10% - 24%	0	0		10% - 24%	0	0		10% - 24%	0	0		10% - 24%	0	0	
25% - 49%	0	0		25% - 49%	1	0.7	0.7	25% - 49%	1	1.4	1.4	25% - 49%	2	2.3	1.7
50% - 74%	0	0		50% - 74%	0	0		50% - 74%	1	1.5	1.5	50% - 74%	5	4.6	2.3
75% - 89%	1	0		75% - 89%	1	1	1	75% - 89%	2	1.2	0.9	75% - 89%	0	0	
≥90%	7	13	5	≥90%	4	4.3	2.2	≥90%	6	9.9	5.2	≥90%	16	27.9	7.8
DK/DTR	11			DK/DTR	12			DK/DTR	11			DK/DTR	5		
Missing	0			Missing	0			Missing	0			Missing	5		
Total	87	100		Total	87	100		Total	87	100		Total	87	100	
Reducing other household spending				Money loaned from someone who is not a friend of the family				Remittances from family members or friends abroad							
0%	60	85.8	4.6	0%	69	93.9	2.6	0%	72	90.8	5.1				
0.1% - 9%	1	0.7	0.7	0.1% - 9%	0	0		0.1% - 9%	0	0					
10% - 24%	6	7.1	3.1	10% - 24%	1	0		10% - 24%	0	0					
25% - 49%	1	0.8	0.8	25% - 49%	1	1.2	1.2	25% - 49%	0	0					
50% - 74%	1	1	1	50% - 74%	0	0		50% - 74%	2	2.4	1.7				
75% - 89%	0	0		75% - 89%	0	0		75% - 89%	0	0					
≥90%	4	4.5	2.2	≥90%	5	4.9	2.3	≥90%	2	6.8	5.1				
DK/DTR	14			DK/DTR	11			DK/DTR	11						
Missing	0			Missing	0			Missing	0						
Total	87	100		Total	87	100		Total	87	100					

2.6 Household Water Quality

In each segment, three households were selected at random for water quality testing. While the Physical Measurements Module was administered, trained data collectors took samples of each selected household's drinking water source. These samples were tested for the concentration of chlorine and for the presence of coliforms. Inadequate water quality is an important risk factor for many health conditions. Presence of coliforms can indicate the growth potential or presence of pathogenic organisms. Water chlorination is a method of purification that helps to prevent the growth and spread of waterborne diseases.

Table 2.6 shows the results of the water quality tests. A total of 138 households' drinking water was tested. Most water contained coliforms (91%) and was not chlorinated (97%). Only one household had sufficient overall water quality (1%).

Table 2.6 Quality of drinking water

Percent distribution of households by water quality test of coliforms and chlorination, including overall quality			
Household characteristic	N	Weighted %	Weighted SE
Drinking water contains coliforms			
Yes	123	90.7	3.2
No	15	9.3	3.2
DK/DTR	0		
Missing	1572		
Total	1710	100	
Drinking water is chlorinated			
Yes	3	2.9	1.7
No	135	97.1	1.7
DK/DTR	0		
Missing	1572		
Total	1710	100	
Overall water quality (water tests positive for chlorine and negative for coliforms)			
Yes	1	0.9	0.9
No	137	99.1	0.9
DK/DTR	0		
Missing	1572		
Total	1710	100	

CHAPTER 3: GENERAL CHARACTERISTICS OF RESPONDENTS

This chapter summarizes the demographic characteristics, socioeconomic status, and health status of women of reproductive age (15-49 years) participating in the SM2015-Panama Baseline Household Survey. As previously mentioned, incomplete information was captured for a total of 70 women from 3 segments; these women are presented as having missing values in the subsequent tables, as applicable.

3.1 Demographic Characteristics

3.1.1 Age, marital status, relation to head of household

The age distribution of the de facto population of women of reproductive age residing in the surveyed households in Panama is shown in Table 3.1.1 by five-year age groups. Fifty-two percent of all women participating in the baseline SM2015 Household Survey were younger than 30 years of age, 28% were between the ages of 30 and 39, and 20% were between the ages of 40 and 49. While the majority of women reported being married (9%) or partnered (61%), 22% indicated they were never married. Approximately 40% of women reported being the biological child of the head of the sampled household, 29% of women reported being the spouse/partner of the head of the household, and 10% reported being the head of the household.

Table 3.1.1 Demographic characteristics of respondents

Percent distribution of the household population by age, marital status, and respondent's relationship to the head of the household			
Background characteristic	N	%	SE
Age			
15-19 years	455	18.5	0.8
20-24 years	443	18.1	0.8
25-29 years	383	15.6	0.7
30-34 years	341	13.9	0.7
35-39 years	345	14.1	0.7
40-44 years	259	10.6	0.6
45-49 years	227	9.3	0.6
Missing	0		
Total	2453	100	
Marital status			
Single	531	21.6	0.8
Married	211	8.6	0.6
Open union/partnered	1505	61.4	1
Divorced	10	0.4	0.1
Separated	157	6.4	0.5
Widowed	34	1.4	0.2
Other	2	0.1	0.1
DK/DTR	3	0.1	0.1
Missing	0		
Total	2453	100	
Respondent's relationship to the head of household			
Head of the household	247	10.1	0.6
Spouse	499	20.3	0.8
Biological child	951	38.8	1
Adopted/step child	29	1.2	0.2
Grandchild	143	5.8	0.5
Niece	61	2.5	0.3
Mother	7	0.3	0.1
Sister	51	2.1	0.3
Daughter-in-law	88	3.6	0.4
Sister-in-law	66	2.7	0.3
Grandparent	2	0.1	0.1
Mother-in-law	14	0.6	0.2
Other relative	35	1.4	0.2
Non-relative	39	1.6	0.3
Life partner	217	8.8	0.6
Other	4	0.2	0.1
Missing	0		
Total	2453	100	

3.1.2 Residence

Province and district of residence are summarized in Table 3.1.2 below. The original sampling scheme dictated that segments would be selected with probability proportional to size. The highest numbers of women were surveyed from Kuna Yala. Approximately three-quarters of women from Embera were from the district Cémaco, and the remaining from Sambú.

Table 3.1.2 Province and district of residence of respondents

Province	District	No. of women
Comarca Embera	Cémaco	419
Comarca Embera	Sambú	134
Comarca Kuna Yala	Comarca Kuna Yala	1900

3.2 Educational attainment and literacy

Seventy-nine percent of survey participants had attended school (Table 3.2.1). For the majority of these women (59%), the highest level of education completed was primary schooling. Literacy was assessed by asking respondents to read from a card the following sentence: “La salud del niño es muy importante para su desarrollo en la vida.” About 60% of women surveyed were able to read the whole sentence. One-quarter of women could not read the sentence at all.

Table 3.2.1 Educational attainment and literacy

Percentage of women age 15-49 who attended school; percentage of women who attended a literacy course; percent distribution by highest level of education attended, among those who attended school; and literacy of women			
Education characteristic	N	Weighted %	Weighted SE
Education			
Attended school	1902	79.1	3.2
Did not attend school	451	20.9	3.2
DK/DTR	1		
Missing	99		
Total	2453	100	
Literacy course			
Attended literacy course	190	8.6	1.3
Did not attend literacy course	2163	91.4	1.3
DK/DTR	1		
Missing	99		
Total	2453	100	
Highest level of education, among those who attended school			
Primary	1125	58.6	3.3
Secondary	647	34.3	2.8
Preparatory	64	4.1	1
University	58	3	0.5
DK/DTR	8		
Missing	0		
Total	1902	100	
Literacy			
Cannot read at all	551	25.5	3.1
Able to read parts of sentence	363	14.6	1.2
Able to read whole sentence	1423	60	3.1
Blind or visually impaired	1	0	
DK/DTR	16		
Missing	99		
Total	2453	100	

3.3 Employment

As summarized in Table 3.3, the vast majority of respondents were homemakers (83%). Of the 182 women who reported being employed and working at the time of the interview, nearly all (90%) identified “employee” as their occupational role. Another 7% were self-employed.

Table 3.3 Employment

Percent distribution of women aged 15-49 by employment status and role			
Employment characteristic	N	Weighted %	Weighted SE
Employment status			
Employed and being paid for work	182	7.9	1
Employed but did not work in the last week	8	0.3	0.1
Employed by a family member without receiving payment	16	0.7	0.2
Student	168	7.1	1.1
Homemaker	1949	83.3	1.9
Retired	3	0.1	0.1
Unable to work due to disability	10	0.6	0.2
DK/DTR	18		
Missing	99		
Total	2453	100	
Occupational role, among women employed and being paid for work			
Employee	163	90.4	2.5
Employer	5	2	0.9
Owner	3	1	0.7
Self-employed	11	6.6	2.4
DK/DTR	0		
Missing	0		
Total	182	100	

3.4 Exposure to mass media

Respondents were asked about their exposure to several common types of mass media: newspapers, radio, and television. As displayed in Table 3.4.1, below, among women who demonstrated full or partial literacy, 36% had weekly exposure to newspapers. About 43% of all women had weekly exposure to radio, and 38% had weekly exposure to television. Sixty percent of women had weekly exposure to any type of media.

Table 3.4.1 Exposure to mass media

Percent distribution of women by exposure to newspapers, radio and television; percentage exposed to all three forms of media and to any form of media at least once a week			
Characteristic	N	Weighted %	Weighted SE
Newspapers, among fully or partially literate women			
≥1 time per week	670	36.1	2.6
<1 time per week	573	33.1	1.8
Never	531	30.6	2.1
Not applicable	3	0.2	0.1
DK/DTR	9		
Missing	0		
Total	1786	100	
Radio			
≥1 time per week	1042	43.4	2.3
<1 time per week	532	22.6	1.6
Never	745	33	2.3
Not applicable	25	1	0.3
DK/DTR	10		
Missing	99		
Total	2453	100	
Television			
≥1 time per week	898	37.8	3.2
<1 time per week	414	18.8	1.8
Not applicable	979	41.9	3.3
Never	41	1.5	0.4
DK/DTR	22		
Missing	99		
Total	2453	100	
Exposed to all three forms of media at least once per week, among fully or partially literate women			
Yes	321	17	1.8
No	1454	82.8	1.8
Not applicable	6	0.2	0.1
DK/DTR	5		
Missing	0		
Total	1786	100	
Exposed to any form of media at least once per week			
Yes	1438	59.8	3
No	896	39.6	3
Not applicable	19	0.6	0.2
DK/DTR	1		
Missing	99		
Total	2453	100	

3.5 Access to health services

3.5.1 Proximity to health care facilities

Tables 3.5.1a-d display the responses to several survey questions that were used to assess proximity to health care facilities. Respondents were asked to estimate proximity to health care facilities in terms of distance (kilometers) and travel time. Not surprisingly, respondents typically had more difficulty estimating distance to health care facilities. As shown in the tables below, “Don’t know” responses to the distance questions were exceedingly common.

The majority of women were unable to estimate the distance to the closest health facility (Table 3.5.1a). More could estimate the time it took to travel there; two-thirds of the sample indicated that it took less than 30 minutes to reach the facility by the usual means of transportation. Twenty-six percent of women estimated the travel time from their household to the closest health facility to be an hour or more.

Women were also asked for the travel distance and time to their usual health facility, if they had a usual health facility. Again, the vast majority of women were unable to estimate the distance to the facility. Sixty-three percent of women could travel there in less than 30 minutes (Table 3.5.1b).

Women who had given birth during the past five years were asked about the proximity to the health facility used to deliver, if they had attended antenatal care for that birth and delivered at a public hospital (MINSAs or CSSs), ULAPS/CAPPS, CSS polyclinic, MINSAs public health center or sub-center, MINSAs public health post, or other public health facility (Table 3.5.1c). Again, the vast majority of these women were unable to estimate the distance to the facility. About half of the sample (unweighted) was able to estimate the time traveled. Forty-five percent of women traveled less than 30 minutes to delivery, and 43% traveled more than one hour to the facility to deliver.

Of the 1,651 women who reported a recent health facility visit for their child or themselves, the vast majority could not estimate the distance traveled for care (Table 3.5.1d). Sixty-five percent of women traveled for less than 30 minutes, and 26% spent one hour or more traveling to care.

Table 3.5.1a Proximity to health care facilities: nearest health facility

Percent distribution of women according to distance and travel time to health care facility closest to household			
Distance and time	N	Weighted %	Weighted SE
Distance			
<1 km	66	54.8	13.4
1 to <5 km	50	28.1	10.3
5 to <10 km	15	9.1	5.1
≥10 km	13	7.9	2.5
DK/DTR	2209		
Missing	100		
Total	2453	100	
Travel time			
<15 min	709	56.4	5.2
15 to <30 min	106	7.7	1.9
30 to <45 min	121	8.9	2.4
45 to <60 min	19	1.3	0.4
≥60 min	345	25.8	4.9
DK/DTR	958		
Missing	195		
Total	2453	100	

Table 3.5.1b Proximity to health care facilities: usual health facility

Percent distribution of women according to distance and travel time to health care facility that the head of household usually attends			
Distance and time	N	Weighted %	Weighted SE
Distance			
<1 km	65	56.2	13.9
1 to <5 km	50	29.7	10.8
5 to <10 km	11	7.7	5
≥10 km	12	6.4	2.5
DK/DTR	1925		
Missing	4		
Total	2067	100	
Travel time			
<15 min	699	53.7	5.3
15 to <30 min	116	8.9	2
30 to <45 min	106	7.9	2.2
45 to <60 min	20	1.6	0.5
≥60 min	370	27.9	5.1
DK/DTR	725		
Missing	31		
Total	2067	100	

Table 3.5.1c Proximity to health care facilities: health facility for delivery

Percent distribution of women according to distance and travel time to health care facility attended for most recent delivery in the last two years, among women who attended antenatal care for that birth			
Distance and time	N	Weighted %	Weighted SE
Distance			
<1 km	20	50.3	14.3
1 to <5 km	16	40	13.1
5 to <10 km	2	7.2	7.3
≥10 km	5	2.5	2.6
DK/DTR	615		
Missing	0		
Total	658	100	
Travel time			
<15 min	133	38.4	4.8
15 to <30 min	23	6.2	1.5
30 to <45 min	31	11	2.2
45 to <60 min	4	1.2	0.6
≥60 min	128	43.2	5.1
DK/DTR	339		
Missing	0		
Total	658	100	

Table 3.5.1d Proximity to health care facilities: health facility for recent illness

Percent distribution of women according to distance and travel time to health care facility attended for respondent's recent illness or child's recent illness			
Distance and time	N	Weighted %	Weighted SE
Distance			
<1 km	42	62	11.6
1 to <5 km	21	25.4	9.2
5 to <10 km	6	4.6	3.3
≥10 km	6	8	4.7
DK/DTR	1576		
Missing	0		
Total	1651	100	
Travel time			
<15 min	588	56	4.9
15 to <30 min	88	9.4	1.8
30 to <45 min	79	7.6	2.1
45 to <60 min	13	1.1	0.4
≥60 min	266	25.9	4.8
DK/DTR	580		
Missing	37		
Total	1651	100	

3.6 Health Status

3.6.1 Current health status

Table 3.6.1 shows the self-rated current health status of all women participating in the survey. When asked to evaluate their current health status relative to the past year, 46% reported that their health was “about the same.” While 52% reported that their health had improved, 3% reported worse health on the day of the interview compared to last year. Ninety-two percent could “easily” perform their daily activities (e.g., work, housework, and child care). About 8% of women reported at least some degree of difficulty performing these tasks that was related to their health status.

Table 3.6.1 Current health status

Percent distribution of women aged 15-49 by self-rated current health status relative to the health status last year and percentage who can easily perform daily activities			
Characteristic	N	Weighted %	Weighted SE
Current health relative to health last year			
Better	1224	51.5	1.9
Worse	55	2.7	0.6
About the same	1070	45.8	1.8
DK/DTR	5		
Missing	99		
Total	2453	100	
Ability to perform daily activities			
Easily	2170	91.8	1.2
With some difficulty	159	7.6	1.2
With much difficulty	14	0.5	0.2
Unable to do	2	0.1	0.1
DK/DTR	9		
Missing	99		
Total	2453	100	

3.6.2 Recent illness

Women were asked a series of questions about any illnesses or health problems they might have had in the two weeks preceding the interview. Approximately 11% of women reported being sick during that time (Table 3.6.2). Of the 236 women who reported a recent illness, fever (26%), headache (16%), and cough/chest infection (15%) were the most commonly elicited specific complaints. Twenty percent of women had an illness other than those on the list provided.

Table 3.6.2 Recent illness

Percentage of women aged 15-49 who were sick in the last two weeks; and among those who were sick, percent distribution by type of recent illness			
Characteristic	N	Weighted %	Weighted SE
Respondent was sick during the past two weeks			
Yes	236	11	1.2
No	2106	89	1.2
DK/DTR	12		
Missing	99		
Total	2453	100	
Type of illness, among those sick in the past two weeks			
Fever	61	25.9	4
Malaria	1	0.2	0.2
Cough/chest infection	35	14.8	3.1
Tuberculosis	1	0.4	0.4
Asthma	5	1.6	0.7
Bronchitis	4	1.3	0.6
Pneumonia	0	0	
Diarrhea without blood	2	0.5	0.4
Diarrhea with blood	1	0.2	0.2
Diarrhea with vomiting	3	2.4	1.8
Vomiting	3	2.3	2.2
Abdominal pain	15	7.5	2.2
Anemia	1	0.2	0.2
Skin rash/infection	10	3.4	1
Eye/ear infection	3	0.9	0.5
Measles	0	0	
Jaundice	0	0	
Headache	32	16	3.5
Toothache	3	0.7	0.4
Stroke	1	0.3	0.3
Hypertension	0	0	
Diabetes	0	0	
HIV/AIDS	0	0	
Paralysis	0	0	
Gynecologic problems	6	1.7	0.8
Obstetric problems	0	0	
Other	49	19.6	3.1
DK/DTR	0		
Missing	0		
Total	236	100	

3.6.3 Utilization of health services

Table 3.6.3 summarizes data on the utilization of health services among the 236 women who reported an illness in the two weeks preceding the interview. Among these women, 111 (46%) sought care at a health care facility. Most of these women attended a MINSA public health center (45%) or sub-center (23%). Four percent of women who sought care at a Public hospital MINSA, Public hospital CSS, ULAPS/CAPPS, Polyclinic CSS, Public Health Center MINSA, Public Health Sub-Center MINSA, Public Health Post MINSA, other public health facility, private hospital, private health center/clinic, or private office were admitted to a hospital for their recent illness.

Table 3.6.3 Utilization of health services

Among women who reported sick in the last two weeks, percentage of women who sought care for the illness; and among women who sought care, percent distribution by timing of care-seeking after onset of illness			
Characteristic	N	Weighted %	Weighted SE
Sought care for recent illness			
Yes	111	46.2	5.4
No	124	53.8	5.4
DK/DTR	1		
Missing	0		
Total	236	100	
Type of health facility where care was sought			
Public hospital MINSAs	17	14.1	5.5
Public hospital CSS	0	0	
ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0	
Public Health Center MINSAs	47	44.9	7.5
Public Health Sub-Center MINSAs	32	22.8	5.7
Public Health Post MINSAs	10	13.5	5.8
Public mobile unit MINSAs	1	0.9	0.9
Other public health facility	0	0	
Private hospital	0	0	
Private health center/clinic	1	0.8	0.8
Private office	0	0	
Private mobile clinic	0	0	
Other private health facility	0	0	
Pharmacy	0	0	
Community health worker	1	0.4	0.4
Traditional healer	0	0	
Other	2	2.5	2
DK/DTR	0		
Missing	0		
Total	111	100	
Admitted to hospital for care, among women who sought care at a Public hospital MINSAs, Public hospital CSS, ULAPS/CAPPS, Polyclinic CSS, Public Health Center MINSAs, Public Health Sub-Center MINSAs, Public Health Post MINSAs, Other public health facility, Private hospital, Private health center / clinic, Private office			
Yes	6	3.8	1.5
No	100	96.2	1.5
DK/DTR	1		
Missing	0		
Total	107	100	

3.6.4 Insurance coverage

Respondents' health insurance coverage is described in Table 3.6.4. Most women are not insured (92%). Five percent or less of women have insurance from each of the following: MINSAs, CSSs, private insurance, or other.

Table 3.6.4 Insurance coverage

Percentage distribution of insurance status among all women, women who reported sick in the last two weeks, and women who reported sick in the last two weeks but did not seek care			
Insurance status	N	Weighted %	Weighted SE
Insurance among all women			
MINSAs	56	2.6	0.7
CSS	108	5.1	1.3
Private insurance	2	0.1	0.1
Other	1	0	
None	2177	92.1	1.6
DK/DTR	10		
Missing	99		
Total	2453	100	
Insurance among women who were sick in the past two weeks			
MINSAs	3	2.8	1.8
CSS	16	7.5	2.5
Private insurance	0	0	
Other	0	0	
None	217	89.7	2.8
DK/DTR	0		
Missing	0		
Total	236	100	
Insurance among women who were sick in the past two weeks but did not seek care			
MINSAs	1	2.2	2.1
CSS	6	3.8	1.9
Private insurance	0	0	
Other	0	0	
None	117	94	2.7
DK/DTR	0		
Missing	0		
Total	124	100	

3.6.5 Other barriers to health care access

There are many other barriers to accessing health care. Women were presented with 20 specific factors that might have prevented themselves or their family from receiving health care when it was needed. Table 3.6.5 summarizes the responses to this section. The most commonly cited factor influencing health care access is that the cost of care is restrictive (42%). About 28% of women said the health center was too far away, 24% did not believe they were ill enough to seek treatment, 22% could not find transportation, and 22% could not afford transportation.

Table 3.6.5 Other barriers to health care utilization

Percentage of women according to perceived barriers to health care utilization, among among women who reported being sick in the last two weeks but did not seek care							
Reason for not seeking care	N	Weighted %	Weighted SE	Reason for not seeking care	N	Weighted %	Weighted SE
Not sick enough to seek treatment				The health center's staff is not knowledgeable			
Yes	30	24.2	4	Yes	1	3.4	3.2
No	90	75.8	4	No	119	96.6	3.2
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	
Treated self at home				Do not trust the staff			
Yes	25	20.3	3.6	Yes	2	1.7	1.2
No	95	79.7	3.6	No	118	98.3	1.2
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	
Care is too expensive				Was previously mistreated			
Yes	43	42.3	7.5	Yes	6	3.8	1.6
No	77	57.7	7.5	No	114	96.2	1.6
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	
Health center is too far away				Tried, but was refused care			
Yes	35	28	7.2	Yes	2	1.6	1
No	85	72	7.2	No	118	98.4	1
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	
Could not find transportation				Did not get permission to go to the doctor			
Yes	26	22.2	5.8	Yes	1	0.6	0.6
No	94	77.8	5.8	No	119	99.4	0.6
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	
Could not afford transportation				Did not want to go alone			
Yes	29	21.6	7	Yes	5	3.2	1.8
No	91	78.4	7	No	115	96.8	1.8
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	

Table 3.6.5 continued

Reason for not seeking care	N	Weighted %	Weighted SE	Reason for not seeking care	N	Weighted %	Weighted SE
Did not know where to go				Too busy with work, children, and other commitments			
Yes	0	0		Yes	4	4	1.9
No	120	100		No	116	96	1.9
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	
Health center infrastructure is poor				Religious/cultural beliefs			
Yes	2	1.1	0.8	Yes	6	4.2	2
No	118	98.9	0.8	No	114	95.8	2
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	
Health center does not have enough drugs				No one present at the center when visited			
Yes	19	21	6.5	Yes	2	1.2	0.9
No	101	79	6.5	No	118	98.8	0.9
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	
Health center is not well equipped				Other			
Yes	5	2.8	1.2	Yes	12	11.6	4.5
No	115	97.2	1.2	No	108	88.4	4.5
DK/DTR	4			DK/DTR	4		
Missing	0			Missing	0		
Total	124	100		Total	124	100	
It is difficult to deal with health center personnel							
Yes	7	5.1	2.1				
No	113	94.9	2.1				
DK/DTR	4						
Missing	0						
Total	124	100					

CHAPTER 4: FERTILITY

This chapter summarizes several indicators related to fertility based on self-reported data from women of reproductive age (15-49 years) participating in the SM2015-Panama Baseline Household Survey. As previously mentioned, incomplete information was captured for a total of 70 women from three segments; these women are presented to have missing values in the subsequent tables, as applicable.

4.1 Fertility Rates

The fertility rates summarized below were derived from the United Nations Population Division-generated time series for Panama.

4.1.1 Age-specific fertility rates

Age-specific fertility rates (ASFR) are calculated for each five-year age group from 15-19 to 45-49, presented as an annual rate. Births to women at ages less than 15 years, or greater than 49, at the time of the birth are not included. Table 4.1.1 summarizes the five-year age-specific fertility rates in Panama since 1990, at the national level.

Table 4.1.1 Age-specific fertility rates

Number of births per 1,000 women, Panama, 1990-2010, from World Population Prospects: The 2012 Revision, United Nations Population Division				
Age group, years	Year			
	1990-1995	1995-2000	2000-2005	2005-2010
15-19	93.7	95.9	91.1	84.6
20-24	168.2	160.5	159.4	158.4
25-29	150.5	145.1	142.2	138.1
30-34	109.0	104.9	99.6	92.2
35-39	51.8	51.4	46.7	40.3
40-44	15.9	14.4	12.4	9.7
45-49	2.5	1.9	1.4	1.0

4.1.2 Total fertility rate

The total fertility rate (TFR) is an age-period fertility rate for a synthetic cohort of women surviving from birth through the end of their reproductive period. It measures the average number of births a group of women would have by the time they reach age 50 if they were to give birth at the current age-specific fertility rates (for women aged 15-49) and survive to age 50. The TFR is expressed as the average number of births per woman, and is a better indicator of population fertility because it does not depend on the age structure of the population. However, since this indicator is based on a synthetic cohort of women, it does not necessarily reflect the average number of children women currently aged 15-49 will have, since fertility rates may change in the future. Table 4.1.2 displays the total fertility rates in Panama since 1990, at the national level.

Table 4.1.2 Total fertility rate

Average number of births per woman, Panama, 1990-2010, from World Population Prospects: The 2012 Revision, United Nations Population Division				
	Year			
	1990-1995	1995-2000	2000-2005	2005-2010
Total fertility rate	2.96	2.87	2.76	2.62

4.2 Age at first birth

4.2.1 Age at first birth

Seventy-eight percent of respondents had ever given birth (Table 4.2.1). Of these, 69% were between 10 and 19 years old when their first child was born. Only 8% of women were 25 years old or older when their first child was born. Approximately 5% of women reported a history of stillbirth, miscarriage, and/or abortion.

Table 4.2.1 Parity and age at first birth

Percent of women aged 15-49 who have ever given birth, their age at first birth, and the percent of women who have had a miscarriage, stillbirth, or abortion			
Characteristic	N	Weighted %	Weighted SE
Ever given birth			
Yes	1921	78.3	1.4
No	433	21.7	1.4
DK/DTR	0		
Missing	99		
Total	2453	100	
Age at first birth, among parous women			
10-14 years	172	9.8	1.2
15-19 years	1017	59	1.8
20-24 years	374	22.9	1.6
25-29 years	71	5.8	1
30-34 years	28	2.3	0.5
35-39 years	5	0.2	0.1
40-44 years	1	0	
45-49 years	0	0	
DK/DTR	0		
Missing	253		
Total	1921	100	
Ever had a stillbirth, miscarriage, or abortion			
Yes	125	4.8	0.6
No	2215	95.2	0.6
DK/DTR	10		
Missing	103		
Total	2453	100	

4.3 Birth Intervals

4.3.1 Intervals between births

Intervals between births (defined as the number of months between successive births) were calculated using the reported ages of all live births. Reported intervals of less than 9 months were reclassified as missing. Mean birth intervals were then calculated by averaging the derived birth intervals for each woman. Table 4.3.1 displays the distribution of birth intervals, stratified by number of live births.

Table 4.3.1 Intervals between births

Among women with two or more children, percent distribution by duration of the birth intervals			
Mean birth interval	N	Weighted %	Weighted SE
Among women with more than one child			
9-11 months	1	0.1	0.1
12-23 months	95	6.2	0.8
24-35 months	466	29.9	1.4
36-47 months	460	28.8	1.7
48-59 months	247	15.2	1.3
≥60 months	283	19.8	1.6
Missing	54		
Total	1606	100	
Among women with two children			
9-11 months	1	0.3	0.3
12-23 months	53	13.6	2.1
24-35 months	100	22.9	2.4
36-47 months	73	19.9	2.2
48-59 months	51	12.3	2
≥60 months	111	31	3.3
Missing	20		
Total	409	100	
Among women with three or four children			
9-11 months	0	0	
12-23 months	27	4.9	1.1
24-35 months	136	23.3	2
36-47 months	167	27.3	2.6
48-59 months	116	18.4	2.2
≥60 months	149	26.1	2.3
Missing	18		
Total	613	100	
Among women with five or more children			
9-11 months	0	0	
12-23 months	15	2.6	0.7
24-35 months	230	41.6	2.5
36-47 months	220	36.7	2.8
48-59 months	80	13.8	1.9
≥60 months	23	5.3	1.4
Missing	16		
Total	584	100	

4.4 Fertility Preferences

4.4.1 Desire for more children

Desire for more children was captured in several places on the Maternal and Child Health Questionnaire. With respect to each live birth in the last five years and with respect to the current pregnancy (among 58 women who reported being pregnant on the day of the interview), women were asked to report whether or not they wanted to become pregnant at that time. Lastly, all women participating in the survey were asked if they wanted more children in the future. Responses to these questions are summarized in Table 4.4.1.

With respect to the most recent pregnancy in the last two years, 31% of parous women reported that they did not want to become pregnant. Fifteen percent did not want more or any children, and 17% would have preferred to wait longer before becoming pregnant. The prevalence of these preferences was lower compared to when women were asked to think about their current pregnancy: 41% of these women did not want to have any more children, and 12% would have preferred to wait longer before becoming pregnant. There were high rates of “don’t know” responses and declined response for these questions among women from Kuna areas.

Table 4.4.1 Desire for more children

Among women with a pregnancy in the two years preceding the interview, percent distribution by desire of the most recent pregnancy in the last two years; and among all women, percentage who desire more children			
Characteristic	N	Weighted %	Weighted SE
Respondent desired their most recent pregnancy in the past two years			
Yes	491	69.2	3.3
No, wanted to wait	126	16.8	2.1
No, did not want (more) children	100	14	2.3
DK/DTR	350		
Missing	35		
Total	1102	100	
Respondent desires current pregnancy			
Yes	15	46.8	11.3
No, wanted to wait	5	12.2	6.5
No, did not want (more) children	12	40.9	12
DK/DTR	26		
Missing	0		
Total	58	100	

4.4.2 Ideal birth interval

Women who indicated that they would have preferred to wait before becoming pregnant with their most recent birth in the last five years were asked to report how long they would have wanted to wait. The preferred birth intervals were calculated by adding the desired length of time mothers would have preferred to wait to the actual birth interval. Table 4.4.2 displays the distribution of ideal birth intervals for the most recent birth in the last five years, stratified by the total number of live births reported by the mother.

Table 4.4.2 Ideal interval for most recent birth

Percent distribution of women with 2 or more children by ideal interval for most recent birth, according to the number of children			
Characteristic	N	Weighted %	Weighted SE
Among women with more than one child			
9-11 months	1	0.2	0.2
12-23 months	40	7.2	1.2
24-35 months	102	17.8	2.2
36-47 months	84	16.3	1.8
48-59 months	69	11.3	1.5
≥60 months	178	30.8	2.5
Did not want to have another child	98	16.4	2.2
Missing	373		
Total	945	100	
Among women with two children			
9-11 months	0	0	
12-23 months	17	11.9	2.4
24-35 months	27	19.2	4.1
36-47 months	21	14.2	3
48-59 months	21	12.2	3.1
≥60 months	52	36.5	4.1
Did not want to have another child	9	6	2
Missing	111		
Total	258	100	
Among women with three or four children			
9-11 months	0	0	
12-23 months	13	6.1	2.4
24-35 months	39	17.6	2.3
36-47 months	34	18.2	2.8
48-59 months	30	13.6	3.3
≥60 months	74	32.6	3.5
Did not want to have another child	28	11.9	2.6
Missing	140		
Total	358	100	
Among women with five or more children			
9-11 months	1	0.5	0.5
12-23 months	10	5.1	1.8
24-35 months	36	17.1	3.9
36-47 months	29	15.9	3.5
48-59 months	18	8.2	1.9
≥60 months	52	25.1	4
Did not want to have another child	61	28.1	4.1
Missing	122		
Total	329	100	

CHAPTER 5: FAMILY PLANNING

This chapter summarizes key indicators related to the knowledge of, access to, need for, and use of family planning methods among women of reproductive age (15-49 years) participating in the SM2015-Panama Baseline Household Survey. Some questions were posed differently between Kuna Yala and Embera segments. This is noted with each table, as applicable.

5.1 Knowledge of the fertile period

The successful use of family planning methods depends on an understanding of when during the menstrual cycle a woman is most likely to conceive. This is especially true for traditional methods such as the rhythm method (i.e., periodic abstinence), and the withdrawal method. To assess knowledge of the fertile period, women were asked if there were certain days when a woman is more likely to become pregnant, and when during the menstrual cycle those days occurred. Women in Embera and Kuna Yala segments were asked these questions differently. Thus responses to these questions are summarized separately (Table 5.1.1).

Most women in Embera (87%) indicated that there were certain days when a woman is more likely to become pregnant, and of these women, only 1% identified the correct timing of the fertile period (halfway between two periods). In Kuna Yala, the majority of women did not know or refused to respond to this question. Of those who provided a response, one-quarter correctly identified the fertile period.

Table 5.1.1 Knowledge of the fertile period

Percentage of all currently married or partnered women age 15-49 who know the timing of the fertile period			
Characteristic	N	Weighted %	Weighted SE
Embera			
Are there certain days when a woman is more likely to become pregnant?			
Yes	324	86.9	2.1
No	49	13.1	2.1
DK/DTR	62		
Missing	2		
Total	437	100	
Is this time just before her period begins, during her period, right after her period has ended, or halfway between two periods?			
Just before her period begins	0	0	
During her period	2	0.5	0.5
Right after her period has ended	317	98.1	1.3
Halfway between two periods	3	1.1	1.1
Other	1	0.3	0.3
DK/DTR	1		
Missing	0		
Total	324	100	
Kuna Yala			
Do you know if a menstrual period to period there are days when a woman is most likely to get pregnant?			
Just before her period begins	35	16.3	4.1
During her period	7	3.6	2.1
Right after her period has ended	117	51.9	7.1
Halfway between two periods	47	25.2	6
Other	9	3	1.3
DK/DTR	981		
Missing	83		
Total	1279	100	

5.2 Use of family planning methods

5.2.1 Current use

The level of current use of contraceptive methods is one of the indicators most frequently used to assess the success of family planning program activities. It is also widely used as a determinant of fertility. In Embera, women who said they had heard of a family planning method were then asked if they were currently using that method. In Kuna Yala, women were asked if they were using any method of family planning, and then asked which method. Table 5.2.1a displays the percentage of all women using at least one family planning method, as well as the percentage of women report-

ing use of more than one family planning method at the time of the interview. Twenty-one percent of all married or partnered survey respondents reported current use of at least one family planning method. A similar proportion of women in need of contraceptives are using any method.

Table 5.2.1a Current use of family planning methods

Percentage of all currently married or partnered women aged 15-49 using family planning methods			
Characteristic or method	N	Weighted %	Weighted SE
Current use of any method			
Yes	356	21	3.4
No	1227	79	3.4
DK/DTR	37		
Missing	96		
Total	1716	100	
Current use of any method, among women in need of contraceptives			
Yes	235	19.2	3.7
No	957	80.8	3.7
DK/DTR	34		
Missing	9		
Total	1235	100	
Current use of more than one method			
Yes	6	0.4	0.2
No	1586	99.6	0.2
DK/DTR	28		
Missing	96		
Total	1716	100	
Number of methods the respondent is currently using			
0 methods	1236	78.1	3.3
1 method	350	20.2	3.3
2 methods	6	0.4	0.2
3 or more methods	96	1.3	0.4
DK/DTR	28		
Missing	0		
Total	1716	100	

Table 5.2.1b displays the percentage of all women using specific family planning methods. The methods most commonly in use are injectables (9%) and withdrawal (7%).

Table 5.2.1b Current use of family planning methods, by type of method

Percentage of all currently married or partnered women aged 15-49 using specified family planning methods											
Method	N	Weighted %	Weighted SE	Method	N	Weighted %	Weighted SE	Method	N	Weighted %	Weighted SE
Female sterilization				Condom				Rhythm method			
Yes	23	1.4	0.4	Yes	2	0.4	0.3	Yes	10	0.7	0.3
No	1473	98.6	0.4	No	1519	99.6	0.3	No	1481	99.3	0.3
DK/DTR	25			DK/DTR	25			DK/DTR	23		
Missing	195			Missing	170			Missing	202		
Total	1716	100		Total	1716	100		Total	1716	100	
Male sterilization				Female condom				Withdrawal method			
Yes	0	0		Yes	0	0		Yes	122	7.2	1.7
No	1483	100		No	1477	100		No	1366	92.8	1.7
DK/DTR	25			DK/DTR	26			DK/DTR	24		
Missing	208			Missing	213			Missing	204		
Total	1716	100		Total	1716	100		Total	1716	100	
IUD				Diaphragm				Emergency contraception			
Yes	7	0.8	0.4	Yes	1	0		Yes	0	0	
No	1508	99.2	0.4	No	1483	100		No	1476	100	
DK/DTR	25			DK/DTR	25			DK/DTR	25		
Missing	176			Missing	207			Missing	215		
Total	1716	100		Total	1716	100		Total	1716	100	
Injectables				Sponge, spermicide				Other modern method			
Yes	148	8.8	1.6	Yes	0	0		Yes	0	0	
No	1438	91.2	1.6	No	1474	100		No	1475	100	
DK/DTR	25			DK/DTR	26			DK/DTR	25		
Missing	105			Missing	216			Missing	216		
Total	1716	100		Total	1716	100		Total	1716	100	
Implants				Lactational amenorrhea method				Other traditional method			
Yes	1	0		Yes	18	0.8	0.3	Yes	23	1.5	0.5
No	1482	100		No	1460	99.2	0.3	No	1468	98.5	0.5
DK/DTR	25			DK/DTR	23			DK/DTR	25		
Missing	208			Missing	215			Missing	200		
Total	1716	100		Total	1716	100		Total	1716	100	
Pill											
Yes	7	0.4	0.2								
No	1547	99.6	0.2								
DK/DTR	24										
Missing	138										
Total	1716	100									

Women considered “in need” of family planning methods are those who do not report the following characteristics: does not have sexual relations, virgin, menopausal, hysterectomy, pregnant, or wants to become pregnant. Table 5.2.1c shows the uptake of modern family planning methods among all women (11%), and among women considered “in need” of contraception (12%).

Table 5.2.1c Current use of modern family planning methods

Percentage of all currently married or partnered women aged 15-49 using modern methods of family planning			
Characteristic	N	Weighted %	Weighted SE
Among all women			
Yes	187	11.1	1.9
No	1448	88.9	1.9
DK/DTR	0		
Missing	81		
Total	1716	100	
Among women in need of contraceptives			
Yes	153	12.2	2.3
No	1082	87.8	2.3
DK/DTR	0		
Missing	0		
Total	1235	100	

5.3 Sources of family planning methods

Information on where women obtain contraceptive methods is important for family planning program managers. The places where the currently used family planning methods were acquired (both initially, and most recently, if applicable) are summarized in Tables 5.3.1a-d.

The public sector is the source most commonly reported by users of most modern family planning methods, including female sterilization and injectables.

Table 5.3.1a Source of family planning methods

Percent distribution of women currently using selected modern methods of family planning, by location where current method was obtained							
Source	N	Weighted %	Weighted SE	Source	N	Weighted %	Weighted SE
Female sterilization				IUD			
Public hospital MINSAs	17	69.6	13.3	Public hospital MINSAs	4	79.5	16
Public hospital CSS	2	9.3	7.1	Public hospital CSS	0	0	
ULAPS/CAPPS	0	0		ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0		Polyclinic CSS	0	0	
Public Health Center MINSAs	3	17.2	11.9	Public Health Center MINSAs	2	14.1	12.8
Public Health Sub-Center MINSAs	0	0		Public Health Sub-Center MINSAs	1	6.4	7.6
Public Health Post MINSAs	0	0		Public Health Post MINSAs	0	0	
Public mobile unit MINSAs	1	3.8	4	Public mobile unit MINSAs	0	0	
Other public health facility	0	0		Other public health facility	0	0	
Private hospital	0	0		Private hospital	0	0	
Private health center/clinic	0	0		Private health center/clinic	0	0	
Private office	0	0		Private office	0	0	
Private mobile clinic	0	0		Private mobile clinic	0	0	
Other private health facility	0	0		Other private health facility	0	0	
Pharmacy	0	0		Pharmacy	0	0	
Community health worker	0	0		Community health worker	0	0	
Traditional healer	0	0		Traditional healer	0	0	
Store	0	0		Store	0	0	
Market	0	0		Market	0	0	
Church	0	0		Church	0	0	
Friend/relative	0	0		Friend/relative	0	0	
Other	0	0		Other	0	0	
DK/DTR	0			DK/DTR	0		
Missing	0			Missing	0		
Total	23	100		Total	7	100	
Male sterilization				Injectables			
Public hospital MINSAs	0	0		Public hospital MINSAs	12	10	3.8
Public hospital CSS	0	0		Public hospital CSS	0	0	
ULAPS/CAPPS	0	0		ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0		Polyclinic CSS	0	0	
Public Health Center MINSAs	0	0		Public Health Center MINSAs	72	40.9	8.1
Public Health Sub-Center MINSAs	0	0		Public Health Sub-Center MINSAs	40	29.3	8.1
Public Health Post MINSAs	0	0		Public Health Post MINSAs	11	10.7	7.4
Public mobile unit MINSAs	0	0		Public mobile unit MINSAs	0	0	
Other public health facility	0	0		Other public health facility	0	0	
Private hospital	0	0		Private hospital	0	0	
Private health center/clinic	0	0		Private health center/clinic	1	1.6	1.7
Private office	0	0		Private office	1	0.5	0.5
Private mobile clinic	0	0		Private mobile clinic	0	0	
Other private health facility	0	0		Other private health facility	0	0	
Pharmacy	0	0		Pharmacy	0	0	
Community health worker	0	0		Community health worker	9	5.3	4.1
Traditional healer	0	0		Traditional healer	0	0	
Store	0	0		Store	0	0	
Market	0	0		Market	0	0	
Church	0	0		Church	0	0	
Friend/relative	0	0		Friend/relative	2	1.6	1.2
Other	0	0		Other	0	0	
DK/DTR	0			DK/DTR	0		
Missing	0	0		Missing	0		
Total	0	0		Total	148	100	

Table 5.3.1b Source of family planning methods

Percent distribution of women currently using selected modern methods of family planning, by location where current method was obtained							
Source	N	Weighted %	Weighted SE	Source	N	Weighted %	Weighted SE
Implants				Condom			
Public hospital MINSAs	0	0		Public hospital MINSAs	0	0	
Public hospital CSS	0	0		Public hospital CSS	0	0	
ULAPS/CAPPS	0	0		ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0		Polyclinic CSS	0	0	
Public Health Center MINSAs	0	0		Public Health Center MINSAs	1	59	48.4
Public Health Sub-Center MINSAs	0	0		Public Health Sub-Center MINSAs	0	0	
Public Health Post MINSAs	0	0		Public Health Post MINSAs	0	0	
Public mobile unit MINSAs	0	0		Public mobile unit MINSAs	0	0	
Other public health facility	0	0		Other public health facility	0	0	
Private hospital	0	0		Private hospital	0	0	
Private health center/clinic	0	0		Private health center/clinic	0	0	
Private office	0	0		Private office	0	0	
Private mobile clinic	0	0		Private mobile clinic	0	0	
Other private health facility	0	0		Other private health facility	0	0	
Pharmacy	0	0		Pharmacy	0	0	
Community health worker	0	0		Community health worker	0	0	
Traditional healer	0	0		Traditional healer	0	0	
Store	0	0		Store	0	0	
Market	0	0		Market	0	0	
Church	0	0		Church	0	0	
Friend/relative	0	0		Friend/relative	1	41	48.4
Other	1	100		Other	0	0	
DK/DTR	0			DK/DTR	0		
Missing	0			Missing	0		
Total	1	100		Total	2	100	
Pill				Female condom			
Public hospital MINSAs	0	0		Public hospital MINSAs	0	0	
Public hospital CSS	0	0		Public hospital CSS	0	0	
ULAPS/CAPPS	0	0		ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0		Polyclinic CSS	0	0	
Public Health Center MINSAs	6	83.3	16.7	Public Health Center MINSAs	0	0	
Public Health Sub-Center MINSAs	0	0		Public Health Sub-Center MINSAs	0	0	
Public Health Post MINSAs	1	16.7	16.7	Public Health Post MINSAs	0	0	
Public mobile unit MINSAs	0	0		Public mobile unit MINSAs	0	0	
Other public health facility	0	0		Other public health facility	0	0	
Private hospital	0	0		Private hospital	0	0	
Private health center/clinic	0	0		Private health center/clinic	0	0	
Private office	0	0		Private office	0	0	
Private mobile clinic	0	0		Private mobile clinic	0	0	
Other private health facility	0	0		Other private health facility	0	0	
Pharmacy	0	0		Pharmacy	0	0	
Community health worker	0	0		Community health worker	0	0	
Traditional healer	0	0		Traditional healer	0	0	
Store	0	0		Store	0	0	
Market	0	0		Market	0	0	
Church	0	0		Church	0	0	
Friend/relative	0	0		Friend/relative	0	0	
Other	0	0		Other	0	0	
DK/DTR	0			DK/DTR	0		
Missing	0			Missing	0	0	
Total	7	100		Total	0	0	

Table 5.3.1c Source of family planning methods

Percent distribution of women currently using selected modern methods of family planning, by location where current method was obtained							
Source	N	Weighted %	Weighted SE	Source	N	Weighted %	Weighted SE
Diaphragm				Lactational amenorrhea method			
Public hospital MINSAs	0	0		Public hospital MINSAs	0	0	
Public hospital CSS	0	0		Public hospital CSS	0	0	
ULAPS/CAPPS	0	0		ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0		Polyclinic CSS	0	0	
Public Health Center MINSAs	1	100		Public Health Center MINSAs	1	5.3	4.2
Public Health Sub-Center MINSAs	0	0		Public Health Sub-Center MINSAs	1	6	5.8
Public Health Post MINSAs	0	0		Public Health Post MINSAs	0	0	
Public mobile unit MINSAs	0	0		Public mobile unit MINSAs	0	0	
Other public health facility	0	0		Other public health facility	0	0	
Private hospital	0	0		Private hospital	0	0	
Private health center/clinic	0	0		Private health center/clinic	0	0	
Private office	0	0		Private office	0	0	
Private mobile clinic	0	0		Private mobile clinic	0	0	
Other private health facility	0	0		Other private health facility	0	0	
Pharmacy	0	0		Pharmacy	0	0	
Community health worker	0	0		Community health worker	0	0	
Traditional healer	0	0		Traditional healer	2	17.3	9.5
Store	0	0		Store	0	0	
Market	0	0		Market	0	0	
Church	0	0		Church	0	0	
Friend/relative	0	0		Friend/relative	9	50	7.7
Other	0	0		Other	4	21.5	11.6
DK/DTR	0			DK/DTR	1		
Missing	0			Missing	0		
Total	1	100		Total	18	100	
Sponge, spermicide				Rhythm method			
Public hospital MINSAs	0	0		Public hospital MINSAs	0	0	
Public hospital CSS	0	0		Public hospital CSS	0	0	
ULAPS/CAPPS	0	0		ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0		Polyclinic CSS	0	0	
Public Health Center MINSAs	0	0		Public Health Center MINSAs	0	0	
Public Health Sub-Center MINSAs	0	0		Public Health Sub-Center MINSAs	0	0	
Public Health Post MINSAs	0	0		Public Health Post MINSAs	0	0	
Public mobile unit MINSAs	0	0		Public mobile unit MINSAs	0	0	
Other public health facility	0	0		Other public health facility	0	0	
Private hospital	0	0		Private hospital	0	0	
Private health center/clinic	0	0		Private health center/clinic	0	0	
Private office	0	0		Private office	0	0	
Private mobile clinic	0	0		Private mobile clinic	0	0	
Other private health facility	0	0		Other private health facility	0	0	
Pharmacy	0	0		Pharmacy	0	0	
Community health worker	0	0		Community health worker	0	0	
Traditional healer	0	0		Traditional healer	0	0	
Store	0	0		Store	0	0	
Market	0	0		Market	0	0	
Church	0	0		Church	0	0	
Friend/relative	0	0		Friend/relative	9	95.3	5.6
Other	0	0		Other	1	4.7	5.6
DK/DTR	0			DK/DTR	0		
Missing	0	0		Missing	0		
Total	0	0		Total	10	100	

Table 5.3.1d Source of family planning methods

Percent distribution of women currently using selected modern methods of family planning, by location where current method was obtained							
Source	N	Weighted %	Weighted SE	Source	N	Weighted %	Weighted SE
Withdrawal method				Other modern method			
Public hospital MINSAs	2	1.5	1.5	Public hospital MINSAs	0	0	
Public hospital CSS	0	0		Public hospital CSS	0	0	
ULAPS/CAPPS	0	0		ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0		Polyclinic CSS	0	0	
Public Health Center MINSAs	5	3.2	1.2	Public Health Center MINSAs	0	0	
Public Health Sub-Center MINSAs	2	3.3	3.4	Public Health Sub-Center MINSAs	0	0	
Public Health Post MINSAs	0	0		Public Health Post MINSAs	0	0	
Public mobile unit MINSAs	0	0		Public mobile unit MINSAs	0	0	
Other public health facility	0	0		Other public health facility	0	0	
Private hospital	0	0		Private hospital	0	0	
Private health center/clinic	0	0		Private health center/clinic	0	0	
Private office	0	0		Private office	0	0	
Private mobile clinic	0	0		Private mobile clinic	0	0	
Other private health facility	0	0		Other private health facility	0	0	
Pharmacy	0	0		Pharmacy	0	0	
Community health worker	2	2.4	1.7	Community health worker	0	0	
Traditional healer	2	1.5	1	Traditional healer	0	0	
Store	0	0		Store	0	0	
Market	0	0		Market	0	0	
Church	0	0		Church	0	0	
Friend/relative	73	60.5	6.7	Friend/relative	0	0	
Other	33	27.6	6.1	Other	0	0	
DK/DTR	3			DK/DTR	0		
Missing	0			Missing	0		
Total	122	100		Total	0		
Emergency contraception				Other traditional method			
Public hospital MINSAs	0	0		Public hospital MINSAs	0	0	
Public hospital CSS	0	0		Public hospital CSS	0	0	
ULAPS/CAPPS	0	0		ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0		Polyclinic CSS	0	0	
Public Health Center MINSAs	0	0		Public Health Center MINSAs	0	0	
Public Health Sub-Center MINSAs	0	0		Public Health Sub-Center MINSAs	0	0	
Public Health Post MINSAs	0	0		Public Health Post MINSAs	0	0	
Public mobile unit MINSAs	0	0		Public mobile unit MINSAs	0	0	
Other public health facility	0	0		Other public health facility	0	0	
Private hospital	0	0		Private hospital	0	0	
Private health center/clinic	0	0		Private health center/clinic	0	0	
Private office	0	0		Private office	0	0	
Private mobile clinic	0	0		Private mobile clinic	0	0	
Other private health facility	0	0		Other private health facility	0	0	
Pharmacy	0	0		Pharmacy	0	0	
Community health worker	0	0		Community health worker	0	0	
Traditional healer	0	0		Traditional healer	6	20.2	7.9
Store	0	0		Store	0	0	
Market	0	0		Market	0	0	
Church	0	0		Church	0	0	
Friend/relative	0	0		Friend/relative	11	64.3	11.7
Other	0	0		Other	6	15.6	8
DK/DTR	0			DK/DTR	0		
Missing	0			Missing	0		
Total	0			Total	23	100	

5.4 Non-use and interruption of use of family planning methods

Non-use and interruption of use of family planning methods are major concerns for family planning program managers.

5.4.1 Prevalence

The prevalence of interruption and non-use of family planning methods is summarized in Table 5.4.1. Of women participating in this survey, 86% are considered “in need” of contraception (i.e., they did not report any of the following: does not have sexual relations, virgin, menopausal, hysterectomy, pregnant, or wants to become pregnant). Among these women in need, 2% reported any interruption in the use of family planning methods in the previous year, and 88% reported not using any modern methods at the time of the interview.

Table 5.4.1 Interruption and non-use of family planning methods

Percentage of women with interruptions last year in the use of contraception, percentage not using contraception, and percentage in need of contraception			
Characteristic	N	Weighted %	Weighted SE
Currently in need of contraceptives (does not report any of the following: does not have sexual relations, virgin, menopausal, hysterectomy, pregnant, or wants to become pregnant)			
Yes	1235	86.2	1.4
No	183	13.8	1.4
DK/DTR	0		
Missing	298		
Total	1716	100	
Discontinuation rate: any interruption in use during the last year, among women in need of contraceptives			
Yes	26	1.8	0.5
No	1209	98.2	0.5
DK/DTR	0		
Missing	0		
Total	1235	100	
Number of interruptions in use during the last year, among women in need of contraceptives			
0	1209	98.2	0.5
1	22	1.5	0.5
2-6	4	0.2	0.1
7-12	0	0	
13 or more	0	0	
DK/DTR	0		
Missing	0		
Total	1235	100	
Not currently using any modern method			
Yes	1448	88.9	1.9
No	187	11.1	1.9
DK/DTR	0		
Missing	81		
Total	1716	100	
Unmet need: Not currently using any modern method, among women "in need" of contraceptives			
Yes	1082	87.8	2.3
No	153	12.2	2.3
DK/DTR	0		
Missing	0		
Total	1235	100	

5.4.2 Reasons

Women who interrupted use of family planning methods in the year preceding the interview, and those who indicated they were not using any methods on the day of the interview were asked to identify reasons for interruption and/or non-use from a list of 30 different options (Tables 5.4.2a-b). The most commonly cited reasons for non-use at the time of the interview were married (27%), being opposed to use (26%), and knowing no method (22%).

Table 5.4.2a Reasons for interruption and non-use of family planning methods

Percent distribution of women who are not using family planning methods by reason for non-use							
Reason	N	Weighted %	Weighted SE	Reason	N	Weighted %	Weighted SE
Unmarried				Did not have a menstrual period since last birth			
Yes	62	7	1	Yes	24	1.9	0.6
No	947	93	1	No	983	98.1	0.6
DK/DTR	194			DK/DTR	196		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Married				Was breastfeeding			
Yes	287	26.6	2.1	Yes	53	4.4	1
No	722	73.4	2.1	No	956	95.6	1
DK/DTR	194			DK/DTR	194		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Does not have sexual relations				Goes against religion			
Yes	25	2.2	0.8	Yes	41	3.9	0.9
No	976	97.8	0.8	No	968	96.1	0.9
DK/DTR	202			DK/DTR	194		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Virgin				Respondent is opposed to use			
Yes	5	0.8	0.4	Yes	260	25.6	2.3
No	1003	99.2	0.4	No	748	74.4	2.3
DK/DTR	195			DK/DTR	195		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Has sexual relations infrequently				Husband/partner is opposed to use			
Yes	41	3.5	1	Yes	52	5.1	1.2
No	961	96.5	1	No	955	94.9	1.2
DK/DTR	201			DK/DTR	196		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Menopausal				Others are opposed to use			
Yes	58	6.2	1.3	Yes	19	2	0.7
No	948	93.8	1.3	No	989	98	0.7
DK/DTR	197			DK/DTR	195		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Hysterectomy/surgery on the uterus				Knows no method			
Yes	5	0.5	0.3	Yes	205	21.7	1.8
No	1002	99.5	0.3	No	804	78.3	1.8
DK/DTR	196			DK/DTR	194		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Cannot become pregnant				Knows no source for getting method			
Yes	37	3.9	1	Yes	11	0.8	0.5
No	970	96.1	1	No	996	99.2	0.5
DK/DTR	196			DK/DTR	196		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	

Table 5.4.2b Reasons for interruption and non-use of family planning methods

Percent distribution of women who are not using family planning methods by reason for non-use							
Reason	N	Weighted %	Weighted SE	Reason	N	Weighted %	Weighted SE
Concerned about side effects				No trust in health facility staff			
Yes	35	3.6	0.8	Yes	7	0.5	0.2
No	972	96.4	0.8	No	1000	99.5	0.2
DK/DTR	196			DK/DTR	196		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Facility is too far				Uncomfortable to use			
Yes	19	2	0.8	Yes	23	2	0.7
No	990	98	0.8	No	986	98	0.7
DK/DTR	194			DK/DTR	194		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Could not find transportation to a facility				Interferes with normal body processes			
Yes	10	0.8	0.4	Yes	30	2.3	0.7
No	998	99.2	0.4	No	977	97.7	0.7
DK/DTR	195			DK/DTR	196		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Could not afford transportation				Affects health / does not like them			
Yes	8	0.7	0.3	Yes	54	4.7	0.9
No	1000	99.3	0.3	No	954	95.3	0.9
DK/DTR	195			DK/DTR	195		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Costs too much				Was pregnant			
Yes	9	1	0.5	Yes	22	1.7	0.5
No	998	99	0.5	No	987	98.3	0.5
DK/DTR	196			DK/DTR	194		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Preferred method is not available				Wanted to become pregnant			
Yes	8	0.7	0.3	Yes	16	1.2	0.4
No	999	99.3	0.3	No	993	98.8	0.4
DK/DTR	196			DK/DTR	194		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
No method is available				Other			
Yes	6	0.4	0.3	Yes	45	4.2	0.8
No	1001	99.6	0.3	No	964	95.8	0.8
DK/DTR	196			DK/DTR	194		
Missing	46			Missing	46		
Total	1249	100		Total	1249	100	
Health facility has staff that are hard to deal with							
Yes	7	0.6	0.3				
No	1001	99.4	0.3				
DK/DTR	195						
Missing	46						
Total	1249	100					

5.5 Family planning intentions and decision-making

5.5.1 Participation in family planning decision

In this setting, most women (59%) report that decisions about family planning methods are jointly made by the respondent and her partner. In a minority of cases (10%), the decision to use family planning methods is up to the respondent's partner.

Table 5.5.1 Participation in family planning decision-making

Percent distribution of women currently using family planning methods according to who makes the decision to use family planning			
Characteristic	N	Weighted %	Weighted SE
Who makes the decision to use family planning methods?			
Mostly the respondent	85	27.8	4.1
Mostly the husband/partner	34	10.1	1.7
Joint decision	211	58.9	4
Other	9	3.2	1.5
DK/DTR/NA	17		
Missing	0		
Total	356	100	

5.5.2 Informed choice

With respect to use of family planning methods, “informed choice” refers to whether or not health care workers described other options for family planning methods, possible side effects associated with the method of choice, and how to respond to side effects if they occur. This information can be used to help women select an appropriate contraceptive method, and to assist users in coping with side effects (thus decreasing discontinuation rates for non-permanent methods).

Table 5.5.2a shows the percent of women currently using family planning methods who were told about other options for contraception (57%).

Table 5.5.2a Family planning decision-making – informed choice

Percentage of all women currently using family planning methods to whom a health care worker described other methods that can be used			
Characteristic	N	Weighted %	Weighted SE
Did a doctor, nurse, or community health worker ever tell you about other methods of family planning that you could use?			
Yes	199	56.9	3.5
No	155	43.1	3.5
DK/DTR	2		
Missing	0		
Total	356	100	

5.6 Exposure to family planning information

5.6.1 Family planning messages delivered by health care providers

Respondents were asked about their exposure to family planning messages delivered by health care providers (Table 5.6.1). One-quarter of women reported being advised about family planning at the health care facility they attend during the past 12 months. Eight percent of respondents indicated that they had been visited by a health promoter who provided information about family planning in the last 12 months. Four percent of respondents who had not attended a health facility in the last 12 months were visited by a health promoter who provided information about family planning.

Table 5.6.1 Family planning messages delivered by health care providers

Percentage of married or partnered women exposed to family planning messages delivered by health care providers at a health care facility or at home, ever and in the last 12 months			
Characteristic	N	Weighted %	Weighted SE
In the last 12 months, did any staff member at a health facility speak to you about family planning methods?			
Yes	432	25.1	2
No	1154	74.9	2
DK/DTR	45		
Missing	85		
Total	1716	100	
In the last 12 months, did a health promoter visit you to speak to you about family planning methods?			
Yes	156	8.3	1.1
No	1455	91.7	1.1
DK/DTR	20		
Missing	85		
Total	1716	100	
Among respondents who had not visited a health facility seeking care for themselves or their children in the last 12 months: In the last 12 months, did a health promoter visit you to speak to you about family planning methods?			
Yes	31	3.5	1
No	653	96.5	1
DK/DTR	6		
Missing	0		
Total	690	100	

CHAPTER 6: MATERNAL HEALTH CARE

This chapter summarizes key indicators pertaining to antenatal care, delivery care, and postpartum care for the most recent birth in the last two years as reported by women of reproductive age (15-49 years) participating in the SM2015-Panama Baseline Household Survey.

6.1 Antenatal care

To reduce recall bias, data pertaining to antenatal care are summarized for a woman's most recent birth in the last two years.

6.1.1 Antenatal care coverage

Early and regular checkups by trained medical providers are very important in assessing the physical status of women during pregnancy. These visits provide an opportunity to intervene in a timely manner if any problems are detected. The Maternal and Child Health Questionnaire captured information from women on both overall coverage of antenatal care and the content of care received. To obtain information on source of antenatal care, interviewers recorded all persons a woman consulted for care. Timing of antenatal care was assessed by asking women how many weeks or months pregnant they were when they attended their first antenatal care visit.

The percentage of women with a birth in the last two years who attended at least one antenatal care visit for the most recent birth, and the percent distribution of timing of care among those who received any antenatal care are presented in Table 6.1.1a. The antenatal care received from specific antenatal care providers is detailed in Table 6.1.1b, and the type of facility where antenatal care was sought is detailed in Table 6.1.1c.

Among women with a child under the age of 2, 86% attended at least one antenatal care visit and 78% attended at least one with a doctor or professional nurse. Approximately 29% of women had an antenatal care visit during the first trimester (first 12 weeks) with a doctor or professional nurse.

As can be seen in Table 6.1.1b, most women with a birth in the last two years with at least one antenatal care visit saw a medical doctor (79%) or professional nurse (22%). Less than 1% of women with antenatal care had a midwife as the attendant at any antenatal care visits.

Regarding the type of facility where antenatal care was sought (Table 6.1.1c), most women who attended antenatal care for their most recent delivery in the last two years sought care at a MINSA public health center (46%) or sub-center (23%). Only 2% of women sought antenatal care in a private facility.

Table 6.1.1a Antenatal care coverage for the most recent birth in the last two years

Percentage of women with a birth in the last two years who attended at least one antenatal care visit for the most recent birth; and among those who received any antenatal care, percent distribution by timing of care			
Characteristic	N	Weighted %	Weighted SE
Attended at least one antenatal care visit			
Yes	832	86.1	2.5
No	119	13.9	2.5
DK/DTR	7		
Missing	121		
Total	1079	100	
Attended at least one antenatal care visit with doctor or professional nurse			
Yes	763	78	2.6
No	195	22	2.6
DK/DTR	0		
Missing	121		
Total	1079	100	
First trimester (first 12 weeks) antenatal care visit with doctor or professional nurse			
Yes	250	28.9	2.1
No	616	71.1	2.1
DK/DTR	87		
Missing	126		
Total	1079	100	
Month of gestation of first ANC visit, among women who received any antenatal care			
1	147	19.7	1.6
2	127	17.8	2.2
3	198	24.3	2.1
4	108	14.7	1.7
5	83	10.4	1.5
6	44	5.8	0.9
7	13	1.9	0.6
8	22	3.3	0.8
9	12	2.1	0.7
DK/DTR	75		
Missing	3		
Total	832	100	

Table 6.1.1b Antenatal care coverage for the most recent birth in the last two years

Percentage distribution of attendants at antenatal care, for women with a birth in the last two years who attended at least one antenatal care visit for the most recent birth											
Attendant	N	Weighted %	Weighted SE	Attendant	N	Weighted %	Weighted SE	Attendant	N	Weighted %	Weighted SE
Medical doctor				Midwife/Comadrona				Relative			
0 visits	174	21.2	2.8	0 visits	829	99.3	0.4	0 visits	814	97.7	0.7
1 visit	237	29.4	2.9	1 visit	3	0.7	0.4	1 visit	11	1.4	0.5
2 visits	37	5	0.8	2 visits	0	0		2 visits	4	0.5	0.3
3 visits	50	6.1	1.1	3 visits	0	0		3 visits	1	0.2	0.2
4 visits	55	6.1	0.8	4 visits	0	0		4 visits	1	0.1	0.1
5 visits	66	7.5	1.3	5 visits	0	0		5 visits	0	0	
6 visits	90	9.7	1.2	6 visits	0	0		6 visits	0	0	
7 visits	40	4.7	0.9	7 visits	0	0		7 visits	1	0.1	0.1
8 visits	83	10.3	1.7	8 visits	0	0		8 visits	0	0	
Missing	0			Missing	0			Missing	0		
Total	832	100		Total	832	100		Total	832	100	
Professional nurse				Community health worker				Other			
0 visits	649	78.1	2.6	0 visits	831	99.9	0.1	0 visits	817	98.2	0.6
1 visit	108	13	1.7	1 visit	1	0.1	0.1	1 visit	6	0.7	0.3
2 visits	13	1.4	0.4	2 visits	0	0		2 visits	2	0.3	0.2
3 visits	23	2.6	0.7	3 visits	0	0		3 visits	4	0.4	0.2
4 visits	11	1.2	0.4	4 visits	0	0		4 visits	1	0.3	0.3
5 visits	5	0.7	0.3	5 visits	0	0		5 visits	0	0	
6 visits	11	1.5	0.5	6 visits	0	0		6 visits	1	0.1	0.1
7 visits	8	1.1	0.4	7 visits	0	0		7 visits	0	0	
8 visits	4	0.4	0.2	8 visits	0	0		8 visits	1	0.1	0.1
Missing	0			Missing	0			Missing	0		
Total	832	100		Total	832	100		Total	832	100	
Auxiliary nurse				Pharmacy assistant				Didn't know attendant or declined to respond			
0 visits	768	90.4	2	0 visits	830	99.9	0.1	0 visits	814	98	0.6
1 visit	25	3.5	1	1 visit	2	0.1	0.1	1 visit	14	1.8	0.6
2 visits	5	0.9	0.5	2 visits	0	0		2 visits	1	0.1	0.1
3 visits	5	0.6	0.4	3 visits	0	0		3 visits	0	0	
4 visits	7	0.9	0.4	4 visits	0	0		4 visits	1	0.1	0.1
5 visits	5	0.7	0.3	5 visits	0	0		5 visits	1	0.1	0.1
6 visits	8	1.1	0.6	6 visits	0	0		6 visits	1	0.1	0.1
7 visits	5	1.1	0.7	7 visits	0	0		7 visits	0	0	
8 visits	4	0.8	0.5	8 visits	0	0		8 visits	0	0	
Missing	0			Missing	0			Missing	0		
Total	832	100		Total	832	100		Total	832	100	
Laboratory technician				Traditional healer							
0 visits	830	99.7	0.2	0 visits	818	98.9	0.7				
1 visit	2	0.3	0.2	1 visit	2	0.1	0.1				
2 visits	0	0		2 visits	0	0					
3 visits	0	0		3 visits	4	0.3	0.2				
4 visits	0	0		4 visits	1	0.1	0.1				
5 visits	0	0		5 visits	1	0.1	0.1				
6 visits	0	0		6 visits	3	0.2	0.2				
7 visits	0	0		7 visits	2	0.1	0.1				
8 visits	0	0		8 visits	1	0.1	0.1				
Missing	0			Missing	0						
Total	832	100		Total	832	100					

Table 6.1.1c Antenatal care coverage for the most recent birth in the last two years

Percentage distribution of usual location of antenatal care for women with a birth in the last two years who attended at least one antenatal care visit for the most recent birth			
Location	N	Weighted %	Weighted SE
Usual location for antenatal care visits			
Public hospital MINSAs	99	10.5	3.8
Public hospital CSS	1	0.1	0.1
ULAPS/CAPPS	0	0	
Polyclinic CSS	5	0.5	0.2
Public Health Center MINSAs	385	46.1	5.6
Public Health Sub-Center MINSAs	189	23.3	4.7
Public Health Post MINSAs	80	10.1	3.6
Public mobile unit MINSAs	38	5.5	1.7
Other public health facility	1	0.1	0.1
Private hospital	1	0.2	0.2
Private health center/clinic	5	1.5	0.8
Private office	3	0.3	0.2
Private mobile clinic	0	0	
Other private health facility	0	0	
Pharmacy	7	0.6	0.4
Community health worker	1	0.2	0.2
Traditional healer	9	1.1	0.5
Other	5		
DK/DTR	3		
Missing	832	100	
Total	632	100	

6.1.2 Frequency of antenatal care visits

Antenatal care can be more effective in avoiding adverse pregnancy outcomes when it is sought early in the pregnancy and continues to delivery. Under normal circumstances, the World Health Organization recommends that pregnant women have at least four antenatal care visits to provide sufficient care. The frequency of antenatal care visits is summarized in Table 6.1.2. The table also includes the percentage of women with four or more visits with at least one with a professional and according to best practices.

Sixty percent of women reported having four or more antenatal care visits during their most recent pregnancy in the last two years. Twenty-seven percent of women reported having seven or more antenatal care visits during their most recent pregnancy.

The content of antenatal care is as crucial as the frequency of visits. Approximately 5% of all women had four or more antenatal care visits, including at least one visit with a doctor or professional nurse, and with each of ten defined best practices performed at least once during pregnancy (i.e., measurement of blood type, test for anemia, test for syphilis, test for HIV, test for blood

glucose, test for proteinuria, measurement of maternal blood pressure, measurement of maternal weight, measurement of fundal height, and measurement of fetal heartbeat).

Table 6.1.2 Frequency of antenatal care visits

Percent distribution of women with a birth in the last two years by number of antenatal care visits for the most recent birth and percentage of women with four or more visits with at least one with a professional			
Characteristic	N	Weighted %	Weighted SE
Number of antenatal care visits			
None	126	20.6	3.1
1-3 visits	123	18.3	2
4-6 visits	256	33.7	2.6
7-9 visits	185	26.9	2.6
10+ visits	4	0.5	0.3
DK/DTR	264		
Missing	121		
Total	1079	100	
Attended at least four antenatal care visits			
Yes	445	61.1	3.4
No	249	38.9	3.4
DK/DTR	264		
Missing	121		
Total	1079	100	
Attended at least four antenatal care visits with doctor or professional nurse			
Yes	384	51.9	3.4
No	310	48.1	3.4
DK/DTR	264		
Missing	121		
Total	1079	100	
Attended at least four antenatal care visits with doctor or professional nurse according to best practices (measuring blood type, anemia, syphilis, HIV, blood glucose, proteinuria, blood pressure, weight, fundal height, fetal heartbeat)			
Yes	36	5.2	1.5
No	658	94.8	1.5
DK/DTR	264		
Missing	121		
Total	1079	100	

6.1.3 Content of antenatal care

The content of antenatal care is an important indicator of quality of care. The coverage of key procedures was assessed among women who received any antenatal care for a birth in the last two years (Table 6.1.3a and Table 6.1.3b). It is important to remember that the validity of these data

hinge on the respondent's understanding of the question and her ability to recall events that may have occurred several years prior to the interview.

There was variation in performance of the 10 "best practice" procedures, from measurement of maternal weight (96%) to testing for syphilis (25%). Most women had a blood specimen (85%) or a urine specimen (83%) collected during their antenatal care visits for the most recent birth during the past two years.

Table 6.1.3a Content of antenatal care visits - best practices

Percentage distribution of content during antenatal visit among women with a birth in the last two years with at least one antenatal care visit							
Procedure	N	Weighted %	Weighted SE	Procedure	N	Weighted %	Weighted SE
Measured blood type				Tested for proteinuria			
Yes	355	58	2.9	Yes	262	45.6	3.3
No	254	42	2.9	No	315	54.4	3.3
DK/DTR	220			DK/DTR	252		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Tested for anemia				Measured maternal blood pressure			
Yes	318	53.9	3	Yes	757	93.2	1.1
No	275	46.1	3	No	50	6.8	1.1
DK/DTR	236			DK/DTR	22		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Tested for syphilis				Measured maternal weight			
Yes	128	25.4	3.1	Yes	799	95.6	1.1
No	398	74.6	3.1	No	26	4.4	1.1
DK/DTR	303			DK/DTR	4		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Tested for HIV				Measured fundal height			
Yes	283	43.5	3.6	Yes	532	68.5	2.6
No	364	56.5	3.6	No	242	31.5	2.6
DK/DTR	182			DK/DTR	55		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Measured blood glucose				Measured fetal heartbeat			
Yes	205	35.3	3.6	Yes	577	73.4	2.2
No	375	64.7	3.6	No	199	26.6	2.2
DK/DTR	249			DK/DTR	53		
Missing	3			Missing	3		
Total	832	100		Total	832	100	

Table 6.1.3b Content of antenatal care visits - other services provided

Percentage distribution of content during antenatal visit among women with a birth in the last two years with at least one antenatal care visit							
Procedure	N	Weighted %	Weighted SE	Procedure	N	Weighted %	Weighted SE
Collected blood specimen				Tested for diabetes			
Yes	704	84.9	2.6	Yes	80	14.9	2.5
No	116	15.1	2.6	No	452	85.1	2.5
DK/DTR	9			DK/DTR	297		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Collected urine specimen				Performed an ultrasound			
Yes	699	83.4	2.6	Yes	203	24	2.1
No	126	16.6	2.6	No	606	76	2.1
DK/DTR	4			DK/DTR	20		
Missing	3			Missing	3		
Total	832	100		Total	832	100	

6.1.4 Coverage of tetanus toxoid vaccinations during pregnancy

Tetanus toxoid injections are given during pregnancy for the prevention of neonatal tetanus. To prevent transmission of this potentially fatal infection, all women should be vaccinated with tetanus toxoid when they become pregnant. A baby is considered protected if the mother receives two doses of tetanus toxoid during pregnancy, with the second at least two weeks before delivery. However, if a woman was vaccinated previously, she requires only one dose during the current pregnancy. Five doses are considered adequate to confer lifetime immunity. To assess the coverage of tetanus toxoid vaccination, women who reported receiving any antenatal care during their most recent pregnancy were asked if they received tetanus toxoid injections.

The percentage of women with prenatal care for a birth in the last two years who received a tetanus vaccinations during pregnancy and the percent distribution by number of vaccinations received and by time since last tetanus vaccination are included in Table 6.1.4.

As shown in table 6.1.4, the coverage of tetanus toxoid vaccinations during pregnancy was 56% among women who received antenatal care. One-third of women had received one vaccination and 8% had received two or more, though many women did not know how many vaccines they received. Among women with prenatal care, 84% have never been vaccinated before, and 16% had received a vaccine in the last 10 years. Among women who were not vaccinated during prenatal care visits, 87% had never been vaccinated.

Table 6.1.4 Coverage of tetanus toxoid vaccinations during pregnancy

Among women with prenatal care for a birth in the last two years, percentage who received a tetanus vaccinations during pregnancy and percent distribution by number of vaccinations received and by time since last tetanus vaccination			
Characteristic	N	Weighted %	Weighted SE
Received tetanus injection during pregnancy			
Yes	472	56.1	2.9
No	357	43.9	2.9
DK/DTR	119		
Missing	131		
Total	1079	100	
Number of tetanus vaccinations during pregnancy			
None	357	59.1	3.1
1	207	32.9	3
2	39	5.7	0.9
3	11	1.7	0.6
4	3	0.4	0.3
5	1	0.1	0.1
DK/DTR	330		
Missing	131		
Total	1079	100	
Time since last tetanus vaccination			
Never vaccinated	199	83.5	3.2
<10 years ago	36	15.7	3
≥10 years ago	2	0.8	0.6
DK/DTR	718		
Missing	124		
Total	1079	100	
Time since last tetanus vaccination, among women who were not vaccinated during pregnancy			
Never vaccinated	117	87.1	3.7
<10 years ago	16	12.1	3.6
≥10 years ago	1	0.8	0.8
DK/DTR	223		
Missing	0		
Total	357	100	

6.1.5 Exposure to safe pregnancy messages

Women who received antenatal care were asked about a series of topics for which they might have received counseling or advice during their pregnancy (Table 6.1.5).

Table 6.1.5 shows that 44% of women were offered an HIV test. At least two-thirds of women were offered counseling about pregnancy (81%), counseling about nutrition during pregnancy (70%), information about proper breastfeeding (70%), and information about in-facility delivery (67%). Sixty-eight percent of women were advised to deliver in a health facility. Few women were counseled about making a transportation plan for delivery (10%). Twelve percent of women were advised to have a Caesarean section.

Table 6.1.5 Exposure to safe pregnancy messages

Among women who received prenatal care for a birth in the last two years, percentage exposed to specific safe pregnancy messages							
Characteristic	N	Weighted %	Weighted SE	Characteristic	N	Weighted %	Weighted SE
Counseled about pregnancy				Advised to have a Caesarean section			
Yes	648	80.6	1.9	Yes	92	12.4	1.7
No	150	19.4	1.9	No	656	87.6	1.7
DK/DTR	31			DK/DTR	81		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Told about signs to watch out for that could indicate a problem with the pregnancy				Counseled about making a transportation plan for the delivery			
Yes	393	55.5	2.6	Yes	68	10.6	1.7
No	306	44.5	2.6	No	673	89.4	1.7
DK/DTR	130			DK/DTR	88		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Offered an HIV test				Counseled about contraception after delivery			
Yes	293	44.3	3.5	Yes	301	38	2.9
No	368	55.7	3.5	No	452	62	2.9
DK/DTR	168			DK/DTR	76		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Counseled about nutrition during pregnancy				Counseled about child care			
Yes	520	70.1	2.7	Yes	472	62.4	2.5
No	222	29.9	2.7	No	268	37.6	2.5
DK/DTR	87			DK/DTR	89		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Given information about in-facility delivery				Given information about proper ways to breast feed			
Yes	519	66.7	3.3	Yes	545	69.6	2.3
No	242	33.3	3.3	No	225	30.4	2.3
DK/DTR	68			DK/DTR	59		
Missing	3			Missing	3		
Total	832	100		Total	832	100	
Advised to deliver in a facility							
Yes	534	67.9	3.2				
No	237	32.1	3.2				
DK/DTR	58						
Missing	3						
Total	832	100					

6.2 Delivery Care

Proper medical attention and hygienic conditions during delivery can reduce the risk of complications, infections, and even death for the mother and newborn baby. Characteristics of the delivery, including assistance at delivery and mode of delivery, were captured for all children born in the five years preceding the survey. Place of delivery was captured for all women who reported antenatal care for that birth. To reduce recall bias, only data from the most recent delivery within the last two years are summarized.

6.2.1 Place of delivery

The location of the most recent birth and the means of transportation used to get to the facility are shown in Table 6.2.1. Delivery location was asked of women who reported attending antenatal care for that birth. The mode of transportation to delivery was asked if the delivery happened in a public hospital (MINSAs or CSSs), ULAPS/CAPPS, CSS polyclinic, MINSAs public health center or sub-center, MINSAs public health post, or other public health facility. Approximately one-fifth of these births occurred in the respondent's home. MINSAs facilities were common for deliveries: public hospitals (25%), public health centers (34%), and public health sub-centers (14%). Deliveries in private sector facilities were rare (less than 1%). About 80% of women who had antenatal care delivered in a facility. Among women who delivered in a facility as listed above, half of women indicated that they traveled by foot, 15% by motor boat, 13% by rowboat, 11% by private vehicle, and 11% by another public vehicle. Few women traveled by ambulance (1%).

Table 6.2.1 Place of delivery

Percent distribution of women with a birth in the last two years who attended antenatal care for that birth, by location of most recent birth and percent distribution of women with in-facility deliveries by means of transportation used to get to the facility for delivery							
Characteristic	N	Weighted %	Weighted SE	Mode of transportation	N	Weighted %	Weighted SE
Delivery location for most recent birth				On foot			
Respondent's house	149	18.3	3	Yes	357	52.4	5
Another person's house	5	0.4	0.2	No	297	47.6	5
Public hospital MINSA	213	24.5	3.6	DK/DTR	4		
Public hospital CSS	12	1.1	0.5	Missing	1		
ULAPS/CAPPS	0	0		Total	659	100	
Polyclinic CSS	2	0.5	0.4	Private vehicle			
Public Health Center MINSA	276	33.8	4.3	Yes	71	11.4	2
Public Health Sub-Center MINSA	112	14.1	3.4	No	583	88.6	2
Public Health Post MINSA	43	5.7	2.3	DK/DTR	4		
Public mobile unit MINSA	0	0		Missing	1		
Other public health facility	0	0		Total	659	100	
Private hospital	0	0		Ambulance			
Private health center/clinic	1	0.1	0.1	Yes	10	1.2	0.5
Private office	0	0		No	644	98.8	0.5
Private mobile clinic	0	0		DK/DTR	4		
Other private health facility	0	0		Missing	1		
Pharmacy	0	0		Total	659	100	
House of a community health worker	0	0		Other public vehicle			
House of a midwife	4	0.4	0.2	Yes	82	11.3	1.5
Other	10	1.1	0.4	No	572	88.7	1.5
DK/DTR	1			DK/DTR	4		
Missing	251			Missing	1		
Total	1079	100		Total	659	100	
In-hospital delivery				Row boat			
Yes	226	25.6	3.6	Yes	76	13.1	3.3
No	601	74.4	3.6	No	578	86.9	3.3
DK/DTR	1			DK/DTR	4		
Missing	251			Missing	1		
Total	1079	100		Total	659	100	
In-facility delivery				Motor boat			
Yes	659	79.8	3.1	Yes	93	15.4	2.8
No	168	20.2	3.1	No	561	84.6	2.8
DK/DTR	0			DK/DTR	4		
Missing	252			Missing	1		
Total	1079	100		Total	659	100	

6.2.2 Assistance at delivery

The assistance a woman receives during childbirth has important health consequences for both mother and child. For women who did not deliver alone in the last two years (97% of all births), the percentage by type of delivery attendant is detailed in Table 6.2.2a. Among women who did not report being alone for delivery, several categories of personnel may have been in attendance. As can be seen in Table 6.2.2a, most deliveries were accompanied by a medical doctor (64%) or professional nurse (50%). The next most common attendants were midwives (42%), relatives (23%), and auxiliary nurse (19%).

Approximately one-third of women delivered with one attendant, another third with two attendants, and another third with three or more attendants (Table 6.2.2b). Only 3% of women delivered with no attendants. Location of delivery was ascertained only for women who had reported attending antenatal care for that birth. For women's most recent live birth in the past two years, among those who attended antenatal care for that pregnancy, 76% of deliveries had a skilled attendant present in a health facility and 25% delivered with a skilled attendant in a hospital (Table 6.2.2c).

Table 6.2.2a Assistance at delivery: type of attendants

For women's most recent birth in the past two years, percentage by type of delivery attendants							
Characteristic	N	Weighted %	Weighted SE	Characteristic	N	Weighted %	Weighted SE
Medical doctor				Community health worker			
Yes	623	64.1	3.8	Yes	18	1.8	0.6
No	324	35.9	3.8	No	913	98.2	0.6
DK/DTR	7			DK/DTR	23		
Missing	125			Missing	125		
Total	1079	100		Total	1079	100	
Professional nurse				Pharmacist			
Yes	477	50	3.4	Yes	5	0.5	0.2
No	468	50	3.4	No	926	99.5	0.2
DK/DTR	9			DK/DTR	23		
Missing	125			Missing	125		
Total	1079	100		Total	1079	100	
Auxiliary nurse				Traditional healer			
Yes	162	18.7	1.7	Yes	21	2.6	0.9
No	767	81.3	1.7	No	918	97.4	0.9
DK/DTR	25			DK/DTR	15		
Missing	125			Missing	125		
Total	1079	100		Total	1079	100	
Laboratory technician				Relative			
Yes	11	1.1	0.4	Yes	218	23.2	2.4
No	916	98.9	0.4	No	723	76.8	2.4
DK/DTR	27			DK/DTR	13		
Missing	125			Missing	125		
Total	1079	100		Total	1079	100	
Midwife/Comadrona				Other			
Yes	393	42.7	3.5	Yes	32	3.2	0.8
No	546	57.3	3.5	No	907	96.8	0.8
DK/DTR	15			DK/DTR	15		
Missing	125			Missing	125		
Total	1079	100		Total	1079	100	

Table 6.2.2b Assistance at delivery: number of attendants

For women's most recent live birth in the past two years, the number of attendants during delivery and the presence of skilled attendants			
Characteristic	N	Weighted %	Weighted SE
Delivered alone			
Yes	25	2.7	0.7
No	927	97.3	0.7
DK/DTR	2		
Missing	125		
Total	1079	100	
Number of categories of personnel in attendance at delivery			
None	27	2.9	0.7
One	287	29.9	2.2
Two	312	32.1	2.1
Three	270	29.9	2.7
Four or more	56	5.2	1
DK/DTR	2		
Missing	125		
Total	1079	100	
Delivery with a skilled birth attendant			
Yes	688	71	3.9
No	260	29	3.9
DK/DTR	0		
Missing	131		
Total	1079	100	

Table 6.2.2c Assistance at delivery: in-facility delivery with skilled birth attendant

For women's most recent live birth in the past two years, the presence of skilled attendants at delivery in a health facility or hospital, among women who reported attending antenatal care for that birth			
Characteristic	N	Weighted %	Weighted SE
In-facility delivery with a skilled birth attendant			
Yes	632	76	3.3
No	191	24	3.3
DK/DTR	0		
Missing	256		
Total	1079	100	
In-hospital delivery with a skilled birth attendant			
Yes	222	25.2	3.7
No	601	74.8	3.7
DK/DTR	0		
Missing	256		
Total	1079	100	

6.2.3 Complications

Pregnancy complications are an important source of maternal and child morbidity and mortality. The type of delivery (vaginal or Caesarian section) among women with births in the last two years are detailed in Table 6.2.3. The table also includes the percentage of women with specific complications and the percentage of women with an in-facility delivery for whom the delivery at the facility was planned. The mode of delivery and the reason for attending a health facility for delivery are available for women who reported attending antenatal care during that pregnancy.

The majority of births were vaginal deliveries (97%). For 18% of in-facility deliveries, women indicated that they attended the facility for emergency care. Few women reported seizures prior to delivery (4%). Approximately 4% of infants were transferred to an intensive care unit after delivery, and 18% of women reported excessive bleeding after delivery (more than one cup over a two-day period of time).

Table 6.2.3 Mode of delivery and complications

For women's most recent live birth in the past two years, the mode of delivery and complications during delivery			
Characteristic	N	Weighted %	Weighted SE
Mode of delivery, among women who reported attending antenatal care			
Vaginal	796	96.8	0.5
Planned Caesarean section	19	2.1	0.5
Emergency Caesarean section	10	1.1	0.4
DK/DTR	1		
Missing	253		
Total	1079	100	
Reason for attending a health facility for delivery, among in-facility births for women who reported attending antenatal care			
Planned	499	81.9	2.7
Emergency	109	17.9	2.7
Other	2	0.2	0.2
DK/DTR	48		
Missing	1		
Total	659	100	
Respondent had seizures prior to delivery, among all births			
Yes	29	3.9	1.2
No	869	96.1	1.2
DK/DTR	56		
Missing	125		
Total	1079	100	
Child entered neonatal intensive care unit after delivery, among all births			
Yes	38	4	0.7
No	911	96	0.7
DK/DTR	5		
Missing	125		
Total	1079	100	
Respondent had excessive bleeding in the first day following the delivery, among all births			
Yes	148	18.1	2.4
No	689	81.9	2.4
DK/DTR	117		
Missing	125		
Total	1079	100	

6.2.4 Birth size and weight

Birth weight is a major determinant of infant and child health and mortality. Birth weight of less than 2.5 kilograms is considered low. For all births during the five-year period preceding the survey, mothers were asked about their perception of the child's size at birth: very large, larger than average, smaller than average, or very small. They were then asked to report the actual weight in kilograms if the child had been weighed after delivery. To reduce recall bias, only data from the most recent birth within the last two years are summarized below (Table 6.2.4).

Most women perceived their infant to be average in size (75%). About three-quarters of newborns were weighed at birth. Among those who were weighed, 12% were classified as low birth weight (<2.5 kilograms), though many women did not know the weight of the child.

Table 6.2.4 Birth size and weight

For women's most recent live birth in the past two years, the size and weight of the child at birth			
Characteristic	N	Weighted %	Weighted SE
Mother's estimate of the size of the child at birth			
Very large	21	2.1	0.5
Larger than average	70	9.3	1.6
Average	620	74.9	2.8
Smaller than average	100	10.5	1.4
Very small	26	3.2	0.7
DK/DTR	117		
Missing	125		
Total	1079	100	
Child's weight was measured at birth			
Yes	695	74.8	4
No	226	25.2	4
DK/DTR	33		
Missing	125		
Total	1079	100	
Child's birth weight, among those who were weighed			
<2.5 kg (low birth weight)	37	11.6	1.8
≥2.5 kg	271	88.4	1.8
DK/DTR	384		
Missing	3		
Total	695	100	

6.3 Postnatal care

Postnatal care is important both for the mother and the child to treat complications arising from the delivery, as well as to provide the mother with important information on how to care for herself and her child. The postnatal period is defined as the time between the delivery of the placenta and 42 days (six weeks) following the delivery. The timing of postnatal care is important. The first two days after delivery are critical, because most maternal and neonatal deaths occur during this period.

Characteristics of postnatal care, including timing, location, and personnel providing care were captured for all births in the five years preceding the survey. To reduce recall bias, only data from the most recent delivery in the last two years are summarized in the tables below.

6.3.1 Postnatal checkup for the mother

Data on postnatal care for the mother are summarized in Table 6.3.1a and Table 6.3.1b. Table 6.3.1a shows the percentage of women with a birth in the last two years who were checked at any time after delivery and within one week after delivery; and percentage by timing of the check for women with an in-facility delivery.

About half of women recalled being checked after delivery, and 20% reported being checked one week after delivery by a health care provider. Only 19% of women with an institutional birth recalled being checked every 15 minutes for the first hour post-partum.

Table 6.3.1b shows the percent distribution of women who were checked at any time after delivery by type of personnel. Among women with postnatal care visits, most received care from a medical doctor (78%) or professional nurse (22%).

Table 6.3.1a Postnatal checkup for the mother

For women's most recent live birth in the past two years, postpartum care received by the respondent			
Characteristic	N	Weighted %	Weighted SE
Respondent was checked after delivery			
Yes	475	52	2.9
No	429	48	2.9
DK/DTR	50		
Missing	125		
Total	1079	100	
Respondent was checked every 15 minutes during the first hour after delivery while still at health facility, among in-facility births			
Yes	98	18.5	2.1
No	447	81.5	2.1
DK/DTR	113		
Missing	1		
Total	659	100	
Respondent was checked within one week after delivery by a health provider			
Yes	175	19.8	2.1
No	734	80.2	2.1
DK/DTR	50		
Missing	120		
Total	1079	100	

Table 6.3.1b Postnatal checkup for the mother: providers

Percentage distribution of attendants at postnatal care, for women with a birth in the last two years who attended at least one postnatal care visit for the most recent birth											
Attendant	N	Weighted %	Weighted SE	Attendant	N	Weighted %	Weighted SE	Attendant	N	Weighted %	Weighted SE
Medical doctor				Midwife/Comadrona				Relative			
0 visits	104	22.2	3.8	0 visits	472	99.3	0.5	0 visits	475	100	
1 visit	254	51.4	3.1	1 visit	3	0.7	0.5	1 visit	0	0	
2 visits	93	21.8	2.6	2 visits	0	0		2 visits	0	0	
3 visits	17	3.2	0.8	3 visits	0	0		3 visits	0	0	
4 visits	3	0.5	0.3	4 visits	0	0		4 visits	0	0	
5 visits	2	0.4	0.3	5 visits	0	0		5 visits	0	0	
6 visits	1	0.2	0.2	6 visits	0	0		6 visits	0	0	
7 visits	0	0		7 visits	0	0		7 visits	0	0	
8 visits	1	0.2	0.2	8 visits	0	0		8 visits	0	0	
Missing	0			Missing	0			Missing	0		
Total	475	100		Total	475	100		Total	475	100	
Professional nurse				Community health worker				Other			
0 visits	373	78.3	2.8	0 visits	465	98.6	0.9	0 visits	474	99.7	0.3
1 visit	77	16	2.2	1 visit	5	0.7	0.4	1 visit	0	0	
2 visits	19	4.2	1.3	2 visits	5	0.7	0.5	2 visits	1	0.3	0.3
3 visits	1	0.2	0.2	3 visits	0	0		3 visits	0	0	
4 visits	2	0.5	0.5	4 visits	0	0		4 visits	0	0	
5 visits	0	0		5 visits	0	0		5 visits	0	0	
6 visits	0	0		6 visits	0	0		6 visits	0	0	
7 visits	2	0.4	0.4	7 visits	0	0		7 visits	0	0	
8 visits	1	0.3	0.3	8 visits	0	0		8 visits	0	0	
Missing	0			Missing	0			Missing	0		
Total	475	100		Total	475	100		Total	475	100	
Auxiliary nurse				Pharmacy assistant				Didn't know attendant or declined to respond			
0 visits	459	96.3	1.3	0 visits	475	100		0 visits	462	96.8	0.9
1 visit	11	2.3	0.8	1 visit	0	0		1 visit	11	2.5	0.7
2 visits	1	0.6	0.6	2 visits	0	0		2 visits	2	0.7	0.5
3 visits	3	0.7	0.5	3 visits	0	0		3 visits	0	0	
4 visits	0	0		4 visits	0	0		4 visits	0	0	
5 visits	0	0		5 visits	0	0		5 visits	0	0	
6 visits	0	0		6 visits	0	0		6 visits	0	0	
7 visits	0	0		7 visits	0	0		7 visits	0	0	
8 visits	1	0.2	0.2	8 visits	0	0		8 visits	0	0	
Missing	0			Missing	0			Missing	0		
Total	475	100		Total	475	100		Total	475	100	
Laboratory technician				Traditional healer							
0 visits	474	99.8	0.2	0 visits	473	99.1	0.7				
1 visit	1	0.2	0.2	1 visit	2	0.9	0.7				
2 visits	0	0		2 visits	0	0					
3 visits	0	0		3 visits	0	0					
4 visits	0	0		4 visits	0	0					
5 visits	0	0		5 visits	0	0					
6 visits	0	0		6 visits	0	0					
7 visits	0	0		7 visits	0	0					
8 visits	0	0		8 visits	0	0					
Missing	0			Missing	0						
Total	475	100		Total	475	100					

6.3.2 Postnatal checkup for the baby

The results regarding postnatal care for the neonate are shown in Table 6.3.2a: percentage of women with a birth in the last two years whose infants were checked after delivery; percent distributions of infants who were checked by skilled personnel within 24 hours of delivery; and percent distributions of infants who were checked by skilled personnel within one week of delivery.

Approximately 68% of women reported that their infant was checked at any time after delivery. Among all deliveries, 7% of women reported that a qualified medical professional checked on their infant within 24 hours of delivery. Table 6.3.2b shows the attendants for neonatal postnatal care. Most women indicated that a checkup was performed by a medical doctor (76%) or professional nurse (22%).

Table 6.3.2a Postnatal checkup for the neonate

For women's most recent live birth in the past two years, postpartum care received by the baby			
Characteristic	N	Weighted %	Weighted SE
Baby was checked after delivery			
Yes	638	68.4	2.8
No	279	31.6	2.8
DK/DTR	37		
Missing	125		
Total	1079	100	
Baby was checked within 24 hours after delivery by a health provider			
Yes	68	7.3	1.4
No	816	92.7	1.4
DK/DTR	37		
Missing	158		
Total	1079	100	
Baby was checked within one week after delivery by a health provider			
Yes	148	16.4	2
No	736	83.6	2
DK/DTR	37		
Missing	158		
Total	1079	100	

Table 6.3.2b Postnatal checkup for the neonate: providers

Percentage distribution of attendants at postnatal care, for women with a birth in the last two years who attended at least one postnatal care visit for the most recent birth											
Attendant	N	Weighted %	Weighted SE	Attendant	N	Weighted %	Weighted SE	Attendant	N	Weighted %	Weighted SE
Medical doctor				Midwife/Comadrona				Relative			
0 visits	146	23.7	3.4	0 visits	636	99.7	0.2	0 visits	636	99.7	0.2
1 visit	329	51.1	3.2	1 visit	2	0.3	0.2	1 visit	2	0.3	0.2
2 visits	110	17.4	2.4	2 visits	0	0		2 visits	0	0	
3 visits	21	2.9	0.9	3 visits	0	0		3 visits	0	0	
4 visits	8	1.5	0.6	4 visits	0	0		4 visits	0	0	
5 visits	6	0.8	0.4	5 visits	0	0		5 visits	0	0	
6 visits	1	0.1	0.1	6 visits	0	0		6 visits	0	0	
7 visits	5	0.9	0.4	7 visits	0	0		7 visits	0	0	
8 visits	12	1.6	0.8	8 visits	0	0		8 visits	0	0	
Missing	0			Missing	0			Missing	0		
Total	638	100		Total	638	100		Total	638	100	
Professional nurse				Community health worker				Other			
0 visits	506	78.2	3.2	0 visits	619	97.4	1.1	0 visits	633	99.1	0.4
1 visit	89	14.5	2.6	1 visit	14	2	0.8	1 visit	4	0.7	0.4
2 visits	16	2.6	0.7	2 visits	4	0.4	0.3	2 visits	1	0.2	0.2
3 visits	4	0.5	0.2	3 visits	1	0.1	0.1	3 visits	0	0	
4 visits	3	0.5	0.3	4 visits	0	0		4 visits	0	0	
5 visits	2	0.3	0.2	5 visits	0	0		5 visits	0	0	
6 visits	4	0.6	0.3	6 visits	0	0		6 visits	0	0	
7 visits	7	1.6	0.9	7 visits	0	0		7 visits	0	0	
8 visits	7	1.3	0.6	8 visits	0	0		8 visits	0	0	
Missing	0			Missing	0			Missing	0		
Total	638	100		Total	638	100		Total	638	100	
Auxiliary nurse				Pharmacy assistant				Didn't know attendant or declined to respond			
0 visits	611	95.3	1.3	0 visits	638	100		0 visits	611	95.2	1.1
1 visit	16	2.6	0.8	1 visit	0	0		1 visit	23	4.2	1.1
2 visits	5	1.1	0.7	2 visits	0	0		2 visits	2	0.3	0.2
3 visits	0	0		3 visits	0	0		3 visits	0	0	
4 visits	1	0.1	0.1	4 visits	0	0		4 visits	0	0	
5 visits	0	0		5 visits	0	0		5 visits	1	0.1	0.1
6 visits	4	0.7	0.5	6 visits	0	0		6 visits	0	0	
7 visits	1	0.1	0.1	7 visits	0	0		7 visits	1	0.1	0.1
8 visits	0	0		8 visits	0	0		8 visits	0	0	
Missing	0			Missing	0			Missing	0		
Total	638	100		Total	638	100		Total	638	100	
Laboratory technician				Traditional healer							
0 visits	637	99.8	0.2	0 visits	637	99.8	0.2				
1 visit	1	0.2	0.2	1 visit	1	0.2	0.2				
2 visits	0	0		2 visits	0	0					
3 visits	0	0		3 visits	0	0					
4 visits	0	0		4 visits	0	0					
5 visits	0	0		5 visits	0	0					
6 visits	0	0		6 visits	0	0					
7 visits	0	0		7 visits	0	0					
8 visits	0	0		8 visits	0	0					
Missing	0			Missing	0						
Total	638	100		Total	638	100					

CHAPTER 7: CHILD HEALTH

This chapter summarizes the health status of children aged 0-59 months whose mothers participated in the SM2015-Panama Baseline Household Survey. All data summarized in this chapter are based on the mother's report.

7.1 Health status

The age and sex distribution of the de facto population of children aged 0-59 months whose mothers resided in the surveyed households in Panama is shown in Table 7.1 by six- or 12-month age groups. Twenty percent of these children were under 1 year of age at the time of the interview. The age distributions of female and male children are similar.

Table 7.1 Age and sex of children

Percent distribution of the de facto population of children aged 0-59 months in the SM2015 baseline survey						
	Female		Male		Total	
	N	%	N	%	N	%
Age, in months						
0-5 months	104	9.3	113	10.2	225	10
6-11 months	106	9.5	113	10.2	224	9.9
12-23 months	232	20.8	239	21.7	476	21.1
24-35 months	216	19.3	232	21	454	20.2
36-47 months	248	22.2	211	19.1	464	20.6
48-59 months	212	19	195	17.7	410	18.2
Total	1118	100	1103	100	2253	100

7.1.1 Current health status

Table 7.1.1 shows the current health status of all children aged 0-59 months, as reported by their mothers. The table also includes mother's evaluation of current health relative to health the previous year; and the percentage of children who can easily perform daily activities. Approximately 75% of mothers considered their children's health to be "good," "very good," or "excellent."

When asked to evaluate their children's current health status relative to the past year, 43% reported that their children's health was "about the same." While 56% reported that their children's health had improved, 2% reported worse health on the day of the interview, compared to last year. Ninety percent could "easily" perform their daily activities (e.g., playing and going to school). Ten percent of caregivers reported that their children had at least some degree of difficulty performing these activities.

Table 7.1.1 Current health status

Percent distribution of children aged 0-59 months, as reported by their mothers			
Characteristic	N	Weighted %	Weighted SE
Current health			
Excellent	473	21.9	1.9
Very good	403	20	1.8
Good	700	33.2	1.7
Fair	481	23.1	1.4
Poor	39	1.9	0.4
DK/NR	2		
Missing	155		
Total	2253	100	
Current health relative to health last year			
Better	891	55.6	2.1
Worse	32	1.9	0.4
About the same	694	42.6	2.1
DK/NR	5		
Missing	160		
Total	1782	100	
Ability to perform daily activities			
Easily	1859	90.3	1.1
With some difficulty	147	7.1	0.9
With much difficulty	15	0.9	0.3
Unable to do	32	1.7	0.4
DK/NR	15		
Missing	35		
Total	2103	100	

7.1.2 Recent illness

Mothers were asked a series of questions about any illnesses or health problems that their children might have had in the two weeks preceding the interview. Approximately one-quarter of children were reported as sick during that time (Table 7.1.2). Of the 531 children who were recently ill, fever (39%) and cough/chest infection (28%) were the most commonly elicited specific complaints.

It is interesting to note that although the health status of these young children, as reported by their mothers (Table 7.1.1), tended to be somewhat better than the health status of women participating in the survey (Table 3.6.1), a larger proportion of children were sick immediately prior to the interview (Table 7.1.2) compared to the proportion of women who were sick (Table 3.6.2).

Table 7.1.2 Recent illness

Percent distribution of children aged 0-59 months, as reported by their mothers			
Characteristic	N	Weighted %	Weighted SE
Child was sick recently (in the last two weeks)			
Yes	531	26.3	1.7
No	1563	73.7	1.7
DK/NR	3		
Missing	156		
Total	2253	100	
Recent illness			
Fever	209	38.9	2.9
Malaria	1	0.1	0.1
Cough/chest infection	143	28.1	2.9
Tuberculosis	0	0	
Asthma	49	9.6	1.8
Bronchitis	6	1.2	0.6
Pneumonia	0	0	
Diarrhea without blood	47	7.9	1.4
Diarrhea with blood	6	1.1	0.5
Vomiting	5	1	0.5
Abdominal pain	2	0.5	0.3
Anemia	0	0	
Skin rash/infection	20	2.9	0.7
Eye/ear infection	2	0.7	0.5
Measles	0	0	
Jaundice	0	0	
Headache	2	0.5	0.4
Stroke	0	0	
Diabetes	0	0	
HIV/AIDS	0	0	
Paralysis	0	0	
Other	38	7.5	2.3
DK/NR	1		
Missing	0		
Total	531	100	

7.1.3 Utilization of health services for recent illness

Table 7.1.3 summarizes data regarding the utilization of health services among the 531 children who were sick in the two weeks preceding the interview. The table shows the percentage of children 0-59 months who were sick in the last two weeks for whom care was sought for recent illness, and among these, the percent distribution by type of medical facility where care was sought and whether the child was hospitalized.

Care was sought for 64% of these cases. Care was typically sought at a MINSA public health center (48%) or sub-center (25%); less than 1% attended private health facilities. Approximately 3% of children were hospitalized for their recent illness.

Table 7.1.3 Utilization of health services for recent illness

Percent distribution of children aged 0-59 months who were sick in the last two weeks			
Utilization of health services	N	Weighted %	Weighted SE
Sought care for recent illness			
Yes	347	64.1	4.1
No	184	35.9	4.1
DK/NR	0		
Missing	0		
Total	531	100	
Type of medical facility where care was sought			
Public hospital MINSAs	37	9.9	4.9
Public hospital CSS	1	0.1	0.1
ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0	
Public Health Center MINSAs	170	47.9	6.5
Public Health Sub-Center MINSAs	90	25.3	5.5
Public Health Post MINSAs	21	6.7	2.6
Public mobile unit MINSAs	9	3.5	2.3
Other public health facility	0	0	
Private hospital	0	0	
Private health center/clinic	0	0	
Private office	1	0.3	0.3
Private mobile clinic	0	0	
Other private health facility	0	0	
Pharmacy	1	0.2	0.2
Community health worker	1	0.6	0.6
Traditional healer	9	2.5	1.2
Other	7	2.9	1.3
DK/NR	0		
Missing	0		
Total	347	100	
Child was hospitalized for recent illness			
Yes	16	3	0.7
No	515	97	0.7
DK/NR	0		
Missing	0		
Total	531	100	

7.2 Acute respiratory infection

Acute respiratory infection is a leading cause of morbidity and mortality among children. Early diagnosis and treatment with antibiotics can prevent a large proportion of deaths resulting from pneumonia, a common acute respiratory disease. The prevalence of acute respiratory infection was estimated by asking mothers whether their children aged 0-59 months had been ill with a cough accompanied by short, rapid breathing in the two weeks preceding the interview. If the child had had symptoms of an acute respiratory infection, the mother was asked about what was done to treat the symptoms and feeding practices during the illness.

7.2.1 Prevalence of acute respiratory infection and fever

The prevalence of cough, acute respiratory infection, and fever among children aged 0-59 months, as reported by their mothers, is displayed in Table 7.2.1. Twenty-two percent of children experienced cough, 8% had symptoms of an acute respiratory infection, and 22% had a fever in the two weeks preceding the interview.

Table 7.2.1 Prevalence of acute respiratory infection and fever

Percent distribution of children aged 0-59 months, as reported by their mothers			
Characteristic	N	Weighted %	Weighted SE
Child had cough in the last two weeks			
Yes	436	22	1.5
No	1655	78	1.5
DK/NR	5		
Missing	157		
Total	2253	100	
Child had cough in the last two weeks, by type			
Cough with difficulty breathing due to chest problem	40	2.2	0.4
Cough with difficulty breathing due to congested or runny nose	50	2.6	0.5
Cough with difficulty breathing due to chest problem and congested or runny nose	69	3.1	0.4
Cough with difficulty breathing due to other reason	2	0.1	0.1
Cough without difficulty breathing	244	12.5	1.2
No cough	1655	79.4	1.6
DK/NR	36		
Missing	157		
Total	2253	100	
Child had acute respiratory infection in the last two weeks			
Yes	166	8.3	0.7
No	1899	91.7	0.7
DK/NR	31		
Missing	157		
Total	2253	100	
Child had fever in the last two weeks			
Yes	425	21.5	1.7
No	1660	78.5	1.7
DK/NR	11		
Missing	157		
Total	2253	100	

7.2.2 Utilization of health services for acute respiratory infection

Sixty-five percent of children with symptoms of acute respiratory infection were taken somewhere for evaluation and/or treatment of their condition (Table 7.2.2). Care for these children was most often sought at a MINSA public health center or sub-center (74%).

Table 7.2.2 Utilization of health services for acute respiratory infection

Percent distribution of children aged 0-59 months who had acute respiratory infection in the last two weeks, as reported by their mothers			
Characteristic	N	Weighted %	Weighted SE
Sought care for acute respiratory infection			
Yes	111	64.8	5.2
No	55	35.2	5.2
DK/NR	0		
Missing	0		
Total	166	100	
Type of medical facility where care was sought			
Public hospital MINSA	12	9.9	4.7
Public hospital CSS	0	0	
ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0	
Public Health Center MINSA	57	50	8.2
Public Health Sub-Center MINSA	27	23.8	7
Public Health Post MINSA	7	7.1	3.4
Public mobile unit MINSA	4	5.1	3.5
Other public health facility	0	0	
Private hospital	0	0	
Private health center/clinic	0	0	
Private office	1	1	1
Private mobile clinic	0	0	
Other private health facility	0	0	
Pharmacy	0	0	
Community health worker	0	0	
Traditional healer	2	1.7	1.2
Other	1	1.4	1.4
DK/NR	0		
Missing	0		
Total	111	100	

7.2.3 Utilization of medications for acute respiratory infection

Seventy-eight percent of children with symptoms of acute respiratory infection were given some type of medication for their condition (Table 7.2.3a). Antibiotic syrups were given to 68% of these cases, antibiotic pills to 5%, and antibiotic injections to 23%. Acetaminophen (51%) and oral rehydration therapy (15%) were also administered. Nineteen percent of children received a treatment other than those listed.

Table 7.2.3a Utilization of medications for acute respiratory infection

Percent distribution of children aged 0-59 months who had acute respiratory infection in the last two weeks, as reported by their mothers			
Medication	N	Weighted %	Weighted SE
Any treatment			
Yes	133	78.4	4.2
No	33	21.6	4.2
DK/NR	0		
Missing	0		
Total	166	100	
Antibiotic injection			
Yes	35	23.3	4.5
No	94	76.7	4.5
DK/NR	4		
Missing	33		
Total	166	100	
Antibiotic pill			
Yes	7	5.2	1.8
No	122	94.8	1.8
DK/NR	4		
Missing	33		
Total	166	100	
Antibiotic syrup			
Yes	91	68.1	5
No	39	31.9	5
DK/NR	3		
Missing	33		
Total	166	100	
Aspirin			
Yes	4	3.8	1.8
No	125	96.2	1.8
DK/NR	4		
Missing	33		
Total	166	100	

Table 7.2.3a continued

Medication	N	Weighted %	Weighted SE
Acetaminophen			
Yes	65	51	6.1
No	65	49	6.1
DK/NR	3		
Missing	33		
Total	166	100	
Ibuprofen			
Yes	2	1.2	0.8
No	126	98.8	0.8
DK/NR	5		
Missing	33		
Total	166	100	
Oral rehydration therapy			
Yes	18	14.5	3.4
No	111	85.5	3.4
DK/NR	4		
Missing	33		
Total	166	100	
Other			
Yes	27	19.1	3.7
No	102	80.9	3.7
DK/NR	4		
Missing	33		
Total	166	100	

7.2.4 Feeding practices during acute respiratory infection

Data on feeding practices during the recent episode of acute respiratory infection are summarized in Table 7.2.4. The table shows the volume of fluids and the volume of solids given during the illness. Seven percent of children were given more fluids than usual. More than half of children were offered less fluid than usual (or none at all). Forty percent of children were offered the same volume of solid food as usual during their illness. Approximately 60% of children were given less than the usual amount of solid food (or none at all).

Table 7.2.4 Feeding practices during acute respiratory infection

Percent distribution of children aged 0-59 months who had acute respiratory infection in the last two weeks, as reported by their mothers			
Amount given	N	Weighted %	Weighted SE
Volume of fluids (including breast milk) given during illness			
No fluids	3	1.9	1
Much less	29	18.5	4.6
Somewhat less	61	34.5	4.7
About the same	60	38.1	4.6
More	13	7	2.7
DK/NR	0		
Missing	0		
Total	166	100	
Volume of solid foods given during illness			
No solids	7	4.5	1.6
Much less	31	20.5	4.2
Somewhat less	60	35.2	5.3
About the same	59	37.3	5.1
More	5	2.4	2.1
DK/NR	4		
Missing	0		
Total	166	100	

7.3 Diarrhea

Dehydration caused by severe diarrhea is a major cause of morbidity and mortality among children. Exposure to diarrheal disease-causing agents frequently results from use of contaminated water and unhygienic practices related to food preparation and disposal of feces. The prevalence of diarrhea was estimated by asking mothers whether their children aged 0-59 months had had diarrhea in the two weeks preceding the interview. If the child had had diarrhea, the mother was asked about what was done to treat the diarrhea and feeding practices during the diarrheal episode.

7.3.1 Prevalence

Table 7.3.1 shows the proportion of children aged 0-59 months with diarrhea in the two weeks preceding the interview, as reported by their mothers (10%). Less than 1% of children had bloody diarrhea.

Table 7.3.1 Prevalence of diarrhea

Percent distribution of children aged 0-59 months, as reported by their mothers			
Characteristic	N	Weighted %	Weighted SE
Child had diarrhea in the last two weeks			
Yes	185	9.6	1.2
No	1755	90.4	1.2
DK/NR	156		
Missing	157		
Total	2253	100	
Child had diarrhea in the last two weeks, by type			
Diarrhea with blood	10	0.5	0.2
Diarrhea without blood	175	9.1	1.1
No diarrhea	1755	90.4	1.2
DK/NR	156		
Missing	157		
Total	2253	100	

7.3.2 Utilization of health services for diarrhea

Over half of children with diarrhea were taken somewhere for evaluation and/or treatment of their condition (Table 7.3.2). Care for these children was most often sought at MINSA public health centers or sub-centers (72%).

Table 7.3.2 Utilization of health services for diarrhea

Percent distribution of children aged 0-59 months who had diarrhea in the last two weeks, as reported by their mothers			
Characteristic	N	Weighted %	Weighted SE
Sought care for diarrhea			
Yes	111	58.9	5.7
No	74	41.1	5.7
DK/NR	0		
Missing	0		
Total	185	100	
Type of medical facility where care was sought			
Public hospital MINSA	13	12.7	7
Public hospital CSS	0	0	
ULAPS/CAPPS	0	0	
Polyclinic CSS	0	0	
Public Health Center MINSA	57	51.9	8
Public Health Sub-Center MINSA	24	19.8	5.4
Public Health Post MINSA	6	5.3	2.7
Public mobile unit MINSA	3	3.6	2.1
Other public health facility	0	0	
Private hospital	0	0	
Private health center/clinic	0	0	
Private office	0	0	
Private mobile clinic	0	0	
Other private health facility	0	0	
Pharmacy	1	0.6	0.6
Community health worker	0	0	
Traditional healer	3	2.6	1.5
Other	4	3.6	1.7
DK/NR	0		
Missing	0		
Total	111	100	

7.3.3 Utilization of treatments for diarrhea

A simple and effective response to dehydration caused by diarrhea is a prompt increase in the child's fluid intake through some form of oral rehydration therapy. Oral rehydration therapy may include the use of a solution prepared from commercially-produced packets of powdered oral re-

hydration salts, commercially-produced bottled oral serums, or homemade fluids usually prepared from sugar, salt, and water. Other treatments may be administered as well.

Although care was sought in 59% of cases, about two-thirds of cases were given some form of treatment. Bottled oral serums were the most common form oral rehydration therapy (31%). Another 27% of children received oral serums prepared from commercially-available powders. Less than 5% of children were given zinc pills or zinc syrup.

Table 7.3.3a Utilization of treatments for diarrhea

Percent distribution of children age 0-59 months who had diarrhea in the last two weeks, as reported by their mother			
Treatment given	N	Weighted %	Weighted SE
Any treatment given			
Yes	127	68.2	4.9
No	54	31.8	4.9
DK/NR	4		
Missing	0		
Total	185	100	
Powdered oral serum			
Yes	49	26.5	4.4
No	133	73.5	4.4
DK/NR	3		
Missing	0		
Total	185	100	
Bottled oral serum			
Yes	58	30.5	3.9
No	124	69.5	3.9
DK/NR	3		
Missing	0		
Total	185	100	
Homemade fluid recommended by health authorities			
Yes	19	9.3	2.1
No	162	90.7	2.1
DK/NR	4		
Missing	0		
Total	185	100	
Antibiotic pill			
Yes	11	7	2.1
No	168	93	2.1
DK/NR	6		
Missing	0		
Total	185	100	

Table 7.3.3a continued

Treatment given	N	Weighted %	Weighted SE
Antidiarrheal pill			
Yes	8	4	1.4
No	170	96	1.4
DK/NR	7		
Missing	0		
Total	185	100	
Zinc pill			
Yes	2	1.2	0.8
No	176	98.8	0.8
DK/NR	7		
Missing	0		
Total	185	100	
Other type of pill			
Yes	2	1.1	0.7
No	176	98.9	0.7
DK/NR	7		
Missing	0		
Total	185	100	
Unknown pill			
Yes	0	0	
No	179	100	
DK/NR	6		
Missing	0		
Total	185	100	
Antibiotic injection			
Yes	15	9.1	2
No	165	90.9	2
DK/NR	5		
Missing	0		
Total	185	100	

Table 7.3.3a continued

Treatment given	N	Weighted %	Weighted SE
Non-antibiotic injection			
Yes	1	0.6	0.6
No	177	99.4	0.6
DK/NR	7		
Missing	0		
Total	185	100	
Unknown injection			
Yes	1	0.5	0.6
No	177	99.5	0.6
DK/NR	7		
Missing	0		
Total	185	100	
Intravenous therapy			
Yes	7	3.3	1.4
No	172	96.7	1.4
DK/NR	6		
Missing	0		
Total	185	100	
Home remedy/herbal medicine			
Yes	21	12.1	2.5
No	158	87.9	2.5
DK/NR	6		
Missing	0		
Total	185	100	
Antibiotic syrup			
Yes	17	8.3	1.8
No	162	91.7	1.8
DK/NR	6		
Missing	0		
Total	185	100	
Antidiarrheal syrup			
Yes	11	5.9	2.1
No	166	94.1	2.1
DK/NR	8		
Missing	0		
Total	185	100	

Table 7.3.3a continued

Treatment given	N	Weighted %	Weighted SE
Zinc syrup			
Yes	0	0	
No	178	100	
DK/NR	7		
Missing	0		
Total	185	100	
Other syrup			
Yes	3	2.2	1.3
No	175	97.8	1.3
DK/NR	7		
Missing	0		
Total	185	100	
Unknown syrup			
Yes	3	1.7	1
No	175	98.3	1
DK/NR	7		
Missing	0		
Total	185	100	

The use of oral rehydration solution with zinc was given to less than 1% of the children with diarrhea (Table 7.3.3b).

Table 7.3.3b Utilization of oral rehydration solution and zinc for diarrhea

Percent distribution of children aged 0-59 months who had diarrhea in the last two weeks, as reported by their mothers			
Treatment given	N	Weighted %	Weighted SE
Oral rehydration solution and zinc, among all children with diarrhea			
Yes	1	0.6	0.6
No	181	99.4	0.6
DK/NR	2		
Missing	1		
Total	185	100	
Oral rehydration solution and zinc, among those given any treatment			
Yes	1	0.9	0.8
No	127	99.1	0.8
DK/NR	2		
Missing	55		
Total	185	100	

7.3.4 Feeding practices during diarrhea

Mothers are encouraged to continue feeding children normally when they suffer from diarrheal diseases and to increase the fluids they are given. These practices help to prevent dehydration and minimize the adverse consequences of diarrhea on the child's nutritional status.

Data on feeding practices during the recent diarrheal episode are summarized in Table 7.3.4. The table shows the volume of fluids and the volume of solids given during the illness. Seven percent of children were given more fluids than usual. Half of children were offered less fluid than usual (or none at all). Approximately half of children were offered the same volume of solid food as usual or more during their illness. Fifty-three percent of children were given less than the usual amount of solid food (or none at all).

Table 7.3.4 Feeding practices during diarrhea

Percent distribution of children aged 0-59 months who had diarrhea in the last two weeks, as reported by their mothers			
Amount given	N	Weighted %	Weighted SE
Volume of fluids (including breastmilk) given during illness			
No fluids	8	4.3	1.7
Much less	24	13.3	2.6
Somewhat less	55	31.3	3.7
About the same	84	44.6	3.9
More	12	6.5	2.1
DK/NR	2		
Missing	0		
Total	185	100	
Volume of solid foods given during illness			
No solids	6	3	1.2
Much less	24	14.7	3
Somewhat less	61	35.1	3.8
About the same	82	43.7	3.8
More	7	3.5	1.4
DK/NR	5		
Missing	0		
Total	185	100	

7.4 Immunization against common childhood illnesses

Information on immunization coverage was collected for all children aged 0-59 months whose mothers were participating in the survey. The mother's report and review of vaccination card (if present) were used to determine coverage. A vaccination card was available for review for 2,062 children (92% of the sample, unweighted). In Table 7.4a, coverage estimates based on recall are summarized for the full sample, and coverage estimates based on vaccination card data are summarized among the subset with a vaccination card available for review at the time of the interview.

Table 7.4a Immunization against common childhood illnesses

Percent distribution of children aged 0-59 months, as reported by their mothers						
Immunization	Recall			Vaccination card		
	N	Weighted %	Weighted SE	N	Weighted %	Weighted SE
BCG vaccine (tuberculosis), among children 0-59 months						
None recalled/recorded	87	9.5	1.4	126	7.3	0.7
1 dose	849	88.7	1.4	1604	91.2	0.9
2+ doses	17	1.8	0.5	24	1.5	0.4
DK/NR, missing	1300			499		
Total	2253	100		2253	100	
Hepatitis B vaccine, among children 0-59 months						
None recalled/recorded	317	38.8	3.2	606	35	3.4
1 dose	481	59.5	3.2	1108	63.3	3.4
2+ doses	14	1.7	0.5	25	1.7	0.4
DK/NR, missing	1441			514		
Total	2253	100		2253	100	
Pentavalent vaccine (DPT, HepB, HiB), among children 6-59 months						
None recalled/recorded	108	15.1	2	111	7.6	0.9
1 dose	143	19.8	2.7	16	1.1	0.4
2 doses	37	4.8	0.8	70	5	0.7
3+ doses	472	60.3	3.7	1357	86.3	1.3
DK/NR, missing	1269			475		
Total	2029	100		2029	100	
Rotavirus vaccine, among children 6-59 months						
None recalled/recorded	200	28.2	2.5	213	13.8	0.9
1 dose	166	23.4	2.5	176	11.8	1.2
2+ doses	363	48.3	3.6	1162	74.5	1.6
DK/NR, missing	1300			478		
Total	2029	100		2029	100	
Pneumococcal vaccine, among children 15-59 months						
None recalled/recorded	141	24.2	3.1	174	13.7	1.6
1 dose	144	25	3.1	91	7.3	1.2
2 doses	85	14.7	2.1	188	15.6	1.6
3 doses	122	19.8	2.4	349	27.9	1.6
4+ doses	98	16.2	1.8	461	35.4	3.1
DK/NR, missing	1087			414		
Total	1677	100		1677	100	
Measles, mumps, and rubella (MMR) vaccine, among children 12-59 months						
None recalled/recorded	301	47.8	4.5	177	13.1	1.2
1 dose	279	46	3.8	1019	75.1	1.3
2+ doses	40	6.2	1.1	166	11.8	1.1
DK/NR, missing	1187			445		
Total	1807	100		1807	100	
Tetavalent vaccine (DPT, HiB), among children 18-59 months						
None recalled/recorded	140	26.1	2.2	218	19.4	1.5
1 dose	388	68.5	2.1	939	80.6	1.5
2+ doses	27	5.4	1.3	0	0	
DK/NR, missing	993			391		
Total	1548	100		1548	100	

The coverage of two key vaccine indicators was calculated according to age groups (Table 7.4b). Based on maternal recall, 61% of children aged 12-23 months had received at least one dose of the measles, mumps, and rubella (MMR) vaccine. Among children in this age group with a vaccine card available for review, coverage of this indicator was 69%. When vaccine card data were supplemented by maternal recall, estimated coverage of one dose of MMR vaccine was 84% among children aged 12-23 months.

Based on maternal recall, only 5% of children aged 12-59 months were classified as fully immunized. Among the subset with a vaccine card available for review, full immunization coverage in this age group was 0%. When vaccine card data were supplemented by maternal recall, 8% of children 12-59 months were estimated to be “fully” immunized for age. Rates of complete vaccination for age are higher when including all children 0-59 months. When considering only mothers’ recall, 10% of children are fully immunized for age. Card-based coverage is also 10%, and when combined with recall-based information, the estimate of full vaccination for age among children 0-59 months is 18%.

Table 7.4b Immunization against common childhood illnesses, according to age group

Percent distribution of children, as reported by their mothers									
Immunization	Recall			Vaccination card ^a			Vaccination card ^a plus recall		
	N	Weighted %	Weighted SE	N	Weighted %	Weighted SE	N	Weighted %	Weighted SE
Measles, mumps, and rubella (MMR) vaccine, at least 1 dose among children 12-23 months									
Yes	113	61	5.1	318	69.1	3.3	327	83.5	2.6
No	77	39	5.1	131	30.9	3.3	62	16.5	2.6
DK/NR, missing	284			25			85		
Total	474	100		474	100		474	100	
Fully immunized ^b , among children 12-59 months									
Yes	27	5.2	1.5	4	0.3	0.1	96	8.3	1.2
No	454	94.8	1.5	1388	99.7	0.1	1079	91.7	1.2
DK/NR, missing	1060			149			366		
Total	1541	100		1541	100		1541	100	
Fully immunized ^b , among children 0-59 months									
Yes	78	9.8	1.7	203	9.9	1	313	18	1.6
No	653	90.2	1.7	1859	90.1	1	1462	82	1.6
DK/NR, missing	1522			191			478		
Total	2253	100		2253	100		2253	100	
^a Among 2,062 children aged 0-59 months who had a vaccine card available for review (92% of the sample, unweighted)									
^b Full immunization for age is defined as follows: 0-2 months (BCG x1, HepB x1); >2-4 months (BCG x1, HepB x1, Penta x1, Pneum x1); >4-6 months (BCG x1, HepB x1, Penta x2, Pneum x2); >6-12 months (BCG x1, HepB x1, Penta x3, Pneum x3, Rota x2); >12-15 months (BCG x1, HepB x1, Penta x3, Pneum x3, Rota x2, MMR x1); >15-18 months (BCG x1, HepB x1, Penta x3, Pneum x4, Rota x2, MMR x1); >18-59 months (BCG x1, HepB x1, Penta x3, Pneum x4, Rota x2, MMR x1, Tetra x1).									

7.5 Deworming treatment

Administration of deworming treatment every six months has been shown to reduce the prevalence of anemia in children. Only 9% of children aged 12-59 months had received at least two doses of deworming treatment in the year preceding the interview (Table 7.5).

Table 7.5 Deworming treatment

Percent distribution of children, as reported by their mothers			
Treatment given	N	Weighted %	Weighted SE
Deworming treatment given at least two times in the last 12 months, among children aged 12-59 months			
Yes	142	8.7	1.1
No	1422	91.3	1.1
DK/NR	55		
Missing	142		
Total	1761	100	

CHAPTER 8: INFANT AND YOUNG CHILDREN FEEDING PRACTICES

This chapter summarizes the feeding practices of infants and children aged 0-59 months whose mothers participated in the SM2015-Panama Baseline Household Survey. All data summarized in this chapter are based on the mother's report.

8.1 Breastfeeding

8.1.1 Early initiation of breastfeeding

Early initiation of breastfeeding is defined as the percentage of children born in the 24 months prior to the survey (<24 months old) who were put to the breast within one hour of birth. In Panama, 1,535 children were in the specified age range (<24 months old), and 1,440 had adequate responses to determine their breastfeeding status. Table 8.1 shows that 88% of children were breastfed within one hour after birth.

8.1.2 Exclusive breastfeeding

Exclusive breastfeeding is defined as the percentage of infants born in the six months prior to the survey who received only breast milk during the previous day. This information is obtained through a 24-hour dietary recall that asks the mother what the child consumed during the previous day or night. In Panama, 224 children were in the specified age range and 215 had sufficiently complete dietary recall information to determine whether they were exclusively breastfed. Table 8.1 shows that 45% of children were exclusively breastfed.

8.1.3 Continued breastfeeding at 1 year

Continued breastfeeding at 1 year is defined as the percentage of children 12-15 months old who received breast milk during the previous day. This information is obtained through a 24-hour dietary recall that asks the mother what the child consumed during the previous day or night. In Panama, 172 children were in the specified age range and 213 had adequate responses to determine their breastfeeding status. Table 8.1 shows that 72% of children continued to receive breast milk at 1 year.

Table 8.1 Breastfeeding

Percentage of children			
Characteristic	N	Weighted %	Weighted SE
Early initiation of breastfeeding (among children <24 months)			
Yes	1275	88	1.2
No	165	12	1.2
Missing, DK/NR	95		
Total	1535	100	
Exclusive breastfeeding (among children 0-5 months)			
Yes	97	45.3	3.5
No	118	54.7	3.5
Missing, DK/NR	9		
Total	224	100	
Continued breastfeeding at 1 year (among children 12-15 months)			
Yes	114	72	3.8
No	44	28	3.8
Missing, DK/NR	14		
Total	172	100	

8.2 Solid Foods

8.2.1 Introduction of solid, semi-solid, or soft foods

The introduction of solid foods is measured as the percentage of infants 6-8 months of age who received solid or semi-soft foods during the previous day. This information is obtained through a 24-hour dietary recall that asks the mother what the child consumed during the previous day or night. In Panama, 107 children were in the specified age range and 101 had sufficiently complete dietary recall information. Table 8.2 shows that 88% of children consumed solid or semi-soft foods.

8.2.2 Dietary diversity

The minimum dietary diversity is measured as the percentage of children 6-23 months of age who received foods from at least four food groups during the previous day. This information is obtained through a 24-hour dietary recall that asks the mother what the child consumed during the previous day or night. In Panama, 696 children were in the specified age range and 661 had sufficiently complete dietary recall information. Table 8.2 shows that 23% of children achieved the minimum dietary diversity during the previous day.

8.2.3 Meal frequency

The minimum meal frequency is measured as the percentage of children 6-23 months of age who received solid foods at least the minimum number of times the previous day, based on age and breastfeeding status. For breastfed children, the minimum number of times is two times for children 6-8 months of age and three times for children 9-23 months of age. For non-breastfed children, the minimum number of times is four times for all children 6-23 months of age. This information is obtained through a 24-hour dietary recall that asks the mother what the child consumed during the previous day or night. In Panama, 392 children were in the specified age range and 644 had sufficiently complete dietary recall information. Table 8.2 shows that 20% of children achieved the minimum meal frequency during the previous day.

8.2.4 Minimum acceptable diet

The minimum acceptable diet is measured for children 6-23 months of age. For breastfed children to meet the minimum acceptable diet, they must have had at least the minimum dietary diversity and the minimum meal frequency during the previous day. For non-breastfed children to meet the minimum acceptable diet, they must have had at least two milk feedings, as well as at least the minimum dietary diversity (not including milk feedings) and the minimum meal frequency during the previous day. This information is obtained through a 24-hour dietary recall that asks the mother what the child consumed during the previous day or night. In Panama, 696 children were in the specified age range and 652 had sufficiently complete dietary recall information. Table 8.2 shows that 4% of children achieved the minimum acceptable diet during the previous day.

8.2.5 Consumption of iron-rich or iron-fortified foods

Consumption of iron-rich foods is measured as the percentage of children 6-23 months of age who receive an iron-rich food (e.g., liver, beef, or fish) or a food that is specially designed for infants and young children, or that is fortified in the home with a product that included iron during the previous day. This information is obtained through a 24-hour dietary recall that asks the

mother what the child consumed during the previous day or night. In Panama, 696 children were in the specified age range and 661 had sufficiently complete dietary recall information. Table 8.2 shows that 78% of children consumed an iron-rich food during the previous day.

Table 8.2 Solid foods

Percentage of children			
Characteristic	N	Weighted %	Weighted SE
Introduction of solid foods (among children 6-8 months)			
Yes	87	87.5	3.2
No	14	12.5	3.2
Missing, DK/NR	6		
Total	107	100	
Minimum dietary diversity (among children 6-23 months)			
Yes	151	22.8	2.7
No	510	77.2	2.7
Missing, DK/NR	35		
Total	696	100	
Minimum meal frequency (among children 6-23 months)			
Yes	84	20.3	3.4
No	308	79.7	3.4
Missing, DK/NR	304		
Total	696	100	
Minimum acceptable diet (among children 6-23 months)			
Yes	31	4.3	1.1
No	613	95.7	1.1
Missing, DK/NR	52		
Total	696	100	
Consumption of iron-rich foods (among children 6-23 months)			
Yes	524	78	2.1
No	137	22	2.1
Missing, DK/NR	35		
Total	696	100	

8.3 Micronutrient Supplementation

8.3.1 Vitamin A

Interviewers showed the woman being interviewed common types of bottles, capsules, or syrups and asked if their child received a dose of vitamin A in the last six months. Table 8.3 shows that 46% of children 0-59 months of age received a dose of vitamin A in the last six months.

8.3.2 Iron

Interviewers showed the woman being interviewed common types of bottles, powders, or syrups and asked if their child received iron pills, powder, or syrup in the last day. Table 8.3 shows that 16% of children 0-59 months of age received a dose of iron in the last day.

8.3.3 Packets of micronutrients

Interviewers showed the woman being interviewed a card with packets of micronutrient (“Chispitas”) and asked how many packets their child has received and consumed in the last six months. Table 8.3 shows that 20% of children 6-23 months of age received packets of micronutrients in the last six months.

Table 8.3 Micronutrient supplements

Percentage of children who received the supplement			
Type of supplement	N	Weighted %	Weighted SE
Vitamin A in the last six months (among children aged 0-59 months)			
Yes	481	27.1	2.3
No	1275	72.9	2.3
DK/NR	340		
Missing	157		
Total	2253	100	
Iron in the last day (among children aged 0-59 months)			
Yes	270	12.7	1.1
No	1806	87.3	1.1
DK/NR	20		
Missing	157		
Total	2253	100	
Packets of micronutrients in the last six months (among children aged 6-23 months)			
0 times	0	0	
1-10 times	4	100	
11-20 times	0	0	
21-30 times	0	0	
31-40 times	0	0	
41-50 times	0	0	
51-59 times	0	0	
60+ times	0	0	
DK/NR	117		
Missing	574		
Total	695	100	

CHAPTER 9: NUTRITIONAL STATUS IN CHILDREN

The nutritional status of children aged 0-59 months is an important outcome measure of children's health. The SM2015-Panama Baseline Household Survey collected data on the nutritional status of children by measuring the height and weight of all children aged 0-59 months residing in surveyed households, using standard procedures. Hemoglobin levels of these children were also assessed in the field, using a portable HemoCue™ machine, and these data were used to estimate anemia prevalence. As described in Chapter 1, medically trained personnel, who were specifically trained to standardize the anthropometric and hemoglobin measurements, conducted the testing. This evaluation allows identification of subgroups of the child population that are at increased risk of malnutrition. The parents of anemic children (hemoglobin level <11.0 g/dL) were informed of this result in real time and were referred for treatment to the appropriate health service.

Three indicators were calculated using the weight and height data – weight-for-age, height-for-age, and weight-for-height. For this report, indicators of the children's nutritional status were calculated using growth standards published by the World Health Organization (WHO) in 2006. The growth standards were generated using data collected in the WHO Multicenter Growth Reference Study. The findings of the study, whose sample included children in six countries (Brazil, Ghana, India, Norway, Oman, and the United States), describe how children should grow under optimal conditions. As such, the WHO Child Growth Standards can be used to assess children all over the world, regardless of ethnicity, social and economic influences, and feeding practices. The three indicators are expressed in standard deviation units from the median in the Multicenter Growth Reference Study.

According to the household roster data collected as part of the SM2015 Household Characteristics Questionnaire, a total of 2,253 children aged 0-59 months were eligible to be weighed, measured, and tested for anemia. In practice, 1,859 children aged 0-59 months underwent the physical measurement module. Height and weight data are presented for more than 99% (1,851) of these children: eight children had invalid values for height or weight. Hemoglobin was measured in 1,257 children (68%): less than 1% were not measured or had invalid measurements, parental consent was refused for 27%, and about 5% had other reasons (too young, couldn't extract enough blood, other). The age and sex distribution of children participating in the physical measurement module is displayed in Table 9.

Table 9 Age and sex of children measured

Percent distribution of the de facto population of children aged 0-59 months who underwent the Physical Measurement Module, by sex and type of measurement, unweighted data			
Measurement	Female (%)	Male (%)	Total (%)
Height and weight			
0-5	5.1	6.1	5.6
6-11	11	11.4	11.2
12-23	22.1	23	22.5
24-35	19.3	20.3	19.8
36-47	22.9	19.6	21.3
48-59	19.5	19.5	19.5
Total	100	100	100
Number of children	945	906	1851
Anemia			
0-5	1.6	1.9	1.8
6-11	10.7	10.8	10.7
12-23	23.4	22.3	22.8
24-35	20.5	22.8	21.6
36-47	23.5	21	22.3
48-59	20	21	20.5
Total	100	100	100
Number of children	625	632	1257

9.1 Weight-for-age

Weight-for-age is a good overall indicator of a population's general health, as it reflects the effects of both acute and chronic undernutrition. The weight-for-age indicator does not distinguish between chronic malnutrition (stunting) and acute malnutrition (wasting); a child can be underweight because of stunting, wasting, or both. Children with weight-for-age below minus two standard deviations (-2 SD) are classified as underweight. Children with weight-for-age below minus three standard deviations (-3 SD) are considered severely underweight.

9.1.1 Distribution of weight-for-age z-scores

Figure 9.1.1 shows the distribution of weight-for-age z-scores among all children aged 0-59 months whose measurements were taken. Overall, 20% of measured children are underweight (have low weight-for-age), and 4% are severely underweight.

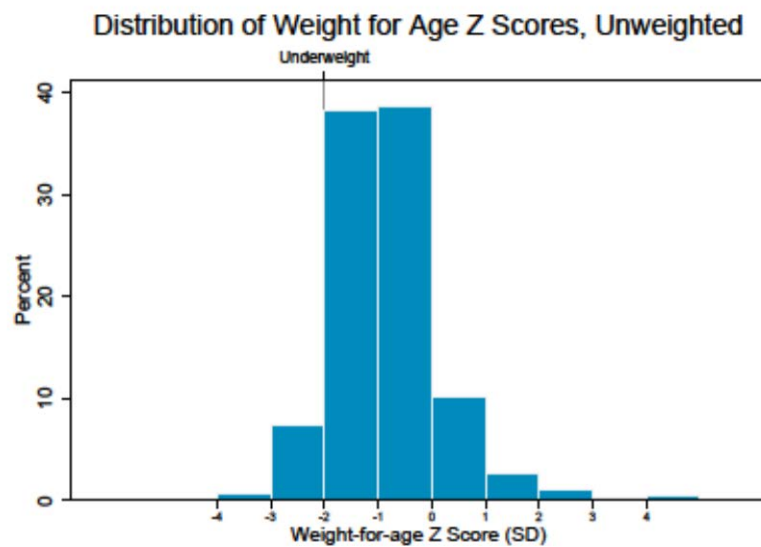


Figure 9.1.1 Distribution of weight-for-age z-scores among children aged 0-59 months

9.1.2 Prevalence of underweight

As shown in Table 9.2, 20% of children aged 0-59 months are underweight (have low weight-for-age), and 4% are severely underweight. The proportion of underweight children is highest (23%) in the age groups 12 to 23 months and lowest (11%) among those 0-5 months old, a significant result ($P < 0.001$). Male children (21%) are slightly more likely to be underweight than female children (19%), but the difference is not significant ($P = 0.36$).

9.2 Height-for-age

Height-for-age is an indicator of linear growth retardation and cumulative growth deficits in children. Children whose height-for-age z-score is below minus two standard deviations (-2 SD) from the median of the WHO reference population are considered short for their age (stunted), or chronically malnourished. Children who are below minus three standard deviations (-3 SD) are considered severely stunted. Stunting reflects failure to receive adequate nutrition over a long period of time and is affected by recurrent and chronic illness. Height-for-age, therefore, represents the long-term effects of malnutrition in a population and is not sensitive to recent, short-term changes in dietary intake.

9.2.1 Distribution of height-for-age z-scores

Figure 9.2.1 presents the distribution of height-for-age z-scores among all children aged 0-59 months whose measurements were taken. Overall, 56% of measured children are stunted, and the proportion of severely stunted children is 23%.

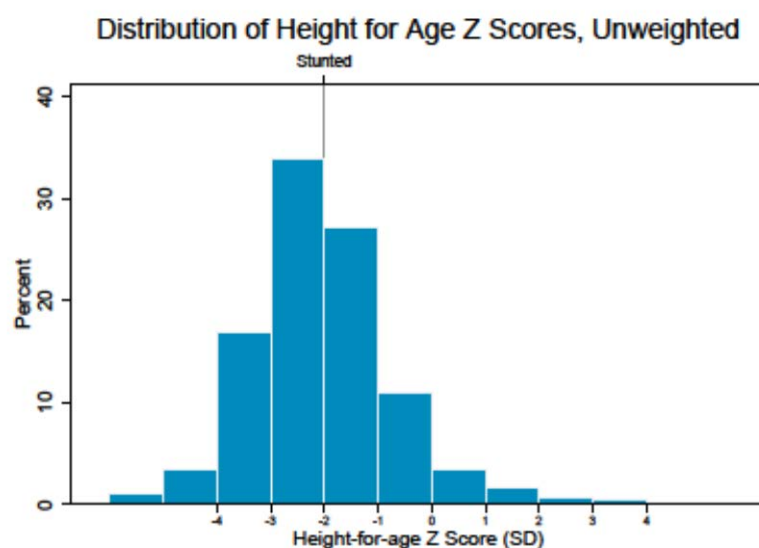


Figure 9.2.1 Distribution of height-for-age z-scores among children aged 0-59 months

9.2.2 Prevalence of stunting

Table 9.2 presents the prevalence of stunting in children aged 0-59 months as measured by height-for-age. Overall, 56% of children under age 5 are stunted, and 23% are severely stunted. Analysis of the indicator by age group shows that stunting is highest (61%) in children 12-23 months and lowest (28%) in children aged 0-5 months ($P<0.001$). Severe stunting shows a similar pattern ($P<0.001$), where the age group of children 12-23 months old has the highest proportion of severely stunted children (31%) while the youngest age group (0-5 months) has the lowest proportion (10%). Female children are slightly less likely to be stunted (54%) than male children (57%), and this difference is not statistically significant ($P=0.28$).

9.3 Weight-for-height

The weight-for-height indicator measures body mass in relation to body height or length and describes current nutritional status. Children with z-scores below minus two standard deviations (-2 SD) are considered thin (wasted) or acutely malnourished. Wasting represents the failure to receive adequate nutrition in the period immediately preceding the survey and may be the result of inadequate food intake or a recent episode of illness causing loss of weight and the onset of malnutrition. Children with a weight-for-height index below minus three standard deviations (-3 SD) are considered severely wasted. This weight-for-height indicator also provides data on overweight and obesity. Children more than two standard deviations (+2 SD) above the median weight-for-height are considered overweight, or obese.

9.3.1 Distribution of weight-for-height z-scores

Figure 9.3.1 shows the distribution of weight-for-height z-scores among all children aged 0-59 months whose measurements were taken. Overall, 3% of children are wasted and 1% of children are severely wasted. Overweight and obesity affect a similar proportion of children in Panama to wasting. In this sample representative of the poorest areas, 3% of children are shown to be overweight or obese (weight-for-height more than +2 SD).

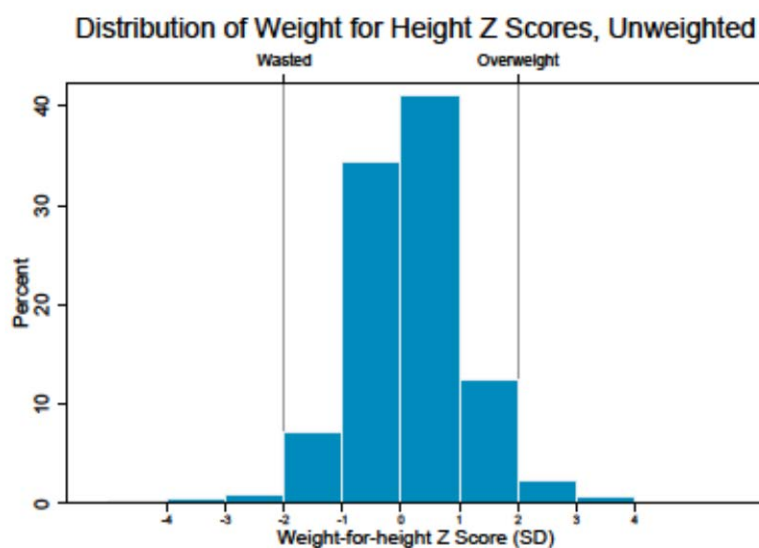


Figure 9.3.1 Distribution of weight-for-height z-scores among children aged 0-59 months

9.3.2 Prevalence of wasting

Table 9.2 shows the breakdown of nutritional status of children aged 0-59 months as measured by weight-for-height by age groups and sex. Overall, 3% of children are wasted and 1% of children are severely wasted. Analysis of the indicator by age group shows that wasting is highest (5%) in children 6-23 months old and lowest (2%) in children aged 24-59 months, a statistically significant difference ($P=0.032$). Male children are similarly likely to be wasted than female children (near 3% for each; this is not significant, $P=0.77$). Male children are similarly likely to be severely wasted (slightly less than 2%) as females (1%), and it is not statistically significant ($P=0.31$).

Overweight and obesity affect a similar proportion of children in Panama to wasting. In this sample of poorest areas of Panama, 3% of children are overweight or obese (weight-for-height more than +2 SD). The coexistence of both growth retardation and obesity reveals the burden of malnutrition in Panama.

Table 9.2 Prevalence of underweight in children aged 0-59 months

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: weight-for-height, height-for-age, and weight-for-age, by age and sex									
Characteristic	Weight for age (underweight)			Height-for-age (stunting)		Weight-for-height (wasting)			Number of children
	Percent < -3 SD	Percent < -2 SD	Percent > +2 SD	Percent < -3 SD	Percent < -2 SD	Percent < -3 SD	Percent < -2 SD	Percent > +2 SD	
Total	4.4	19.5	1.9	22.5	55.9	1.3	2.8	3	2253
Sex									
Male	4.7	20.6	2	25.2	57.3	1.6	2.9	3.2	1103
Female	4.2	18.5	1.9	20	54.5	1	2.7	2.8	1118
Age in months									
0-5	4.3	10.5	11.6	10.3	27.6	3	3.5	9.2	224
6-23	5.7	22.5	1.9	20	47.2	2.2	5.1	4.4	222
12-23	6	22.9	1.4	31	60.9	1.2	3.6	2.5	474
24-59	3.3	19.3	0.4	21.6	60.7	0.8	2	1.9	1281

9.4 Anemia

Anemia is a condition characterized by a decrease in the concentration of hemoglobin in the blood. Hemoglobin is necessary for transporting oxygen to tissues and organs in the body. The reduction in oxygen available to organs and tissues when hemoglobin levels are low is responsible for most of the symptoms experienced by anemic persons. The consequences of anemia include general body weakness, frequent tiredness, and lowered resistance to disease. It is of concern in children because anemia is associated with impaired mental and motor development. Overall, morbidity and mortality risks increase for individuals suffering from anemia.

Common causes of anemia include inadequate intake of iron, folate, vitamin B12, or other nutrients. This form of anemia is commonly referred to as iron-deficiency anemia and is the most widespread form of anemia in the world. Anemia can also be the result of thalassemia, sickle cell disease, malaria, or intestinal worm infestation.

9.4.1 Distribution of hemoglobin values

Figure 9.4.1 shows the distribution of hemoglobin values (in g/dL) among children 0-59 months of age.

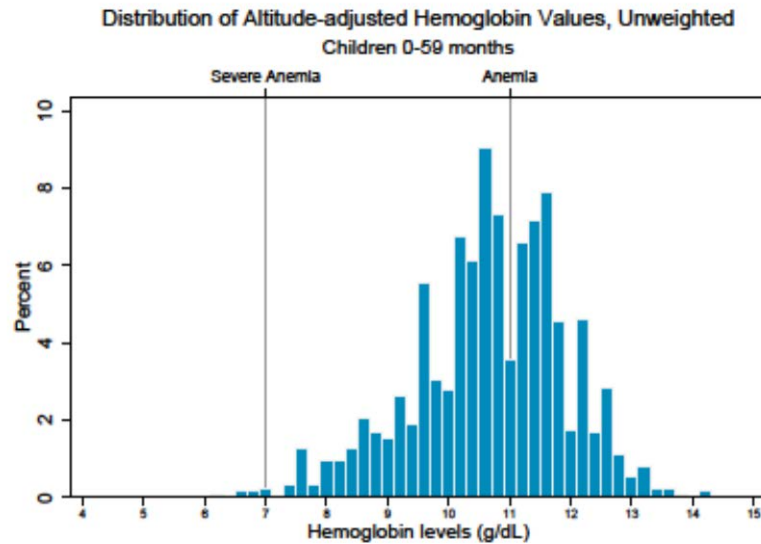


Figure 9.4.1 Distribution of hemoglobin values among children aged 0-59 months

9.4.2 Prevalence of anemia

Levels of anemia were classified as severe (<7.0 g/dL) and any (<11.0 g/dL) based on the hemoglobin concentration in the blood. Children whose hemoglobin levels are below 11 g/dL are considered anemic, and children who have hemoglobin levels below 7 g/dL are considered severely anemic. Table 9.4.2 indicates that 57% of children under age 5 in Panama are anemic. Overall, the anemia prevalence is mostly mild to moderate, with less than 1% of children under age 5 years presenting as severely anemic. Anemia prevalence is highest among children aged 0-5 months (84%) compared with the other children. About three-quarters of all children aged 6-23 months, our targeted population for anemia intervention, were found to be anemic. For all children under 5 years of age, male children are slightly more likely to be anemic than female children (59% and 55%, respectively), and the difference is not statistically significant (P=0.28).

Table 9.4.2 Prevalence of anemia in children aged 0-59 month

Characteristic	N	Weighted Anemia Prevalence	
		< 7 g/dL	< 11g/dL
Age in months			
0-5	224	0	83.9
6-11	222	1.6	80.7
12-23	474	0.2	70.4
24-59	1326	0.3	45.2
0-59	2246	0.4	56.8
6-23	696	0.6	73.6
Sex			
Male	1103	0.6	58.7
Female	1118	0.2	55.3

CHAPTER 10: EXPOSURE TO HEALTH SYSTEM INTERVENTIONS

This chapter summarizes data regarding the exposure of women to four health system interventions: community health workers, breastfeeding interventions, child nutrition interventions, and child health interventions.

10.1 Exposure to community health workers

Respondents were asked about their exposure to community health workers. Four percent of women reported meeting with a community health worker in the month preceding the interview (Table 10.1.1).

Table 10.1.1 Exposure to community health workers

Percent distribution of women			
Characteristic	N	Weighted %	Weighted SE
Met with a community health worker in the last month			
Yes	120	4.4	0.8
No	2196	95.6	0.8
DK/NR	33		
Missing	104		
Total	2453	100	
Number of times respondent met with a community health worker in the last month			
Did not meet	2196	96.5	0.7
One time	64	2.5	0.6
Two times	22	0.7	0.2
Three times	3	0.1	0.1
Four or more times	5	0.2	0.1
DK/NR	59		
Missing	104		
Total	2453	100	

Referral and advice services provided by community health workers are summarized in Table 10.1.2. Among women who met with a community health worker in the last month, advice about child vaccination was the most frequently reported (77%). Advice about child nutrition (64%) and family planning and contraception (54%) were also frequently reported.

Table 10.1.2 Services provided by community health workers

Percent distribution of women who met with a community health worker in the last month			
Type of service	N	Weighted %	Weighted SE
Referral for prenatal care			
Yes	40	45.7	6.4
No	48	54.3	6.4
DK/NR	6		
Missing	26		
Total	120	100	
Referral for in-facility delivery			
Yes	27	30.3	5
No	61	69.7	5
DK/NR	6		
Missing	26		
Total	120	100	
Referral for postnatal care			
Yes	31	36.2	6.3
No	57	63.8	6.3
DK/NR	6		
Missing	26		
Total	120	100	
Referral for voluntary counseling and testing for the prevention of HIV/syphilis transmission from mother to child			
Yes	31	34.1	6.4
No	57	65.9	6.4
DK/NR	6		
Missing	26		
Total	120	100	
Advice about family planning and contraception			
Yes	47	53.5	7.5
No	41	46.5	7.5
DK/NR	6		
Missing	26		
Total	120	100	
Child vaccination			
Yes	69	77.4	3.7
No	19	22.6	3.7
DK/NR	6		
Missing	26		
Total	120	100	

Table 10.1.2 Continued

Percent distribution of women who met with a community health worker in the last month			
Type of service	N	Weighted %	Weighted SE
Advice about child nutrition			
Yes	55	63.6	7.3
No	34	36.4	7.3
DK/NR	5		
Missing	26		
Total	120	100	
Information, education, and communication sessions			
Yes	33	39.3	6.7
No	55	60.7	6.7
DK/NR	6		
Missing	26		
Total	120	100	
Other			
Yes	24	27.2	7.5
No	64	72.8	7.5
DK/NR	6		
Missing	26		
Total	120	100	

10.2 Exposure to breastfeeding interventions

Respondents were asked about their exposure to breastfeeding interventions. Approximately 26% of women reported receiving guidance or advice about breastfeeding in the 12 months preceding the interview (Table 10.4.1).

10.3 Exposure to child nutrition interventions

Respondents were asked about their exposure to child nutrition interventions. Approximately 36% of women reported receiving guidance or advice about child nutrition in the 12 months preceding the interview (Table 10.4.1).

10.4 Exposure to child health interventions

Respondents were asked about their exposure to child health interventions. Approximately 25% of women reported receiving guidance or advice about danger signs for children's health in the 12 months preceding the interview (Table 10.4.1).

Table 10.4.1 Exposure to breastfeeding, child nutrition, and child health interventions

Percent distribution among women with children under 5			
Characteristic	N	Weighted %	Weighted SE
Received guidance or advice about breastfeeding in the last 12 months			
Yes	367	25.9	2.2
No	1032	74.1	2.2
DK/NR	13		
Missing	99		
Total	1511	100	
Received guidance or advice about child nutrition in the last 12 months			
Yes	519	35.8	2.5
No	882	64.2	2.5
DK/NR	11		
Missing	99		
Total	1511	100	
Received guidance or advice about danger signs for children's health in the last 12 months			
Yes	369	25.3	2
No	1024	74.7	2
DK/NR	19		
Missing	99		
Total	1511	100	

Most women receiving guidance or advice about breastfeeding (96%), child nutrition (97%), or danger signs for children's health (95%) indicated that this occurred at a MINSA facility (Table 10.4.2). Few women received guidance from a community health worker or traditional healer.

Table 10.4.2 Exposure to child health interventions, by source

Percentage of women with children under 5 who received guidance or advice about breastfeeding, child nutrition and danger signs for children's health in the last 12 months, and among them, the percentage of women with guidance or advice from specific sources			
Characteristic	Intervention type		
	Breast-feeding	Child nutrition	Child health
Received guidance or advice about interventions for children's health in the last 12 months (%)	25.9	35.8	25.3
<i>Number of women</i>	3878	3878	3878
Source of advice (%)			
Public hospital MINSA	10.9	11.9	10.4
Public hospital CSS	0	0.5	0
ULAPS/CAPPS	0	0	0
Polyclinic CSS	0	0	0
Public Health Center MINSA	46.8	48.4	45.9
Public Health Sub-Center MINSA	21.3	19.2	22.5
Public Health Post MINSA	14.4	14.6	12.2
Public mobile unit MINSA	2.7	3.3	3.6
Other public health facility	0	0	0
Private hospital	0	0	0
Private health center / clinic	0	0	0.5
Private office	0	0	0
Private mobile clinic	0	0	0
Other private health facility	0	0	0
Pharmacy	0	0	0.5
Community health worker	1.7	1.6	2.7
Traditional healer	1.3	0.8	1.5
Other	0.7	1.4	2.1
DK/NR, missing	1.9	1.2	2
<i>Number of women</i>	367	519	369

10.5 Satisfaction with community health workers

Women who met with a community health worker in the month preceding the interview were asked to assess their satisfaction with the following: number of visits received from community health workers, knowledge and training of community health workers, information provided by community health workers, and respectfulness of community health workers. Results are displayed in Table 10.5.

Table 10.5 Satisfaction with community health workers

Percent distribution of women who met with a community health worker in the last month by level of satisfaction in different fields					
Field of satisfaction	Level of satisfaction				Total
	Very dis-satisfied	Dis-satisfied	Satisfied	Very satisfied	
Number of visits received from community health workers	9.3	19.6	67.9	3.2	100
Knowledge and training of community health workers	8.3	10.5	78	3.2	100
Information provided by community health workers	6.9	12	78.7	2.4	100
Respectfulness shown by community health workers	7	12.9	77.6	2.5	100

CHAPTER 11: NEONATAL, INFANT, AND CHILD MORTALITY

This chapter summarizes estimates of neonatal, infant, and child mortality within the target area for the initiative in Panama. The complete birth histories of women of reproductive age (15-49 years) captured in the SM2015-Panama Baseline Household Survey provided the data necessary to calculate probability of death using direct methods: date of birth of children, their survival status, and the dates of death or ages at death of deceased children. For the sake of comparison, at the end of this chapter national-level estimates of neonatal, infant, and child mortality in Panama, produced by IHME, are included.

As previously mentioned, incomplete information was captured for a total of 70 women from three segments. The live birth histories for these women could not be used toward calculating neonatal, infant, and child mortality estimates.

11.1 Neonatal mortality

Neonatal mortality is defined as the number of deaths during the first 28 completed days of life per 1,000 live births in a given year or period. Figure 11.1 displays the weighted point estimates and 95% confidence intervals for neonatal mortality in the intervention areas of the initiative during all 5-year periods preceding the survey for which data were reported.

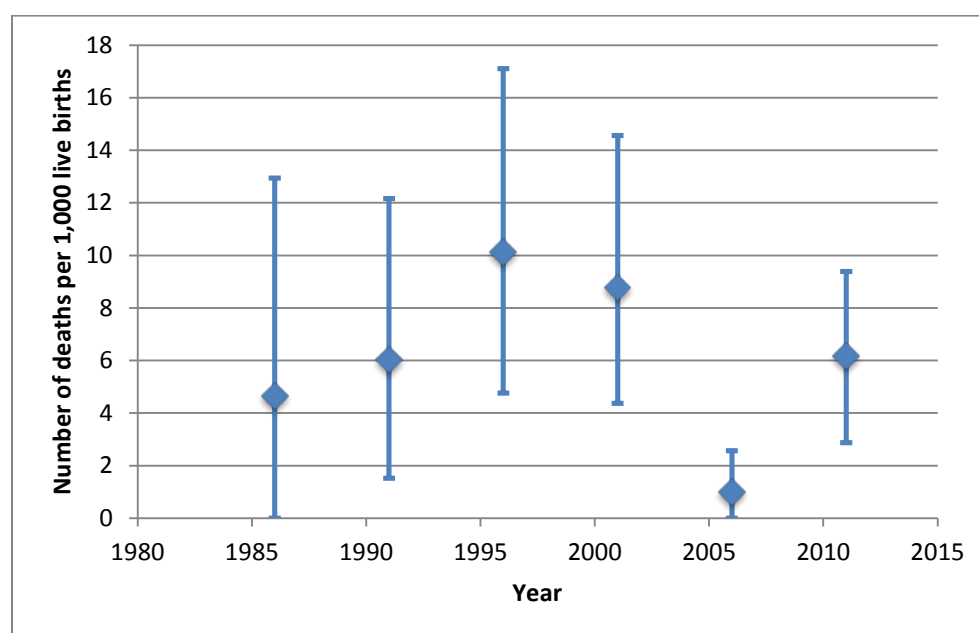


Figure 11.1 Neonatal mortality estimated from complete birth history data obtained from the SM2015-Panama Baseline Household Survey, 2013

11.2 Infant mortality

Infant mortality is defined as the number of deaths during the first year of life per 1,000 live births in a given year or period. Figure 11.2 displays the weighted point estimates and 95% confidence intervals for infant mortality in the intervention areas of the initiative during all 5-year periods preceding the survey for which data were reported.

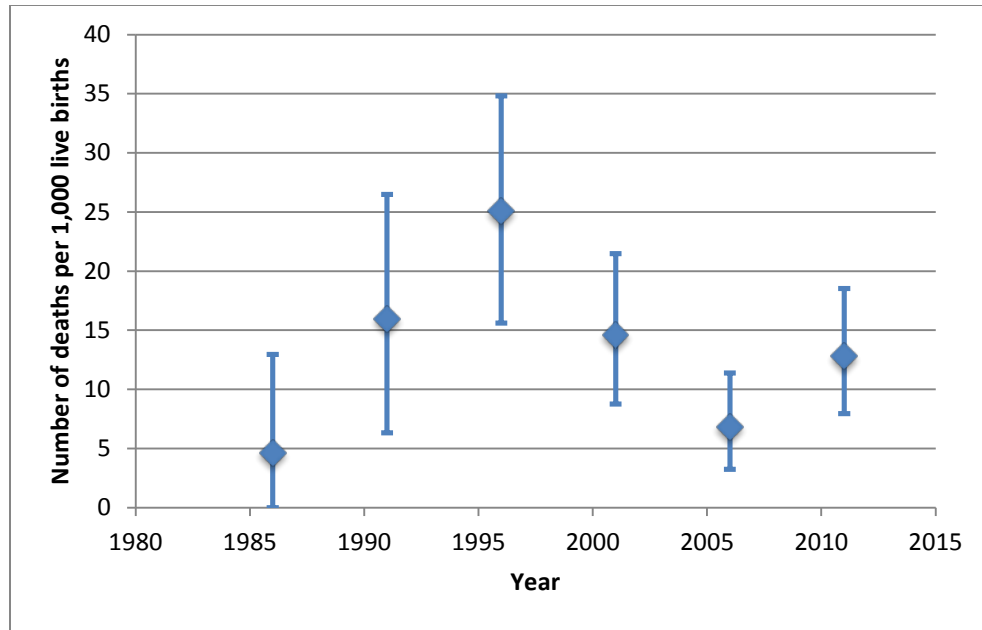


Figure 11.2 Infant mortality estimated from complete birth history data obtained from the SM2015-Panama Baseline Household Survey, 2013

11.3 Mortality in children under 5 years of age

Mortality in children under 5 years of age is defined as the number of deaths during the first five years of life per 1,000 live births in a given year or period. Figure 11.3 displays the weighted point estimates and 95% confidence intervals for under-5 child mortality in the intervention areas of the initiative during all five-year periods preceding the survey for which data were reported.

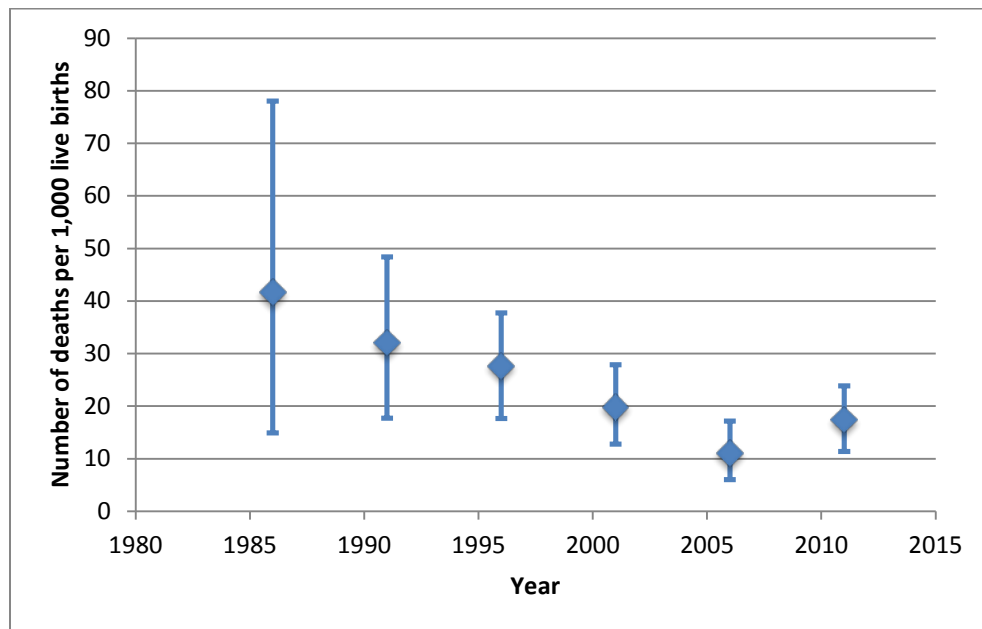


Figure 11.3 Mortality in children under 5 years of age estimated from complete birth history data obtained from the SM2015-Panama Baseline Household Survey, 2013

A summary of the most recent five-year period estimates for neonatal, infant, and under-5 child mortality in the target area based on complete birth history data from the SM2015 Household Survey is shown in Table 11.3a.

Table 11.3a Mortality in children under 5 years of age in the target area of the initiative

Based on complete birth history data from the five years preceding the interview, among study areas, Panama 2013		
Child mortality indicator	Deaths per 1,000	
	live births	95% CI
Neonatal mortality	6.2	(2.9-9.4)
Infant mortality	12.8	(8.0-18.5)
Under-5 mortality	17.4	(11.4-23.8)

The estimates produced from the complete birth histories displayed above are compared to the IHME-generated time series of national-level estimates in Table 11.3b.

Table 11.3b Mortality in children under 5 years of age at the national-level

Based on IHME-generated time series, Global Burden of Disease		
Child mortality indicator	Deaths per 1,000	
	live births	95% CI
Neonatal mortality		
2007	7.2	(5.4-9.1)
2008	7.5	(5.8-9.4)
2009	7.9	(6.2-9.8)
2010	8.3	(6.5-10.2)
2011	8.6	(6.9-10.5)
Infant mortality		
2007	11.6	(9.1-14.3)
2008	12.2	(9.7-14.8)
2009	12.8	(10.3-15.4)
2010	13.3	(10.8-15.9)
2011	13.8	(11.3-16.5)
Under-5 mortality		
2007	17.2	(14.1-20.5)
2008	18.0	(14.8-21.1)
2009	18.8	(15.7-22.0)
2010	19.5	(16.6-22.7)
2011	20.3	(17.3-23.4)

To calculate the IHME-generated time series for mortality in children younger than 5 years of age, data were derived from a range of sources, including vital registration systems, sample registration systems, summary birth histories in censuses and surveys, and complete birth histories. We compiled a database of measurements for 187 countries (excluding those countries with populations of less than 50,000) from 1970 to 2011.

For each country, we generated a time series of estimates of under-5 mortality by synthesizing the empirical data estimates with an analytical technique called Gaussian process regression (GPR). Details of the implementation of this technique can be found in Rajaratnam JK et al. Neonatal, postneonatal, childhood, and under-5 mortality for 187 countries, 1970–2010: a systematic analysis of progress towards Millennium Development Goal 4. *Lancet*. 2010;375:1988-2008. A subsequent update to the 2010 publication, including updated data, methods, and new estimates from 1990 to 2011 can be found in Lozano R, Wang H, Foreman KJ, Rajaratnam JK, Naghavi M, Marcus JR, Dwyer-Lindgren L, Lofgren KT, Phillips D, Atkinson C, Lopez AD, Murray CJL. Progress towards Millennium Development Goals 4 and 5 on maternal and child mortality: an updated systematic analysis. *The Lancet*. 2011; 378:1139-1165, and in Wang H*, Dwyer-Lindgren L, Lofgren KT, Rajaratnam JK, Marcus JR, Levin-Rector A, Levitz C, Lopez AD, Murray CJL. Age-specific and sex-specific mortality in 187 countries, 1970–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*. 2012; 380: 2071–2094.

Briefly, we applied Loess regression of the log of under-5 mortality in a country as a function of time and an indicator variable for measurements from vital registration data to allow for under-registration of child deaths. This predicted series was then updated by the data within each country by use of GPR. Our GPR model has better out-of-sample predictive validity than do previous methods for measuring child mortality and captures uncertainty caused by sampling and non-sampling error across data types. We computed yearly rates of change in under-5 mortality and examined rates over time for each country.

We divided the estimates of under-5 mortality generated by GPR into estimates of neonatal (the probability of death before age 1 month), postneonatal (the probability of death before age 1 year conditional on surviving to age 1 month), and childhood (the probability of death from age 1 year to age 5 years conditional on surviving to age 1 year) risks of death by use of a two-step modeling process in which we first predicted sex-specific under-5 mortality and then predicted the sex-specific neonatal, postneonatal, and childhood risks of death.

To compute aggregate numbers of deaths, we combined estimates of neonatal and postneonatal mortality to obtain an estimate of the infant mortality rate. We obtained numbers of deaths in infants younger than 1 year by applying the infant mortality rate (the probability of death from birth to age 1 year) to the number of births in the current and previous years. We used a similar method to estimate deaths in children aged between 1 year and 5 years. Deaths in children younger than 5 years were calculated as the sum of deaths in infants younger than 1 year and deaths in children aged between 1 year and 5 years.

APPENDIX A. SAMPLING DESIGN AND METHODOLOGY

A.1 Sample size and statistical power calculations

Sample size and power calculations were determined based on IDB's pre-specified plan to complete a full census of the sampled segments (described in section A.2 "Sampling Procedures," below), followed by a survey of 1,650 selected eligible households. Households were eligible if they had at least one child aged 0-59 months or one woman aged 15-49 years.

Please note that the sample size and statistical power calculations described in this Appendix are for the comparison of baseline and follow-up percentages of indicators in the treatment population. The power calculations do not pertain to control group comparisons.

A.1.1 Sample sizes

The original sample size calculated of 1,650 households was necessary to attain 80% power, with an alpha value of 0.05, to detect a change from 51% to 66% in the indicator prevalence of exclusive breastfeeding among children 0-5 months old. The indicator definition and baseline value are in accordance with the payment indicator matrix provided by IDB. Of the payment indicators relying on the household survey, the exclusive breastfeeding indicator is the most restrictive and hence drives the necessary sample size. Using the 2010 Panama Population Census for reference, we assumed that among the 1,650 households there would be 532 children under 2 years, 1,335 children under 5 years, 2,010 women aged 15-49 years, and 399 women aged 15-49 years with live births in the last 2 years.

In order to achieve the desired sample size of 1,650 households, we sought to complete interviews with residents of 30 randomly selected households in each of the 61 randomly selected segments in intervention areas. More specifically, we drew a sample of 30 randomly selected households with age-eligible children as residents and 10 randomly selected backup households with age-eligible women as residents. To do so, listings of all households with age-eligible women or children were assembled in random order for each segment. Naturally, there was a substantial degree of overlap between houses listed on the "woman-resident" list and houses listed on the "child-resident" list. Interviewers sought to interview the 30 households with children first. In some cases, selected households were absent or declined to participate in the SM2015 Household Survey. These households were replaced by other households from the backup list of households with age-eligible women from the same segment. When selected households were visited, the survey was applied to all present and eligible women and children. Because multiple interviewers worked the sample simultaneously, in a handful of instances more than 30 surveys were completed. This occurred in 26 segments, where between 31 and 34 households completed surveys.

In addition, three households in each segment were randomly selected for water quality testing. These households were selected from the pool of the first 30 selected households in each segment via computer-generated random sampling from a uniform distribution. Based on power calculations, a sample size of 133 households was necessary to detect a change in the prevalence of high-quality water from 50% to 65%. An additional 38% of households were sampled to account for non-response and potential challenges in water quality testing.

A.1.2 Prior levels of indicators

Where possible, we used IHME's estimates of the national levels of indicator coverage in 2010, multiplied by 0.9, to obtain estimates of coverage and prevalence among the poorest 20% of the population. Where these data were not available, and for the malnutrition indicators, we used the 2008 estimates of coverage and prevalence among the poorest 20% of the population provided to us by IDB.

A.1.3 Statistical power calculation

All calculations were done using the "samps" command in Stata version 12.1. Calculations assumed a two-tailed two-sample proportions test with an alpha level of 0.05 corresponding to a 95% confidence interval, and a beta level of 0.20 corresponding to an 80% power level.

A.2 Sampling Procedures

In total, nine corregimientos in two provinces were identified by IDB as the "target area" for the initiative. Clusters (segments) were randomly selected from a list of all segments within the targeted regions, with probability proportional to size, where size was represented by the number of occupied households within the segment, based on data from the 2010 National Population Census. Within each randomly selected cluster, a complete household listing exercise was carried out, enabling the systematic selection of households for participation in the survey, based on household composition. All households in which women aged 15-49 years and/or children aged 0-59 months resided were eligible to be selected for the survey. Additional information about the selection of eligible households is described in Section A.1.1 "Sample sizes."

In this section, we describe the random sampling procedures for selecting the segments from the target area that were surveyed. An alternate sample was also selected in the event that the survey could not be conducted in the selected segments. Below we describe the selection of the primary and alternate samples.

A.2.1 Primary sample

The primary sample of 61 clusters (segments) were randomly selected from a total of 158 segments in two provinces which, based on data from the 2010 National Population Census, contained 7,003 occupied households. As stated previously, segments were selected with probability proportional to size, as follows:

We put the segments in a random order and generated a variable representing the cumulative number of households by that segment. We divided the total number of households by the number of segments we meant to sample, to obtain an interval length " Δ " (115). A random starting point " Σ " was drawn from a uniform distribution between 1 and the interval length Δ . The n^{th} segment in the sample was the first segment whose cumulative number of households was greater than $\Sigma + (n - 1) * \Delta$.

Some communities with a large number of households were divided into several smaller segments, each with between 50 and 150 households. Each of these divided segments in the same community was independently eligible for selection. Hence, there were six communities in which two such divided segments were interviewed and one community in which three such divided segments were interviewed.

A.2.2 Alternate sample

After selecting the 61 total segments to be surveyed, a set of 25 alternate segments were selected. These segments could be used in the event that selected segments in the modified sample could not be surveyed and needed to be replaced. These alternate segments were selected with equal probability within each municipality, as follows:

The segments chosen as part of the primary sample of 61 segments were eliminated from the pool of 158 clusters. Twenty-five replacement clusters were then selected from the remaining clusters using the same methods in part A.2.1

During implementation of the household survey, four segments were surveyed from this alternate sample.

APPENDIX B. SURVEY WEIGHTS, SAMPLING ERRORS, AND DESIGN EFFECTS

B.1 Weighting methodology

As previously described, cluster sampling was performed using the segment as the primary sampling unit. There were 61 segments interviewed. Design weights for households, women, and children were generated and incorporated into the merged datasets for analyses. The weights were calculated as follows for households:

$$\text{Weight} = \frac{1}{p(\text{selecting Household } Y)} = \frac{1}{p(\text{selecting Segment } X) * p(\text{selecting Household } Y \text{ in segment } X)}$$

where

$$p(\text{selecting Segment } X) = \frac{\# \text{ occupied households in Segment } X \text{ in 2010}}{\text{Total } \# \text{ occupied households in target municipalities in 2010}} * \# \text{ draws}$$

and the number of draws corresponds to the number of designated segments (61), and the total number of occupied households in target municipalities in 2010 corresponds to 7,003 households, and

if the household includes children under 5 according to the SM2015 census:

$$\begin{aligned} & p(\text{selecting household } Y \text{ in segment } X) \\ &= \frac{\# \text{ households with age - eligible children interviewed for SM2015 in segment } X}{\# \text{ occupied households with age - eligible children in Segment } X \text{ from SM2015 census}} \end{aligned}$$

or if the household does not include children under 5 according to the SM2015 census:

$$= \frac{p(\text{selecting household } Y \text{ in segment } X)}{\# \text{ occupied households with age - eligible women but no children in Segment } X \text{ from SM2015 census}}$$

Minor modifications to this formula were used to calculate weights for women, children, and households with water quality testing as follows:

$$\begin{aligned} & p(\text{selecting woman } Z) \\ &= \frac{p(\text{selecting Segment } X) * p(\text{selecting Household } Y \text{ in Segment } X)}{\text{average number of women 15 - 49 years old per household in SM2015 census} * p(\text{selecting Woman } Z \text{ in household } Y)} \end{aligned}$$

where the average number of women 15-49 years old per household in the sample was 1.3866719 (according to the SM2015 Household Census), and

if the household includes children under 5 according to the SM2015 census:

$$= \frac{p(\text{selecting Household } Y \text{ in Segment } X)}{\# \text{ occupied households with age - eligible children in Segment } X \text{ from SM2015 census}}$$

or if the household does not include children under 5 according to the SM2015 census:

$$= \frac{p(\text{selecting Household } Y \text{ in Segment } X)}{\# \text{ occupied households with age - eligible women but not children in Segment } X \text{ from SM2015 census}}$$

and

$$p(\text{selecting Woman } Z \text{ in Household } Y) = \frac{\# \text{ women in Household } Y \text{ completing the survey}}{\# \text{ women 15 – 49 years old residing in Household } Y \text{ from SM2015 census}}$$

and

$$p(\text{selecting Child } W) = \frac{p(\text{selecting Segment } X) * p(\text{selecting Household } Y \text{ in Segment } X)}{\text{average number of children 0 – 59 months old per household in sample} * p(\text{selecting child } W \text{ in Household } Y)}$$

where the average number of children 0-59 months old per household in the sample was 0.88028307 (according to the SM2015 Household Census), and

$$p(\text{selecting Household } Y \text{ in Segment } X) = \frac{\# \text{ households completing children's health survey for SM2015 in Segment } X}{\# \text{ occupied households with age – eligible children in Segment } X \text{ from SM2015 census}}$$

and

$$p(\text{selecting Child } W \text{ in Household } Y) = \frac{\# \text{ children in Household } Y \text{ completing the survey}}{\# \text{ children 0 – 59 months residing in Household } Y \text{ from SM2015 census}}$$

and for households with water quality testing

$$p(\text{selecting household } Y \text{ in Segment } X) = p(\text{selecting Segment } X) * p(\text{selecting Household } Y \text{ in Segment } X \text{ for water quality testing})$$

where

$$p(\text{selecting household } Y \text{ in segment } X \text{ for water quality testing}) = \frac{\text{Number of households completing SM2015 water quality testing}}{\# \text{ occupied households with age-eligible children in Segment } X \text{ from SM2015 census households}}$$

The weights yielded results similar to the unweighted results.

B.2 Sampling Errors

As described in Appendix A, a random sample of eligible households was selected from each of 61 clusters (segments) which had been randomly sampled with probability proportional to size from the target areas of the initiative, which consisted of 158 segments. Although cluster-sampling can improve efficiency when the target population is spread out over a large area, the resultant sample consists of observations that are not completely independent of one another. The standard errors presented throughout this report account for this intra-class correlation, using Taylor-linearized variance estimation. Standard errors for key indicators being assessed as part of the SM2015 initiative are summarized in Table B, below.

B.3 Design effects for key indicators

As described above, cluster-sampling yields a sample of observations that are not completely independent of one another. The effective sample size is therefore reduced because there is less variation in the selected sample than in a simple random sample. The design effect represents the impact of cluster-sampling on the effective sample size, expressed as the ratio of the actual variance observed to the variance computed under the assumption of simple random sampling, given the sample size obtained. For a DEFF of 2.0, based on data from 2,010 women, we would conclude that the observed sample variance is twice as large as it would be if we had selected 1,005 women completely at random from the target area. In other words, under simple random sampling, we would only need half as many women (1,005) in order to produce the same results. The design effect (DEFF) is calculated as follows:

$DEFF = 1 + \delta (n - 1)$, where δ = intra-class correlation and n = average size of the cluster

Design effects, therefore, increase as the intra-class correlation increases and as the size of the clusters increases. Because the intra-class correlation depends on the characteristic being assessed, the design effects vary across the range of indicators assessed in this survey.

Another measure that can be used to assess design effects is the square root of DEFF (hereafter abbreviated as DEFT), which is, naturally, less variable than DEFF. The DEFT represents the increase in the standard error (and therefore, the confidence interval) that is associated with the use of cluster sampling rather than simple random sampling for a fixed sample size. For a DEFT of 2.0, the standard error would be twice as large, and the confidence interval would be twice as wide under cluster sampling as compared to a simple random sample of the same size.

For well-designed surveys, estimates of design effects should be in the range of 1.0 to 3.0. However, depending on the characteristic being assessed, design effects may be 10.0 or larger. Design effects for key indicators being assessed as part of the SM2015 initiative are summarized in Table B, below. As expected, most design effects were minimal.

Table B Design effects, SM2015-Panama Baseline Household Survey, 2013

SM2015 Indicators					
Indicator	N	Weighted %	Weighted SE	DEFF	DEFT
Children 12-59 months who received 2 doses of deworming in the past year	1800	8.7	1.1	2.5	1.6
Children 0-5 months who were exclusively fed breast milk yesterday	224	45.3	3.5	1.1	1
Mothers who gave their children of 0 to 59 months Oral Rehydration Salts (ORS) and zinc during the last episode of diarrhea in the last two weeks	2253	0.6	0.6	1	1
Women of reproductive age (15-49) (sexually active women not seeking pregnancy, women with menopause, hysterectomy, virgin, pregnant or want to become pregnant are excluded) who did not wish to become pregnant and who were not using / had no access to methods family planning	1720	90.3	1.9	7.3	2.7
Women of reproductive age (15-49) who received at least 4 prenatal checks by skilled personnel in their most recent pregnancy in the last two years	1490	38.8	2.8	4.9	2.2
Women of reproductive age (15-49) who received postpartum care by qualified personnel (doctor, nurse, or maternal - neonatal auxiliary) within the first 48 hours in their most recent pregnancy in the last two years	1490	14.1	1.9	2.6	1.6
Households in the targeted area consuming water with adequate quality	1710	1	1	1.3	1.1
Children 6 to 23 months of age who have a hemoglobin level <11.0 g/dL (Prevalence of anemia in children 6 to 23 months old)	696	73.6	2.3	1.1	1.1
Children 0-59 months with height <-2 SD of the mean of the reference population for age length	2253	55.9	2.7	5.3	2.3
Children 0-59 months fully vaccinated for their age	2253	18	1.6	3.1	1.8
Percentage of children 12-23 months old with vaccine for Measles, Mumps and Rubella (MMR)	2253	90.5	0.9	1.8	1.3
Percentage of children 12-15 months of age who were breastfed during the previous day	172	72	3.8	1.1	1.1
Children 6-8 months who received solid or semisolid food yesterday	107	87.5	3.2	0.9	1
Children 6 to 23 months who received food from 4 or more food groups during the previous day	696	22.8	2.7	2.6	1.6
Children fed breast milk or complementary foods between 6 and 23 months who received solid, semi-solid or soft (including milk for infants receiving replacement feeding) the minimum number of times or more	696	20.3	3.4	2.8	1.7
Children 6 to 23 months who received a minimum acceptable diet (apart from breast milk) during the previous day	696	4.3	1.1	1.9	1.4
Children 6 to 23 months who received iron-rich foods or iron-fortified foods during the previous day	696	78	2.1	1.7	1.3
Live births per 1,000 women aged between 15 and 49 years, in a given year	2453	127.4	6.7	0.9	1
Number of births per 1,000 women aged 15-19 years, in a given year	450	129.7	19.5	1.5	1.2
Women of reproductive age (15-49) currently using (or whose partner is using) a modern method of family planning (sexually active women not seeking pregnancy, women with menopause, hysterectomy, virgin, pregnant or want to become pregnant are excluded)	1720	9.7	1.9	7.3	2.7
Women of reproductive age (15-49) (sexually active women using a method of family planning during the last year not seeking pregnancy, women are excluded with menopause, hysterectomy, virgin, pregnant or want to become pregnant) who report having stopped use of a family planning method in the previous year	301	10.4	2.5	2	1.4
Mothers (15-49) that can recognize at least 5 danger signs in the newborn (difficulty breathing, seizures, spasms, cyanosis (bluish discoloration of the skin and mucous membranes), difficulty breathing, seizures, spasms, pallor, flaccidity, lethargy, hot to the touch (fever), cold to the touch) for their most recent birth in the last two years	773	22.3	3.4	5	2.2
Women of reproductive age (15-49) who reported having suffered an illness in the past two weeks	2453	11	1.2	3.4	1.9
Average travel time to the nearest health care facility during the last visit	2453	56.5	11.6	14.2	3.8
Women of reproductive age (15-49) who received at least one antenatal care visit with skilled personnel in their most recent pregnancy in the last two years	1490	77.4	2.7	6.2	2.5
Women of reproductive age (15-49) who received postpartum care by qualified personnel (doctor, nurse, or maternal-neonatal auxiliary) within the first 24 hours in their most recent pregnancy the last two years	1490	8.3	1.6	2.9	1.7
Women of reproductive age (15-49) who received postpartum care by qualified personnel (doctor, nurse or maternal - neonatal auxiliary) within seven days of their most recent birth in a health unit in the last two years	1490	19.8	2.1	2.5	1.6
Women of reproductive age (15-49) who received postnatal care within 24 hours of birth, additional check within 7 days and another check before 42 days by qualified personnel in health unit, for the most recent delivery in the last two years	1490	0	0	0	0
Infants who received neonatal care by qualified personnel (doctor, nurse, or maternal - neonatal auxiliary) in a health facility within 48 hours of birth during the last two years	1544	10.8	1.5	2.6	1.6
Children born in the last 24 months who were put to breast within the first hour after delivery	1544	88	1.2	2	1.4

N=Size of denominator; SE=Standard error; DEFF=Design effect; DEFT=Square root of design effect

APPENDIX C. SM2015 HOUSEHOLD INDICATORS

Table C.1 SM2015 indicators among intervention areas, SM2015-Panama Baseline Household Survey, 2013

SM2015 indicators			
Indicator	N	Weighted %	Weighted SE
Children 12-59 months who received 2 doses of deworming in the past year	1800	8.7	1.1
Children aged 0-5 months who were exclusively fed breast milk yesterday	224	45.3	3.5
Mothers who gave their children aged 0 to 59 months Oral Rehydration Salts (ORS) and zinc in the last episode of diarrhea in the last two weeks	2253	0.6	0.6
Women of reproductive age (15-49) (sexually active women not seeking pregnancy, women with menopause, hysterectomy, virgin, pregnant or want to become pregnant are excluded) who did not wish to become pregnant and who were not using/had no access to methods family planning	1720	90.3	1.9
Women of reproductive age (15-49) who received at least 4 prenatal checks by skilled personnel in their most recent pregnancy in the last two years	1490	38.8	2.8
Women of reproductive age (15-49) who received postpartum care by qualified personnel (doctor, nurse, or maternal - neonatal auxiliary) within the first 48 hours in their most recent pregnancy in the last two years	1490	14.1	1.9
Households in the targeted area consuming water with adequate quality	1710	1	1

Table C.2 SM2015 indicators among intervention areas, SM2015-Panama Baseline Household Survey, 2013

SM2015 indicators, full sample	N	Weighted %	Weighted SE
Children aged 6 to 23 months of age who have a hemoglobin level <110 g/L (Prevalence of anemia in children 6 to 23 months old)	696	73.6	2.3
Children aged 0-59 months with height <-2 SD of the mean of the reference population for age length	2253	55.9	2.7
Children aged 0-59 months fully vaccinated for their age	2253	18	1.6
Percentage of children aged 12-23 months old with vaccine for Measles, Mumps and Rubella (MMR)	2253	90.5	0.9
Percentage of children aged 12-15 months of age who were breastfed during the previous day	172	72	3.8
Children aged 6-8 months who received solid or semisolid food yesterday	107	87.5	3.2
Children aged 6 to 23 months who received food from 4 or more food groups during the previous day	696	22.8	2.7
Children fed breast milk or complementary foods between 6 and 23 months who received solid, semi-solid or soft (including milk for infants receiving replacement feeding) the minimum number of times or more	696	20.3	3.4
Children aged 6 to 23 months who received a minimum acceptable diet (apart from breast milk) during the previous day	696	4.3	1.1
Children aged 6 to 23 months who received iron-rich foods or iron-fortified foods during the previous day	696	78	2.1
Live births per 1,000 women aged between 15 and 49 years, in a given year	2453	127.4	6.7
Number of births per 1,000 women aged 15-19 years, in a given year	450	129.7	19.5
Women of reproductive age (15-49) currently using (or whose partner is using) a modern method of family planning (sexually active women not seeking pregnancy, women with menopause, hysterectomy, virgin, pregnant or want to become pregnant are excluded)	1720	9.7	1.9
Women of reproductive age (15-49) (sexually active women using a method of family planning during the last year not seeking pregnancy, women are excluded with menopause, hysterectomy, virgin, pregnant or want to become pregnant) who report having stopped use of a family planning method in the previous year	301	10.4	2.5
Mothers (15-49) that can recognize at least 5 danger signs in the newborn (difficulty breathing, seizures, spasms, cyanosis (bluish discoloration of the skin and mucous membranes), difficulty breathing, seizures, spasms, pallor, flaccidity, lethargy, hot to the touch (fever), cold to the touch) for their most recent birth in the last two years	773	22.3	3.4
Women of reproductive age (15-49) who reported having suffered an illness in the past two weeks	2453	11	1.2
Average travel time to the nearest health care facility during the last visit	2453	56.5	11.6
Women of reproductive age (15-49) who received at least one antenatal care visit with skilled personnel in their most recent pregnancy in the last two years	1490	77.4	2.7
Women of reproductive age (15-49) who received postpartum care by qualified personnel (doctor, nurse, or maternal-neonatal auxiliary) within the first 24 hours in their most recent pregnancy the last two years	1490	8.3	1.6
Women of reproductive age (15-49) who received postpartum care by qualified personnel (doctor, nurse or maternal - neonatal auxiliary) within seven days of their most recent birth in a health unit in the last two years	1490	19.8	2.1
Women of reproductive age (15-49) who received postnatal care within 24 hours of birth, additional check within 7 days and another check before 42 days by qualified personnel in health unit, for the most recent delivery in the last two years	1490	0	
Infants who received neonatal care by qualified personnel (doctor, nurse, or maternal - neonatal auxiliary) in a health facility within 48 hours of birth during the last two years	1544	10.8	1.5
Children born in the last 24 months who were put to breast within the first hour after delivery	1544	88	1.2