SMI-Guatemala

Household Census and Survey Data Quality Report

Second Follow-up Measurement

October 2018

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This report of the Salud Mesoamérica Initiative (SMI) Guatemala household survey was produced in agreement with the Inter-American Development Bank (IDB). All analyses and writing were conducted by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington.

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 better-informed decision-making and higher achievement in health. To that end, we strive to build the objective evidence about what does and does not improve health conditions and health system 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.

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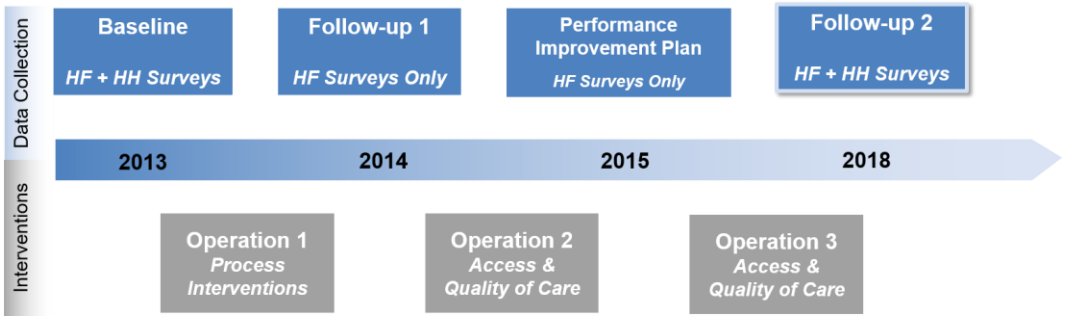
1 CHAPTER 1: INTRODUCTION

The Salud Mesoamérica Initiative (SMI) is a regional public-private partnership that brings together Mesoamerican governments, private foundations and bilateral and multilateral donors with the purpose of reducing health inequalities affecting the poorest 20% of the population in the region. Funding focuses on supply- and demand-side interventions, including evidence-based interventions, the expansion of proven and cost-effective healthcare packages, and the delivery of incentives for effective health services. One of its defining features is the application of a results-based aid (RBA) model that relies on performance measurement and enhanced transparency and accountability. The initiative focuses its resources on integrating key interventions aimed at reducing health inequalities that stem from the lack of access to quality reproductive, maternal, neonatal and child health services (including immunization and nutrition services) for the poorest quintile of the population.

1.1 Objectives

The objectives of the SMI evaluation are to assess whether countries are reaching the indicator targets set by the Initiative and to evaluate the results of specific interventions. In Guatemala, baseline data were collected at households and health facilities in intervention and comparison areas (2013). The first follow-up data collection took place at health facilities in intervention areas only (2014), the performance improvement plan measurement (PIPM) took place in health facilities (only implementing an interview questionnaire and an observation checklist) in intervention areas only (2015), and this second follow-up measurement was performed at households and health facilities in intervention and comparison areas (2018). The use of health facility and household data collection methods permits the measurement of supply- and demand-side information on the Initiative. The pairing of the two types of surveys is a defining feature, designed to capture key indicators in a robust and multidimensional way. The timeline of data collection, evaluation, and interventions is shown in Figure 1.1.

Figure 1.1: SMI-Guatemala timeline



The objectives of the SMI-Guatemala second follow-up household survey are to capture household characteristics, reported maternal and child health data for women 15-49 years of age and for children 0-59 months of age, and anthropometric measurements including height, weight, and hemoglobin concentration for children. Community data collection permits the measurement of changes in health

status, access to health care, and satisfaction with health care, as well as an array of data points which give context to these factors.

Chapter 1 provides a general overview of the design and implementation of the SMI-Guatemala second follow-up household census and SMI-Guatemala second follow-up household survey and discusses the design and coverage of the study in both intervention and comparison areas. The subsequent chapters present results of the SMI-Guatemala second follow-up household survey from intervention areas only. Appendix D presents results from comparison areas only, and Appendix E presents results pooled from intervention and comparison areas.

1.2 SMI household census and survey

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

Data from the SMI household census are used to identify and select eligible households for the detailed interviews and the physical measurements module (Figure 1.2). The household survey is typically conducted within one month of the household census. The SMI household survey includes three components: the Household Characteristics Questionnaire, the Maternal and Child Health Questionnaire, and the Physical Measurements Module.

The household questionnaire collects 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 covers eligible women's background characteristics (including education, occupation, and exposure to media), access to health care, current health status, recent history of illness and associated medical expenses, fertility preferences, knowledge and use of family planning methods (including barriers to use), exposure to health system interventions, and satisfaction with community health workers. Women who have been pregnant in the last five years answer questions about birth history; antenatal, delivery, and postpartum care; birth spacing; breastfeeding; and infant feeding practices.

Caretakers of children aged 0-5 years are asked detailed questions for each child under age 5 on topics such as 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 captures weight, height/length, and hemoglobin concentrations of children aged 0-59 months. Portable scales and height rods were used for the anthropometric measurements and hemoglobin levels were assessed in the field using a portable HemoCue™ machine. Medically trained personnel (i.e., anthropometrists or professional nurses) performed all assessments.

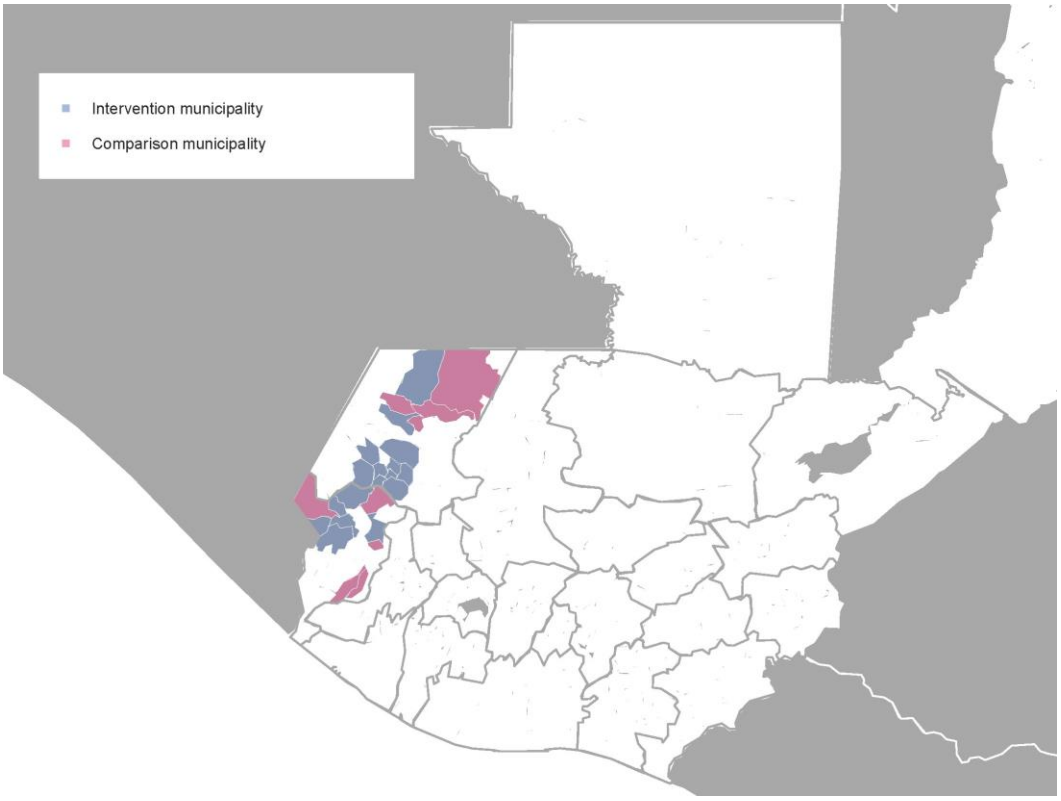
1.3 Methodology

The study design for the SMI-Guatemala second follow-up household survey provides representative estimates of the coverage of key health interventions and indicators for a geographic area that approximates the lowest wealth quintile of the population of Guatemala.

1.3.1 *Study area*

The primary administrative unit in Guatemala is the department. Guatemala has 22 departments, and two, Huehuetenango and San Marcos, were purposefully selected for SMI-Guatemala. From those two departments, IDB identified 17 intervention municipalities in which to conduct the baseline SMI household survey for the Initiative on the basis of their high concentration of residents in the country's lowest wealth quintile, and 9 comparison municipalities with similar socioeconomic characteristics and ethnic composition (Figure 1.3). From these 26 municipalities, a two-stage clustered random sample of eligible households was selected to reach the sample sizes shown in Table 1.1.

Figure 1.3: Map of Salud Mesoamérica Initiative study area



1.3.2 *First-stage sample selection: census segments*

The household survey uses a two-stage random sampling design in order to balance survey administration costs with the ability to make estimates representative of the population in the study area. For the SMI-Guatemala household census, the primary sampling unit (PSU) is the sección de cartograffa (cartographic section) from the 2002 Guatemala Population and Housing Census. A representative sample of these clusters ("segments") was randomly selected from a sampling frame of all segments in SMI municipalities with probability proportional to size, where size is measured by the number of occupied households at baseline, and by population at second follow-up. Samples for intervention and comparison strata, and for baseline and follow-up rounds, were selected independently.

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 due to security concerns, community rejection of the study, or a high proportion of absent households. In Guatemala in the 2018 follow-up survey, two segments in intervention areas were replaced due to community refusal. Each segment was replaced with a randomly selected alternate from the same municipality. One of these replacements occurred after census was completed, but before household data collection began, so 89 segments were completed during the census and 88 segments were completed during the household survey. During baseline data collection, ten segments in intevention areas were replaced due to unsafe conditions and security threats. One segment in comparison areas at baseline was determined to be unsafe after census was completed, so the field team did not to return for household data collection. This segment was not replaced because the target quota for the household survey had been met. At baseline, 148 segments were completed during the census and 147 segments were completed during the household survey. Counts by municipality of segments where census data collection was completed successfully are shown in Figure 1.4.

Table 1.1: Number of segments per municipality in SMI area, census dataset

Intervention				Comparison			
Department	Municipality	2013	2018	Department	Municipality	2013	2018
Huehuetenango	Colotenango	6	4	Huehuetenango	Barillas	8	7
Huehuetenango	San Gaspar Ixchil	1	2	Huehuetenango	San Rafael La Independencia	1	2
Huehuetenango	San Ildelfonso Ixtahuacán	9	5	Huehuetenango	San Sebastián Coatán	2	1
Huehuetenango	San Juan Atitán	5	2	Huehuetenango	Santa Eulalia	3	3
Huehuetenango	San Mateo Ixtatan	8	4	San Marcos	La Reforma	2	1
Huehuetenango	San Miguel Acatán	6	5	San Marcos	Nuevo Progreso	4	3
Huehuetenango	San Pedro Necta	8	5	San Marcos	San Lorenzo	1	1
Huehuetenango	San Rafael Petzal	2	1	San Marcos	San Miguel Ixtahuacán	3	3
Huehuetenango	San Sebastián Huehuetenango	6	3	San Marcos	Tacaná	6	6
Huehuetenango	Santa Bárbara	5	2				
Huehuetenango	Todos Santos Cuchumatán	8	4				
San Marcos	Comitancillo	10	8				
San Marcos	Concepción Tutuapa	15	9				
San Marcos	Ixchiguán	6	3				
San Marcos	San José Ojetenam	4	3				
San Marcos	Sibinal	3	3				
San Marcos	Tajumulco	16	7				

* Baseline counts in this table reflect all 148 segments that completed census; the household survey was conducted in 147 segments.
* Follow-up counts in this table reflect all 89 segments that completed census; the household survey was conducted in 88 segments.

1.3.3 *Second-stage sample selection: households*

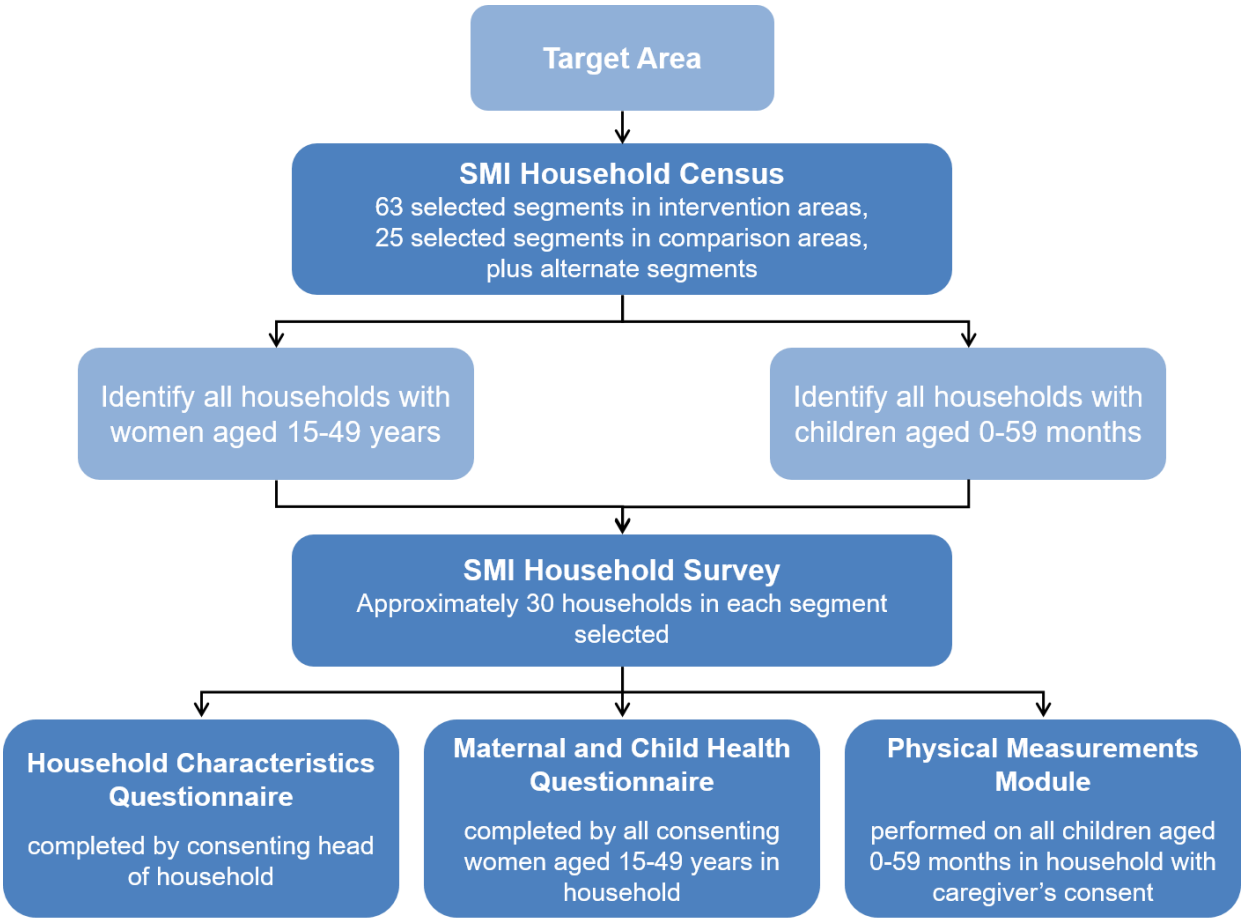
The SMI-Guatemala second follow-up household census is conducted in each of the randomly selected segments prior to the SMI-Guatemala second follow-up household survey in order to identify all eligible women and children for second-stage sampling. Interviewers visit every household in the segment and create a household roster capturing the age and sex distribution of household members.

Eligible households are systematically selected from the complete census listing for participation in the SMI-Guatemala Household Survey. Thirty households are selected for participation, 25 households with at least one eligible child and five households with only eligible women. In order to ensure at least 30 complete interviews per segment, 10 backup households, eight with at least one eligible child and two with only eligible women, are selected at random in case of refusals or absent households.

All women aged 15-49 years who are members of the selected household are eligible to be interviewed, and all children aged 0-59 months who are members of the selected household are eligible for the physical measurement module. Any household head or other individual knowledgeable about household characteristics and expenditures is permitted to respond to the household characteristics module, while any primary caregiver of a child 0-59 months is eligible to inform for the child health interview module, regardless of sex or age.

A schematic diagram of the survey implementation is shown in Figure 1.5. Appendix A provides a detailed description of sampling methods.

Figure 1.5: Schematic diagram of SMI survey implementation



1.4 Survey implementation

1.4.1 *Data collection instruments*

Questionnaires were initially developed in English, and then translated to Spanish during the baseline measurement. 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 baseline and first follow-up pilot studies (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. In order to allow the participation of non-Spanish speakers in the survey, the data collection team includes interviewers proficient in Mam, Akateko, Q'anjob, and Chuj who interpret as needed as they administer the survey.

All surveys were conducted using a computer-assisted personal interview (CAPI). The CAPI was programmed using DatStat Illume and installed onto computer netbooks. CAPI supports skip patterns, inter-question answer consistency, and data entry ranges. The aim of introducing CAPI to the field was

to reduce survey time by prompting only relevant questions, maintain a logical answering pattern across different questions, decrease data entry errors, and permit rapid data verification.

1.4.2 *Training and supervision of data collectors*

At the baseline, a total of 43 people were trained in April 2013 to serve as supervisors and interviewers. Training sessions for the second follow-up survey were conducted in Guatemala in May 2018. For household and census data collection, 12 surveyors and four anthropometrists were trained. All surveyors underwent a week-long training, which included three days of in-classroom instruction and practice of interview application. Teams were split into their respective groups and given in-depth training and practice for each relevant component of data collection. The training included content of each survey, proper conduct of the survey, in-depth review of the instrument, and hands-on training on the CAPI software. Two community leaders from the intervention areas attended the trainings. Surveyors participated in a two-day pilot data collection exercise in communities that were not selected to be part of the SMI sample, where they applied the census and household survey. IHME held debriefing and re-training sessions with surveyors post-pilot and provided continued training during the first week of data collection in sampled communities.

1.4.3 *Data collection, management, and analysis*

The SMI-Guatemala second follow-up household census, which captures basic demographic characteristics of all usual household occupants, was carried out between April 15 and August 8, 2013, at the baseline, and between May 7 and August 7, 2018 in in the second follow-up.

Data collection for the SMI-Guatemala second follow-up household survey at the baseline began on May 1, 2013, and was completed on August 11, 2013. At the follow-up, data collection began May 29, 2018, and was completed on August 29, 2018. To assure completeness of the sample, field staff were instructed to return to selected households up to three times (on different days, and at least once on a weekend) in an attempt to complete the Household Characteristics Questionnaire, the Maternal and Child Health Questionnaire, and the Physical Measurements Module. Households that refused to participate or were absent at all three visits were substituted with randomly selected alternates.

Data collection teams, consisting of one supervisor and three to five interviewers were deployed to conduct the SMI household census and the SMI household survey. Supervisors were responsible for reviewing questionnaires for quality and consistency prior to departing to each segment. There were six supervisors overseeing the SMI household census and SMI household survey at baseline, and four supervisors overseeing the follow-up survey.

Data were collected using computer netbooks equipped with CAPI software. Field team leaders monitored the implementation of the survey and report feedback. Data collection using CAPI allowed data to be transferred instantaneously once a survey was completed via a secure connection to IHME. IHME monitored collected data on a continuous basis and provided feedback. Suggestions, surveyor feedback, and any modifications were incorporated into the instruments and readily transmitted to the field.

Data analysis was conducted at IHME using STATA version 14 and R version 3. Performance and monitoring indicators were calculated at IHME following indicator definitions provided by IDB.

The total number of completed interviews with heads of households in the census is shown in Table 1.2, and the total number of completed interviews with heads of households in the household survey is shown in Table 1.3. The total number women of reproductive age who participated in the household survey for each department in Guatemala is shown in Table 1.4, and the total number of physical measurements of children aged 0-59 months performed, with corresponding response rates by department, is shown in Table 1.5. Response rates were calculated using the following formula: ([# surveyed] ÷ [# selected participants]). High non-response may affect the reliability of the estimates.

According to the 2002 Guatemala Population and Housing Census, we expected a total of 20,756 occupied households in the 97 selected segments in the second follow-up. The SMI household listing exercise found 12,677 occupied households in these segments. Of the 12,677 occupied households, 12,383 completed the SMI household census, yielding a response rate of 98 % for this portion of the survey.

Based on information collected during the SMI household census, a subset of households were visited for individual interviews. A total of 2,861 households were visited for the individual interviews in intervention and comparison areas during the second follow-up. Of these, a total of 2,637 Household Characteristics Questionnaires were completed with heads of households, yielding a household response rate of 91.9% in intervention areas and 93.9% in comparison areas.

Using the household roster completed as part of the SMI household survey, 3,765 women of reproductive age (15-49 years) were identified in the intervention and comparison areas during the second follow-up from the sub-sample of interviewed households as eligible for the Maternal and Child Health Questionnaire. Of these women, 3,742 successfully completed the questionnaire (99.3% in intervention areas and 99.7% in comparison areas). The household roster completed as part of the SMI household survey was also used to identify 3,099 children aged 0-59 months as eligible for the Physical Measurements Module among the interviewed households in intervention and comparison areas during the second follow-up. 3,082 of these children participated in either the interview or measurements module (99.4% in intervention areas and 99.7% in comparison areas).

Among those households that were occupied but did not complete the SMI 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: Households participating in the SMI census and response rates, by department

	Baseline 2013					Second Follow-Up 2018				
	No. Segments	No. households	No. households eligible	No. households censused	Census response rate, %	No. Segments	No. households	No. households eligible	No. households censused	Census response rate, %
Huehuetenango	77	10717	10917	10702	98.0	45	6960	6077	5905	97.2
San Marcos	70	9743	9927	9736	98.1	44	7024	6599	6478	98.2
Intervention	118	16853	17127	16838	98.3	64	10437	9416	9206	97.8
Comparison	29	3607	3717	3600	96.9	25	3547	3260	3177	97.5

*Response rate calculated as the number of complete or partial interviews over total occupied households.
Overall response rate = household response rate*census response rate.

Table 1.3: Households participating in SMI household survey and response rates, by department

	Baseline 2013					Second Follow-Up 2018				
	No. Segments	No. households selected	No. households interviewed	Household response rate, %	Overall response rate, %	No. Segments	No. households selected	No. households interviewed	Household response rate, %	Overall response rate, %
Huehuetenango	77	2538	2306	90.9	89.1	45	1417	1352	95.4	92.7
San Marcos	70	2212	2099	94.9	93.1	43	1444	1294	89.6	88.0
Intervention	118	3825	3533	92.4	90.8	63	2062	1896	91.9	89.9
Comparison	29	925	872	94.3	91.3	25	799	750	93.9	91.5

*Response rate calculated as the number of complete or partial interviews over total selected households

Table 1.4: Women participating in SMI women's health and/or pregnancy interview, by department

	Baseline 2013				Second Follow-Up 2018			
	No. women eligible	No. women interviewed	Woman response rate, %	Overall response rate, %	No. women eligible	No. women interviewed	Woman response rate, %	Overall response rate, %
Huehuetenango	3425	3142	91.7	81.7	1843	1830	99.3	92.1
San Marcos	3088	2757	89.3	83.1	1922	1912	99.5	87.5
Intervention	5142	4658	90.6	82.3	2752	2732	99.3	89.2
Comparison	1371	1241	90.5	82.6	1013	1010	99.7	91.2

*Response rate calculated as the number of complete or partial interviews over total eligible women. All children aged 0-59 months who reside in interviewed households, based on the household roster completed as part of the SMI census, are selected for the caregiver interview and physical measurements.

Table 1.5: Children participating in SMI child health interview and/or physical measurements by department

	Baseline 2013				Second Follow-Up 2018			
	No. children eligible	No. children participated	Child response rate, %	Overall response rate, %	No. children eligible	No. children participated	Child response rate, %	Overall response rate, %
Huehuetenango	2834	2735	96.5	86.0	1504	1497	99.5	92.3
San Marcos	2591	2535	97.8	91.1	1595	1585	99.4	87.4
Intervention	4344	4214	97.0	88.1	2213	2199	99.4	89.3
Comparison	1081	1056	97.7	89.2	886	883	99.7	91.2

*Response rate calculated as the number of complete or partial interviews over total eligible women. All women aged 15-49 years who reside in interviewed households, based on the household roster completed as part of the SMI census, are selected for the interview.

1.5 Characteristics of Non-Participating Households

Data on selected households that were absent or declined to participate in the SMI Household Survey are drawn from the SMI Household Census. A total of 188 of the 2,861 households that were selected at the

second follow-up did not complete the SMI Household Survey. Households that did not complete the SMI Household Survey are referred to as "replaced" households because they were substituted with alternate households selected from the same segment.

Replaced households consisted of one to 14 members (median five members). Three percent of these households were headed by a man, 15.4% of households were headed by a woman, and 81.4% were identified as dual-headed.

Table 1.6: Household characteristics, nonparticipating households

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Head of household						
Dual-headed household	249	83.3	2.2	153	81.4	3.2
Single head, female	39	13.0	2.0	29	15.4	2.7
Single head, male	11	3.7	1.1	6	3.2	1.2

Dual-headed households are those where (a) two individuals were identified as "head" by the respondent or (b) both the person identified as "head" and his or her spouse or partner are household members.

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Number of usual household members	299	0	2	4	5	7	16
Second follow-up 2018							
Number of usual household members	188	0	1	4	5	7	14

1.6 Report structure

The subsequent chapters present characteristics of the surveyed SMI-Guatemala sample in intervention areas only. Each table is presented for comparison areas only in Appendix D, and pooled intervention and comparison areas in Appendix E. Most tables take one of three forms. Tabulations of select-only-one question types are similar to Table 2.2(a). The categories are mutually exclusive, so the proportions sum to 100%. Counts are shown for non-response ("Don't know" or "Decline to respond" recorded), but these cases are always excluded from the denominator.

Tabulations of select-all-that-apply question types look like Table 2.4(a). As respondents can report more than one option, categories are not mutually exclusive, and thus proportions do not sum to 100%. The table shows affirmative cases (n) and non-missing cases (N). Non-response is the difference between non-missing cases (N) and the total sample eligible for that section of the questionnaire, indicated at the start of the chapter. Where statistics are reported for subpopulations, the size of the subpopulation is reported in the same table or the preceding table for straightforward comparison.

Tabulations of continuous variables, where respondents were requested to provide a numeric response, appear similar to Table 2.2(b) and present the range and quartiles (25th percentile, median, 75th percentile) in order to illustrate the distribution of responses across the sample. Counts of non-response are listed in the table and excluded from the count of non-missing cases (N).

2 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 SMI-Guatemala Baseline and Second Follow-up Household Survey.

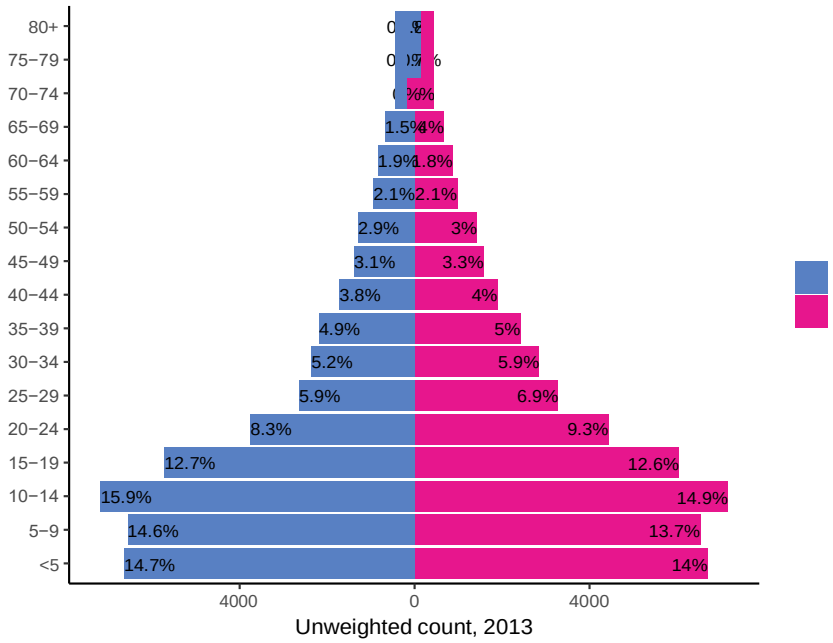
2.1 Characteristics of Participating Households

A total of 1,889 households in the Guatemala second follow-up completed the household characteristics questionnaire. In the baseline, 3,494 completed the survey. 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.

2.2 Age and Sex Composition, SMI Census

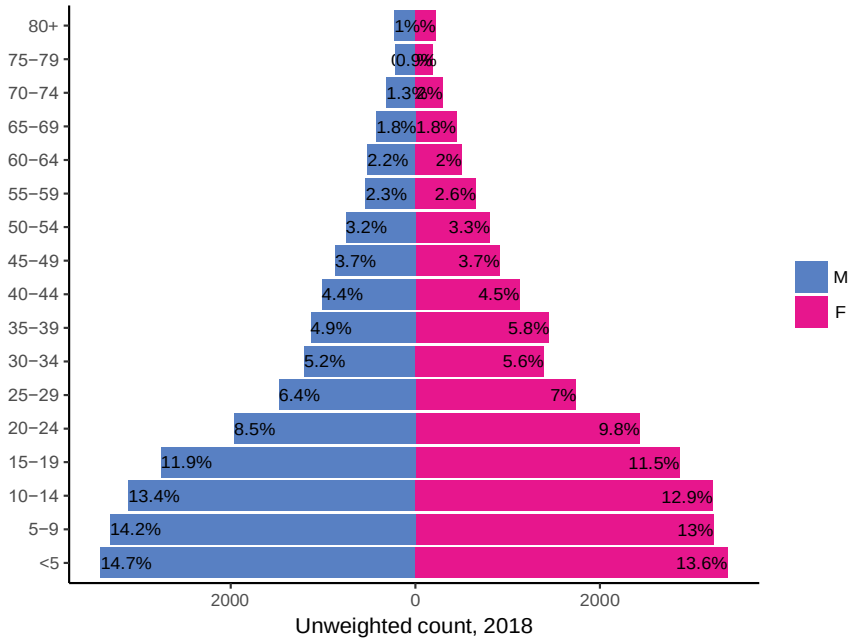
The unweighted distribution of the de facto household population in the surveyed households in the SMI-Guatemala household census by five-year age groups and by sex is shown for baseline (Figure 2.1) and second follow-up (Figure 2.2). Guatemala has a larger proportion of its population in the younger age groups than in the older age groups. Figure 2.2 indicates that in the second follow-up, just under 41% of the population in the Second Follow-up is under age 15 years, more than half (54%) of the population is in the economically productive age range (15-64), and the remaining 5% is age 65 and above.

Figure 2.1: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, baseline survey



* 21 people were excluded due to missing age.

Figure 2.2: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, follow-up survey



2.3 Household Characteristics, SMI Household Survey

The number of households, women and children in the sample are displayed in Table 2.1; and the percent distribution of households by head of household, number of usual members, and marital status are shown in Table 2.2.

Eighty two percent of households in Guatemala identify as dual-headed in the second follow-up. Males are the head of the household in 3.6% of surveyed households in Guatemala, with females as the head of household in the remaining 14.6%. The median household size in Guatemala is five members, with another 15% of households having seven or more members.

Table 2.1: SMI household survey sample sizes: number of total households, women 15-49 years of age, and children 0-59 months

	Baseline 2013	Second Follow-Up 2018
Households	3494	1889
Women	4658	2732
Children	4215	2211

Table 2.2: Household characteristics, SMI household sample

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Head of household						
Dual-headed household	2985	84.2	1.0	1590	81.8	1.1
Single head, female	430	13.6	0.9	233	14.6	1.1
Single head, male	79	2.2	0.4	66	3.6	0.5

Dual-headed households are those where (a) two individuals were identified as "head" by the respondent or (b) both the person identified as "head" and his or her spouse or partner are household members

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Number of usual household members	3494	0	1	4	5	7	25
Second follow-up 2018							
Number of usual household members	1889	0	1	4	5	7	19

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 the health status of household members. 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, location of water source, and information about sanitation facilities is shown in Table 2.3. The majority of surveyed households (85%) have water piped to dwelling, and 15% of households have to go outside their home or yard to a water source.

Many households (59.8%) use a pit latrine and 18% of households use a flush toilet. Four percent of households report having no toilet, compared to 6.4% at baseline.

Table 2.3: Household water source and sanitation facilities

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Household water source						
Piped to dwelling	2676	77.0	2.1	1599	85.0	2.2
Piped to yard/plot	290	8.1	1.2	62	3.3	0.8
Protected dug well	130	4.0	0.8	49	2.4	0.7
Protected spring	41	1.0	0.2	38	1.9	0.8
Rainwater collection	17	0.6	0.2	25	1.4	1.0
Unprotected spring	44	1.1	0.2	23	1.2	0.5
Public tap/standpipe	12	0.3	0.1	16	0.8	0.6
Unprotected dug well	131	3.7	0.7	10	0.6	0.2
Tubewell/borehole	37	0.9	0.2	11	0.5	0.2
Surface water	51	1.7	0.5	7	0.3	0.1
Water jug	3	0.1	0.0	2	0.2	0.2
Tanker truck	0	0.0	0	1	0.0	0
Cart with small tank/drum	1	0.0	0	0	0.0	0
Bottled water	1	0.0	0	0	0.0	0
Other	58	1.5	0.3	45	2.3	0.7
Don't know	2	0	0	1	0	0
Decline to respond	0	0	0	0	0	0
Time it takes to retrieve water (min)						
Water on premises	3125	90.7	1.2	1759	94.3	1.2
Less than 30 minutes	285	7.4	0.9	89	4.8	1.1
30 minutes or longer	62	1.9	0.5	19	0.9	0.3
Don't know	22	0	0	9	0	0
Decline to respond	0	0	0	0	0	0
Sanitation facilities						
Pit latrine	2255	64.8	2.4	1159	59.8	3.6
Flush toilet	577	17.6	2.4	320	18.0	2.9
Pour flush toilet	200	4.9	0.7	174	9.5	1.5
Dry toilet	216	5.9	0.9	152	8.3	1.4
No toilet	237	6.4	1.3	67	3.7	1.3
Other	6	0.3	0.2	17	0.7	0.2
Don't know	2	0	0	0	0	0
Decline to respond	1	0	0	0	0	0

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Shared toilet/facilities	134	3248	3.8	0.5	98	1805	5.2	0.8

2.4.2 *Cooking fuel sources*

Cooking fuel source and the location for cooking food are included in Table 2.4. The percentage of households with a separate kitchen is also shown. The two most commonly reported cooking fuel sources

used in households during the second follow-up are wood (98.6%) and gas tank (8.7%). Among those households with non-missing responses as to what cooking fuel sources they use, 54.9% report normally cooking food in a separate building, 44.1% normally cook food inside the house, and 0.9% normally cook food outdoors. Eighty nine percent of households have a separate kitchen.

Table 2.4: Cooking fuel source and cooking location

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Wood	3455	3494	98.8	0.3	1857	1888	98.6	0.3
Gas tank	129	3494	4.1	1.2	140	1888	8.7	2.2
Electricity	25	3494	0.7	0.2	23	1888	1.2	0.3
Coal	5	3494	0.1	0.1	2	1888	0.1	0.1
Straw/twigs/grass	34	3494	0.9	0.2	0	1888	0.0	0
Agricultural crops	1	3494	0.0	0	0	1888	0.0	0
No food cooked at home	1	3494	0.0	0	0	1888	0.0	0
Other	0	3494	0.0	0	1	1888	0.1	0.1

*categories not mutually exclusive (select all that apply)

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Location for cooking food, if cooking fuel source reported						
In a separate building	1676	47.3	2.0	1038	54.9	2.1
Inside house	1753	50.5	2.0	826	44.1	2.1
Outdoors	63	2.2	0.4	23	0.9	0.3
Other	2	0.1	0.0	1	0.0	0
Don't know	0	0	0	0	0	0
Decline to respond	0	0	0	0	0	0

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Separate kitchen, if cooking fuel source reported and food cooked in the home	1400	1750	80.6	2.2	727	825	89.1	1.4

2.4.3 *Household wealth*

The median number of bedrooms per household is less than two (Table 2.5). Fifty one percent of households in the second follow-up own agricultural land and 5.5% of households rent agricultural land (Table 2.6).

The availability of durable consumer goods is a good indicator of a household's socioeconomic status. Table 2.6 shows the availability of selected consumer goods by household. The large majority of

households (86.5%) have electricity, and the most commonly owned items are mobile phone (85.1%), radio (66.4%), and television (49.2%). Many households (12.1%) own a car and 8.3% own a bicycle.

Table 2.5: Number of bedrooms per household

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Number of bedrooms	3492	2	0	1	1	2	7
Second follow-up 2018							
Number of bedrooms	1886	3	0	1	2	2	6

Table 2.6: Household assets

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Household assets								
Electricity	2746	3494	79.1	2.0	1611	1889	86.5	1.9
Mobile phone	2506	3493	71.4	1.9	1596	1889	85.1	1.3
Radio	1996	3494	57.4	2.0	1227	1889	66.4	2.0
Television	1404	3492	40.4	2.3	902	1889	49.2	2.9
Watch	773	3493	23.2	1.5	292	1888	16.8	1.7
Bank account	235	3430	7.6	1.0	227	1845	14.1	1.8
Sound system	321	3493	9.0	1.0	242	1889	13.2	1.3
Refrigerator	239	3492	7.1	1.1	217	1889	12.7	1.7
Computer	105	3494	3.2	0.7	78	1889	4.3	0.8
Guitar	53	3492	1.4	0.3	33	1889	1.5	0.3
Washing machine	26	3494	0.8	0.3	13	1889	0.9	0.4
Landline phone	25	3493	0.9	0.3	13	1887	0.7	0.4
Transportation assets								
Car	236	3492	7.3	0.9	207	1889	12.1	1.4
Bicycle	229	3494	6.6	0.9	159	1887	8.3	1.2
Motorcycle/scooter	110	3492	3.3	0.5	135	1888	7.5	1.3
Truck	29	3490	0.7	0.2	9	1889	0.8	0.4
Animal cart	3	3493	0.1	0	3	1889	0.1	0.1
Agricultural assets: Livestock ownership								
Chickens	2464	3494	70.2	1.9	1347	1887	71.5	2.3
Pigs	1222	3493	34.1	2.4	601	1889	31.4	2.9
Sheep or goats	433	3493	12.5	1.6	283	1888	14.8	2.4
Cattle	319	3491	9.5	1.3	251	1889	12.3	2.0
Horses, donkeys, or mules	395	3491	10.9	1.3	167	1889	8.8	1.4

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Agricultural assets: Own or rent agricultural land						
No agricultural land	1215	35.5	2.2	790	43.1	2.5
Owns agricultural land	2037	58.7	2.3	945	51.3	2.3
Rents agricultural land	201	5.6	0.7	109	5.5	0.9
Shared/community-held land	10	0.2	0.1	3	0.1	0.1
Don't know	27	0	0	10	0	0
Decline to respond	4	0	0	32	0	0

2.5 Household expenditure

2.5.1 *Total expenditures by type*

Households are surveyed about the amount of money spent over the last month. After reporting total household expenditures, households are then asked how much was spent on specific categories (e.g., food, housing, education, and medical care) over the last four weeks. Table 2.7 shows the itemized monthly expenditure per person living in the household summarized by expenditure quintile. All data are presented in current quetzal (Q), with no adjustment for inflation. Itemized expenditure information was sufficiently complete to report for 1722 households at the second follow-up. The lowest quintile in the study area spent less than 112 Q per person over the last month in the second follow-up.

Table 2.8 shows the budget share, defined as the weighted average expenditure on each category across a quintile divided by the weighted average total itemized household expenditure in the same quintile. Table 2.8 shows that the poorest 20% of households in the study area spend 73.1% of their monthly expenditure on food, on average. In comparison, the wealthiest households spend 44% on food. The poorest households spent 0.8% of their expenditure on medical care, while the wealthiest spent 20%.

Table 2.7: Total itemized per- capita expenditure quintiles, current Guatemala Quetzal

	N	DK/DTR	p20	p40	p60	p80
Baseline 2013						
Per capita monthly household expenditure	2883	75	100	160	226	344
Second follow-up 2018						
Per capita monthly household expenditure	1722	0	112	175	250	393

* Not adjusted for inflation

Table 2.8: Itemized household expenditure by total household budget share

	Bottom quintile	2nd quintile	3rd quintile	4th quintile	Top quintile
Baseline 2013					
Food	70.1	71.2	70.0	67.5	55.7
Alcoholic beverages and tobacco	0.8	0.6	0.9	0.8	0.5
Education expenses	4.1	4.4	4.0	3.6	3.5
Furniture and domestic appliances	0.1	0.2	0.1	0.4	0.9
Recreation	0.1	0.0	0.1	0.1	0.1
Housing and utilities	13.9	12.4	13.0	11.0	10.2
Clothing and shoes	4.0	4.0	4.3	6.7	10.0
Transportation	3.1	3.1	3.4	3.8	3.2
Communication	2.6	2.2	2.0	2.4	2.1
Out-of-pocket medical expenses	1.3	1.9	2.2	3.7	13.6
Social security premiums	0.0	0.0	0.0	0.0	0.0
Private insurance premiums	0.0	0.0	0.0	0.0	0.0
Other costs to access health care	0.0	0.1	0.0	0.0	0.1
Second Follow-Up 2018					
Food	73.1	71.6	67.5	61.9	44.0
Alcoholic beverages and tobacco	0.2	0.4	1.1	2.0	0.7
Education expenses	3.2	2.8	2.9	3.0	2.6
Furniture and domestic appliances	0.0	0.2	0.1	0.2	0.2
Recreation	0.0	0.0	0.1	0.1	0.2
Housing and utilities	12.2	12.3	13.9	12.3	8.7
Clothing and shoes	4.8	5.8	6.2	11.5	18.2
Transportation	2.9	3.1	3.2	3.9	3.4
Communication	2.6	2.3	2.7	2.4	2.2
Out-of-pocket medical expenses	0.8	1.4	2.5	2.8	20.0
Social security premiums	0.1	0.1	0.0	0.0	0.1
Private insurance premiums	0.0	0.0	0.0	0.0	0.0
Other costs to access health care	0.1	0.0	0.0	0.1	0.2

2.5.2 Health expenditures

Of the 1722 households with expenditure data at the second follow-up, 295 reported having health expenditures in the last four weeks. Table 2.9 shows health expenditure by type among households reporting non-zero out-of-pocket health expenditure. Very few households had spending in each category.

Table 2.9: Out-of-pocket medical expenditures by type, last four weeks, current Guatemala Quetzal

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Care that required overnight stay in hospital/clinic	526	2	0	0	0	0	6000
Medications prescribed by health personnel	526	2	0	0	100	300	6000
Care by health professionals not requiring overnight stay	527	1	0	0	0	0	5500
Diagnostic and laboratory tests, X-rays, blood tests	527	1	0	0	0	0	5000
Care or non-prescription medications from pharmacist	528	0	0	0	0	20	1500
Other costs associated with overnight stay in hospital/clinic	525	3	0	0	0	0	1000
Other health care products or services	528	0	0	0	0	0	700
Dentists	528	0	0	0	0	0	300
Care by traditional/alternative healers/birth attendants	528	0	0	0	0	0	200
Health products (glasses, hearing aids, prosthetics, etc.)	528	0	0	0	0	0	50
Second Follow-Up 2018							
Care that required overnight stay in hospital/clinic	295	0	0	0	0	0	7500
Medications prescribed by health personnel	294	1	0	0	0	100	3000
Care by health professionals not requiring overnight stay	295	0	0	0	0	0	12000
Diagnostic and laboratory tests, X-rays, blood tests	295	0	0	0	0	0	1800
Care or non-prescription medications from pharmacist	293	2	0	0	0	0	1500
Other costs associated with overnight stay in hospital/clinic	295	0	0	0	0	0	2000
Other health care products or services	294	1	0	0	0	0	100
Dentists	295	0	0	0	0	0	800
Care by traditional/alternative healers/birth attendants	295	0	0	0	0	0	300
Health products (glasses, hearing aids, prosthetics, etc.)	295	0	0	0	0	0	1700

* Not adjusted for inflation

2.5.3 Source of health expenditure financing

Of the 1722 households with expenditure data at the second follow-up, 39 reported that members of the household went to a hospital and stayed overnight at least once during the last 12 months and paid for expenses associated with the overnight stays. The maximum paid for a hospital stay was 7500 Q.

Table 2.10 shows the source and amount of financing for medical expenditures for overnight hospital stays. No single funding source was used by more than about 25% of households with hospital stays.

Table 2.10: Health care financing by source, last 12 months, current Guatemala Quetzal

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Property sold	118	2	0	0	0	0	50000
Loan from a source other than family or friends	119	1	0	0	0	0	30000
Money from relatives or friends outside the household	118	2	0	0	0	1000	20000
Savings	118	2	0	0	0	0	10000
Other source	118	2	0	0	0	0	8000
Any household member's current income	118	2	0	0	0	221.4	5000
Conditional cash transfer programs	118	2	0	0	0	0	5000
Items sold	118	2	0	0	0	0	5000
Remittances from family or friends abroad	118	2	0	0	0	0	5000
Reducing other household spending	118	2	0	0	0	0	3500
Health insurance plan payment/reimbursement	118	2	0	0	0	0	1
Political donations or grants	118	2	0	0	0	0	0
Second Follow-Up 2018							
Property sold	39	2	0	0	0	0	25000
Loan from a source other than family or friends	39	2	0	0	0	0	7000
Money from relatives or friends outside the household	39	2	0	0	0	1500	7500
Savings	38	3	0	0	0	0	5500
Other source	39	2	0	0	0	0	19000
Any household member's current income	37	4	0	0	0	428.9	3000
Conditional cash transfer programs	39	2	0	0	0	0	0
Items sold	39	2	0	0	0	0	3000
Remittances from family or friends abroad	39	2	0	0	0	0	10000
Reducing other household spending	39	2	0	0	0	0	300
Health insurance plan payment/reimbursement	39	2	0	0	0	0	150
Political donations or grants	39	2	0	0	0	0	0

* Not adjusted for inflation

3 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 SMI-Guatemala second follow-up household survey.

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 participating in the women's health or pregnancy interviews in Guatemala is shown in Figure 3.1 by five-year age groups. About 60% of all women participating in the second follow-up SMI-Guatemala household survey were younger than 30 years of age, 26% were between the ages of 30 and 39, and 14% were between the ages of 40 and 49. While 25% of women reported being married and 47% being partnered, 23% indicated they were never married. Seven percent of women were reported at the SMI-Guatemala census to be the head of household, 48.2% to be the spouse of the head of the household, and 29.9% to be the biological child of the head of the household.

Figure 3.1: Age of respondents, unweighted

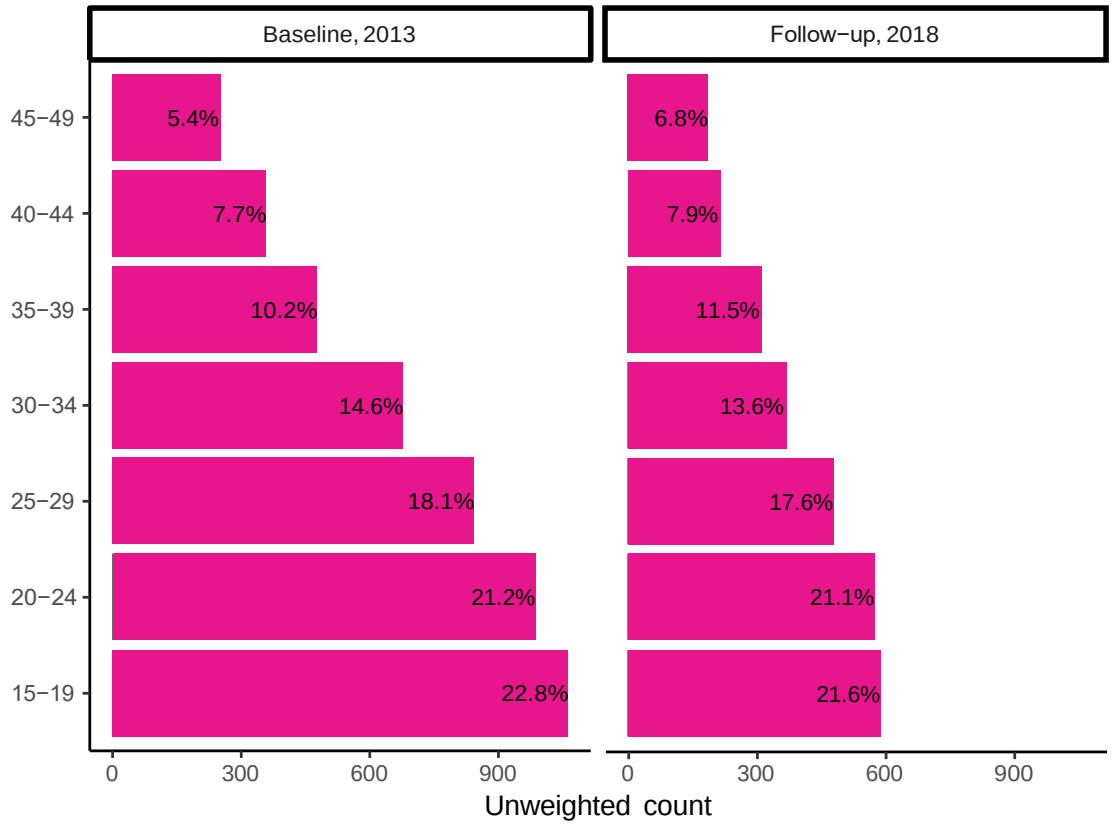


Table 3.1: Demographic characteristics of respondents

	Baseline 2013		Second Follow-Up 2018	
	n	%	n	%
Marital status				
Single	1157	24.8	719	26.3
Married	1244	26.7	647	23.7
Civil union/partnered	1999	42.9	1205	44.1
Divorced	10	0.2	1	0.0
Separated	173	3.7	124	4.5
Widowed	68	1.5	34	1.2
NA	1	0.0	0	0.0
Other	4	0.1	1	0.0
Don't know	2	0.0	0	0.0
Decline to respond	0	0.0	2	0.1
Respondent's relationship to head of household				
Head of household	363	7.8	187	6.8
Spouse	2484	53.3	1316	48.2
Biological child	1174	25.2	816	29.9
Adopted or stepchild	11	0.2	5	0.2
Grandchild	43	0.9	49	1.8
Niece/nephew	10	0.2	6	0.2
Parent	15	0.3	2	0.1
Sibling	36	0.8	18	0.7
Daughter-in-law/son-in-law	446	9.6	289	10.6
Sister-in-law/brother-in-law	10	0.2	5	0.2
Grandparent	1	0.0	0	0.0
Mother-in-law/father-in-law	0	0.0	0	0.0
Other relative	9	0.2	5	0.2
Unrelated person	3	0.1	6	0.2
Partner	27	0.6	17	0.6
NA	24	0.5	10	0.4
Other	2	0.0	2	0.1
Don't know	0	0.0	0	0.0
Decline to respond	0	0.0	0	0.0

*At baseline, marital status is reported by the respondent in the Census. In the second follow-up, marital status is reported by the woman at the start of the Household Survey
* "NA" represents women who were missed in the census and added individually into the household survey, so relationship to the head of household was not registered.

3.2 Education Attainment and Literacy

Seventy two percent of second follow-up survey participants had some formal education (Table 3.2). For 72% of these women, 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." Fifty one percent of women surveyed were able to read the whole sentence. Thirty percent of women could not read the sentence at all.

Table 3.2: Education attainment and literacy

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Ever attended school	2942	4598	62.9	1.8	2024	2728	72.0	2.1
Attended literacy course	223	4599	5.2	0.7	95	2729	3.4	0.5

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Educational attainment and literacy						
Primary	2144	70.8	2.4	1459	72.0	2.6
Secondary	442	15.9	1.2	305	15.1	1.2
High school	319	11.9	1.4	218	11.3	1.7
University	29	1.4	0.5	33	1.6	0.4
Don't know	6	-	-	8	-	-
Decline to respond	2	-	-	1	-	-
Literacy						
Cannot read at all	1591	36.1	1.9	746	30.0	2.2
Can read parts	1033	22.4	1.0	510	18.9	1.2
Can read entire sentence	1880	41.2	2.1	1470	51.0	2.5
Visually impaired	4	0.2	0.1	0	0.0	-
Don't know	63	-	-	3	-	-
Decline to respond	32	-	-	0	-	-

3.3 Employment

As summarized in Table 3.3, the vast majority of respondents in the second follow-up were homemakers (77.4%). Of the 144 women who reported being employed and working at the time of the interview, most (99.1%) identified "Employee" as their occupational role.

Table 3.3: Employment

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Employment status						
Homemaker	3989	85.8	1.2	2147	77.4	1.7
Self-employed	0	0.0	-	213	8.2	1.4
Student	283	7.2	0.8	156	6.1	0.7
Employed/paid for work	194	4.8	0.7	144	5.9	0.8
Employed by a family member without pay	91	1.6	0.3	44	2.0	0.5
Retired	1	0.0	-	6	0.2	0.1
Unable to work due to disability	9	0.3	0.1	6	0.2	0.1
Employed, but did not work in last week	8	0.1	0.1	3	0.1	0.0
Don't know	24	-	-	10	-	-
Decline to respond	4	-	-	0	-	-
Occupational role, among women employed and being paid for work						
Employee	175	89.0	3.2	140	99.1	0.6
Employer	1	0.4	0.4	2	0.9	0.6
Proprietor	10	8.0	3.0	0	0.0	-
Independent contractor	6	2.6	1.1	0	0.0	-
Don't know	2	-	-	2	-	-
Decline to respond	0	-	-	0	-	-

* Self-employed option was not included in the baseline survey

3.4 Exposure to Mass Media

Respondents were asked about their exposure to newspapers, radio, and television. As displayed in Table 3.4, among women who demonstrated full or partial literacy in the second follow-up, 40.4% had weekly exposure to newspapers. Sixty two percent of all women had weekly exposure to radio, and 47.3% had weekly exposure to television.

Table 3.4: Exposure to mass media

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Newspapers, among literate women						
At least once a week	1044	37.3	2.3	779	40.4	2.1
Less than once a week	764	26.9	1.5	342	18.0	1.9
Never	1065	35.9	2.4	810	41.6	2.4
Don't know	25	-	-	47	-	-
Decline to respond	12	-	-	0	-	-
Not applicable	3	-	-	2	-	-
Radio						
At least once a week	2595	59.4	2.4	1682	61.9	2.3
Less than once a week	582	13.2	1.3	365	14.1	1.6
Never	1220	27.3	2.1	655	24.1	2.0
Don't know	19	-	-	25	-	-
Decline to respond	11	-	-	1	-	-
Not applicable	176	-	-	1	-	-
Television						
At least once a week	1732	40.3	2.4	1275	47.3	2.9
Less than once a week	459	10.9	1.1	238	9.0	1.0
Never	2077	48.9	2.5	1200	43.7	2.9
Don't know	12	-	-	13	-	-
Decline to respond	11	-	-	3	-	-
Not applicable	312	-	-	0	-	-

3.5 Access to Health Services

3.5.1 *Proximity to health care facilities*

Table 3.5 - Table 3.7 display the responses to several survey questions that were used to assess access 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.

Excluding the 1226 women who were unable to estimate the distance to the closest health facility in the second follow-up, 75% of women reported living 2 kilometers or less from a health facility (Table 3.5). Three-quarters of the sample indicated that it took less than 30 minutes to reach this facility by the usual means of transportation. One-quarter estimated the travel time from their household to the closest health facility to be 30 minutes or more.

Women were also asked for the travel distance and time to their usual health facility, if they had a usual health facility. Excluding the 1004 women who did not know the distance to the facility in the second follow-up, three-quarters of the women reported traveling up to 2 kilometers, and three-quarters of the women could travel to the closest facility in less than 30 minutes (Table 3.6).

Of the 882 women who reported a recent health facility visit for themselves or for family members in the second follow-up, three-quarters traveled less than 2 kilometers for care. Twenty-five percent of women traveled 2 to 120 kilometers for care. Half of women traveled for less than 15 minutes, and one-quarter spent 30 minutes or more traveling for care. The longest travel time reported for a recent illness was approximately 4 hours.

Table 3.5: Proximity to health care facilities: nearest health facility

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	3352	1251	0	1	1	5	50
Travel time, min	4226	178	1	10	20	40	2700
Second Follow-Up 2018							
Distance, km	1503	1226	0	1	1	2	40
Travel time, min	2418	123	1	10	20	30	1800

Table 3.6: Proximity to health care facilities: usual health facility

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	2864	744	0	1	1	4	200
Travel time, min	3544	56	1	10	20	35	2700
Second Follow-Up 2018							
Distance, km	1348	1004	0	1	1	2	50
Travel time, min	2175	63	1	10	20	30	1800

Table 3.7: Proximity to health care facilities: health facility for recent illness

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	1272	211	0	0.8	1	4	200
Travel time, min	1450	9	1	10	20	30	2700
Second Follow-Up 2018							
Distance, km	468	403	0	1	1	2	120
Travel time, min	820	8	1	10	15	30	240

3.6 Health Status

3.6.1 *Current health status*

Table 3.8 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, 61.8% reported that their health was "about the same" in the second follow-up. While 34.3% reported that their health had improved, 3.9% reported worse health on the day of the interview, compared to last year. Eighty eight percent could "easily" perform their daily activities (e.g., work, housework, and childcare). About 12% of women reported at least some degree of difficulty performing these tasks that was related to their health status.

Table 3.8: Current health status

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Current health relative to last year						
Better	1884	40.2	1.9	964	34.3	2.7
Worse	217	5.1	0.6	109	3.9	0.5
About the same	2481	54.7	1.9	1640	61.8	2.8
Don't know	19	-	-	14	-	-
Decline to respond	2	-	-	2	-	-
Ability to perform daily activities						
Easily	3904	84.1	1.3	2406	88.1	1.3
With some difficulty	622	13.9	1.1	281	10.5	1.2
With much difficulty	54	1.4	0.3	34	1.2	0.3
Unable to do	16	0.5	0.2	5	0.1	0.1
Don't know	6	-	-	1	-	-
Decline to respond	1	-	-	2	-	-

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Days in the last month that physical health was not good						
No days	3751	80.7	1.6	2238	81.9	1.8
1 to 3 days	309	7.1	0.8	190	7.8	1.0
4 to 7 days	510	12.2	1.1	284	10.3	1.5
7 to 29 days	0	0.0	-	0	0.0	-
All month	0	0.0	-	0	0.0	-
Don't know	31	-	-	16	-	-
Decline to respond	2	-	-	1	-	-
Days in the last month that mental health was not good						
No days	4178	90.7	1.0	2510	91.4	1.2
1 to 3 days	160	3.5	0.4	125	5.4	1.0
4 to 7 days	205	5.8	0.7	79	3.2	0.5
7 to 29 days	0	0.0	-	0	0.0	-
All month	0	0.0	-	0	0.0	-
Don't know	58	-	-	12	-	-
Decline to respond	2	-	-	3	-	-

3.6.2 *Recent illness*

Women were asked a series of questions about any illnesses or health problems they had in the two weeks preceding the interview. Out of the women in the second follow-up, 14% reported being sick during that time (Table 3.9). Of the 373 women who reported a recent illness, headache (18.6%), cough (16.5%), fever (13.4), and abdominal pain (12.9%) were the most commonly elicited specific complaints. Twenty three percent of women specified a different health problem not listed in the questionnaire.

Table 3.9: Recent illness (in the last two weeks)

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Respondent was sick during the past two weeks	603	4599	13.8	1.3	373	2727	14	1.5

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of illness, among those sick in the past two weeks						
Headache	152	26.1	2.6	62	18.6	2.6
Cough	51	8.0	1.4	64	16.5	2.7
Fever	96	14.3	1.9	64	13.4	2.0
Abdominal pain	81	13.2	2.3	41	12.9	2.2
Swelling in legs, ankles, or feet	0	0.0	-	13	3.5	1.2
Diarrhea without blood	15	1.9	0.5	9	3.3	1.4
Gynecologic problem	19	2.2	0.6	6	2.1	1.0
Eye/ear infection	7	1.4	0.5	3	1.6	1.2
Vomiting	8	2.0	1.0	5	1.2	0.6
Diarrhea with vomiting	2	0.3	0.2	3	1.1	0.8
Toothache	0	0.0	-	4	1.1	0.7
Diabetes	2	0.4	0.3	2	0.7	0.5
Diarrhea with blood	0	0.0	-	2	0.4	0.2
Anemia	0	0.0	-	2	0.3	0.2
Skin rash/infection	7	0.9	0.4	2	0.3	0.2
Tuberculosis	1	0.2	0.2	1	0.2	0.2
Blood in urine	0	0.0	-	1	0.2	0.2
Malaria	0	0.0	-	0	0.0	-
Asthma	0	0.0	-	0	0.0	-
Bronchitis	0	0.0	-	0	0.0	-
Pneumonia	1	0.5	0.5	0	0.0	-
Measles	0	0.0	-	0	0.0	-
Jaundice	0	0.0	-	0	0.0	-
Stroke	0	0.0	-	0	0.0	-
Hypertension	5	2.0	1.1	0	0.0	-
HIV/AIDS	0	0.0	-	0	0.0	-
Paralysis	0	0.0	-	0	0.0	-
Obstetric problem	3	0.5	0.4	0	0.0	-
Chest infection	0	0.0	-	0	0.0	-
Other	152	26.2	2.8	89	22.7	2.7
Don't know	1	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Options for "Swelling in legs, ankles, or feet", "Blood in urine", and "Chest infection" were available only in the follow-up survey. In the baseline, "Chest infection" was included within the "Cough" answer choice.

3.6.3 *Utilization of health services*

Table 3.10 summarizes data regarding the utilization of health services among the 373 women who reported an illness in the two weeks preceding the second follow-up interview. One hundred fifty three (41.8%) of these women sought care at a health care facility. Many of these women attended a Public health unit health unit (58.2%); another 22.4% attended a Public health center/clinic clinic. Only ten women were hospitalized for their recent illness (6.2% of those who sought care).

Table 3.10: Utilization of health services for illness in the last two weeks

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for recent illness	235	603	38.6	2.4	153	372	41.8	3.4
Admitted to hospital for care*	22	229	7.6	2.1	10	149	6.2	2.2

*Among women who sought care at a public or private hospital, health center/clinic, mobile clinic, or other health facility; public health unit; private office; or pharmacy

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of facility where care was sought						
Public health unit	113	47.6	5.2	84	58.2	6.0
Public health center/clinic	78	33.2	6.2	33	22.4	5.4
Public hospital	11	4.1	1.3	8	5.7	3.1
Private doctor's office	6	3.2	1.2	9	4.7	2.0
Private health center/clinic	4	1.6	0.9	6	2.8	1.0
Private hospital	6	2.7	1.1	3	1.9	1.2
Pharmacy	8	4.0	1.8	4	1.7	0.9
Community health worker	2	0.6	0.4	2	0.9	0.6
Other private health facility	0	0.0	-	1	0.5	0.5
Other public health facility	0	0.0	-	1	0.4	0.4
Public mobile clinic	3	1.2	0.8	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Traditional healer	1	0.8	0.8	0	0.0	-
Other	3	1.0	0.6	2	0.9	0.6
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

3.6.4 *Insurance coverage*

Less than 24% of women reported being covered by any type of health insurance in the second follow-up (Table 3.11).

Table 3.11: Insurance coverage

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
No insurance	4278	93.8	1.3	1889	75.9	2.2
Ministry of Public Health and Social Assistance (MSPAS)	261	5.2	1.3	620	22.0	2.2
Guatemalan Institute of Social Security (IGSS)	45	0.9	0.2	30	1.4	0.4
Private insurance	2	0.0	-	4	0.3	0.1
Armed forces	1	0.0	-	0	0.0	-
Other	4	0.1	0.1	8	0.4	0.2
Don't know	8	-	-	177	-	-
Decline to respond	4	-	-	1	-	-

3.6.5 *Other barriers to health care access*

There are many other barriers to accessing health care. Women who reported that they sometimes or never sought care when they felt sick were asked what reasons prevented them from receiving health care when it was needed. Interviewers were instructed to ask in an open-ended manner for all applicable reasons, and to mark the appropriate response options in the questionnaire based on the woman's response. Table 3.12 summarizes the responses to this section. The most commonly cited factors influencing health care access in the second follow-up were the preference for treatment at home (41.4%) and the belief that the health center does not have sufficient medicines (32.6%). Fifteen percent of women did not believe they were ill enough to seek treatment. Access and quality of care were also important barriers: numeric(0)% of women said the health center did not carry sufficient medication, 4.3% said they did not trust facility personnel, and 3.9% said the care was too expensive.

Table 3.12: Other barriers to health care utilization, women 15-49 years of age who were sick in the last two weeks but did not seek care

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Treated self at home	189	355	53.4	3.7	91	207	41.4	5.5
Health center does not have sufficient medicines	67	355	18.9	2.7	58	207	32.6	5.7
Not sick enough to seek treatment	62	355	16.5	3.0	32	207	14.6	3.2
Too busy with work, children, or other commitments	19	355	5.3	1.5	14	207	7.0	2.4
Do not trust the personnel	8	355	2.6	1.3	8	207	4.3	1.7
Care is too expensive	42	355	13.5	2.5	9	207	3.9	2.0
Health center is not well-equipped	23	355	6.2	1.7	8	207	3.9	1.6
It is difficult to deal with health center personnel	1	355	0.3	0.3	5	207	3.4	1.8
Health center infrastructure is poor	7	355	1.7	0.7	6	207	3.2	1.5
Health center is too far away	27	355	6.0	1.6	9	207	3.1	1.2
Did not want to go alone	1	355	0.2	0.2	5	207	2.1	1.0
Tried, but no staff was at the center	5	355	2.2	1.3	4	207	2.0	1.2
Could not afford transportation	8	355	2.4	1.1	2	207	0.7	0.5
Tried, but was refused care	1	355	0.2	0.2	2	207	0.7	0.4
Could not get permission to go to the doctor	0	355	0.0	-	2	207	0.7	0.4
Did not know where to go	2	355	1.1	0.9	2	207	0.5	0.4
Health center personnel not knowledgeable	4	355	2.2	1.3	1	207	0.3	0.3
Could not find transportation	6	355	2.1	1.0	0	207	0.0	-
Was previously mistreated	1	355	0.2	0.2	0	207	0.0	-
Religious or cultural beliefs	0	355	0.0	-	0	207	0.0	-
Other	25	355	7.0	1.9	21	207	8.1	1.7

*categories not mutually exclusive (select all that apply)

4 CHAPTER 4: EXPOSURE TO HEALTH SYSTEM INTERVENTIONS

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

4.1 Exposure to Community Health Workers

Respondents were asked about their exposure to community health workers. Two percent of women reported meeting with a community health worker in the month preceding the second follow-up interview (Table 4.1). Of the women in the second follow-up, 1.3% met only once, and 0.2% met two or more times.

Table 4.1: Exposure to community health workers, women 15-49 years

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Did not meet	4352	96.0	0.4	2655	98.5	0.4
One time	177	3.3	0.4	39	1.3	0.3
Two times	22	0.4	0.1	6	0.2	0.1
Three times	3	0.0	-	2	0.0	-
Four or more times	6	0.2	0.1	0	0.0	-
Don't know	37	-	-	26	-	-
Decline to respond	4	-	-	0	-	-

Referral and advice services provided by community health workers are summarized in Table 4.2. Among women who met with a community health worker in the last month during the second follow-up, vaccination for children was the most common service provided (56.8%). Advice about family planning methods or counseling (56.5%) and referral for antenatal care (32.4%) was also frequently reported.

Table 4.2: Services provided by community health workers, women 15-49 years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Vaccination for children	172	209	73.1	4.6	26	46	56.8	8.5
Family planning methods or counseling	122	210	51.6	4.6	24	45	56.5	7.5
Referral for antenatal care	85	208	39.3	5.2	14	46	32.4	8.0
Child nutrition counseling	131	211	56.7	5.3	12	45	24.1	6.6
Referral for postnatal care	56	206	25.1	3.9	5	44	14.0	6.7
Information, education, and communication sessions (IEC)	60	209	23.9	3.8	4	44	8.4	3.2
Referral for in-facility delivery	50	207	20.1	3.2	2	43	3.9	2.7
Referral for voluntary HIV/syphilis counseling and testing*	53	206	21.2	3.6	1	44	1.9	1.9

* For the prevention of HIV/syphilis transmission from mother to child

	Second Follow-Up 2018			
	n	N	%	SE
Provided deworming treatments	19	46	41.9	6.1
Provided micronutrients	14	46	29.0	6.1
Provided diarrhea treatment with ORS and zinc	9	44	18.9	5.7
Other	2	44	5.3	4.0

Questions about these topics were not asked at baseline. They were added to the second follow-up survey to track exposure to SMI interventions.

4.2 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, information provided by community health workers, and respectfulness of community health workers. Results are displayed in Table 4.3.

Table 4.3: Satisfaction with community health workers, women 15-49 years of age who met with community health workers in the last month

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Satisfaction with number visits from community health workers						
Very dissatisfied	5	3.8	2.1	10	24.3	9.0
Dissatisfied	30	13.7	3.3	16	31.6	7.8
Satisfied	161	75.0	4.3	24	40.6	9.0
Very satisfied	20	7.5	2.3	2	3.5	2.4
Don't know	8	-	-	4	-	-
Decline to respond	0	-	-	1	-	-
Satisfaction of knowledge and training of community health workers						
Very dissatisfied	3	3.0	2.1	9	23.6	9.1
Dissatisfied	22	10.9	3.1	16	32.3	7.8
Satisfied	172	79.7	4.4	24	42.3	9.3
Very satisfied	16	6.5	2.2	1	1.8	1.8
Don't know	11	-	-	6	-	-
Decline to respond	0	-	-	1	-	-
Satisfaction with information provided by community health workers						
Very dissatisfied	2	0.9	0.7	11	26.6	8.9
Dissatisfied	18	9.7	2.8	16	30.0	6.9
Satisfied	176	82.2	3.1	24	40.0	9.0
Very satisfied	18	7.3	2.2	2	3.4	2.3
Don't know	10	-	-	3	-	-
Decline to respond	0	-	-	1	-	-
Satisfaction with respectfulness shown by community health workers						
Very dissatisfied	4	3.6	2.3	11	27.0	8.9
Dissatisfied	22	11.6	3.3	13	24.7	6.8
Satisfied	154	76.0	4.7	27	46.6	9.1
Very satisfied	21	8.8	2.4	1	1.7	1.7
Don't know	23	-	-	4	-	-
Decline to respond	0	-	-	1	-	-

4.3 Counseling provided in health facilities

Respondents who had visited a health facility in the last 12 months (826 women at the second follow-up) were asked whether they were given counseling about certain topics by health center personnel. Approximately 19.8% of women in the second follow-up reported receiving guidance or advice about breastfeeding in the 12 months preceding the interview (Table 4.4). Approximately 21.8% of women in the second follow-up reported receiving guidance or advice about child nutrition in the 12 months preceding the interview (Table 4.4). Approximately 24.4% of women in the second follow-up reported receiving guidance or advice about danger signs for children's health in the 12 months preceding the interview (Table 4.4).

Table 4.4: Exposure to breastfeeding, child nutrition, and child health interventions, women 15-49 years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Breastfeeding	419	1243	31.4	2.4	188	821	19.8	2.2
Child nutrition	458	1240	33.4	2.3	209	824	21.8	2.5
Danger signs for children's health	358	1230	27.1	2.3	232	819	24.4	2.9

4.4 Counseling provided in health facilities to women with children

In the follow-up survey, respondents who had visited a health facility in the last 12 months and who had children (735 women at the second follow-up) were asked whether they were given counseling about certain topics by health center personnel.

Table 4.5: Counseling provided in health facilities to women with children

	Second Follow-Up 2018			
	n	N	%	SE
Deworming	213	729	27.2	2.9
Micronutrients	170	729	20.9	2.6
Diarrhea treatment with ORS and zinc	155	726	19.3	2.3

Questions about these topics were not asked at baseline. They were added to the second follow-up survey to track exposure to SMI interventions.

5 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 SMI-Guatemala second follow-up household survey.

Family planning questions were asked only to women of reproductive age who were married or partnered. During the SMI-Guatemala baseline household survey, family planning questions were asked to women whose marital status was reported as "married" or "partnered" by the SMI-Guatemala household census respondent. During the second follow-up, the family planning section was instead conditioned on a question about marital status asked to the respondent herself at the start of the woman's health interview. This captured participants who had a change in marital status between the census and household survey and participants whose marital status was incorrectly recorded in the census. At the baseline, 3,202 women qualified for the family planning questions, and at the second follow-up, 1,848 women qualified.

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 are certain days when a woman is more likely to become pregnant, and when during the menstrual cycle those days occur. Responses to these questions are summarized in Table 5.1. In the second follow-up, 35.3% of women indicated that there were certain days when a woman is more likely to become pregnant, and of these women, only 38.4% identified the correct timing of the fertile period (halfway between two periods).

Table 5.1: Knowledge of the fertile period, women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Knowledge of the fertile period	744	1523	48.3	2.5	428	1194	35.3	3.4

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Knowledge of timing of fertile period, among women who know of fertile period						
Just before period	59	8.2	1.4	51	14.5	2.8
During period	22	2.4	0.6	69	15.8	2.9
Just after period	520	74.9	3.0	136	31.3	3.7
Halfway between periods	93	14.3	2.6	150	38.4	2.7
Other	2	0.2	0.1	0	0.0	-
Don't know	48	-	-	21	-	-
Decline to respond	0	-	-	1	-	-

5.2 Use of Family Planning Methods

5.2.1 *Current use*

The coverage 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. Women who said they had heard of a family planning method were asked if they were currently using that method. Table 5.2 displays the percentage of all women using at least one family planning method, as well as the percentage of women reporting use of more than one family planning method at the time of the interview. Twenty five percent of all survey respondents in the second follow-up reported current use of at least one family planning method.

Women considered "in need" of family planning methods are those who are married or partnered, excluding those who report the following characteristics: does not have sexual relations, virgin, menopausal, infertile, hysterectomy, pregnant, or wants to become pregnant. Even women not considered "in need" of contraception may use a method. Table 5.3 shows the uptake of modern family planning methods among all married and partnered women (25%), and among women considered "in need" of contraception (33%).

Table 5.2: Current use of family planning methods, women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Currently in need of contraception	2372	3200	73.7	1.3	1423	1847	73.8	1.7
Current use of any method, among married or partnered women	703	3200	21.7	1.5	472	1847	25.0	2.1

Table 5.3: Current use of modern family planning methods, women 15-49 years of age who are married or partnered and in need of contraception

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Current use of any method, among women in need of contraception	674	2372	27.9	1.9	461	1423	33.0	2.8
Current use of modern method, among women in need of contraception	641	2372	25.8	1.8	441	1423	31.6	2.7

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Number of methods the respondent is currently using						
Not using any family planning methods	1709	72.5	1.9	964	67.3	2.8
Using 1 family planning method	656	27.1	1.9	458	32.7	2.8
Using 2 family planning methods	6	0.2	0.1	1	0.1	0.1

Table 5.4 displays the percentage of all women using specific family planning methods. The methods most commonly in use during the second follow-up are injectables (15.9%) and female sterilization (5.5%).

Table 5.4: Current use of family planning methods, by type of method, for women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Injectable	481	3167	14.1	1.1	319	1836	15.9	1.4
Female sterilization	85	3166	3.2	0.5	82	1835	5.5	1.1
Implant	43	3168	1.3	0.3	24	1836	1.1	0.3
Oral contraceptive	27	3168	1.2	0.3	13	1837	0.8	0.3
Rhythm	19	3168	1.1	0.3	11	1835	0.6	0.2
Intrauterine device (IUD)	21	3167	0.7	0.2	3	1837	0.2	0.1
Male condom	6	3166	0.1	0.1	6	1837	0.2	0.1
Withdrawal	3	3167	0.1	0.1	5	1836	0.2	0.1
Male sterilization	1	3168	0.1	0.1	2	1836	0.1	0.1
Lactational amenorrhea	6	3167	0.2	0.1	2	1836	0.1	0.1
Other traditional method	10	3167	0.6	0.4	3	1836	0.1	0.1
Female condom	0	3168	0.0	-	0	1837	0.0	-
Diaphragm	0	3168	0.0	-	0	1836	0.0	-
Sponge	0	3167	0.0	-	0	1836	0.0	-
Emergency contraception (Plan B)	0	3167	0.0	-	0	1837	0.0	-
Other modern method	2	3168	0.0	-	0	1837	0.0	-

* categories not mutually exclusive (select all that apply)

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 are summarized in Table 5.5.

The public sector is the source most commonly reported by users of most modern family planning methods, including female sterilization. Pharmacies are important sources for injectables, the pill, and male condoms. Women report learning about traditional methods in the public sector, from friends or relatives, or at church (Table 5.6).

Table 5.5: Source of modern family planning methods, women 15-49 years of age who are married or partnered

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Injectable						
Public health unit	243	49.9	3.7	177	53.3	5.2
Public health center/clinic	158	30.7	3.4	92	29.5	4.8
Pharmacy	20	5.7	1.7	32	10.7	1.9
Public hospital	14	3.0	1.3	8	3.2	2.1
Private hospital	0	0.0	-	4	1.4	0.7
Private doctor's office	0	0.0	-	2	0.9	0.7
Community health worker	31	7.0	1.9	2	0.5	0.3
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private health center/clinic	1	0.2	0.2	0	0.0	-
Private mobile clinic	1	0.2	0.2	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	1	1.1	1.1	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	1	0.1	0.1	0	0.0	-
Other	11	2.1	0.7	2	0.6	0.4
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Female sterilization						
Public hospital	46	46.7	8.1	39	43.5	7.5
Private hospital	6	9.7	5.3	14	21.0	5.7
Public health center/clinic	16	17.5	5.6	7	10.9	3.8
Public health unit	10	15.0	8.0	6	5.1	2.2
Private doctor's office	1	0.6	0.6	4	3.1	1.6
Other public health facility	0	0.0	-	2	3.0	2.3
Private health center/clinic	3	4.0	3.3	2	3.0	2.3
Other private health facility	0	0.0	-	1	0.8	0.8
Public mobile clinic	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	1	2.1	2.1	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	2	4.5	3.5	7	9.7	7.6
Don't know	0	-	-	1	-	-
Decline to respond	0	-	-	0	-	-
Oral contraceptive						
Public health unit	10	38.9	14.9	8	51.6	18.8
Public health center/clinic	11	47.8	14.4	4	44.1	20.0
Public hospital	0	0.0	-	1	4.3	4.3

(continued)

	n	%	SE	n	%	SE
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	1	1.9	1.9	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	1	2.6	2.2	0	0.0	-
Community health worker	3	6.8	4.1	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	1	2.1	2.2	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Intrauterine device (IUD)						
Public health unit	3	9.7	5.9	2	76.7	23.0
Public health center/clinic	10	31.1	11.7	1	23.3	23.0
Public hospital	4	16.5	8.4	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	1	11.1	10.3	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	1	3.9	3.9	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	2	27.8	16.7	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Implant						
Public health center/clinic	21	49.2	10.3	11	41.4	10.0
Public health unit	15	33.3	9.4	10	39.8	10.3
Private health center/clinic	1	1.4	1.4	2	15.6	11.1
Public hospital	0	0.0	-	1	3.2	3.2
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	1	4.9	4.8	0	0.0	-
Private hospital	2	2.6	1.9	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-

(continued)

	n	%	SE	n	%	SE
Community health worker	1	2.4	2.3	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	2	6.1	4.3	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Male condom						
Pharmacy	2	40.2	21.3	5	84.6	14.8
Public health unit	2	29.1	18.3	1	15.4	14.8
Public hospital	0	0.0	-	0	0.0	-
Public health center/clinic	2	30.7	19.6	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	0	0.0	-	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Male sterilization						
Private health center/clinic	0	0.0	-	1	48.2	35.6
Public hospital	0	0.0	-	0	0.0	-
Public health unit	0	0.0	-	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	1	100.0	0.0	1	51.8	35.6
Don't know	0	-	-	0	-	-

(continued)

	n	%	SE	n	%	SE
Decline to respond	0	-	-	0	-	-

*Diaphragm and emergency contraceptive (Plan B) omitted from table because no women reported receiving them in baseline or follow-up.

Table 5.6: Source of knowledge about traditional family planning methods, women 15-49 years of age who are married or partnered

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Lactational amenorrhea						
Public health unit	1	30.0	24.4	2	100.0	0.0
Public hospital	0	0.0	-	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	1	23.3	20.8	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	1	27.4	23.2	0	0.0	-
Other	1	19.4	18.1	0	0.0	-
Don't know	2	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Rhythm						
Friend/parent	6	32.7	13.9	6	67.9	14.8
Public health center/clinic	2	19.9	13.0	2	12.7	9.2
Public health unit	2	7.5	5.9	1	7.3	7.3
Public hospital	1	3.1	3.1	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	1	3.1	2.7	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	2	3.3	2.6	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-

Other	5	30.3	13.8	2	12.1	8.8
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Withdrawal						
Friend/parent	1	23.9	25.8	3	72.3	23.3
Public hospital	0	0.0	-	0	0.0	-
Public health unit	1	76.1	25.8	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Other	0	0.0	-	1	27.7	23.3
Don't know	1	-	-	0	-	-
Decline to respond	0	-	-	1	-	-

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 of interruption*

The prevalence of interruption and non-use of family planning methods is summarized in Table 5.7. Of women participating in the second follow-up survey, 73.8% are considered "in need" of contraception (i.e., they did not report any of the following: does not have sexual relations, virgin, menopausal, infertile, hysterectomy, pregnant, or wants to become pregnant). Among these women in need, 1.2% reported any interruption in the use of family planning methods in the previous year.

Table 5.7: Interruption and non-use of family planning methods, among women 15-49 years of age who are married or partnered and in need of contraception

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Discontinuation rate*	57	2372	2.4	0.4	20	1423	1.2	0.3

* any interruption in use during the last year, among women in need of contraception

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Number of interruptions in use during the last year						
none	2315	97.6	0.4	1403	98.8	0.3
once	37	1.6	0.4	13	0.8	0.2
2-6 times per year	20	0.8	0.2	7	0.4	0.1
7-12 times per year	0	0.0	-	0	0.0	-
>12 times per year	0	0.0	-	0	0.0	-

5.4.2 *Reasons for non-use*

Women who indicated they were not using any method on the day of the interview were asked to specify all reasons why they did not use a method. The interviewer matched responses provided by the respondent to a list of reasons in the questionnaire (Table 5.8). The most commonly cited reasons for non-use at the time of the second follow-up interview were, do not like to use contraception (23.8%), respondent is married (13.4%), and respondent knows no method (12.2%).

Table 5.8: Reasons for non-use of family planning methods, women 15-49 years of age who are married or partnered and who are not using family planning methods

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Do not like to use contraception	466	2176	21.4	1.5	325	1283	23.8	2.0
Married	49	2176	2.3	0.5	184	1283	13.4	2.8
Knows no method	438	2176	19.9	1.8	156	1283	12.2	2.5
Not sexually active	167	2176	8.2	1.0	114	1283	11.4	1.9
Trying to become pregnant	184	2176	9.1	0.8	91	1283	7.6	0.9
Spouse or partner opposed to use	282	2176	11.3	1.1	100	1283	6.8	0.9
Using contraception is uncomfortable	105	2176	4.1	0.7	80	1283	5.7	1.0
Infrequently sexually active	85	2176	4.5	0.7	59	1283	5.2	1.0
Currently pregnant	95	2176	3.7	0.5	52	1283	4.0	0.8
Using contraception interferes with normal body processes	120	2176	5.5	0.9	38	1283	3.0	0.7
Knows no source for methods	63	2176	2.3	0.4	36	1283	2.8	0.8
Infertile	33	2176	2.0	0.5	20	1283	2.4	0.6
Against religious beliefs	29	2176	1.3	0.3	33	1283	2.4	0.6
Breastfeeding	62	2176	2.3	0.5	40	1283	2.3	0.5
Opposed to use	93	2176	4.2	0.8	29	1283	1.9	0.5
Concerned about side effects	95	2176	4.5	0.6	28	1283	1.9	0.4
Unmarried	32	2176	1.8	0.4	17	1283	1.4	0.4
Menopausal	32	2176	2.0	0.5	9	1283	1.3	0.5
No method was available	4	2176	0.1	0.1	7	1283	0.8	0.4
No menstrual period since giving birth	20	2176	0.9	0.3	11	1283	0.7	0.3
The health facility is too far away	18	2176	0.6	0.2	7	1283	0.7	0.3
Have undergone hysterectomy	11	2176	0.5	0.2	3	1283	0.4	0.2
Mistrust health center staff	21	2176	0.8	0.2	8	1283	0.4	0.1
The method is too expensive	17	2176	0.8	0.3	2	1283	0.2	0.1
Preferred method was not available	3	2176	0.3	0.2	2	1283	0.2	0.1
Health facility staff difficult to deal with	6	2176	0.2	0.1	3	1283	0.2	0.1
Could not find transportation to a health facility	6	2176	0.2	0.1	1	1283	0.1	0.1
Could not afford transportation	5	2176	0.2	0.1	1	1283	0.1	0.1
Virgin	5	2176	0.1	0.1	0	1283	0.0	-
Others opposed to use	7	2176	0.4	0.2	1	1283	0.0	-
Other	139	2176	6.5	0.8	54	1283	4.4	0.9

* "Using contraception affects health" was an option offered in the second follow-up, but was not available at baseline. 266 women selected this as a reason for not using family planning at the second follow-up.
* categories not mutually exclusive (select all that apply)

5.5 Family Planning Intentions and Decision-Making

5.5.1 *Participation in family planning decision*

In this setting in the second follow-up, 80.6% of women report that decisions about family planning methods are jointly made by the respondent and her partner. In only 8.1% of cases, the decision to use family planning methods is up to the respondent's partner alone.

Table 5.9: Participation in family planning decision-making, women 15-49 years of age who are married or partnered and are currently using family planning methods

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Joint decision	875	87.2	1.9	512	80.6	2.4
Mostly the respondent	41	4.8	1.4	66	9.9	1.7
Mostly respondent's spouse/partner	68	7.6	1.3	56	8.1	1.6
Others	4	0.3	0.2	3	1.2	0.7
Not applicable - not partnered	0	0.0	-	1	0.2	0.2
Don't know	18	-	-	14	-	-
Decline to respond	5	-	-	6	-	-

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 5.10 shows the percent of women currently using family planning methods who were told about other options for contraception (42.6% of women in the second follow-up).

Table 5.10: Family planning decision-making, informed choice, women 15-49 years of age who are married or partnered and who are currently using family planning methods

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Informed about other family planning options by a doctor, nurse, or community health worker	492	989	49.4	3.2	283	648	42.6	3

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 5.11). Forty four percent of women in the second follow-up reported being advised about family planning at the health care facility they attend during the past 12 months. Seven percent of all respondents indicated that they had been visited by a health promoter who provided information about family planning in the last 12 months. Just 2.4% 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 5.11: Family planning messages delivered by health care providers in the last 12 months, women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Discussion about family planning methods with staff member at a health facility	484	939	49.6	2.6	284	627	43.5	2.7
Discussion about family planning methods during health promoter visit	340	3166	10.1	1.2	139	1837	7.0	0.8
Visit by promotor, among women who had not visited a health facility	93	2214	3.9	0.6	31	1198	2.4	0.6

5.7 Age at First Birth

5.7.1 *Age at first birth*

Seventy percent of respondents in the second follow-up had ever given birth (Table 5.12). Of these women, the median age of the women when their first child was born was 19 years old. Only a quarter of women were 22 years old or older when their first child was born. Four percent of women reported a history of stillbirth, miscarriage, and/or abortion.

Table 5.12: Parity and age at first birth, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Ever given birth	3600	4603	71.7	1.1	2054	2721	69.5	1.2
Ever had a stillbirth, miscarriage, or abortion	224	4585	4.8	0.5	98	2725	3.5	0.5

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Age at first birth, among parous women	3416	0	10	17	19	21	45
Second follow-up 2018							
Age at first birth, among parous women	1958	0	13	17	19	22	45

6 CHAPTER 6: MATERNAL HEALTH CARE

This chapter summarizes key indicators pertaining to antenatal care, delivery care, and postpartum care for the most recent live birth in the last two years as reported by women of reproductive age (15-49 years) participating in the SMI-Guatemala second follow-up household survey. Participating women were interviewed about all live births in the last five years, but to reduce the impact of recall bias, results reported here are for each woman's most recent birth in the last two years. At the baseline, 1893 women were interviewed about at least one birth in the last two years. At the second follow-up, 947 women were interviewed about births in the last two years.

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 important in assessing the physical status of women during pregnancy and 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 same details were recorded for up to eight antenatal care visits.

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. Definition of "most recent birth" changed between baseline and second follow-up. The type of facility where antenatal care was sought is detailed in Table 6.2.

Among women with a child under the age of 2 in the second follow-up, 90.8% attended at least one antenatal care visit and 79.2% of women had at least one antenatal care visit with a doctor or professional nurse. At the second follow-up, 19.5% of women had an antenatal care visit during the first trimester (first 12 weeks) with a doctor or professional nurse, compared to 11.8% at the baseline. The median age of gestation at the first antenatal care visit during the second follow-up was 4 months.

Table 6.1: Antenatal care coverage for the most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Attended at least one antenatal care visit	1521	1893	80.4	1.7	858	945	90.8	1.1
Attended at least one antenatal care visit with doctor or professional nurse	723	1893	38.6	2.2	748	945	79.2	1.9
Antenatal care visit with doctor or professional nurse in the first trimester (12 weeks)	218	1843	11.8	1.2	180	906	19.5	2.0

* Definition of most recent birth changed between baseline and second follow-up

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Month of gestation of first ANC visit	1471	49	0.2	2	3	5	9
Second follow-up 2018							
Month of gestation of first ANC visit	819	38	0.2	2.2	4	5	9

Regarding the type of facility where antenatal care was usually sought during the second follow-up (Table 6.2), most women who attended antenatal care for their most recent delivery in the last two years sought care in a Public health unit (58.9%) or Public health center/clinic (20.5%). Only 3.7% of women sought antenatal care with a public hospital.

Table 6.2: Usual antenatal care location, women 15-49 years of age who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Public health unit	411	26.1	1.9	497	58.9	3.6
Public health center/clinic	281	19.6	1.9	178	20.5	3.0
Public hospital	39	3.2	1.4	31	3.7	1.3
Traditional healer	44	3.0	0.7	18	2.1	0.6
Private doctor's office	11	0.5	0.2	11	1.2	0.3
Private hospital	9	0.5	0.2	8	0.9	0.6
Community health worker	61	4.2	0.7	7	0.8	0.4
Private health center/clinic	19	1.4	0.4	5	0.6	0.2
Other public health facility	2	0.2	0.1	2	0.3	0.2
Public mobile clinic	9	0.6	0.3	1	0.1	0.1
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	4	0.3	0.2	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Other	616	40.2	2.2	94	11.1	1.3
Don't know	12	-	-	2	-	-
Decline to respond	3	-	-	4	-	-

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 until delivery. According to the national norm in Guatemala, it is recommended that women receive a minimum of four antenatal care visits. The frequency of antenatal care visits is summarized in Table 6.3. Table 6.4 shows the percentage of women with four or more visits with skilled providers and according to best practices.

In the second follow-up, 56.9% of women reported having four or more antenatal care visits during their most recent pregnancy in the last two years. Ten 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. As shown in Table 6.4, 1.4 percent of all women in the second follow-up survey had four or more antenatal care visits, at least one of which was with a doctor or professional nurse, and with each of 10 defined best practices performed at least once during pregnancy (measurement of blood type, test for anemia, test for syphilis, test for HIV, test of blood glucose, test for proteinuria, measurement of maternal blood pressure, measurement of maternal weight, measurement of fundal height, and measurement of fetal heartbeat).

Table 6.3: Frequency of antenatal care visits for the most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
None	372	20.0	1.7	87	9.7	1.2
1-3 visits	467	25.4	1.5	304	33.4	2.0
4-6 visits	627	33.5	1.6	415	46.7	2.2
7-9 visits	282	14.9	1.3	77	8.6	1.1
10+ visits	104	6.1	0.8	15	1.6	0.5
Don't know	33	-	-	43	-	-
Decline to respond	0	-	-	3	-	-

Table 6.4: Frequency of antenatal care visits with skilled provider for the most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
At least four antenatal care visits with doctor or professional nurse	505	1857	27.4	2.1	457	899	51.2	2.6
At least four antenatal care visits with doctor or professional nurse according to best practices*	16	1860	0.8	0.2	14	899	1.4	0.5

*measuring blood type, anemia, syphilis, HIV, glucose, proteinuria, blood pressure, weight, fundal height, fetal heartbeat

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 6.5 and Table 6.6). 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 during the second follow-up: measured maternal weight (86.4%), measured maternal blood pressure (71.6%), tested for anemia (56.4%), measured blood type (52.8%), measured fetal heartbeat (51.4%), tested for proteinuria (51%), measured fundal height (48.1%), measured blood glucose (30.6%), tested for syphilis (18.6%), and tested for HIV (16.8%). Women were unfamiliar with several tests, as evidenced by the high number of missing responses for proteinuria and syphilis in particular.

Table 6.5: Content of antenatal care visits - best practices, among women 15-49 years who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Measured maternal weight	870	1492	58.8	2.3	738	852	86.4	1.5
Measured maternal blood pressure	655	1479	44.6	2.6	609	845	71.6	1.9
Tested for anemia	118	222	54.2	4.1	142	255	56.4	4.3
Measured blood type	143	230	62.0	4.0	127	242	52.8	4.3
Measured fetal heartbeat	600	1465	41.4	2.5	434	847	51.4	3.3
Tested for proteinuria	117	234	49.5	3.8	137	268	51.0	3.8
Measured fundal height	826	1459	57.2	2.4	392	814	48.1	2.9
Measured blood glucose	72	229	32.5	3.8	75	251	30.6	4.0
Tested for syphilis	53	224	23.5	3.5	51	257	18.6	3.7
Tested for HIV	131	1444	9.0	1.1	142	824	16.8	2.2

Most women in the second follow-up had a tested for diabetes (53.5%) and a collected urine specimen (36.5%) collected during their antenatal care visits for the most recent birth during the past two years.

Table 6.6: Content of antenatal care visits - other services provided, among women 15-49 years who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Tested for diabetes	36	69	54.0	7.4	40	73	53.5	7.8
Collected urine specimen	273	1505	18.9	1.9	315	846	36.5	2.4
Collected blood specimen	255	1513	16.9	1.5	279	842	32.8	2.7
Performed an ultrasound	224	1470	15.1	1.8	272	843	32.0	2.7
Offered an HIV test	147	1452	9.7	1.2	119	828	14.2	2.0

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 only requires 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.

As shown in Table 6.7, the coverage of sufficient tetanus toxoid vaccination during pregnancy was 55.1% among women who received antenatal care during the second follow-up. Thirteen percent of women

received one vaccination during the pregnancy and 51% received two or more. Among women with antenatal care, 29.3% had never been vaccinated before and 19.7% had received a vaccine in the last 10 years. Among women who were not vaccinated during prenatal care visits, 20.7% had never been vaccinated.

Table 6.7: Coverage of tetanus toxoid vaccinations during pregnancy, among women 15-49 years who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Two or more injections during pregnancy	723	64.6	2.1	325	51.0	2.5
One injection during pregnancy, one <10 years before	20	2.1	0.6	27	4.1	0.9
One injection during pregnancy, none <10 years before	59	5.4	0.9	54	8.6	1.3
No injections during pregnancy, one or more <10 years before	124	10.6	1.4	101	15.6	1.9
No injections during pregnancy nor during the 10 years prior	188	17.3	1.8	134	20.7	2.1
Don't know	404	-	-	212	-	-
Decline to respond	2	-	-	5	-	-

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 6.8 shows the percentage of women in the second follow-up who were exposed to the following messages: counseled about pregnancy (59.2%); counseled about danger signs during pregnancy (49.8%); advised to deliver in a facility (46.5%); counseled about breastfeeding (43%); counseled about nutrition during pregnancy (42.3%); given information about in-facility delivery (40.8%); counseled about childcare (34.2%).

Exposure to safe pregnancy practices increased from baseline to second follow-up for all counseling categories. In the second follow-up, 25.8% of women were counseled about contraception after delivery compared to 20.1% at baseline. 20.6% of women in the second follow-up, compared to 10.8% at baseline, were counseled about making a transportation plan for delivery. Compared to 12.4% of women at baseline, 16.3% of women in the second follow-up were advised to have a Cesarean section.

Table 6.8: Exposure to safe pregnancy practices, women 15-49 years of age who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Counseled about pregnancy	846	1486	57.2	2.0	497	834	59.2	2.3
Counseled about danger signs during pregnancy	503	1456	35.4	2.0	409	824	49.8	2.7
Advised to deliver in a facility	567	1466	38.7	2.1	379	822	46.5	2.7
Counseled about breastfeeding	652	1465	45.2	2.7	354	830	43.0	3.0
Counseled about nutrition during pregnancy	578	1458	40.8	2.4	354	838	42.3	2.7
Given information about in-facility delivery	486	1467	33.2	2.0	340	827	40.8	2.8
Counseled about childcare	434	1463	29.8	2.0	279	822	34.2	2.7
Counseled about contraception after delivery	298	1458	20.1	1.8	211	823	25.8	2.4
Counseled about making a transportation plan for delivery	158	1461	10.8	1.2	167	830	20.6	2.4
Advised to have a Cesarean section	186	1462	12.4	1.4	135	825	16.3	1.9

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 place of delivery and assistance at delivery were captured for all births in the five years preceding the survey. 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 6.9. The majority of births occurred in own homes (69.1%) and public hospitals (16.3%). Yet 70.6% of women reported giving birth at home or at another person's home. Deliveries in private-sector facilities were rare (3.7%). Among women who delivered in a facility, 75.8% indicated that they used a private vehicle for transport (Table 6.10).

Table 6.9: Place of delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Own home	1464	77.7	2.1	646	69.1	3.2
Public hospital	241	12.6	1.7	160	16.3	2.3
Public health center/clinic	124	6.3	1.0	85	8.9	1.3
Private hospital	20	1.1	0.4	21	2.0	0.5
Private health center/clinic	11	0.7	0.3	14	1.6	0.8
Other house	19	1.1	0.3	15	1.5	0.4
Public health ward	0	0.0	-	1	0.1	0.1
Other public health facility	5	0.2	0.1	1	0.1	0.1
Other private health facility	1	0.0	-	1	0.1	0.1
Private medical ward	0	0.0	-	0	0.0	-
Other	6	0.3	0.1	3	0.3	0.2
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Table 6.10: Transportation to place of delivery for most recent birth in the last two years, among women 15-49 years of age who delivered in a facility

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Private vehicle	281	402	67.6	4.2	213	282	75.8	3.3
Ambulance	52	402	12.4	2.2	41	282	14.0	2.5
Other public transit	39	402	9.7	1.6	18	282	6.4	1.7
On foot	37	402	11.7	4.0	17	282	6.2	2.2

*categories not mutually exclusive (select all that apply)

Women were asked about the proximity to the health facility used to deliver. Of the 283 women from the second follow-up who delivered in a facility, 124 were able to estimate the distance to the facility (Table 6.11). The median number of women reported travelling less than 15.8 km. Fifty percent of women traveled more than one hours to the facility to deliver.

Table 6.11: Proximity to health care facilities: health facility for delivery

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	305	97	0	3	14	30	100
Travel time, min	386	16	1	30	60	120	2700
Second follow-up 2018							
Distance, km	124	159	0	2	15.8	30	98
Travel time, min	278	5	1	30	60	120	13800

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 (98.5% of all births in the second follow-up), the percentage by type of delivery attendant is detailed in Table 6.12. 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 6.12, most in-facility deliveries during the second follow-up were accompanied by a midwife/comadrona (68.4%) and/or a medical doctor (27.2%). For 17.5% of the deliveries an auxiliary nurse was in attendance. For 17.4% a relative was in attendance.

Table 6.12: Types of attendants: assistance at delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Midwife/comadrona	1362	1888	72.5	2.3	639	944	68.4	3.1
Medical doctor	362	1886	19.2	2.0	266	947	27.2	2.9
Auxiliary nurse	192	1879	10.0	1.4	167	935	17.5	2.5
Relative	338	1887	18.4	2.0	162	943	17.4	2.0
Professional nurse	219	1884	10.9	1.3	169	939	17.3	2.2
Laboratory technician	27	1877	1.2	0.3	6	940	0.7	0.3
Community health worker	7	1884	0.4	0.3	5	942	0.6	0.2
Traditional healer	4	1887	0.2	0.2	6	944	0.6	0.3
Pharmacist	1	1886	0.1	0.1	1	944	0.1	0.1
Other	33	1885	1.7	0.4	17	942	1.7	0.5

Sixty percent of women in the second follow-up delivered with one attendant, 26.8% with two attendants, and 10% with three attendants (Table 6.13). For women's most recent live birth in the past two years, 29.9% of deliveries had a skilled attendant present and 26.6% delivered with a skilled attendant in a CAP, CAIMI, or hospital (Table 6.14).

Table 6.13: Number of attendants: assistance at delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
None	56	2.9	0.5	14	1.5	0.5
One	1313	69.3	2.3	564	59.9	2.8
Two	374	20.2	1.8	251	26.8	2.4
Three	113	5.9	0.9	101	10.0	1.7
Four or more	35	1.7	0.4	17	1.8	0.5
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Table 6.14: In-facility delivery with skilled birth attendant: assistance at delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Delivery with a skilled birth attendant	414	1883	21.7	2.1	291	947	29.9	3.1
Delivery in a health facility, any attendant	402	1891	20.9	2.1	283	947	29.1	3.1
Delivery in a CAP, CAIMI, or hospital, with any birth attendant	373	1891	19.3	2.0	263	947	27.0	2.9
Delivery with a skilled birth attendant in a CAP, CAIMI, or hospital	370	1883	19.2	2.0	259	947	26.6	2.9

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 is detailed in Table 6.15 along with the percentage of planned in-facility deliveries. Table 6.16 displays the percentage of women with specific complications.

In the second follow-up, 77.5% of women indicated that they attended the facility for emergency care during their most recent birth in the last two years. Few women reported seizures prior to delivery (4.9%). Approximately 2.5% of infants were transferred to an intensive care unit after delivery, and 16.4% of women reported excessive bleeding after delivery (more than 1 cup over a two-day period of time).

Table 6.15: Mode of delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Mode of delivery						
Vaginal	1791	95.0	0.6	857	90.6	1.3
Emergency c-section	84	4.2	0.6	66	7.0	1.0
Planned c-section	16	0.8	0.2	24	2.3	0.6
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Reason for seeking delivery care, among in-facility births						
Because of emergency	311	76.0	3.7	217	77.5	2.9
According to birth plan	84	24.0	3.7	62	21.3	2.6
Other reason	0	0.0	-	4	1.2	0.7
Don't know	7	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Table 6.16: Delivery complications for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Respondent experienced excessive bleeding in the first day after delivery	616	1793	34.5	2.5	153	939	16.4	1.5
Respondent experienced seizures prior to delivery	78	1860	4.5	0.7	47	934	4.9	0.9
Child entered neonatal intensive care unit after delivery	25	1881	1.3	0.3	24	946	2.5	0.6

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 6.17).

In the second follow-up, many women perceived their infant to be average in size (77.2%). With most births occurring in institutional settings, it is not surprising that 84.7% of newborns were weighed at birth. Among those who were weighed, 12.9% weighed less than 2.5 kilograms according to the mother's recall (low birth weight).

Table 6.17: Birth size and weight for most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Very large	70	4.0	1.0	18	2.0	0.5
Larger than average	138	7.3	0.7	54	5.9	0.9
Average	1228	67.7	2.1	705	77.2	2.0
Smaller than average	284	16.0	1.4	105	11.4	1.1
Very small	90	5.0	0.8	34	3.6	0.7
Don't know	80	-	-	31	-	-
Decline to respond	1	-	-	0	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Child was weighed at birth	971	1827	52.2	2.6	770	907	84.7	2.0
Low birth weight (<2.5kg), among those weighed	112	929	11.8	1.5	96	730	12.9	1.4

6.2.5 *Cultural sensitivity*

The help that a woman receives during delivery has important consequences for the health of the mother and child. Proper medical conditions during delivery can reduce the risk of complications, infections, and even death for the mother and newborn baby. When women giving birth in institutional settings are given options for delivery that take cultural differences into account, they are more likely to return to health facilities for future deliveries and seek more institutional treatment. At baseline and second follow-up, mothers were asked about five different standards for cultural sensitivity during their most recent institutional birth in the past two years: whether (1) health facility personnel used the language spoken by the mother, (2) she was able to drink traditional liquids or remedies that she wanted to take, (3) she was able to choose her position of delivery, (4) she was able to choose the clothing she wore, and (5) she was allowed to be accompanied by family member or midwife. Eight additional questions were added in the second follow-up to further capture how women were treated during institutional births: (1) Selected sex of delivery attendant, (2) facility personnel explained actions, (3) Understood explanations from facility personnel, (4) Given placenta after birth, (5) warm enough in facility, (6) a bed was provided and put in preferred position, (7) treated with respect, and (8) facility was clean. Table 6.18 shows that 51.6% of women indicated that their language was spoken during a vaginal birth in a Guatemala health facility in the past 2 years, while only 22.6% of women were allowed to choose delivery position. Forty nine percent of women reported they were provided with two or more standards of cultural sensitivity.

Table 6.18: Cultural sensitivity during delivery for most recent live birth in the past two years, women with a vaginal delivery in a health facility in Guatemala

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Woman's language spoken	123	266	44.3	5.6	89	175	51.6	6.0
Drinks and remedies allowed	55	264	22.1	3.5	53	174	32.0	4.1
Accompanied by family or midwife	66	265	25.3	3.3	53	174	31.6	3.9
Allowed to choose clothing	44	263	18.9	3.1	53	174	31.2	4.2
Allowed to choose delivery position	93	262	38.3	3.9	39	172	22.6	4.2
Met at least 2 standards for cultural sensitivity	98	272	38.6	4.2	85	175	49.4	5.0

	Second Follow-Up 2018			
	n	N	%	SE
Treated with respect	151	174	87.3	3.1
Space was clean	147	169	87.1	3.0
Warm enough in facility	102	172	60.7	4.6
Understood explanations from facility personnel	98	170	58.5	4.1
Facility personnel explained actions	98	171	57.6	4.4
A bed was provided and changed to preferred position	62	173	36.1	5.2
Given placenta after birth	25	175	14.8	3.3
Selected sex of facility personnel attending delivery	11	174	5.9	2.0

* Not collected at baseline, added for follow-up evaluation.

6.3 Early initiation of breastfeeding

Coverage of early initiation of breastfeeding is defined as the percentage of women who had a live birth in the past two years and put the child to the breast with one hour of birth. Table 6.19 shows that 83.7% of women initiated breastfeeding within one hour of birth.

Table 6.19: Early initiation of breastfeeding for most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Early initiation of breastfeeding	1414	1869	75	2.2	778	932	83.7	1.5

6.4 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.

6.4.1 *Postnatal checkup for the mother*

Data on postnatal care for the mother are summarized in Table 6.20. Table 6.20 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 with a skilled attendant (doctor, nurse, or auxiliary nurse); and every 15 minutes during the first hour after delivery for institutional births.

Only 46% of women recalled being checked after delivery during the second follow-up, and 25.3% reported being checked one week after delivery by a health care provider. Only 41.9% of women with an institutional birth recalled being checked every 15 minutes for the first hour post-partum.

Table 6.21 shows the percent distribution of women who were checked at any time after delivery by type of personnel. Among women with postnatal care visits in the second follow-up, most received care from a midwife/comadrona (34.9%) or auxiliary nurse (24.6%).

Table 6.20: Postnatal checkup for the mother for most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any checkup after delivery	449	1852	24.0	1.7	431	942	46.0	2.9
Checked every 15 minutes during the first hour after delivery, among in-facility births	74	182	42.4	4.8	75	172	41.9	4.5
Checked within a week after delivery by a skilled provider	201	1852	10.3	1.0	241	942	25.3	2.2

Table 6.21: Provider of care at first postnatal checkup for the mother, most recent live birth in the past two years, among women who attended at least one postnatal care visit

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Midwife/comadrona	150	34.2	3.6	142	34.9	4.4
Auxiliary nurse	91	20.0	2.8	109	24.6	2.8
Doctor	131	29.2	3.0	104	22.9	2.6
Professional nurse	62	13.1	1.9	73	17.4	3.0
Community health worker	8	2.0	0.9	1	0.2	0.2
Laboratory technician	0	0.0	-	0	0.0	-
Pharmacy assistant	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Relative	5	1.1	0.5	0	0.0	-
Other	2	0.4	0.3	0	0.0	-
Don't know	0	-	-	2	-	-
Decline to respond	0	-	-	0	-	-

6.4.2 *Postnatal checkup for the infant*

The results regarding postnatal care for the neonate are shown in Table 6.22: percentage of women with a birth in the last two years whose infants were checked after delivery; percentage of infants who were checked by skilled personnel within 24 hours of delivery; and percentage of infants who were checked by skilled personnel within one week of delivery.

Approximately 58.5% of women in the second follow-up reported that their infant was checked at any time after delivery. Among all deliveries, 17.5% of women reported that a qualified medical professional checked on their infant within 24 hours of delivery. Table 6.23 shows the attendants for neonatal postnatal care. Most women indicated that a auxiliary nurse performed a checkup (43.8%). Doctor and professional nurse were also reported, though much less frequently.

Table 6.22: Postnatal checkup for neonate for woman's most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any checkup after delivery	502	1872	26.2	2.0	549	933	58.5	2.7
Checked within 24 hours after delivery by a skilled provider	125	1848	6.7	0.9	162	910	17.5	2.1
Checked within a week after delivery by a skilled provider	222	1848	12.0	1.3	318	910	34.7	3.3

Table 6.23: Provider of care at first postnatal checkup for the infant, woman's most recent live birth in the past two years, among women whose child attended at least one postnatal care visit

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Auxiliary nurse	132	27.1	2.9	237	43.8	2.8
Doctor	174	35.7	3.5	141	25.6	2.9
Professional nurse	130	26.5	3.3	104	19.6	2.8
Midwife/comadrona	30	5.6	1.2	55	10.1	2.6
Traditional healer	0	0.0	-	2	0.4	0.3
Community health worker	23	4.5	1.4	1	0.2	0.2
Laboratory technician	1	0.2	0.2	0	0.0	-
Pharmacy assistant	0	0.0	-	0	0.0	-
Relative	2	0.3	0.2	0	0.0	-
Other	1	0.1	0.1	2	0.3	0.2
Don't know	7	-	-	7	-	-
Decline to respond	2	-	-	0	-	-

7 Chapter 7: CHILD HEALTH

This chapter summarizes the health status of children aged 0-59 months whose caregivers participated in the SMI-Guatemala Second Follow-up Household Survey. All data summarized in this chapter are based on the caregiver's report.

7.1 Health status

The age and sex distribution of the de facto population of children aged 0-59 months participating in the caregiver interview module or the anthropometric measures in Guatemala at the second follow-up is shown in Figure 7.2 by six- or 12-month age groups.

Twenty one percent of children surveyed at baseline and 20% of children surveyed at the second follow-up were under 1 year old at the time of the interview. The age distributions of female and male children are similar.

Figure 7.1: Age and sex of children aged 0-59 months in child health survey or anthropometric measures of the de facto population by six- to twelve-month age groups, baseline survey unweighted

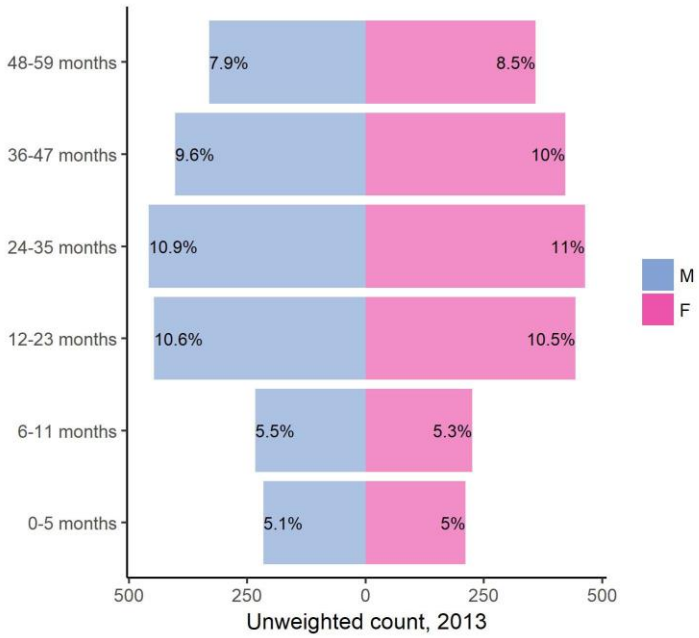
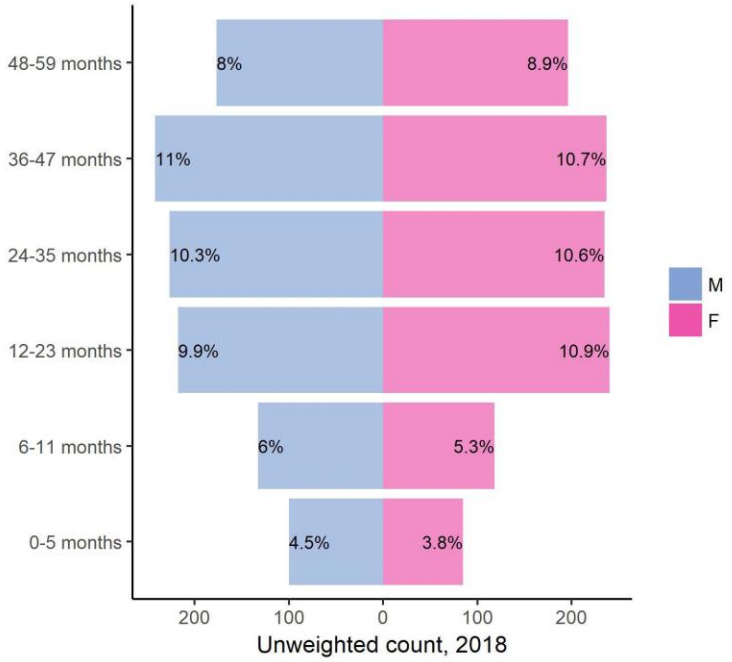


Figure 7.2: Age and sex of children aged 0-59 months in child health survey or anthropometric measures of the de facto population by six- to twelve-month age groups, follow-up survey unweighted



7.1.1 *Current health status*

Table 7.1 shows the current health status of all children aged 0-59 months, as reported by their caregivers. The table includes the caregiver's evaluation of current health relative to health the previous year and the percentage of children who can easily perform daily activities. In the second follow-up, approximately 85% of children's health was considered by their caregiver to be "good," "very good," or "excellent," compared to 71.7% at baseline.

Relative to the past year, caregivers in the second follow-up evaluation reported that 53% of children's health was "about the same" in the second follow-up. While 44.4% of children's health had improved, 2.6% of children experienced reportedly worse health on the day of the interview, compared to last year. Ninety five percent of children could "easily" perform their daily activities (e.g., playing and going to school) according to their caregivers. Four percent of children had some degree of difficulty performing these activities, 0.3% of children had a significant degree of difficulty performing these activities, and 0.2% of children were unable to complete daily activities, according to their caregivers.

Table 7.1: Current health status, among children aged 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Current health status						
Excellent	463	11.0	1.2	508	23.1	2.8
Very good	498	11.9	0.9	227	10.5	1.2
Good	2054	48.8	1.8	1130	51.4	2.7
Fair	1044	25.3	1.5	296	13.4	1.0
Poor	119	3.0	0.3	37	1.6	0.3
Don't know	5	-	-	0	-	-
Decline to respond	3	-	-	0	-	-
Health status relative to a year ago						
Better	1556	48.1	1.9	747	44.4	3.0
Worse	93	3.0	0.4	44	2.6	0.5
About the same	1541	49.0	1.8	901	53.0	3.0
Don't know	11	-	-	6	-	-
Decline to respond	2	-	-	0	-	-
Ability to perform daily activities						
Easily	3735	89.7	0.9	2081	95.1	0.6
With some difficulty	340	8.5	0.8	99	4.4	0.5
With much difficulty	25	0.6	0.1	8	0.3	0.1
Unable to do	44	1.1	0.3	3	0.2	0.1
Don't know	36	-	-	7	-	-
Decline to respond	6	-	-	0	-	-

7.1.2 *Recent illness*

Caregivers were asked a series of questions about any illnesses or health problems that their children had in the two weeks preceding the interview. In the second follow-up survey, approximately 21% of children were reported as sick during that time (Table 7.2). Of the 456 children who were recently ill, fever (35%), diarrhea without blood (27.7%), and cough (18.9%) were the most commonly specified complaints.

Table 7.2: Recent illness, among children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Child was sick in the last two weeks	974	4178	24.1	1.4	456	2195	20.8	1.9

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Recent illness among children ill in the last 2 weeks						
Fever	340	34.8	2.1	158	35.0	2.3
Diarrhea without blood	227	23.5	1.5	126	27.7	2.8
Cough	141	14.6	1.4	87	18.9	2.0
Skin rash/infection	19	2.0	0.5	8	1.8	0.5
Diarrhea with blood	24	2.8	0.6	8	1.7	0.6
Abdominal pain	21	2.5	0.6	5	1.1	0.4
Pneumonia	10	1.0	0.3	3	0.6	0.3
Vomiting	11	1.2	0.4	2	0.4	0.3
Headache	7	0.7	0.3	2	0.4	0.3
Bronchitis	8	0.8	0.3	1	0.2	0.2
Eye/ear infection	4	0.4	0.2	1	0.2	0.2
Malaria	0	0.0	-	0	0.0	-
Tuberculosis	1	0.1	0.1	0	0.0	-
Asthma	0	0.0	-	0	0.0	-
Anemia	1	0.1	0.1	0	0.0	-
Measles	1	0.1	0.1	0	0.0	-
Jaundice	1	0.1	0.1	0	0.0	-
Stroke	0	0.0	-	0	0.0	-
Diabetes	0	0.0	-	0	0.0	-
HIV/AIDS	0	0.0	-	0	0.0	-
Paralysis	0	0.0	-	0	0.0	-
Chest infection	0	0.0	-	0	0.0	-
Blood in urine	0	0.0	-	0	0.0	-
Difficulty urinating	0	0.0	-	0	0.0	-
Swelling in legs, ankles, or feet	0	0.0	-	0	0.0	-
Other	157	15.5	1.4	54	12.0	1.8
Don't know	1	-	-	1	-	-
Decline to respond	0	-	-	0	-	-

Options for "Swelling in legs, ankles, or feet", "Blood in urine", and "Chest infection" were available only in the follow-up survey. In the baseline, "Chest infection" was included within the "Cough" answer choice.

7.1.3 *Utilization of health services for recent illness*

Table 7.3 summarizes data regarding the utilization of health services among the 456 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.

In the second follow-up survey, care was sought for 62% of these cases. Care was typically sought at Public health unit (62%) or Public health center/clinic (18.4%) facilities; some attended pharmacies (10.5%). Only three children were hospitalized for their recent illness.

Table 7.3: Utilization of health services for recent illness in the last two weeks, among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for recent illness	640	974	66.2	2.2	282	456	62.0	3
Child was hospitalized for recent illness	11	391	2.5	1.1	3	175	1.7	1

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of medical facility where care was sought						
Public health unit	285	43.4	3.0	174	62.0	4.5
Public health center/clinic	181	28.1	2.6	51	18.4	3.6
Pharmacy	69	11.4	2.2	30	10.5	2.2
Private doctor's office	8	1.2	0.4	7	2.4	1.0
Private health center/clinic	9	1.5	0.5	5	1.7	0.8
Public hospital	20	3.3	1.1	4	1.3	0.8
Traditional healer	4	0.6	0.3	2	0.7	0.5
Private hospital	4	0.9	0.6	1	0.3	0.3
Public mobile clinic	1	0.1	0.1	0	0.0	-
Other public health facility	2	0.3	0.2	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	1	0.2	0.2	0	0.0	-
Community health worker	26	4.3	1.1	0	0.0	-
Other	29	4.7	1.0	7	2.6	0.9
Don't know	1	-	-	1	-	-
Decline to respond	0	-	-	0	-	-

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 deaths resulting from pneumonia, a common acute respiratory disease. The prevalence of acute respiratory infection was estimated by asking caregivers 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 symptoms of an acute respiratory infection, the caregiver 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, suspected acute respiratory infection, and fever among children aged 0-59 months, as reported by their caregivers, is displayed in Table 7.4. In the second follow-up, 12% of children experienced cough, 4.8% had symptoms of an acute respiratory infection, and 14.9% had a fever in the two weeks preceding the interview.

Table 7.4: Prevalence of suspected acute respiratory infection and fever in the last two weeks, among children 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Child had cough in the last two weeks, by type						
No cough	3460	83.1	1.3	1909	87.8	1.5
Cough without difficulty breathing	346	8.4	0.6	166	7.5	1.0
With difficulty breathing due to congested/runny nose	159	4.0	0.6	42	2.0	0.4
With difficulty breathing due to chest problem and congested/runny nose	61	1.4	0.2	33	1.5	0.3
With difficulty breathing due to chest problem	126	3.0	0.4	28	1.3	0.3
With difficulty breathing due to other reason	2	0.1	0.0	0	0.0	-
Don't know	27	-	-	20	-	-
Decline to respond	5	-	-	0	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Symptoms of acute respiratory infection in the last two weeks	353	4159	8.6	1.0	104	2179	4.8	0.7
Fever in last two weeks	748	4175	18.2	1.1	328	2196	14.9	1.5

7.2.2 *Utilization of health services for suspected acute respiratory infection*

Fifty five percent of children with symptoms of acute respiratory infection were taken for evaluation and/or treatment of their condition at the second follow-up (Table 7.5).

Table 7.5: Utilization of health services for suspected acute respiratory infection in the last two weeks, among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for suspected acute respiratory infection	578	1013	57.7	2	245	454	54.7	3

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of medical facility where care was sought						
Public health unit	276	46.7	3.4	157	63.7	4.2
Public health center/clinic	143	23.9	2.5	38	15.8	3.6
Pharmacy	70	12.6	2.4	29	11.9	2.6
Private doctor's office	8	1.3	0.5	7	2.8	1.1
Private hospital	3	0.6	0.4	2	0.9	0.6
Private health center/clinic	8	1.5	0.7	2	0.8	0.6
Public hospital	14	2.7	1.2	1	0.3	0.4
Public mobile clinic	3	0.6	0.5	0	0.0	-
Other public health facility	3	0.7	0.4	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	2	0.4	0.3	0	0.0	-
Community health worker	25	4.6	1.0	0	0.0	-
Traditional healer	3	0.5	0.3	0	0.0	-
Other	20	4.0	1.0	9	3.8	1.2
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

7.2.3 *Utilization of medications for suspected acute respiratory infection*

Sixty eight percent of children with symptoms of acute respiratory infection were given some type of medication for their condition during the second follow-up (Table 7.6). Forty two percent of children were administered antibiotic syrups for a suspected acute respiratory infection. Acetaminophen (64.7%) and ibuprofen (5.3%) were also commonly administered. Twenty one percent of children received a treatment other than those listed.

Table 7.6: Utilization of medications for suspected acute respiratory infection in the last two weeks, among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any treatment	702	1013	68.8	1.9	309	454	68.2	2.7
Antibiotic injection	54	694	8.0	1.3	17	306	5.3	1.5
Antibiotic pill	50	693	7.3	1.3	23	307	7.6	1.9
Antibiotic syrup	350	697	51.8	2.6	127	307	41.6	3.4
Aspirin	64	699	9.9	1.5	28	307	9.0	1.9
Acetaminophen	482	698	68.4	2.2	199	307	64.7	3.5
Ibuprofen	48	696	6.3	1.1	16	307	5.3	1.3
Oral rehydration therapy	26	696	4.1	1.1	10	307	3.1	1.1
Other	101	698	13.9	1.6	65	307	21.3	2.6

7.2.4 *Feeding practices during suspected acute respiratory infection*

Data on feeding practices during the recent episode of suspected acute respiratory infection are summarized in Table 7.7. The table shows the volume of fluids and the volume of solids given during the illness. At the second follow-up, only 10% of children were given more fluids than usual. In total, 51% of children were offered less fluid than usual (or none at all). Thirty six percent of children were offered the same volume of solid food as usual during their illness. Approximately 58% of children were given less than the usual amount of solid food (or none at all).

Table 7.7: Feeding practices during suspected acute respiratory infection in the last two weeks, among children 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Volume of fluids (including breastmilk) given during illness						
No fluids	23	2.4	0.5	7	1.6	0.6
Much less	96	9.4	1.3	66	14.2	2.2
Somewhat less	362	36.0	1.8	159	35.0	2.5
About the same	397	39.2	2.0	175	39.2	2.7
More	132	13.0	1.1	46	10.0	1.5
Don't know	4	-	-	2	-	-
Decline to respond	0	-	-	0	-	-
Volume of solid foods given during illness						
No solids	115	11.7	1.3	6	1.3	0.6
Much less	121	11.8	1.3	53	11.3	2.0
Somewhat less	419	41.7	1.7	203	45.0	2.9
About the same	340	33.9	1.9	162	36.5	2.7
More	10	0.9	0.3	26	5.8	1.3
Don't know	8	-	-	4	-	-
Decline to respond	1	-	-	1	-	-

7.3 Diarrhea

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

7.3.1 *Prevalence*

Table 7.8 shows the proportion of children aged 0-59 months with diarrhea in the two weeks preceding the interview, as reported by their caregivers (12.5% at the second follow-up). One percent of children

had bloody diarrhea.

Table 7.8: Prevalence of diarrhea in the last two weeks, among children aged 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
No diarrhea	3585	85.9	1.1	1903	87.5	1.2
Diarrhea without blood	524	12.9	1.0	256	11.6	1.2
Diarrhea with blood	44	1.2	0.2	21	0.9	0.3
Don't know	31	-	-	17	-	-
Decline to respond	2	-	-	1	-	-

7.3.2 *Utilization of health services for diarrhea*

In the second follow-up, % of children with diarrhea were taken for evaluation and/or treatment of their condition (Table 7.9). Care for these children was often sought in the public sector, although private health centers were visited by 2% of these cases.

Table 7.9: Utilization of health services for diarrhea in the last two weeks, among children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for diarrhea	338	568	61.2	2.7	176	277	63.8	3.2

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of medical facility where care was sought						
Public health unit	126	36.1	3.9	114	65.2	5.0
Pharmacy	54	16.8	3.6	25	13.9	3.3
Public health center/clinic	105	31.9	3.2	17	10.1	2.5
Traditional healer	1	0.3	0.3	6	3.4	1.5
Private health center/clinic	3	1.1	0.7	4	2.3	1.1
Private doctor's office	2	0.8	0.6	3	1.6	0.9
Public hospital	5	1.5	0.7	1	0.6	0.6
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	1	0.2	0.2	0	0.0	-
Private hospital	2	0.7	0.5	0	0.0	-
Private mobile clinic	1	0.3	0.3	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Community health worker	14	4.1	1.4	0	0.0	-
Other	22	6.2	1.5	5	3.0	1.5
Don't know	2	-	-	1	-	-
Decline to respond	0	-	-	0	-	-

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

Although care was sought in only 63.8% of diarrhea cases, 79.4% of cases were given some form of treatment at the second follow-up. Fluid made with powdered oral rehydration salts was the most common form oral rehydration therapy (30.3%). Thirteen percent of cases were treated with zinc syrup or pills. Eighteen percent of cases were treated with an antibiotic pill.

Table 7.10: Utilization of treatments for diarrhea during the last two weeks, among children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any treatment	452	560	81.2	1.8	219	276	79.4	2.8
Fluids								
Fluid made with powdered oral rehydration salts	190	562	34.3	2.6	80	276	30.3	4.2
Bottled oral rehydration serum	117	563	22.3	3.1	61	275	21.5	2.8
Homemade fluid recommended by health authorities	84	562	14.2	2.3	37	274	12.9	2.9
Medications								
Antibiotic pill	44	562	7.9	1.1	49	273	18.5	2.7
Antidiarrheal pill	68	562	11.6	2.0	24	275	8.2	1.6
Zinc pill	3	562	0.4	0.3	26	275	8.9	1.9
Other type of pill	18	559	3.1	0.8	11	274	4.1	1.3
Unknown pill	33	561	5.9	1.2	11	273	3.8	0.9
Antibiotic injection	5	562	0.7	0.4	9	273	3.5	1.0
Non-antibiotic injection	1	562	0.1	0.1	3	274	1.0	0.6
Unknown injection	3	562	0.7	0.4	3	275	0.9	0.5
Intravenous therapy	2	562	0.4	0.3	3	274	1.2	0.7
Home remedy/herbal medicine	158	564	26.5	2.8	75	274	27.9	2.9
Antibiotic syrup	135	561	25.7	2.4	46	273	16.8	2.6
Antidiarrheal syrup	46	561	8.8	1.7	34	274	12.0	2.2
Zinc syrup	1	560	0.1	0.1	10	273	4.1	1.4
Other syrup	13	560	2.5	0.8	5	274	1.8	1.0
Unknown syrup	34	561	5.9	1.3	5	274	1.8	0.8

*39 women selected 'Other antibiotic' as a treatment for diarrhea at the second follow-up, which was not an option in the baseline survey.

7.3.4 *Feeding practices during diarrhea*

Caregivers 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 7.11. The table shows the volume of fluids and the volume of solids given during the illness. Only 9.5% of children were given more fluids than usual in the second follow-up survey. Approximately 58% of children were offered less fluid than usual (or none at all). Thirty percent of children were offered the same volume of solid food as usual during their illness. Approximately 64% of children were given less than the usual amount of solid food (or none at all).

Table 7.11: Feeding practices among children aged 0-59 months who had diarrhea in the last two weeks

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Volume of fluids (including breastmilk) given during illness						
No fluids	27	4.9	1.0	7	2.5	0.9
Much less	74	13.2	2.0	42	15.0	2.4
Somewhat less	219	39.0	2.5	111	40.6	3.7
About the same	142	25.6	2.6	89	32.3	3.5
More	106	17.4	1.9	27	9.5	2.0
Don't know	0	-	-	1	-	-
Decline to respond	0	-	-	0	-	-
Volume of solid foods given during illness						
No solids	86	15.0	2.0	12	4.5	1.5
Much less	105	19.3	1.9	44	16.0	2.4
Somewhat less	242	42.9	2.1	121	43.9	3.8
About the same	117	21.2	2.0	83	30.3	3.2
More	10	1.6	0.6	14	5.3	1.3
Don't know	7	-	-	3	-	-
Decline to respond	1	-	-	0	-	-

7.4 Immunization against common childhood illnesses

Information on immunization coverage was collected for all children aged 0-59 months whose caregivers participated in the survey. Both caregiver's report and review of vaccination card (if available) were used to determine coverage. A vaccination card was available for review for 1,545 children at the second follow-up (70.3% of the sample, unweighted). In Table 7.12, coverage is estimated by vaccine type to include all children with full compliance for age as specified in the national immunization scheme at the time of the survey, according to either an affirmative response from the caregiver that the immunization was received, or a mark that the immunization was received on the vaccination card (for children with a vaccination card available for review at the time of the interview). Children too young to have received a specific vaccine are counted as covered in order to maintain a comparable all-ages sample across vaccine types.

Table 7.12: Immunization against common childhood illnesses, children aged 0-59 months, according to caretaker recall and vaccination card

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
BCG vaccine (tuberculosis)	3779	3838	98.4	0.3	1674	1796	93.2	1.2
Hepatitis B vaccine	898	3693	23.7	1.6	871	1739	49.8	2.6
Polio vaccine	3139	3844	81.7	1.1	1204	1795	67.1	1.4
Pentavalent vaccine (DPT, HepB, HiB)	3541	3858	91.8	0.7	1414	1791	78.7	2.1
Rotavirus vaccine	2213	3739	58.1	1.4	1373	1766	77.1	1.9
Measles, mumps, and rubella (MMR) vaccine	3660	3844	95.3	0.5	1663	1847	90.1	1.1
Diphtheria, tetanus, and pertussis (DPT) vaccine	3577	3913	91.5	0.7	1563	1887	82.7	1.3

	Second Follow-Up 2018			
	n	N	%	SE
Pneumococcal conjugate vaccine	1365	1758	77.1	1.8

*Pneumococcal vaccine was only asked and required for full compliance according to the vaccine scheme at follow-up.

In Table 7.13, 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. When considering only caregivers' recall, only 16.8% of children aged 0-59 months were fully immunized for age at the second follow-up survey, reflecting many "Don't know" or "Decline" responses that call into question the reliability and validity of the caregiver recall data. Caregivers were able to definitively answer the entire vaccine recall section for only 482 children at the second follow-up. Immunization coverage for children 0-59 months based only upon the vaccine card is 23.2%, and when combined with recall-based information, the estimate of full vaccination for age among children 0-59 months is 28.8%.

Table 7.13: Full immunization compliance for age, children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
According to recall + card	610	3647	16.0	1.4	499	1705	28.8	2.2
According to vaccine card	542	4128	12.5	1.2	509	2164	23.2	2.2
According to caregiver's recall	202	2253	8.8	1.2	84	482	16.8	2.5

*Pneumococcal vaccine was not asked or required at baseline. At follow-up it was asked and required for full compliance according to the vaccine scheme.

7.5 Deworming treatment

Administration of deworming treatment every six months has been shown to reduce the prevalence of anemia in children. Only 17.9% of children aged 12-59 months received at least two doses of deworming treatment in the year preceding the second follow-up interview (Table 7.14).

Table 7.14: Deworming treatment among children aged 12-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
No deworming	1864	60.5	1.6	700	41.9	2.1
One dose	766	23.8	1.2	663	40.2	2.3
Two or more doses	489	15.7	1.1	304	17.9	1.3
Don't know	81	-	-	54	-	-
Decline to respond	3	-	-	3	-	-

8 Chapter 8: INFANT AND YOUNG CHILDREN FEEDING PRACTICES

This chapter summarizes the feeding practices of infants and children aged 0-59 months whose caregivers participated in the SMI-Guatemala Household Survey. All data summarized in this chapter are based on the caregiver's report.

8.1 Breastfeeding

8.1.1 *Exclusive breastfeeding*

Coverage of 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 in which the caregiver indicates what the child consumed during the previous day and night. In Guatemala during the second follow-up, the sample includes 186 children who are under 6 months of age, and 152 of those children have sufficiently complete dietary recall information to determine whether they are exclusively breastfed. Table 8.1 shows that 85.1% of children under 6 months of age are exclusively breastfed.

8.1.2 *Continued breastfeeding at 1 year*

Coverage of continued breastfeeding at 1 year is defined as the percentage of children 12-15 months old who received breast milk during the previous day according to caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 147 children who are between 12 and 15 months of age, and 113 of those children have adequate responses to determine their breastfeeding status. Table 8.1 shows that 75.9% of children continue to receive breast milk at 1 year.

Table 8.1: Breastfeeding among children

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Exclusive breastfeeding among children <6 months	344	420	81.8	2.3	152	179	85.1	2.6
Continued breastfeeding at one year among children 12-15 months	239	310	77.3	2.7	113	147	75.9	4.6

8.2 Acceptable diet

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

Coverage of appropriate 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 according to caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 123 children who are 6-8 months of age,

and 76 of those children have sufficiently complete dietary recall information. Table 8.2 shows that 62.9% of children consumed solid or semi-soft foods.

8.2.2 *Dietary diversity*

Coverage of 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 according to caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 707 children who are 6-23 months of age, and 253 of those children have sufficiently complete dietary recall information to determine dietary diversity. Table 8.2 shows that 35.7% of children achieved the minimum dietary diversity during the previous day.

8.2.3 *Meal frequency*

Coverage of 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 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 is four times for all children 6-23 months of age. This information is obtained through caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 707 children who are 6-23 months of age, and 293 of those children have sufficiently complete dietary recall information to determine meal frequency. Table 8.2 shows that 49.1% of children achieved the minimum meal frequency during the previous day.

8.2.4 *Minimum acceptable diet*

Coverage of 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 caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 707 children who are 6-23 months of age, and 689 of those children have sufficiently complete dietary recall information to determine minimum acceptable diet. Table 8.2 shows that 17.8% 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), an iron supplement, or a fortified food that is specially designed for infants and young children, or a food fortified in the home with a product that included iron during the previous day. This information is obtained through caregiver's dietary recall. In Guatemala during

the second follow-up, the sample includes 707 children who are 6-23 months of age and 277 of those children have sufficiently complete dietary recall information to determine iron consumption. Table 8.2 shows that 38.7% of children consumed an iron-rich food during the previous day.

Table 8.2: Acceptable diet among children 6-23 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Introduction of solid foods among children 6-8 months	155	243	63.0	4.0	76	123	62.9	5.6
Minimum meal frequency among children 6-23 months	512	1173	43.7	2.4	293	594	49.1	2.9
Consumption of iron-rich foods among children 6-23 months	533	1336	39.0	2.1	277	707	38.7	2.0
Minimum dietary diversity among children 6-23 months	351	1336	25.7	1.6	253	707	35.7	2.1
Minimum acceptable diet among children 6-23 months	181	1325	13.7	1.2	124	689	17.8	2.0

8.3 Micronutrient supplementation

8.3.1 *Vitamin A*

Interviewers asked the caregiver if their child received a dose of vitamin A in the last six months. Table 8.3 shows that of the 2,197 sampled children 0-59 months of age in the second follow-up, 41.6% received a dose of vitamin A in the last six months.

8.3.2 *Iron*

Interviewers showed the caregiver photos of 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 of the 2,197 children 0-59 months of age in the second follow-up sample, 19.9% received a dose of iron in the last day.

Table 8.3: Vitamin A and Iron consumption among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Vitamin A in the last six months	1909	4051	46.3	2.1	816	1946	41.6	2.0
Iron supplement the previous day	679	4132	15.9	1.2	437	2173	19.9	1.4

8.3.3 *Packets of micronutrients*

Interviewers showed the caregiver a card with packets of micronutrients and asked how many packets their child received from a health facility and consumed in the last six months. Children are intended

to take 60 consecutive daily doses of micronutrient powder in each of three rounds, beginning at age 6, 12, and 18 months, with an adequate consumption considered to be 60 packets. Table 8.4 shows that among children 6-23 months of age sampled in the second follow-up, 62.4% received no packets of micronutrients from a health facility in the last six months.

Table 8.4: Micronutrient powders among children 6-23 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Received any micronutrient packets from health facility in the last six months	277	1299	20.8	1.6	265	695	37.6	2.3
Consumed any micronutrient packets	255	1279	19.4	1.6	241	675	35.1	2.3
Received 60 micronutrient packets	21	1299	1.5	0.4	41	695	6.0	1.5
Consumed adequate dose (>=60 packets) of micronutrient powders	44	1279	3.7	0.7	64	675	9.4	1.3

* Identical questions were asked in baseline and second follow-up surveys, but the second follow-up interview included photos of the micronutrient products. The baseline survey predated the intervention, so it is possible that questions about receipt and consumption were interpreted by caregivers to include different types of micronutrient supplements at baseline.

9 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 SMI-Guatemala Second Follow-up 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, with altitude adjustment) 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.

A total of 2,198 children aged 0-59 months participated in the SMI-Guatemala second follow-up. In practice, 2,112 of these children underwent the physical measurement module. Height and weight data are presented for 2,112 of these children (100%, unweighted). One thousand nine hundred thirty two children 6-59 months of age were eligible for the anemia test. Hemoglobin was measured in 1,742 children (90.2%, unweighted, of children 6-59 months of age). Parental consent was refused for 180 children, three were not measured because anthropometrists could not obtain a sufficient capillary blood sample or any sample at all, and six cases were not tested for other reasons (for example, because the child did not cooperate). The age and sex distribution of children participating in the physical measurement module in second follow-up is displayed in Figure 9.2 and Figure 9.4.

Figure 9.1: Height and weight measured: Age and sex of sample, unweighted percent distribution of the de facto population, baseline survey

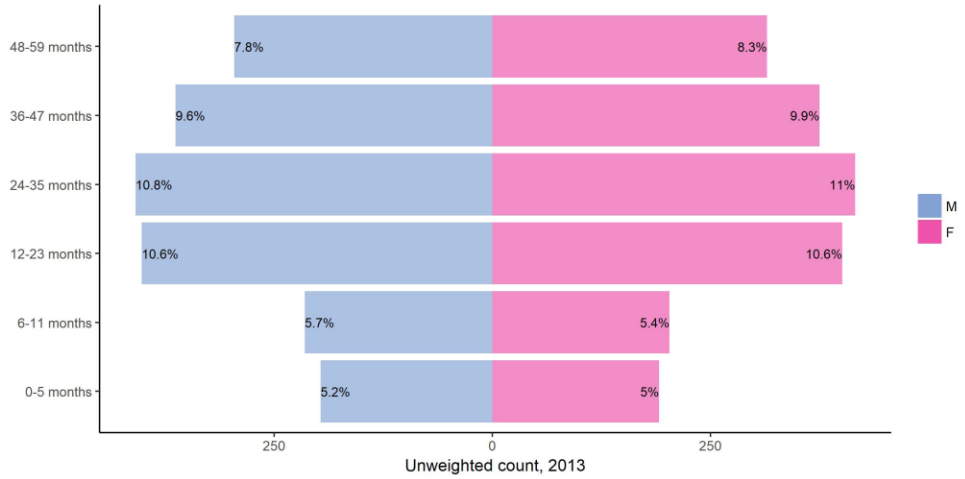


Figure 9.2: Height and weight measured: Age and sex of sample, unweighted percent distribution of the de facto population, follow-up survey

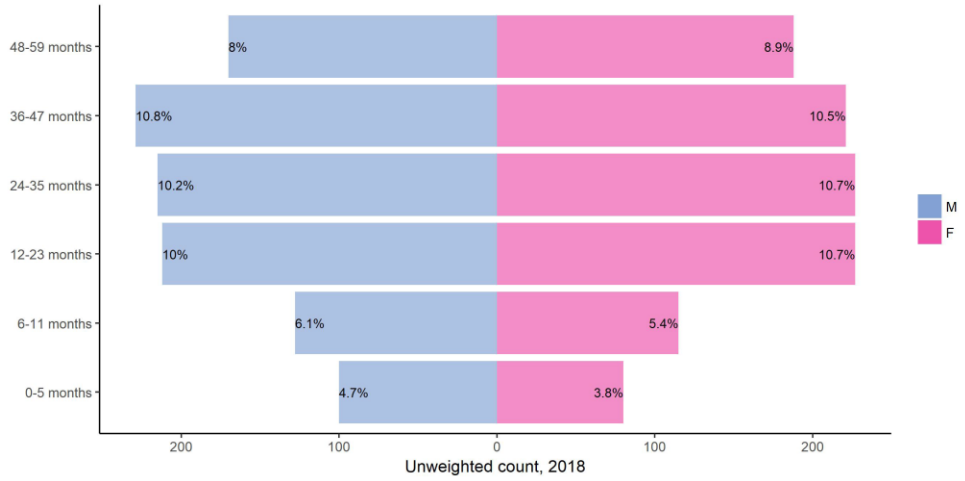


Figure 9.3: Hemoglobin measured: Age and sex of sample, unweighted percent distribution of the de facto population, baseline survey

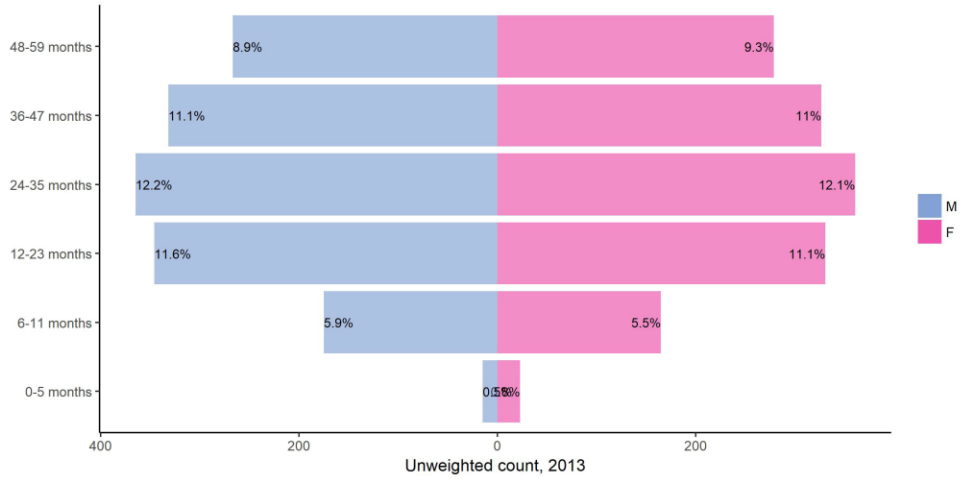
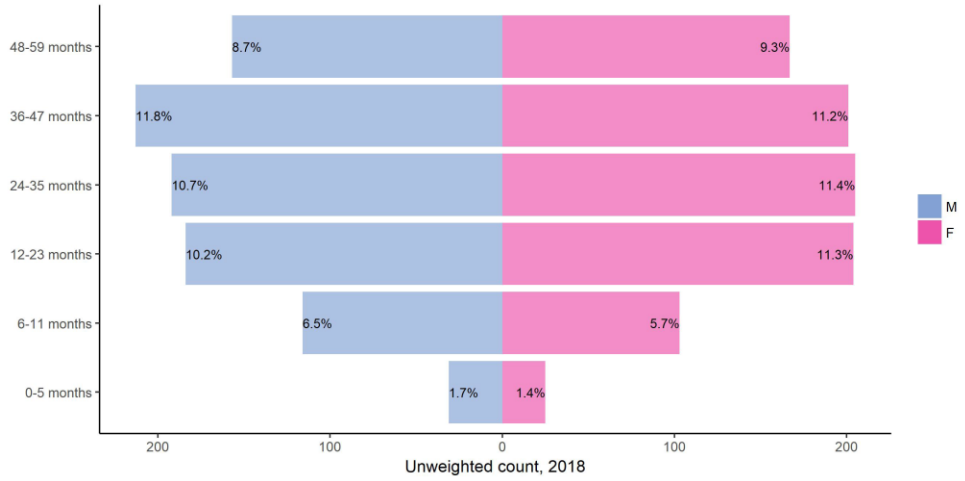


Figure 9.4: Hemoglobin measured: Age and sex of sample, unweighted percent distribution of the de facto population, follow-up survey



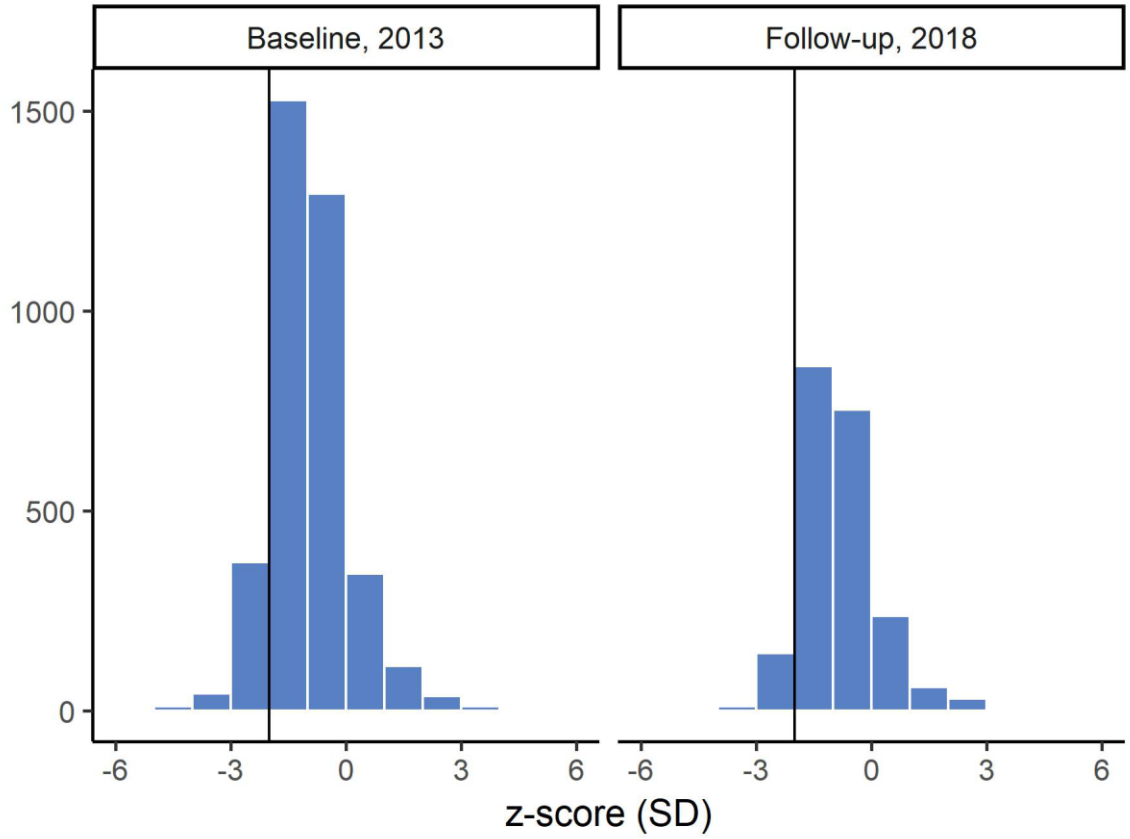
9.1 Weight-for-Age

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 *Unweighted distribution of weight-for-age z-scores*

Figure 9.5 shows the distribution of weight-for-age z-scores among all children aged 0-59 months whose measurements were taken. The vertical black lines in the figure denote minus two standard deviations – children to the left of the line are classified as underweight.

Figure 9.5: Distribution of weight-for-age z-scores among children 0-59 months, unweighted



9.1.2 *Prevalence of underweight*

As shown in Table 9.1, 17.7% of children aged 0-59 months in the second follow-up are underweight (have low weight-for-age) and 3.5% are severely underweight. The proportion of underweight children is highest (20.3%) in the age groups 24 to 59 months and lowest (2.7%) among those under 6 months. Female children (16%) are less likely to be underweight than male children (19.4%).

Table 9.1: Prevalence of underweight in children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of underweight in children 0-59 months, by sex and age (< -2 SD)								
Male	433	1881	22.7	1.4	202	1054	19.4	1.6
Female	376	1900	19.3	1.3	164	1058	16.0	1.7
0-5 months	23	388	5.8	1.2	5	180	2.7	1.4
6-11 months	54	418	12.3	1.6	32	243	13.0	2.4
12-23 months	187	803	23.1	2.2	81	439	18.8	2.3
24-59 months	545	2172	24.7	1.5	248	1250	20.3	1.6
0-59 months	809	3781	21.0	1.1	366	2112	17.7	1.4
6-23 months	241	1221	19.4	1.7	113	682	16.8	2.0
Prevalence of severe underweight in children 0-59 months, by sex and age (< -3 SD)								
Male	119	1881	6.3	0.6	39	1054	3.8	0.7
Female	91	1900	4.9	0.6	31	1058	3.2	0.8
0-5 months	9	388	2.2	0.7	1	180	0.6	0.6
6-11 months	12	418	2.6	0.7	4	243	1.5	0.8
12-23 months	47	803	5.8	0.9	20	439	4.7	1.1
24-59 months	142	2172	6.6	0.6	45	1250	3.9	0.7
0-59 months	210	3781	5.6	0.4	70	2112	3.5	0.6
6-23 months	59	1221	4.7	0.7	24	682	3.6	0.9
Prevalence of high weight for age in children 0-59 months, by sex and age (> 2 SD)								
Male	37	1881	1.9	0.4	16	1054	1.5	0.4
Female	35	1900	1.8	0.3	18	1058	1.7	0.4
0-5 months	50	388	12.6	1.7	27	180	15.0	2.9
6-11 months	9	418	1.8	0.6	2	243	0.8	0.6
12-23 months	9	803	1.2	0.4	2	439	0.4	0.3
24-59 months	4	2172	0.2	0.1	3	1250	0.2	0.1
0-59 months	72	3781	1.9	0.2	34	2112	1.6	0.3
6-23 months	18	1221	1.4	0.3	4	682	0.6	0.3

9.2 Height-for-Age

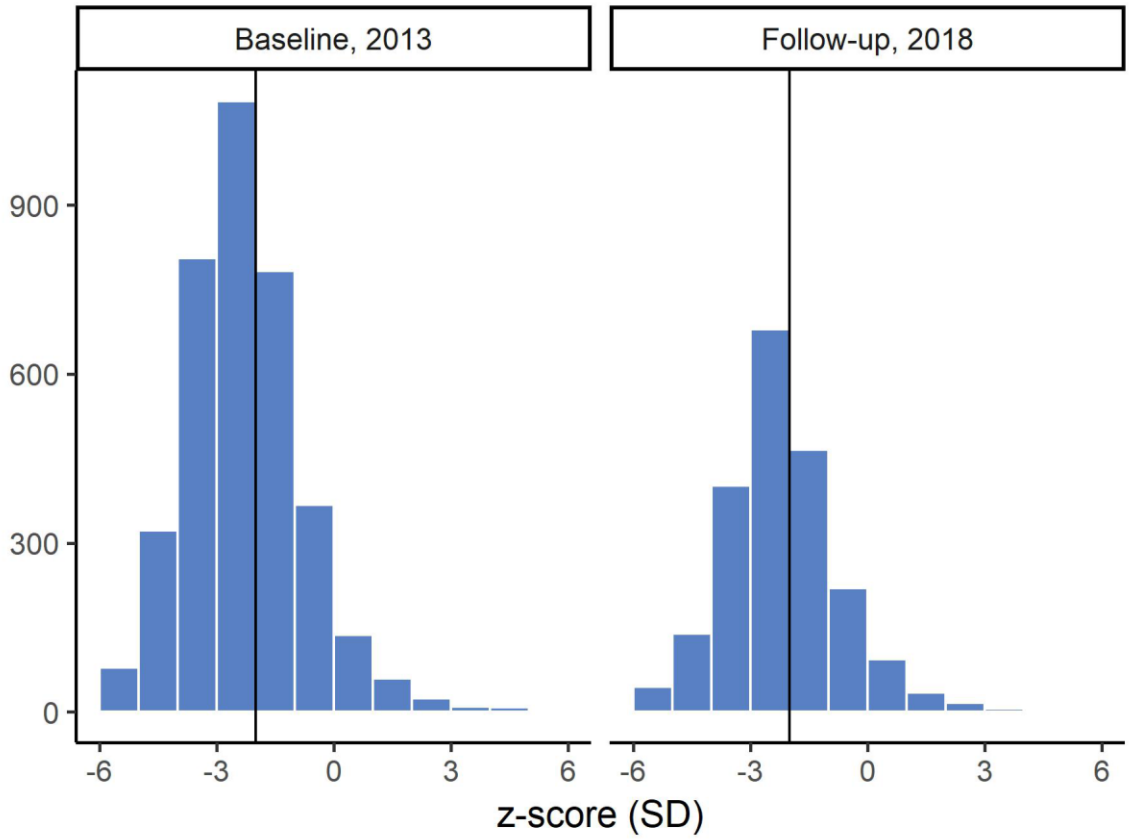
Height-for-age is an indicator of linear growth retardation and cumulative growth deficits in children. Children whose height-for-age z-score is below minus two standard deviations (-2 SD) from the median of the WHO reference population are considered short for their age (stunted) or chronically malnourished. 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 9.6 presents the distribution of height-for-age z-scores among all children aged 0-59 months whose measurements were taken. The vertical black lines in the figure denotes minus two standard deviations

– children to the left of the line are classified as stunted.

Figure 9.6: Distribution of height-for-age z-scores among children 0-59 months, unweighted



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. In the second follow-up, 61.3% of children under age 5 are stunted and 29.1% are severely stunted. Analysis of the indicator by age group shows that stunting is highest (69.7%) in children 24-59 months and lowest (20%) in children aged 0-5 months. Children 12-23 months old have the highest proportion of severely stunted children (30.7%) while the youngest age group (0-5 months) has the lowest proportion (9.3%). A higher proportion (62.1%) of male children is stunted compared with the proportion of female children (60.5%).

Table 9.2: Prevalence of stunting in children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of stunting in children 0-59 months, by sex and age (< -2 SD)								
Male	1230	1877	65.2	1.6	650	1054	62.1	2.3
Female	1127	1891	59.0	1.7	630	1058	60.5	2.2
0-5 months	76	386	18.3	2.0	35	180	20.0	3.1
6-11 months	164	418	38.0	2.7	98	243	41.1	3.3
12-23 months	514	796	64.8	2.2	285	439	65.2	3.0
24-59 months	1603	2168	73.7	1.7	862	1250	69.7	2.3
0-59 months	2357	3768	62.1	1.5	1280	2112	61.3	2.0
6-23 months	678	1214	55.6	1.9	383	682	56.7	2.4
Prevalence of severe stunting in children 0-59 months, by sex and age (< -3 SD)								
Male	699	1877	37.0	1.9	324	1054	31.5	2.3
Female	591	1891	30.9	1.7	272	1058	26.6	2.0
0-5 months	29	386	6.8	1.3	16	180	9.3	2.5
6-11 months	69	418	16.1	1.7	44	243	18.6	2.7
12-23 months	289	796	36.3	2.3	132	439	30.7	2.8
24-59 months	903	2168	41.5	2.2	404	1250	33.3	2.2
0-59 months	1290	3768	34.0	1.6	596	2112	29.1	1.9
6-23 months	358	1214	29.4	1.7	176	682	26.5	2.2

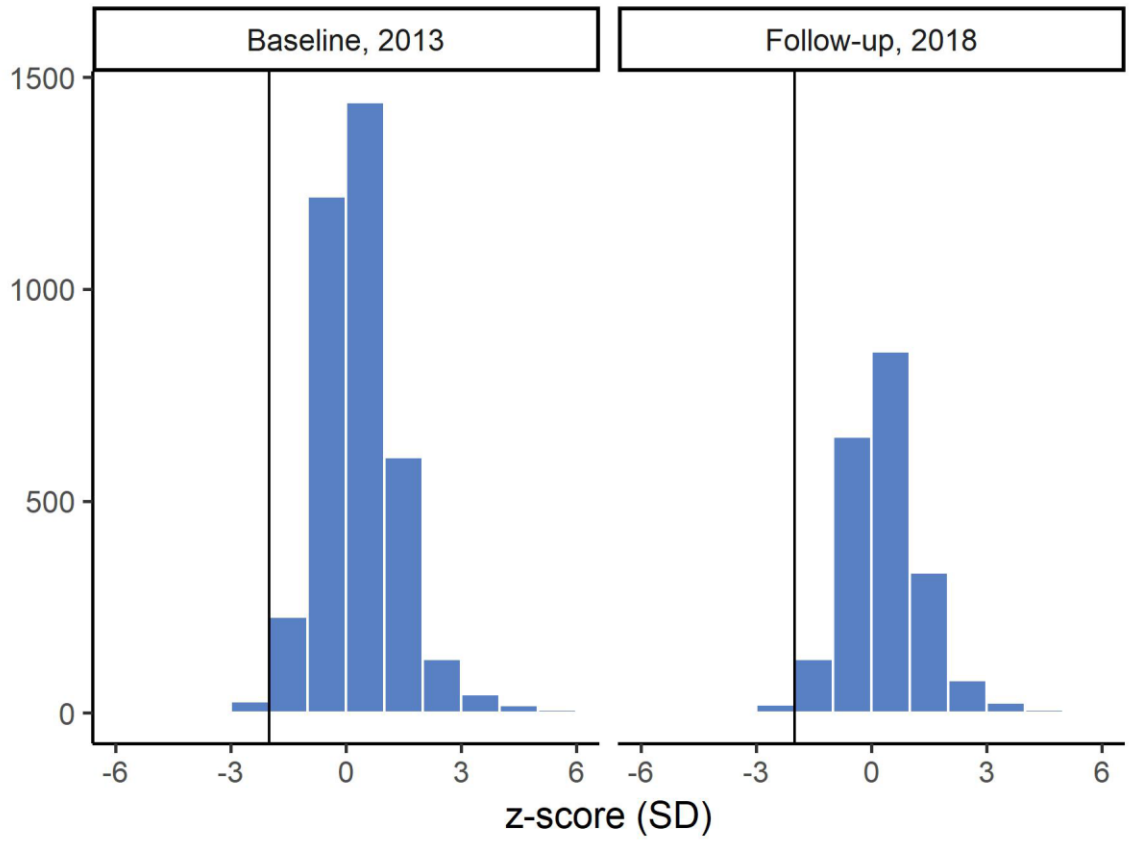
9.3 Weight-for-Height

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 over-weight 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 9.7 shows the distribution of weight-for-height z-scores among all children aged 0-59 months whose measurements were taken. The vertical black lines in the figure denote minus two standard deviations – children to the left of the line are classified as wasted.

Figure 9.7: Distribution of weight-for-height z-scores among children 0-59 months, unweighted



9.4 Prevalence of Wasting

Table 9.3 shows the breakdown of nutritional status of children aged 0-59 months as measured by weight-for-height by age groups and sex. In the second follow-up, 2.1% of children are wasted and 0.5% of children are severely wasted. Analysis of the indicator by age group shows that wasting is highest (2.3%) in children 12-23 months old and lowest (3%) in children aged 6-11 months. Male children are more likely to be wasted than female children (3% to 1.2%). Male children are slightly more likely to be severely wasted (0.7%) than females (0.3%).

Overweight and obesity affect a greater proportion of children in SMI areas Guatemala than wasting. In this sample, 5.2% 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 Guatemala.

Table 9.3: Prevalence of wasting in children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of wasting in children 0-59 months, by sex and age (< -2 SD)								
Male	34	1867	1.8	0.3	31	1053	3.0	0.5
Female	30	1885	1.6	0.3	13	1058	1.2	0.3
0-5 months	10	386	2.4	0.8	4	179	2.6	1.2
6-11 months	7	418	1.6	0.8	7	243	3.0	1.2
12-23 months	25	796	3.1	0.7	10	439	2.3	0.7
24-59 months	22	2152	1.1	0.3	23	1250	1.8	0.4
0-59 months	64	3752	1.7	0.2	44	2111	2.1	0.3
6-23 months	32	1214	2.6	0.5	17	682	2.5	0.6
Prevalence of severe wasting in children 0-59 months, by sex and age (< -3 SD)								
Male	10	1867	0.5	0.2	7	1053	0.7	0.3
Female	10	1885	0.5	0.2	3	1058	0.3	0.2
0-5 months	4	386	0.9	0.5	0	179	0.0	-
6-11 months	3	418	0.7	0.4	1	243	0.4	0.4
12-23 months	5	796	0.6	0.3	2	439	0.5	0.3
24-59 months	8	2152	0.4	0.1	7	1250	0.6	0.2
0-59 months	20	3752	0.5	0.1	10	2111	0.5	0.2
6-23 months	8	1214	0.6	0.2	3	682	0.5	0.3
Prevalence of overweight in children 0-59 months, by sex and age (> 2 SD)								
Male	111	1867	5.7	0.7	63	1053	6.1	0.7
Female	81	1885	4.3	0.6	45	1058	4.2	0.6
0-5 months	68	386	17.4	2.3	45	179	25.4	3.5
6-11 months	23	418	4.7	0.9	16	243	7.0	1.7
12-23 months	34	796	4.4	0.9	15	439	3.3	0.8
24-59 months	67	2152	3.0	0.4	32	1250	2.6	0.5
0-59 months	192	3752	5.0	0.5	108	2111	5.2	0.5
6-23 months	57	1214	4.5	0.7	31	682	4.6	0.8

9.5 Anemia

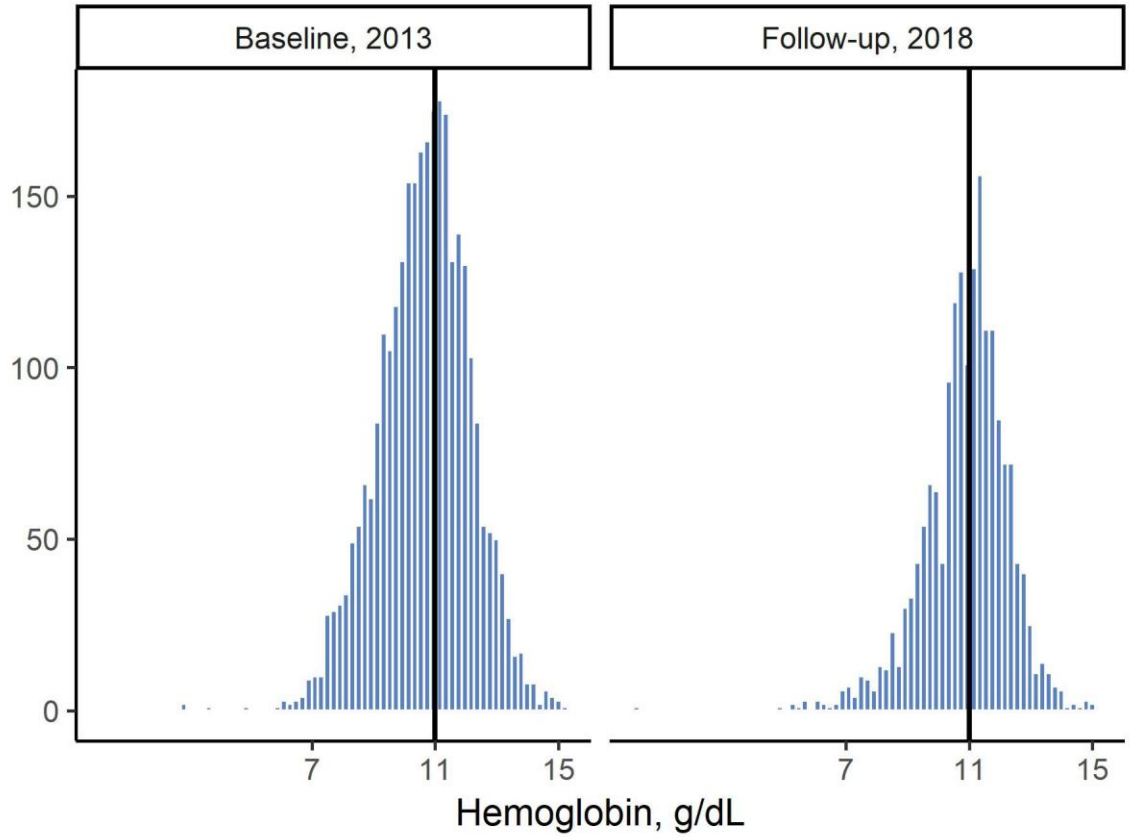
Anemia is a condition characterized by low concentration of hemoglobin in the blood. Hemoglobin is necessary for transporting oxygen to tissues and organs in the body. The reduction in oxygen available to organs and tissues when hemoglobin levels are low is responsible for most of the symptoms experienced 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.

9.5.1 *Distribution of hemoglobin values*

Figure 9.8 shows the distribution of hemoglobin values (in g/dL) among children 0-59 months of age. The vertical black lines in the figure denote a hemoglobin concentration of 11.0 g/dL – children to the left of the line are classified as anemic.

Figure 9.8: Distribution of altitude-adjusted hemoglobin values among children 0-59 months, unweighted



9.5.2 *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. The cutpoints for anemia are adjusted (raised) in settings where altitude is more than 1,000 meters above sea level, to account for lower oxygen partial pressure, a reduction in oxygen saturation of blood, and an increase in red blood cell production. Although some regions of Guatemala are mountainous and well above 1,000 meters, the majority of the population resides at lower levels. The highest elevation of a surveyed household at the second follow-up was 3,501 meters above sea level; 98.2% of children (unweighted) lived above 1,000 meters. Correction for elevation was applied to anemia diagnosis where data collectors measured altitude over 1,000m (using a handheld GPS device).

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 indicates that 46.9% of children under age 5 in Guatemala are anemic. Overall, the anemia prevalence is mostly mild to moderate (45.7%), with only 1.2% of children under 5 years presenting as severely anemic. Anemia prevalence is highest among children aged 0-5 months (63.3%) compared with the other children. More than 56.2% of all children aged 6-23 months, our targeted population for anemia intervention, were found to be anemic.

Table 9.4: Prevalence of anemia, children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of anemia in children 0-59 months, by sex and age								
Male	867	1500	58.1	2.8	427	893	48.2	2.5
Female	802	1486	54.2	2.8	411	905	45.7	2.7
0-5 months	27	38	70.5	7.3	36	56	63.3	6.5
6-11 months	254	340	75.2	2.9	137	219	63.2	4.5
12-23 months	442	677	65.7	3.3	204	388	52.4	3.1
24-59 months	946	1931	49.1	2.8	461	1135	41.2	2.7
0-59 months	1669	2986	56.2	2.6	838	1798	46.9	2.3
6-23 months	696	1017	68.8	2.9	341	607	56.2	3.0
Prevalence of severe anemia in children 0-59 months, by sex and age								
Male	14	1500	1.0	0.3	14	893	1.5	0.5
Female	13	1486	1.0	0.4	8	905	0.9	0.3
0-5 months	0	38	0.0	-	2	56	3.5	2.5
6-11 months	9	340	2.9	1.0	8	219	3.7	1.4
12-23 months	7	677	0.9	0.4	6	388	1.5	0.7
24-59 months	11	1931	0.7	0.3	6	1135	0.6	0.3
0-59 months	27	2986	1.0	0.2	22	1798	1.2	0.4
6-23 months	16	1017	1.6	0.4	14	607	2.3	0.8

APPENDIX A. SAMPLING DESIGN AND METHODOLOGY

A.1 Sample Size

Sample sizes were determined based on IDB's pre-specified plan for the second follow-up measurement to complete a full census of sampled segments (described in section A.2 "Sampling Procedures," below), followed by a survey of 1,889 selected eligible households in intervention areas, and 750 selected eligible households in comparison areas. Households were eligible if they had at least one child aged 0-59 months or one woman aged 15-49 years.

In order to achieve the desired sample size of 2,639 households, we sought to complete interviews with residents of 30 randomly selected households in each of the 63 randomly selected segments in intervention areas (25 in comparison areas). More specifically, we drew a sample of 30 randomly selected households with age-eligible women and/or children as residents, and then drew a backup sample of 10 households from the remaining households with eligible participants in the segment. In some cases, selected households were absent or declined to participate in the SMI-Guatemala Household Survey. These households were replaced in order by households from the backup sample for the same segment. In each selected household, all eligible women and children were selected to participate in the study. Informed consent was sought from each respondent to the household questionnaire and women's health interview, and from the guardian of each child participating in physical measurements. Occasionally, one or more eligible participants refused the interview despite other household members participating, or a survey was refused in course, resulting in a partially complete household result. Because multiple interviewers worked the sample simultaneously, in a handful of instances more than 30 surveys were completed. In the second follow-up, counts of complete households by segment range from 27 to 30 households. Twenty-seven segments with fewer than 30 complete households had one or two partially complete households. Data from partially complete households are used wherever individual modules are sufficiently complete.

A.2 Sampling Procedures

IDB identified 17 intervention municipalities in which to conduct the SMI household survey for the Initiative on the basis of their high concentration of residents in the country's lowest wealth quintile, and 9 comparison municipalities with similar socioeconomic characteristics and ethnic composition. From these 26 municipalities, a two-stage clustered random sample of eligible households was selected.

In this section, we describe the random sampling procedures for selecting the segments from the target area, and the households within the segment. An alternative 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 Cluster sampling

Cluster sample sizes were determined based on the total estimated household sample size divided by a fixed cluster size "μ" of 30 households per segment. The primary sample at the second follow-up of 63 intervention and 25 comparison clusters (segments) was randomly selected from a total of 902 intervention segments in 17 municipalities and 814 comparison segments in 9 municipalities which, based on data from the 2002 Guatemala Population and Housing Census, contained respective populations of 326,565 and 215,375. As stated previously, segments were selected in each study arm with probability proportional to size and with replacement, as follows:

Size was represented by the number of occupied households within the segment, based on data from the 2002 Guatemala Population and Housing Census. We generated a variable for the cumulative number of households in each of the intervention and comparison sampling frames. We divided the cumulative total by the number of segments we meant to sample to obtain an interval length "Δ." 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 $\Sigma+(n-1)*\Delta$.

After selecting the 97 total segments to be surveyed, a set of 30 alternate segments in intervention areas and 10 alternate segments in comparison areas were randomly selected with probability proportional to size. These segments could be used in the event that any of the selected segments could not be surveyed and needed to be replaced due to security concerns, community rejection of the study, or a high proportion of absent households. In Guatemala in the 2018 follow-up survey, one segment was replaced for logistical reasons, and one segment refused the household survey after the SMI census had been completed. Each was replaced with an alternate segment from the same municipality. During the baseline survey, 10 segments were replaced for security reasons, and one segment could not be surveyed for security reasons after the census was completed, but was not replaced because the target household sample size had already been reached.

A.2.2 Household sampling

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. Eligible households were sorted according to a random variable. The first 25 households with eligible children were selected for participation. The first five households with eligible women only were selected to complete the sample of 30 households. Ten additional households were identified as an alternate sample, eight with eligible children and two with eligible women only. These alternate households were substituted in order for selected households that were absent throughout the data collection or refused participation in the study.

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

B.1 Weighting Methodology

Survey weights reflect the three-stage cluster sampling design of the study. The primary sampling unit is referred to as the "segment." The segment is censused, and 30 households with eligible participants selected at random. Within selected households, all women 15-49 years of age and all children 0-59 months of age are selected for participation in the survey. Design weights for households, women and children were generated according to the inverse probability of selection of the unit and incorporated into the merged datasets for analyses. At baseline, selection of segment was with probability proportional to number of households, which matches other SMI countries, but the second follow-up selection was with probability proportional to population because estimates of household counts by segment were unavailable in the geographically referenced census data. The weights were calculated as follows for households:

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

where, at baseline,

$$p(selecting\ Segment\ X) = \frac{\#\ occupied\ households\ in\ Segment\ X\ in\ 2002\ Population\ Census}{Total\ \#\ occupied\ households\ in\ target\ municipalities\ in\ 2002\ Population\ Census} * \quad draws$$

where, at second follow-up,

$$p(selecting\ Segment\ X) = \frac{\#\ individuals\ in\ Segment\ X\ in\ 2002\ Population\ Census}{Total\ \#\ individuals\ in\ target\ municipalities\ in\ 2002\ Population\ Census} * \#\ draws$$

and the number of draws corresponds to the number of segments in the corresponding study arm (70 for intervention areas and 27 for comparison areas at the second follow-up), and the total number of individuals in target municipalities in the 2002 Guatemala Population and Housing Census corresponds to 326,565 in intervention areas and 215,375 in comparison areas, and

if the household includes children under 5 according to the SMI-Guatemala census:

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

or if the household does not include children under 5 according to the SMI-Guatemala census:

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

Minor modifications to this formula were used to calculate weights for women and children as follows:

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

where the average number of women 15-49 years old per household in the sample was 1.3 in intervention areas and 1.22 in comparison areas (according to the SMI-Guatemala Household Census), and

if the household includes children under 5 according to the SMI-Guatemala census:

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

or if the household does not include children under 5 according to the SMI-Guatemala census:

$$p(\text{selecting Household } Y \text{ in Segment } X) = \frac{\#\ \text{households with eligible women but not children completing women's health survey for SMI in Segment } X}{\#\ \text{occupied households with age-eligible women but not children in Segment } X \text{ from SMI census}},$$

and

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

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 0.7383228 in intervention areas and 0.7208058 in comparison areas (according to the SMI-Guatemala Household Census), and

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

and

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

The weights yielded results which were 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 63 clusters (segments) in intervention areas and 25 clusters in comparison areas which had been randomly sampled with probability proportional to size from the target intervention and comparison areas of the initiative. 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 and in Appendix C account for this intra-class correlation, using Taylor-linearized variance estimation.

APPENDIX C. SMI HOUSEHOLD INDICATORS

Table C.1: Performance of payment indicators, SMI-Guatemala Second Follow-up Survey

		Baseline 2013				Second Follow-Up 2017			
	Indicator	n	N	%		n	N	%	SE
2080	Women (age 15-49) who report having received information about family planning methods from a health facility personnel or community health workers in the last 12 months	601	3153	17.6	1.5	338	1825	16.7	1.6
4015	Women (age 15-49) who delivered in a CAPS, CAIMI, or hospital for most recent birth in the last two years	373	1891	19.3	2.0	263	947	27.0	2.9
4670	Women (age 15-49) whose most recent institutional birth (CAPS, CAIMI, or hospital) in the past two years met at least two of five identified standards for cultural sensitivity, excluding C-sections and deliveries outside Guatemala	98	272	38.6	4.2	85	175	49.4	5.0
4100	Infants receiving neonatal care by skilled personnel in a health facility within 48 hours of birth in the last two years	180	2077	8.6	1.0	193	947	19.9	2.4
5060	Children 0-59 months who received ORS and zinc in the last episode of diarrhea in the past two weeks	3	561	0.4	0.3	25	274	9.3	2.2
5070	Children 6-23 months who have received at least 60 packets of micronutrients in the last six months	21	1299	1.5	0.4	41	695	6.0	1.5

Table C.2: Performance of monitoring indicators, SMI-Guatemala Follow-up Survey

		Baseline 2013				Second Follow-Up 2017			
	Indicator	n	N	%		n	N	%	SE
6110	Out-of-pocket health expenditures were 10% or more of total itemized household expenditure reported in the last month	366	3419	10.6	1.0	192	1889	9.4	1.2
6110	Out-of-pocket health expenditures were 25% or more of total itemized household expenditure reported in the last month	175	3419	5.1	0.6	95	1889	4.4	0.6
6110	Out-of-pocket health expenditures were 40% or more of total itemized household expenditure reported in the last month	96	3419	2.9	0.5	46	1889	2.2	0.4
1080	Women aged 15-49 with a live birth in the last year	795	4603	13.2	0.6	408	2729	10.6	0.6
1090	Women aged 15-19 with a live birth in the last year	164	1053	11.3	1.1	71	588	8.5	1.0
2010	Women (age 15-49) currently using (or whose partner is using) a modern method of family planning	641	2372	25.8	1.8	441	1423	31.6	2.7
2020	Women (age 15-49) who did not wish to become pregnant and who were not using/not have access to family planning methods (temporary and permanent)	1731	2372	74.2	1.8	982	1423	68.4	2.7
2030	Women (age 15-49) who report having stopped using a method of family planning during the previous year	57	659	8.9	1.5	20	485	3.5	0.9
4110	Women (age 15-49) with a birth in the last two years who can recognize at least five danger signs in newborns	322	1556	20.8	2.0	219	849	25.1	2.5
6010	Women 15-49 who report having any illness in the past two weeks	603	4599	13.8	1.3	373	2727	14.0	1.5
6020	Women (age 15-49) who report having any illness in the past two weeks but did not seek health care	368	603	61.4	2.4	219	372	58.2	3.4
6050	Women (age 15-49) who used health facility services in the past two weeks	546	4594	10.9	0.9	373	2717	12.9	1.1
6130	Women who reported satisfaction with health care services at their most recent visit to a health facility	1157	1293	88.7	1.5	770	836	92.6	1.3

(continued)

		Baseline 2013				Second Follow-Up 2017			
	Indicator	n	N	%	SE	n	N	%	SE
6140	Women who reported satisfaction with cleanliness of the facility at their most recent visit to a health facility	750	1313	54.2	2.6	363	838	45.7	3.4
6150	Women who reported satisfaction with competence of the medical personnel at their most recent visit to a health facility	1122	1212	91.9	1.3	750	790	95.2	1.1
6160	Women who reported they were treated with respect at their most recent visit to a health facility	717	1322	52.1	2.5	345	837	44.5	3.4
3010	Women (age 15-49) who received at least one antenatal care visit by skilled personnel in their most recent pregnancy in the last two years	723	1893	38.6	2.2	748	945	79.2	1.9
4020	Women (age 15-49) who received postpartum care by skilled personnel within the first 48 hours in their most recent pregnancy in the last two years	169	1852	8.7	1.0	207	942	21.7	2.1
4035	Women (age 15-49) who received postpartum care by skilled personnel between 7 and 42 days after delivery in their most recent pregnancy in the last two years	93	1852	5.2	0.8	48	942	5.1	0.7
4040	Women (age 15-49) who received postpartum care by skilled personnel within 24 hours after delivery, a second check before 7 days, and a third check between 7 and 42 days after delivery in their most recent pregnancy in the last two years	1	1852	0.0	-	1	942	0.1	0.1
4102	Infants receiving neonatal care by skilled personnel in a health facility within seven days of birth in the last two years	215	2077	10.3	1.1	219	947	22.7	2.5
5050	Children born in the last two years who were breastfed within one hour after birth	1596	2100	75.2	2.2	808	970	83.4	1.5
5010	Children 12-59 months who received two doses of deworming in the last year	489	3119	15.7	1.1	304	1667	17.9	1.3
5040	Children 0-5 months who were exclusively breastfed on the previous day	344	420	81.8	2.3	152	179	85.1	2.6
5080	Children 12-15 months who were breastfed on the previous day	239	310	77.3	2.7	113	147	75.9	4.6
5090	Children 6-8 months who received solid or semi-solid food on the previous day	155	243	63.0	4.0	76	123	62.9	5.6
5100	Children 6-23 months who received foods from four or more food groups during the previous day	351	1336	25.7	1.6	253	707	35.7	2.1
5110	Children 6-23 months breastfed or complimentary feeding who received solid, semi-solid, or soft foods the minimum number of times or more during the previous day	512	1173	43.7	2.4	293	594	49.1	2.9
5120	Children 6-23 months who received the minimum acceptable diet (apart from breastmilk) during the previous day	181	1325	13.7	1.2	124	689	17.8	2.0
6030	Children 0-59 months who had any illness in the past two weeks, according to report of mother or caregiver	974	4178	24.1	1.4	456	2195	20.8	1.9
6040	Children 0-59 months who had any illness in the past two weeks but did not seek health care, according to report of mother or caregiver	4	956	0.4	0.2	2	443	0.4	0.3
5020	Children 0-59 months fully vaccinated for age, according to vaccine card and recall	610	3647	16.0	1.4	499	1705	28.8	2.2
1060	Children 6-23 months with hemoglobin <110g/L	696	1017	68.8	2.9	341	607	56.2	3.0
1070	Children 0-59 months with height < -2 SD of the mean of the reference population for age	2357	3768	62.1	1.5	1280	2112	61.3	2.0

		Baseline 2013			Second Follow-Up 2017		
	Indicator	N	mean		N	mean	SE
6090	Average out-of-pocket household itemized health expenditure for the last month (Q)	3404	70.9	12.4	1882	52.3	11.0
6100	Average household itemized expenditure for the last month (Q)	3419	1195.7	57.9	1889	1396.6	63.5
6080	Average travel time to nearest health facility (min)	4226	42.2	3.9	2418	30.7	3.2
6085	Average distance to nearest health facility (km)	3352	3.9	0.4	1503	2.3	0.5
6120	Average wait time at most recent visit to a health facility (min)	1298	48.1	3.8	790	29.7	2.4
6082	Average travel time to delivery location for most recent birth in the last two years (min)	386	161.0	20.5	278	262.5	56.5

APPENDIX D. COMPARISON AREAS

D1. CHAPTER 1

D1.1 Report structure

The chapters in the main body of the report present characteristics of the surveyed SMI-Guatemala sample in intervention areas only. Each table is presented for comparison areas only in Appendix D, and pooled intervention and comparison areas in Appendix E. Most tables take one of three types. Tabulations of select-only-one question types are mutually exclusive, so the proportions sum to 100%. Counts are shown for non-response ("Don't know" or "Decline to respond" recorded), but these cases are always excluded from the denominator.

Tabulations of select-all-that-apply question types do not have mutually-exclusive categories, as respondents can report more than one option, and thus proportions do not sum to 100%. The table shows affirmative cases (n) and non-missing cases (N). Non-response is the difference between non-missing cases (N) and the total sample eligible for that section of the questionnaire, indicated at the start of the chapter. Where statistics are reported for subpopulations, the size of the subpopulation is reported in the same table or the preceding table for straightforward comparison.

Tabulations of continuous variables, where respondents were requested to provide a numeric response, present the range and quartiles (25th percentile, median, 75th percentile) in order to illustrate the distribution of responses across the sample. Counts of non-response are listed in the table and excluded from the count of non-missing cases (N).

D2. 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 SMI-Guatemala Baseline and Second Follow-up Household Survey.

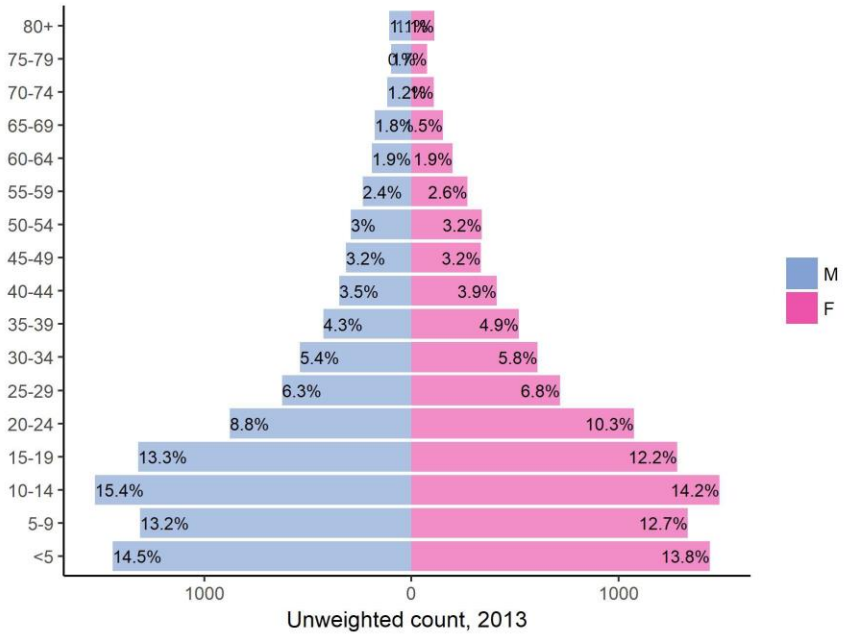
D2.1 Characteristics of Participating Households

A total of 748 households in the Guatemala second follow-up completed the household characteristics questionnaire. In the baseline, 864 completed the survey. 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.

D2.2 Age and Sex Composition, SMI Census

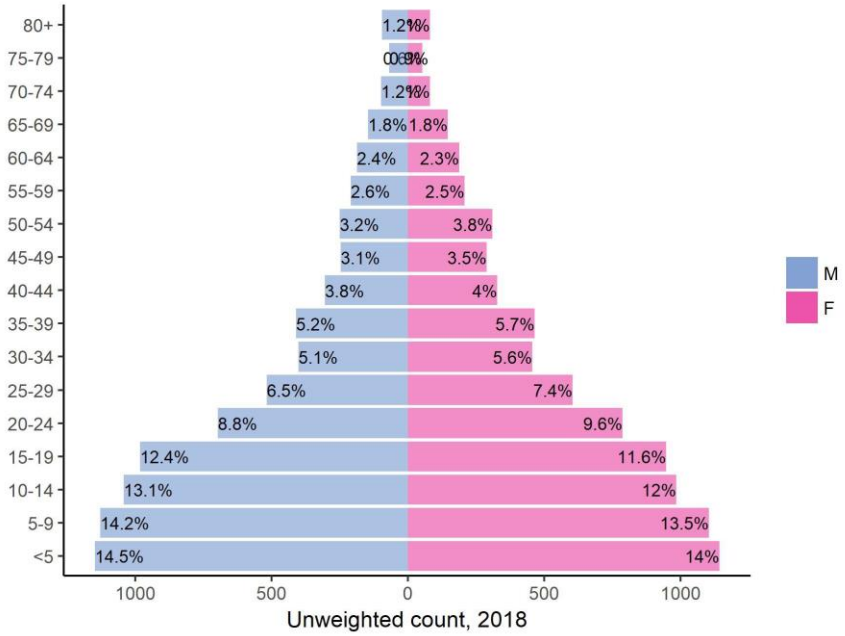
The unweighted distribution of the de facto household population in the surveyed households in the SMI-Guatemala household census by five-year age groups and by sex is shown for baseline (Figure D2.1) and second follow-up (Figure D2.2). Guatemala has a larger proportion of its population in the younger age groups than in the older age groups. Figure D2.2 indicates that in the second follow-up, just under 41% of the population in the Second Follow-up is under age 15 years, more than half (55%) of the population is in the economically productive age range (15-64), and the remaining 5% is age 65 and above.

Figure D2.1: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, baseline survey



* 7 people were excluded due to missing age.

Figure D2.2: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, follow-up survey



D2.3 Household Characteristics, SMI Household Survey

The number of households, women and children in the sample are displayed in Table D2.1; and the percent distribution of households by head of household, number of usual members, and marital status are shown in Table D2.2.

Eighty three percent of households in Guatemala identify as dual-headed in the second follow-up. Males are the head of the household in 3.6% of surveyed households in Guatemala, with females as the head of household in the remaining 13.2%. The median household size in Guatemala is five members, with another 15% of households having seven or more members.

Table D2.1: SMI household survey sample sizes: number of total households, women 15-49 years of age, and children 0-59 months

	Baseline 2013	Second Follow-Up 2018
Households	864	748
Women	1241	1010
Children	1056	883

Table D2.2: Household characteristics, SMI household sample

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Head of household						
Dual-headed household	725	79.6	2.4	630	83.2	1.7
Single head, female	115	16.7	2.1	90	13.2	1.6
Single head, male	24	3.7	1.3	28	3.6	0.8

Dual-headed households are those where (a) two individuals were identified as "head" by the respondent or (b) both the person identified as "head" and his or her spouse or partner are household members

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Number of usual household members	864	0	1	4	6	7	20
Second follow-up 2018							
Number of usual household members	748	0	1	4	5	7	18

D2.4 Drinking Water Access and Treatment

D2.4.1 Sanitation facilities and waste disposal

A household's source of drinking water is an important determinant of the health status of household members. 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, location of water source, and information about sanitation facilities is shown in Table D2.3. The majority of surveyed households (81.4%) have water piped to dwelling, and 18.6% of households have to go outside their home or yard to a water source.

Many households (51%) use a pit latrine and 25.4% of households use a flush toilet. One percent of households report having no toilet, compared to 1.8% at baseline.

Table D2.3: Household water source and sanitation facilities

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Household water source						
Piped to dwelling	645	79.3	4.4	607	81.4	4.5
Protected dug well	37	4.2	1.6	33	4.7	1.7
Piped to yard/plot	22	2.4	0.7	34	4.4	1.4
Unprotected spring	14	1.5	0.9	14	2.0	0.9
Unprotected dug well	47	3.2	1.2	11	1.3	0.7
Rainwater collection	36	3.1	1.5	10	1.3	0.7
Protected spring	4	0.4	0.2	9	1.2	0.6
Tubewell/borehole	21	1.8	0.6	9	1.1	0.6
Surface water	5	0.6	0.5	7	0.9	0.5
Public tap/standpipe	1	0.1	0.1	4	0.4	0.3
Tanker truck	0	0.0	-	0	0.0	-
Cart with small tank/drum	0	0.0	-	0	0.0	-
Bottled water	0	0.0	-	0	0.0	-
Water jug	0	0.0	-	0	0.0	-
Other	32	3.5	1.2	10	1.4	0.7
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Time it takes to retrieve water (min)						
Water on premises	741	89.5	2.9	684	91.8	2.9
Less than 30 minutes	92	8.0	2.3	53	7.2	2.7
30 minutes or longer	24	2.5	1.1	8	1.0	0.5
Don't know	6	-	-	2	-	-
Decline to respond	1	-	-	0	-	-
Sanitation facilities						
Pit latrine	498	52.7	6.4	394	51.0	5.3
Flush toilet	226	30.5	6.8	177	25.4	5.7
Pour flush toilet	73	9.3	2.8	93	12.1	2.9
Dry toilet	48	5.6	2.2	77	10.7	2.7
No toilet	15	1.8	1.0	7	0.8	0.4
Other	2	0.1	0.1	0	0.0	-
Don't know	2	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Shared toilet/facilities	74	845	10.3	2.1	28	741	3.6	0.8

D2.4.2 Cooking fuel sources

Cooking fuel source and the location for cooking food are included in Table D2.4. The percentage of households with a separate kitchen is also shown. The two most commonly reported cooking fuel sources

used in households during the second follow-up are wood (97.4%) and gas tank (10.6%). Among those households with non-missing responses as to what cooking fuel sources they use, 54.3% report normally cooking food in a separate building, 44.6% normally cook food inside the house, and 1.1% normally cook food outdoors. Ninety percent of households have a separate kitchen.

Table D2.4: Cooking fuel source and cooking location

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Wood	830	864	94.4	2.5	730	748	97.4	1.5
Gas tank	105	864	14.0	4.2	75	748	10.6	2.9
Electricity	2	864	0.2	0.2	7	748	1.0	0.5
Coal	6	864	0.7	0.4	0	748	0.0	-
Straw/twigs/grass	2	864	0.2	0.1	0	748	0.0	-
Agricultural crops	0	864	0.0	-	0	748	0.0	-
No food cooked at home	0	864	0.0	-	0	748	0.0	-
Other	0	864	0.0	-	0	748	0.0	-

*categories not mutually exclusive (select all that apply)

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Location for cooking food, if cooking fuel source reported						
In a separate building	338	36.7	3.9	408	54.3	2.3
Inside house	514	61.5	3.7	334	44.6	2.2
Outdoors	11	1.7	0.7	6	1.1	0.5
Other	1	0.1	0.1	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Separate kitchen, if cooking fuel source reported and food cooked in the home	432	513	85.7	3.6	294	334	89.7	2.2

D2.4.3 Household wealth

The median number of bedrooms per household is less than two (Table D2.5). Fifty six percent of households in the second follow-up own agricultural land and 3.7% of households rent agricultural land (Table D2.6).

The availability of durable consumer goods is a good indicator of a household's socioeconomic status. Table D2.6 shows the availability of selected consumer goods by household. The large majority

of households (90.3%) have electricity, and the most commonly owned items are mobile phone (86%), radio (64.1%), and television (59.4%). Many households (15.3%) own a car and 13.9% own a motorcycle/scooter.

Table D2.5: Number of bedrooms per household

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Number of bedrooms	863	1	0	1	1	2	7
Second follow-up 2018							
Number of bedrooms	746	2	0	1	2	2	7

Table D2.6: Household assets

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Household assets								
Electricity	717	864	86.9	3.5	671	748	90.3	3.1
Mobile phone	700	863	81.7	2.7	633	747	86.0	2.8
Radio	578	864	67.5	2.8	489	748	64.1	2.8
Television	434	862	53.0	5.0	423	747	59.4	4.8
Sound system	105	864	13.4	2.4	148	748	21.6	4.5
Refrigerator	140	863	18.0	3.4	137	747	20.0	4.4
Watch	171	863	20.8	2.4	135	748	17.6	2.3
Bank account	102	861	12.3	2.7	97	702	15.7	2.6
Computer	60	863	8.4	2.2	51	747	8.4	2.4
Washing machine	18	863	3.2	1.3	27	747	4.2	1.5
Guitar	38	864	5.7	1.4	23	748	3.4	1.0
Landline phone	11	864	3.1	1.7	8	747	1.4	0.6
Transportation assets								
Car	73	864	8.1	1.5	94	747	15.3	3.0
Motorcycle/scooter	42	864	5.3	1.6	96	748	13.9	2.8
Bicycle	65	863	8.6	1.9	50	748	6.3	1.3
Truck	4	864	0.4	0.2	5	747	0.8	0.4
Animal cart	1	864	0.1	0.1	1	748	0.1	0.1
Agricultural assets: Livestock ownership								
Chickens	554	864	59.6	4.9	511	748	67.9	3.9
Pigs	357	864	36.3	4.9	211	748	27.7	2.9
Sheep or goats	96	864	8.9	3.0	112	748	14.2	3.7
Cattle	58	864	5.4	1.7	69	748	8.8	2.5
Horses, donkeys, or mules	100	863	10.5	2.4	55	748	6.9	2.3

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Agricultural assets: Own or rent agricultural land						
No agricultural land	463	55.5	5.3	287	40.7	4.7
Owns agricultural land	303	31.7	4.6	394	55.6	4.5
Rents agricultural land	97	12.8	2.8	31	3.7	0.8
Shared/community-held land	0	0.0	-	0	0.0	-
Don't know	1	-	-	9	-	-
Decline to respond	0	-	-	27	-	-

D2.5 Household expenditure

D2.5.1 Total expenditures by type

Households are surveyed about the amount of money spent over the last month. After reporting total household expenditures, households are then asked how much was spent on specific categories (e.g., food, housing, education, and medical care) over the last four weeks. Table D2.7 shows the itemized monthly expenditure per person living in the household summarized by expenditure quintile. All data are presented in current quetzal (Q), with no adjustment for inflation. Itemized expenditure information was sufficiently complete to report for 616 households at the second follow-up. The lowest quintile in the study area spent less than 129 Q per person over the last month in the second follow-up.

Table D2.8 shows the budget share, defined as the weighted average expenditure on each category across a quintile divided by the weighted average total itemized household expenditure in the same quintile. Table D2.8 shows that the poorest 20% of households in the study area spend 73% of their monthly expenditure on food, on average. In comparison, the wealthiest households spend 49.7% on food. The poorest households spent 0.8% of their expenditure on medical care, while the wealthiest spent 6.2%.

Table D2.7: Total itemized per- capita expenditure quintiles, current Guatemala Quetzal

	N	DK/DTR	p20	p40	p60	p80
Baseline 2013						
Per capita monthly household expenditure	744	6	87	155	251	447
Second follow-up 2018						
Per capita monthly household expenditure	616	0	129	198	269	377

* Not adjusted for inflation

Table D2.8: Itemized household expenditure by total household budget share

	Bottom quintile	2nd quintile	3rd quintile	4th quintile	Top quintile
Baseline 2013					
Food	68.7	71.6	65.5	64.6	45.3
Alcoholic beverages and tobacco	1.6	0.6	0.2	0.7	0.8
Education expenses	5.6	4.0	4.1	3.5	4.1
Furniture and domestic appliances	0.2	0.2	0.3	0.2	1.2
Recreation	0.1	0.0	0.0	0.1	0.4
Housing and utilities	11.6	8.3	9.3	8.4	7.4
Clothing and shoes	4.2	6.7	8.4	11.6	20.7
Transportation	3.0	3.7	4.0	2.4	3.2
Communication	2.9	2.3	3.2	3.0	2.2
Out-of-pocket medical expenses	2.0	2.2	4.9	5.5	14.3
Social security premiums	0.0	0.0	0.0	0.1	0.1
Private insurance premiums	0.0	0.0	0.0	0.0	0.3
Other costs to access health care	0.1	0.3	0.0	0.0	0.1
Second Follow-Up 2018					
Food	73.0	71.4	65.3	66.9	49.7
Alcoholic beverages and tobacco	0.1	0.6	0.2	0.4	4.8
Education expenses	2.9	2.9	2.7	1.6	5.2
Furniture and domestic appliances	0.0	0.1	0.0	0.0	0.1
Recreation	0.0	0.0	0.0	0.0	0.0
Housing and utilities	11.7	14.4	17.9	16.2	11.5
Clothing and shoes	5.6	5.0	5.3	9.1	15.2
Transportation	3.2	2.7	3.7	2.6	4.2
Communication	2.7	2.0	2.6	2.3	3.1
Out-of-pocket medical expenses	0.8	1.1	2.3	0.9	6.2
Social security premiums	0.0	0.0	0.0	0.0	0.0
Private insurance premiums	0.0	0.0	0.0	0.0	0.1
Other costs to access health care	0.0	0.0	0.0	0.1	0.0

D2.5.2 Health expenditures

Of the 616 households with expenditure data at the second follow-up, 55 reported having health expenditures in the last four weeks. Table D2.9 shows health expenditure by type among households reporting non-zero out-of-pocket health expenditure. Very few households had spending in each category.

Table D2.9: Out-of-pocket medical expenditures by type, last four weeks, current Guatemala Quetzal

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Diagnostic and laboratory tests, X-rays, blood tests	175	0	0	0	0	0	7000
Care that required overnight stay in hospital/clinic	174	1	0	0	0	0	6100
Health products (glasses, hearing aids, prosthetics, etc.)	175	0	0	0	0	0	5000
Care by health professionals not requiring overnight stay	175	0	0	0	0	0	3000
Medications prescribed by health personnel	174	1	0	0	0	300	3000
Care or non-prescription medications from pharmacist	175	0	0	0	0	50	1000
Other costs associated with overnight stay in hospital/clinic	175	0	0	0	0	0	700
Care by traditional/alternative healers/birth attendants	175	0	0	0	0	0	600
Dentists	175	0	0	0	0	0	100
Other health care products or services	175	0	0	0	0	0	50
Second Follow-Up 2018							
Diagnostic and laboratory tests, X-rays, blood tests	55	0	0	0	0	0	450
Care that required overnight stay in hospital/clinic	55	0	0	0	0	0	100
Health products (glasses, hearing aids, prosthetics, etc.)	55	0	0	0	0	0	0
Care by health professionals not requiring overnight stay	55	0	0	0	0	0	250
Medications prescribed by health personnel	55	0	0	0	138.4	628.2	5900
Care or non-prescription medications from pharmacist	55	0	0	0	0	0	1000
Other costs associated with overnight stay in hospital/clinic	55	0	0	0	0	0	450
Care by traditional/alternative healers/birth attendants	55	0	0	0	0	0	0
Dentists	55	0	0	0	0	0	150
Other health care products or services	55	0	0	0	0	0	12000

* Not adjusted for inflation

D2.5.3 Source of health expenditure financing

Of the 616 households with expenditure data at the second follow-up, 14 reported that members of the household went to a hospital and stayed overnight at least once during the last 12 months and paid for expenses associated with the overnight stays. The maximum paid for a hospital stay was 100 Q.

Table D2.10 shows the source and amount of financing for medical expenditures for overnight hospital stays. No single funding source was used by more than about 25% of households with hospital stays.

Table D2.10: Health care financing by source, last 12 months, current Guatemala Quetzal

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Money from relatives or friends outside the household	47	0	0	0	0	1553	20000
Remittances from family or friends abroad	47	0	0	0	0	0	14000
Savings	47	0	0	0	0	0	10000
Reducing other household spending	47	0	0	0	0	0	10000
Property sold	47	0	0	0	0	0	10000
Any household member's current income	47	0	0	0	0	397.8	6000
Items sold	47	0	0	0	0	0	5000
Health insurance plan payment/reimbursement	47	0	0	0	0	0	4200
Loan from a source other than family or friends	47	0	0	0	0	0	3000
Conditional cash transfer programs	47	0	0	0	0	0	2000
Other source	47	0	0	0	0	0	2000
Political donations or grants	47	0	0	0	0	0	500
Second Follow-Up 2018							
Money from relatives or friends outside the household	14	0	0	0	0	0	3800
Remittances from family or friends abroad	14	0	0	0	0	0	12000
Savings	14	0	0	0	0	0	400
Reducing other household spending	14	0	0	0	0	0	2000
Property sold	14	0	0	0	0	0	0
Any household member's current income	14	0	0	0	0	3132.4	6000
Items sold	14	0	0	0	0	0	0
Health insurance plan payment/reimbursement	14	0	0	0	0	0	15000
Loan from a source other than family or friends	14	0	0	0	0	649.4	20000
Conditional cash transfer programs	14	0	0	0	0	0	0
Other source	14	0	0	0	0	0	0
Political donations or grants	14	0	0	0	0	0	0

* Not adjusted for inflation

D3. 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 SMI-Guatemala second follow-up household survey.

D3.1 Demographic Characteristics

D3.1.1 Age, marital status, relation to head of household

The age distribution of the de facto population of women of reproductive age participating in the women's health or pregnancy interviews in Guatemala is shown in Figure D3.1 by five-year age groups. About 61% of all women participating in the second follow-up SMI-Guatemala household survey were younger than 30 years of age, 28% were between the ages of 30 and 39, and 11% were between the ages of 40 and 49. While 38% of women reported being married and 36% being partnered, 23% indicated they were never married. Six percent of women were reported at the SMI-Guatemala census to be the head of household, 51.6% to be the spouse of the head of the household, and 27.7% to be the biological child of the head of the household.

Figure D3.1: Age of respondents, unweighted

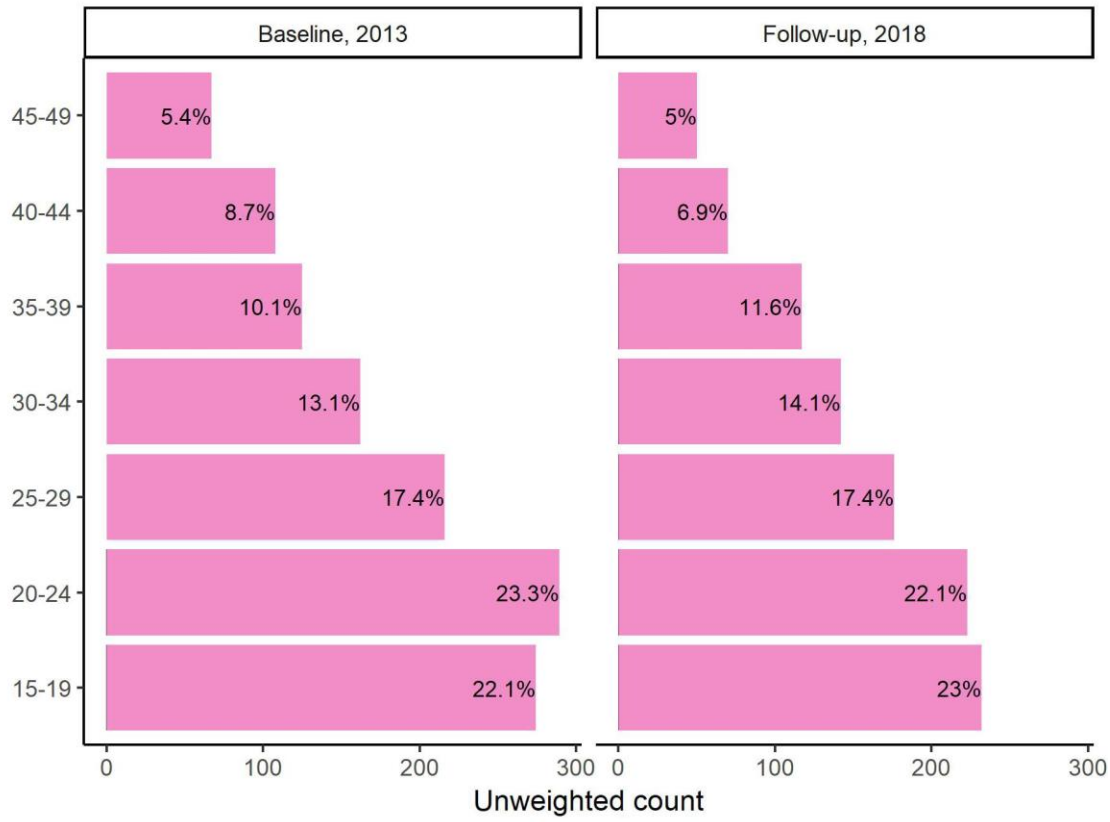


Table D3.1: Demographic characteristics of respondents

	Baseline 2013		Second Follow-Up 2018	
	n	%	n	%
Marital status				
Single	383	30.9	275	27.2
Married	507	40.9	365	36.1
Civil union/partnered	295	23.8	337	33.4
Divorced	1	0.1	0	0.0
Separated	36	2.9	24	2.4
Widowed	17	1.4	9	0.9
Other	0	0.0	0	0.0
Don't know	0	0.0	0	0.0
Decline to respond	2	0.2	0	0.0
Respondent's relationship to head of household				
Head of household	105	8.5	60	5.9
Spouse	586	47.2	521	51.6
Biological child	401	32.3	280	27.7
Adopted or stepchild	3	0.2	4	0.4
Grandchild	14	1.1	22	2.2
Niece/nephew	2	0.2	4	0.4
Parent	4	0.3	0	0.0
Sibling	12	1.0	6	0.6
Daughter-in-law/son-in-law	86	6.9	85	8.4
Sister-in-law/brother-in-law	7	0.6	6	0.6
Grandparent	1	0.1	0	0.0
Mother-in-law/father-in-law	1	0.1	0	0.0
Other relative	3	0.2	3	0.3
Unrelated person	3	0.2	1	0.1
Partner	1	0.1	12	1.2
NA	12	1.0	6	0.6
Other	0	0.0	0	0.0
Don't know	0	0.0	0	0.0
Decline to respond	0	0.0	0	0.0

*At baseline, marital status is reported by the respondent in the Census. In the second follow-up, marital status is reported by the woman at the start of the Household Survey

* "NA" represents women who were missed in the census and added individually into the household survey, so relationship to the head of household was not registered.

D3.2 Education Attainment and Literacy

Eighty one percent of second follow-up survey participants had some formal education (Table D3.2). For 65.8% of these women, 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." Fifty nine percent of women surveyed were able to read the whole sentence. Twenty three percent of women could not read the sentence at all.

Table D3.2: Education attainment and literacy

		Baseline 2013			Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Ever attended school	948	1225	77.6	2.6	819	1009	80.7	2.8
Attended literacy course	76	1225	7.6	1.9	22	1008	2.2	0.7

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Educational attainment and literacy						
Primary	641	63.1	4.9	559	65.8	5.2
Secondary	147	15.8	2.1	145	19.5	2.6
High school	138	18.6	3.8	102	12.7	3.0
University	22	2.5	1.1	13	1.9	0.8
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Literacy						
Cannot read at all	265	22.2	3.0	222	22.9	3.2
Can read parts	273	21.5	2.3	179	17.8	3.2
Can read entire sentence	630	56.2	4.3	608	59.3	5.3
Visually impaired	1	0.1	0.1	0	0.0	-
Don't know	50	-	-	0	-	-
Decline to respond	7	-	-	0	-	-

D3.3 Employment

As summarized in Table D3.3, the vast majority of respondents in the second follow-up were homemakers (74.1%). Of the 53 women who reported being employed and working at the time of the interview, most (91.2%) identified "Employee" as their occupational role.

Table D3.3: Employment

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Employment status						
Homemaker	969	75.3	4.3	786	74.1	3.1
Student	104	11.0	1.5	76	10.4	2.2
Self-employed	0	0.0	-	71	7.3	2.1
Employed/paid for work	113	12.2	3.1	53	5.5	1.1
Employed by a family member without pay	12	1.1	0.5	8	1.6	1.2
Employed, but did not work in last week	2	0.2	0.1	8	0.6	0.3
Retired	0	0.0	-	4	0.4	0.3
Unable to work due to disability	3	0.2	0.1	0	0.0	-
Don't know	18	-	-	2	-	-
Decline to respond	5	-	-	1	-	-
Occupational role, among women employed and being paid for work						
Employee	103	91.2	4.4	49	91.2	4.8
Proprietor	5	2.6	1.2	2	6.2	4.7
Independent contractor	4	6.1	4.2	2	2.6	1.8
Employer	0	0.0	-	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	1	-	-	0	-	-

* Self-employed option was not included in the baseline survey

D3.4 Exposure to Mass Media

Respondents were asked about their exposure to newspapers, radio, and television. As displayed in Table D3.4, among women who demonstrated full or partial literacy in the second follow-up, 40.7% had weekly exposure to newspapers. Sixty six percent of all women had weekly exposure to radio, and 54% had weekly exposure to television.

Table D3.4: Exposure to mass media

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Newspapers, among literate women						
At least once a week	460	55.0	3.7	313	40.7	4.5
Less than once a week	202	20.9	2.5	139	17.3	2.9
Never	239	24.2	3.2	331	42.0	4.4
Don't know	1	-	-	4	-	-
Decline to respond	1	-	-	0	-	-
Not applicable	0	-	-	0	-	-
Radio						
At least once a week	910	75.8	2.8	651	65.8	4.7
Less than once a week	132	11.9	2.2	147	13.3	3.0
Never	154	12.3	2.0	208	20.9	3.0
Don't know	3	-	-	2	-	-
Decline to respond	0	-	-	1	-	-
Not applicable	27	-	-	0	-	-
Television						
At least once a week	620	56.5	4.8	526	54.0	5.1
Less than once a week	130	12.0	2.0	105	10.6	2.3
Never	405	31.5	4.5	374	35.4	4.4
Don't know	2	-	-	2	-	-
Decline to respond	0	-	-	2	-	-
Not applicable	69	-	-	0	-	-

D3.5 Access to Health Services

D3.5.1 Proximity to health care facilities

Table D3.5 - Table 3.7 display the responses to several survey questions that were used to assess access 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.

Excluding the 648 women who were unable to estimate the distance to the closest health facility in the second follow-up, 75% of women reported living 1 kilometers or less from a health facility (Table D3.5). Three-quarters of the sample indicated that it took less than 30 minutes to reach this facility by the usual means of transportation. One-quarter estimated the travel time from their household to the closest health facility to be 30 minutes or more.

Women were also asked for the travel distance and time to their usual health facility, if they had a usual health facility. Excluding the 473 women who did not know the distance to the facility in the second follow-up, three-quarters of the women reported traveling up to 1 kilometers, and three-quarters of the women could travel to the closest facility in less than 30 minutes (Table D3.6).

Of the 328 women who reported a recent health facility visit for themselves or for family members in the second follow-up, three-quarters traveled less than 2 kilometers for care. Twenty-five percent of women traveled 2 to 124 kilometers for care. Half of women traveled for less than 15 minutes, and one-quarter spent 30 minutes or more traveling for care. The longest travel time reported for a recent illness was approximately 10 hours.

Table D3.5: Proximity to health care facilities: nearest health facility

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	930	296	0	0.5	1	3	70
Travel time, min	1170	25	1	10	15	30	1800
Second Follow-Up 2018							
Distance, km	361	648	0	1	1	1	45
Travel time, min	927	31	1	10	15	30	420

Table D3.6: Proximity to health care facilities: usual health facility

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	743	165	0	0.5	1	4	155
Travel time, min	900	8	1	10	15	30	1800
Second Follow-Up 2018							
Distance, km	299	473	0	1	1	1	25
Travel time, min	743	13	1	10	15	30	600

Table D3.7: Proximity to health care facilities: health facility for recent illness

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	388	66	0	0.5	1	4	200
Travel time, min	451	1	1	10	15	36.3	1800
Second Follow-Up 2018							
Distance, km	117	207	0	1	1	2	124
Travel time, min	317	3	1	6.7	15	30	600

D3.6 Health Status

D3.6.1 Current health status

Table D3.8 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, 53% reported that their health was "about the same" in the second follow-up. While 43.6% reported that their health had improved, 3.4% 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 childcare). About 8% of women reported at least some degree of difficulty performing these tasks that was related to their health status.

Table D3.8: Current health status

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Current health relative to last year						
Better	502	40.5	2.4	422	43.6	4.3
Worse	61	4.8	0.8	32	3.4	0.7
About the same	659	54.7	2.7	548	53.0	4.3
Don't know	2	-	-	7	-	-
Decline to respond	2	-	-	0	-	-
Ability to perform daily activities						
Easily	1017	81.2	2.8	932	91.6	1.6
With some difficulty	191	17.0	2.4	63	6.4	1.3
With much difficulty	15	1.4	0.6	12	1.6	0.6
Unable to do	1	0.4	0.4	2	0.3	0.3
Don't know	1	-	-	0	-	-
Decline to respond	1	-	-	0	-	-

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Days in the last month that physical health was not good						
No days	1038	84.4	3.1	866	86.1	1.6
1 to 3 days	71	5.3	0.9	54	5.2	0.9
4 to 7 days	105	10.3	2.6	86	8.7	1.8
7 to 29 days	0	0.0	-	0	0.0	-
All month	0	0.0	-	0	0.0	-
Don't know	9	-	-	3	-	-
Decline to respond	3	-	-	0	-	-
Days in the last month that mental health was not good						
No days	1131	92.2	2.5	959	95.5	0.8
1 to 3 days	33	3.3	1.1	21	2.3	0.7
4 to 7 days	48	4.5	1.4	24	2.3	0.6
7 to 29 days	0	0.0	-	0	0.0	-
All month	0	0.0	-	0	0.0	-
Don't know	12	-	-	5	-	-
Decline to respond	2	-	-	0	-	-

D3.6.2 Recent illness

Women were asked a series of questions about any illnesses or health problems they had in the two weeks preceding the interview. Out of the women in the second follow-up, 9.8% reported being sick during that time (Table D3.9). Of the 96 women who reported a recent illness, headache (14.9%), fever (13.8%), cough (13.4), and abdominal pain (11.4%) were the most commonly elicited specific complaints. Twenty four percent of women specified a different health problem not listed in the questionnaire.

Table D3.9: Recent illness (in the last two weeks)

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Respondent was sick during the past two weeks	179	1226	15.9	3	96	1008	9.8	1.5

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of illness, among those sick in the past two weeks						
Headache	44	21.9	3.2	17	14.9	4.0
Fever	27	16.3	3.0	13	13.8	4.1
Cough	13	7.4	1.8	13	13.4	4.0
Abdominal pain	12	6.2	1.2	13	11.4	3.9
Gynecologic problem	7	5.1	2.1	6	10.2	4.0
Eye/ear infection	2	0.6	0.4	4	6.9	3.7
Swelling in legs, ankles, or feet	0	0.0	-	2	2.0	1.5
Toothache	1	0.1	0.2	1	1.7	1.6
Vomiting	0	0.0	-	1	0.7	0.7
Obstetric problem	1	0.4	0.4	1	0.7	0.7
Skin rash/infection	0	0.0	-	1	0.6	0.5
Malaria	0	0.0	-	0	0.0	-
Tuberculosis	1	0.5	0.6	0	0.0	-
Asthma	0	0.0	-	0	0.0	-
Bronchitis	1	0.6	0.6	0	0.0	-
Pneumonia	0	0.0	-	0	0.0	-
Diarrhea without blood	8	4.9	2.2	0	0.0	-
Diarrhea with blood	0	0.0	-	0	0.0	-
Diarrhea with vomiting	0	0.0	-	0	0.0	-
Anemia	0	0.0	-	0	0.0	-
Measles	0	0.0	-	0	0.0	-
Jaundice	0	0.0	-	0	0.0	-
Stroke	0	0.0	-	0	0.0	-
Hypertension	2	1.3	0.7	0	0.0	-
Diabetes	1	0.4	0.4	0	0.0	-
HIV/AIDS	0	0.0	-	0	0.0	-
Paralysis	0	0.0	-	0	0.0	-
Chest infection	0	0.0	-	0	0.0	-
Blood in urine	0	0.0	-	0	0.0	-
Other	57	34.1	4.2	24	23.7	6.4
Don't know	2	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Options for "Swelling in legs, ankles, or feet", "Blood in urine", and "Chest infection" were available only in the follow-up survey. In the baseline, "Chest infection" was included within the "Cough" answer choice.

D3.6.3 Utilization of health services

Table D3.10 summarizes data regarding the utilization of health services among the 96 women who reported an illness in the two weeks preceding the second follow-up interview. Forty one (44.2%) of these women sought care at a health care facility. Many of these women attended a Public health unit health unit (68.4%); another 12.9% attended a Public health center/clinic clinic. Only one women were hospitalized for their recent illness (1.6% of those who sought care).

Table D3.10: Utilization of health services for illness in the last two weeks

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for recent illness	89	178	49.0	4.4	41	96	44.2	8.2
Admitted to hospital for care*	7	75	8.6	4.3	1	38	1.6	1.7

*Among women who sought care at a public or private hospital, health center/clinic, mobile clinic, or other health facility; public health unit; private office; or pharmacy

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of facility where care was sought						
Public health unit	25	30.1	6.4	27	68.4	8.6
Public health center/clinic	35	40.3	8.1	5	12.9	6.7
Private doctor's office	2	3.2	2.1	1	5.5	5.4
Pharmacy	3	6.2	4.5	2	4.0	2.7
Private health center/clinic	4	3.4	1.6	2	2.9	2.1
Private hospital	2	1.6	1.2	1	2.0	2.1
Community health worker	5	4.6	2.7	1	1.5	1.6
Traditional healer	1	0.9	0.9	1	1.3	1.3
Public hospital	3	4.3	3.2	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	1	0.3	0.3	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Other	7	5.0	2.6	1	1.6	1.7
Don't know	1	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

D3.6.4 Insurance coverage

Less than 31% of women reported being covered by any type of health insurance in the second follow-up (Table D3.11).

Table D3.11: Insurance coverage

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
No insurance	1051	85.8	2.9	668	69.2	4.0
Ministry of Public Health and Social Assistance (MSPAS)	138	10.9	2.7	277	29.5	4.0
Guatemalan Institute of Social Security (IGSS)	34	3.2	1.2	13	1.0	0.4
Armed forces	0	0.0	-	0	0.0	-
Private insurance	0	0.0	-	0	0.0	-
Other	2	0.1	0.1	4	0.3	0.1
Don't know	1	-	-	47	-	-
Decline to respond	0	-	-	0	-	-

D3.6.5 Other barriers to health care access

There are many other barriers to accessing health care. Women who reported that they sometimes or never sought care when they felt sick were asked what reasons prevented them from receiving health care when it was needed. Interviewers were instructed to ask in an open-ended manner for all applicable reasons, and to mark the appropriate response options in the questionnaire based on the woman's response. Table D3.12 summarizes the responses to this section. The most commonly cited factors influencing health care access in the second follow-up were the preference for treatment at home (52.3%) and the belief that the health center does not have sufficient medicines (20.9%). Twenty percent of women did not believe they were ill enough to seek treatment. Access and quality of care were also important barriers: numeric(0)% of women said the health center did not carry sufficient medication, 0% said they did not trust facility personnel, and 0% said the care was too expensive.

Table D3.12: Other barriers to health care utilization, women 15-49 years of age who were sick in the last two weeks but did not seek care

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Treated self at home	28	85	31.6	6.2	28	55	52.3	8.6
Health center does not have sufficient medicines	12	85	10.5	3.8	11	55	20.9	7.7
Not sick enough to seek treatment	20	85	18.1	4.2	10	55	20.1	6.5
Health center is not well-equipped	4	85	5.0	3.4	2	55	7.3	4.6
Tried, but no staff was at the center	2	85	1.9	1.5	1	55	3.0	2.6
Health center is too far away	10	85	9.1	4.0	2	55	2.5	1.7
Could not afford transportation	3	85	3.6	2.6	2	55	2.5	2.4
Health center infrastructure is poor	2	85	1.5	1.1	1	55	1.6	1.6
Care is too expensive	20	85	23.9	5.3	0	55	0.0	-
Could not find transportation	3	85	1.5	1.2	0	55	0.0	-
Did not know where to go	1	85	1.0	1.0	0	55	0.0	-
It is difficult to deal with health center personnel	2	85	2.3	1.3	0	55	0.0	-
Health center personnel not knowledgeable	0	85	0.0	-	0	55	0.0	-
Do not trust the personnel	7	85	7.0	3.3	0	55	0.0	-
Was previously mistreated	2	85	2.1	1.2	0	55	0.0	-
Tried, but was refused care	2	85	2.6	1.3	0	55	0.0	-
Could not get permission to go to the doctor	0	85	0.0	-	0	55	0.0	-
Did not want to go alone	1	85	0.9	0.9	0	55	0.0	-
Too busy with work, children, or other commitments	5	85	7.1	2.2	0	55	0.0	-
Religious or cultural beliefs	0	85	0.0	-	0	55	0.0	-
Other	22	85	26.7	5.8	10	55	15.0	3.2

*categories not mutually exclusive (select all that apply)

D4. CHAPTER 4: EXPOSURE TO HEALTH SYSTEM INTERVENTIONS

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

D4.1 Exposure to Community Health Workers

Respondents were asked about their exposure to community health workers. One percent of women reported meeting with a community health worker in the month preceding the second follow-up interview (Table D4.1). Of the women in the second follow-up, 0.4% met only once, and 0.4% met two or more times.

Table D4.1: Exposure to community health workers, women 15-49 years

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Did not meet	1113	93.3	1.1	996	99.2	0.3
One time	84	5.3	1.0	6	0.4	0.2
Two times	9	0.5	0.2	3	0.4	0.3
Three times	4	0.7	0.4	0	0.0	-
Four or more times	3	0.2	0.1	0	0.0	-
Don't know	11	-	-	4	-	-
Decline to respond	1	-	-	0	-	-

Referral and advice services provided by community health workers are summarized in Table D4.2. Among women who met with a community health worker in the last month during the second follow-up, vaccination for children was the most common service provided (52.6%). Advice about family planning methods or counseling (46.3%) and referral for postnatal care (45.9%) was also frequently reported.

Table D4.2: Services provided by community health workers, women 15-49 years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Vaccination for children	84	106	79.4	4.1	5	10	52.6	16.2
Family planning methods or counseling	62	106	62.3	6.5	4	10	46.3	18.3
Referral for postnatal care	26	104	24.4	7.4	4	10	45.9	16.7
Child nutrition counseling	60	105	62.6	8.1	4	10	44.8	16.8
Referral for antenatal care	44	104	47.7	7.2	3	10	39.2	20.0
Referral for in-facility delivery	21	105	21.7	7.0	1	10	25.3	21.1
Referral for voluntary HIV/syphilis counseling and testing*	21	104	22.8	6.8	1	10	6.7	5.6
Information, education, and communication sessions (IEC)	27	105	26.5	7.6	1	10	6.7	5.6

* For the prevention of HIV/syphilis transmission from mother to child

	Second Follow-Up 2018			
	n	N	%	SE
Provided deworming treatments	3	10	39.1	17.3
Provided micronutrients	3	10	39.1	17.3
Provided diarrhea treatment with ORS and zinc	2	10	32.0	19.0
Other	1	10	9.1	9.3

Questions about these topics were not asked at baseline. They were added to the second follow-up survey to track exposure to SMI interventions.

D4.2 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, information provided by community health workers, and respectfulness of community health workers. Results are displayed in Table D4.3.

Table D4.3: Satisfaction with community health workers, women 15-49 years of age who met with community health workers in the last month

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Satisfaction with number visits from community health workers						
Very dissatisfied	2	2.1	1.4	0	0.0	-
Dissatisfied	12	11.0	3.4	1	34.8	25.3
Satisfied	88	84.7	3.8	6	56.0	23.8
Very satisfied	3	2.2	1.2	1	9.2	9.5
Don't know	4	-	-	1	-	-
Decline to respond	0	-	-	0	-	-
Satisfaction of knowledge and training of community health workers						
Very dissatisfied	2	2.1	1.4	0	0.0	-
Dissatisfied	7	5.6	2.1	0	0.0	-
Satisfied	93	90.0	2.7	7	90.8	9.5
Very satisfied	3	2.2	1.2	1	9.2	9.5
Don't know	4	-	-	1	-	-
Decline to respond	0	-	-	0	-	-
Satisfaction with information provided by community health workers						
Very dissatisfied	3	3.2	2.3	0	0.0	-
Dissatisfied	7	5.5	2.4	0	0.0	-
Satisfied	93	89.1	4.2	7	90.8	9.5
Very satisfied	3	2.2	1.2	1	9.2	9.5
Don't know	3	-	-	1	-	-
Decline to respond	0	-	-	0	-	-
Satisfaction with respectfulness shown by community health workers						
Very dissatisfied	2	2.4	2.3	0	0.0	-
Dissatisfied	9	7.0	2.3	0	0.0	-
Satisfied	87	87.3	3.8	7	90.8	9.5
Very satisfied	4	3.3	1.6	1	9.2	9.5
Don't know	7	-	-	1	-	-
Decline to respond	0	-	-	0	-	-

D4.3 Counseling provided in health facilities

Respondents who had visited a health facility in the last 12 months (324 women at the second follow-up) were asked whether they were given counseling about certain topics by health center personnel. Approximately 19.7% of women in the second follow-up reported receiving guidance or advice about breastfeeding in the 12 months preceding the interview (Table D4.4). Approximately 19.9% of women in the second follow-up reported receiving guidance or advice about child nutrition in the 12 months preceding the interview (Table D4.4). Approximately 25.1% of women in the second follow-up reported receiving guidance or advice about danger signs for children's health in the 12 months preceding the interview (Table D4.4).

Table D4.4: Exposure to breastfeeding, child nutrition, and child health interventions, women 15-49 years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Breastfeeding	90	297	29.3	4.6	77	323	19.7	2.3
Child nutrition	92	300	29.8	5.0	72	323	19.9	2.2
Danger signs for children's health	92	301	29.9	4.8	93	323	25.1	3.2

D4.4 Counseling provided in health facilities to women with children

In the follow-up survey, respondents who had visited a health facility in the last 12 months and who had children (288 women at the second follow-up) were asked whether they were given counseling about certain topics by health center personnel.

Table D4.5: Counseling provided in health facilities to women with children

	Second Follow-Up 2018			
	n	N	%	SE
Deworming	82	286	27.7	3.5
Micronutrients	62	285	20.5	2.6
Diarrhea treatment with ORS and zinc	57	287	19.3	2.9

Questions about these topics were not asked at baseline. They were added to the second follow-up survey to track exposure to SMI interventions.

D5. 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 SMI-Guatemala second follow-up household survey.

Family planning questions were asked only to women of reproductive age who were married or partnered. During the SMI-Guatemala baseline household survey, family planning questions were asked to women whose marital status was reported as "married" or "partnered" by the SMI-Guatemala household census respondent. During the second follow-up, the family planning section was instead conditioned on a question about marital status asked to the respondent herself at the start of the woman's health interview. This captured participants who had a change in marital status between the census and household survey and participants whose marital status was incorrectly recorded in the census. At the baseline, 790 women qualified for the family planning questions, and at the second follow-up, 701 women qualified.

D5.1 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 are certain days when a woman is more likely to become pregnant, and when during the menstrual cycle those days occur. Responses to these questions are summarized in Table D5.1. In the second follow-up, 39.5% of women indicated that there were certain days when a woman is more likely to become pregnant, and of these women, only 49.2% identified the correct timing of the fertile period (halfway between two periods).

Table D5.1: Knowledge of the fertile period, women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Knowledge of the fertile period	265	435	59.1	4.9	186	473	39.5	4.1

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Knowledge of timing of fertile period, among women who know of fertile period						
Just before period	25	9.4	2.1	13	6.6	1.9
During period	6	2.3	1.0	22	9.7	3.7
Just after period	149	57.1	6.5	65	34.1	5.1
Halfway between periods	70	29.9	5.6	81	49.2	5.6
Other	3	1.2	0.9	1	0.4	0.4
Don't know	11	-	-	4	-	-
Decline to respond	1	-	-	0	-	-

D5.2 Use of Family Planning Methods

D5.2.1 Current use

The coverage 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. Women who said they had heard of a family planning method were asked if they were currently using that method. Table D5.2 displays the percentage of all women using at least one family planning method, as well as the percentage of women reporting use of more than one family planning method at the time of the interview. Twenty four percent of all survey respondents in the second follow-up reported current use of at least one family planning method.

Women considered "in need" of family planning methods are those who are married or partnered, excluding those who report the following characteristics: does not have sexual relations, virgin, menopausal, infertile, hysterectomy, pregnant, or wants to become pregnant. Even women not considered "in need" of contraception may use a method. Table D5.3 shows the uptake of modern family planning methods among all married and partnered women (23.6%), and among women considered "in need" of contraception (29.5%).

Table D5.2: Current use of family planning methods, women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Currently in need of contraception	610	789	75.5	2.7	553	701	78.1	2.6
Current use of any method, among married or partnered women	216	789	26.9	2.5	167	701	23.6	2.7

Table D5.3: Current use of modern family planning methods, women 15-49 years of age who are married or partnered and in need of contraception

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Current use of any method, among women in need of contraception	205	610	33.3	2.9	161	553	29.5	3.5
Current use of modern method, among women in need of contraception	190	610	31.3	3.0	152	553	28.1	3.6

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Number of methods the respondent is currently using						
Not using any family planning methods	408	67.3	2.8	392	70.5	3.5
Using 1 family planning method	199	32.4	2.8	159	28.8	3.4
Using 2 family planning methods	2	0.2	0.1	2	0.6	0.5

Table D5.4 displays the percentage of all women using specific family planning methods. The methods most commonly in use during the second follow-up are injectables (14.5%) and female sterilization (5.4%).

Table D5.4: Current use of family planning methods, by type of method, for women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Injectable	127	788	13.9	2.0	107	687	14.5	2.3
Female sterilization	41	787	6.7	1.6	30	686	5.4	1.4
Implant	16	788	1.9	0.6	9	685	1.2	0.4
Rhythm	6	787	1.2	0.7	9	687	1.0	0.4
Intrauterine device (IUD)	5	786	0.5	0.2	5	687	0.9	0.4
Male condom	3	787	0.3	0.1	3	686	0.8	0.5
Other traditional method	1	787	0.1	0.1	2	687	0.5	0.5
Withdrawal	3	787	0.3	0.2	2	687	0.2	0.1
Oral contraceptive	8	786	0.9	0.4	1	687	0.1	0.1
Diaphragm	0	788	0.0	-	1	687	0.1	0.1
Male sterilization	1	788	0.4	0.4	0	687	0.0	-
Female condom	0	788	0.0	-	0	685	0.0	-
Sponge	0	788	0.0	-	0	686	0.0	-
Lactational amenorrhea	7	788	0.7	0.4	0	687	0.0	-
Emergency contraception (Plan B)	0	787	0.0	-	0	687	0.0	-
Other modern method	0	788	0.0	-	0	687	0.0	-

* categories not mutually exclusive (select all that apply)

D5.3 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 are summarized in Table D5.5.

The public sector is the source most commonly reported by users of most modern family planning methods, including female sterilization. Pharmacies are important sources for injectables, the pill, and male condoms. Women report learning about traditional methods in the public sector, from friends or relatives, or at church (Table D5.6).

Table D5.5: Source of modern family planning methods, women 15-49 years of age who are married or partnered

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Injectable						
Public health unit	56	43.7	9.3	84	77.7	5.3
Public health center/clinic	50	35.0	5.3	14	14.5	4.2
Pharmacy	5	7.7	3.1	8	7.0	3.1
Other public health facility	1	0.7	0.7	1	0.7	0.8
Public hospital	2	1.7	1.2	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	1	0.8	0.7	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Community health worker	4	4.1	2.3	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	8	6.3	3.8	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Female sterilization						
Public hospital	20	38.8	6.8	13	53.9	10.7
Public health unit	2	2.8	2.1	6	17.8	7.9
Private hospital	4	21.9	10.6	5	15.8	9.4
Public health center/clinic	5	12.3	6.6	3	6.7	3.9
Other public health facility	1	1.0	1.1	1	2.1	2.2
Private health center/clinic	3	4.1	2.7	1	1.9	1.6
Private doctor's office	2	3.6	2.7	1	1.9	1.6
Public mobile clinic	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	4	15.5	8.8	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Oral contraceptive						
Pharmacy	1	11.7	9.7	1	100.0	0.0
Public hospital	0	0.0	-	0	0.0	-
Public health unit	4	37.6	18.6	0	0.0	-

(continued)

	n	%	SE	n	%	SE
Public health center/clinic	2	27.5	12.3	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	1	23.2	20.8	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	0	0.0	-	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Intrauterine device (IUD)						
Private health center/clinic	0	0.0	-	1	44.9	28.3
Public health unit	2	36.7	21.8	2	30.1	21.4
Public health center/clinic	2	41.9	22.9	1	13.1	13.5
Other public health facility	0	0.0	-	1	11.9	12.4
Public hospital	1	21.4	19.2	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	0	0.0	-	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Implant						
Public health unit	2	10.9	8.3	5	62.5	17.6
Public health center/clinic	11	73.8	12.6	3	28.7	15.8
Public hospital	1	4.5	4.7	1	8.8	8.9
Public mobile clinic	1	5.2	5.4	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-

(continued)

	n	%	SE	n	%	SE
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	1	5.5	5.4	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Male condom						
Public health unit	2	58.5	30.3	2	86.4	14.8
Pharmacy	1	41.5	30.3	1	13.6	14.8
Public hospital	0	0.0	-	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	0	0.0	-	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Male sterilization						
Public hospital	0	0.0	-	0	0.0	-
Public health unit	1	100.0	0.0	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	0	0.0	-	0	0.0	-
Don't know	0	-	-	0	-	-

(continued)

	n	%	SE	n	%	SE
Decline to respond	0	-	-	0	-	-

*Diaphragm and emergency contraceptive (Plan B) omitted from table because no women reported receiving them in baseline or follow-up.

Table D5.6: Source of knowledge about traditional family planning methods, women 15-49 years of age who are married or partnered

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Lactational amenorrhea						
Public hospital	0	0.0	-	0	0.0	-
Public health unit	1	6.8	7.5	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	1	12.3	9.7	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	2	27.2	16.2	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	3	53.7	22.8	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Rhythm						
Friend/parent	2	17.7	15.2	4	43.4	21.8
Public health unit	0	0.0	-	3	36.8	21.1
Public hospital	0	0.0	-	1	9.0	8.4
Public health center/clinic	2	15.2	13.4	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	1	7.5	8.5	0	0.0	-

Other	1	59.6	26.9	1	10.9	11.0
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Withdrawal						
Friend/parent	1	46.6	31.1	1	55.8	35.6
Public health unit	1	23.8	22.8	1	44.2	35.6
Public hospital	0	0.0	-	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Other	1	29.5	26.4	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

D5.4 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.

D5.4.1 Prevalence of interruption

The prevalence of interruption and non-use of family planning methods is summarized in Table D5.7. Of women participating in the second follow-up survey, 78.1% are considered "in need" of contraception (i.e., they did not report any of the following: does not have sexual relations, virgin, menopausal, infertile, hysterectomy, pregnant, or wants to become pregnant). Among these women in need, 2.9% reported any interruption in the use of family planning methods in the previous year.

Table D5.7: Interruption and non-use of family planning methods, among women 15-49 years of age who are married or partnered and in need of contraception

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Discontinuation rate*	24	610	4.1	1.3	18	553	2.9	0.9

* any interruption in use during the last year, among women in need of contraception

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Number of interruptions in use during the last year						
none	586	95.9	1.3	535	97.1	0.9
once	18	2.6	0.8	13	1.9	0.6
2-6 times per year	6	1.5	0.9	5	1.0	0.7
7-12 times per year	0	0.0	-	0	0.0	-
>12 times per year	0	0.0	-	0	0.0	-

D5.4.2 Reasons for non-use

Women who indicated they were not using any method on the day of the interview were asked to specify all reasons why they did not use a method. The interviewer matched responses provided by the respondent to a list of reasons in the questionnaire (Table D5.8). The most commonly cited reasons for non-use at the time of the second follow-up interview were, do not like to use contraception (22.9%), respondent is married (21.5%), and respondent knows no method (10.4%).

Table D5.8: Reasons for non-use of family planning methods, women 15-49 years of age who are married or partnered and who are not using family planning methods

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Do not like to use contraception	114	488	20.4	3.1	115	496	22.9	3.5
Married	17	488	7.2	2.6	98	496	21.5	5.9
Knows no method	48	488	8.3	1.7	51	496	10.4	3.5
Trying to become pregnant	51	488	9.8	1.9	38	496	9.0	2.4
Spouse or partner opposed to use	37	488	8.0	2.4	41	496	8.1	1.9
Using contraception is uncomfortable	54	488	8.8	2.0	35	496	5.4	1.4
Not sexually active	28	488	5.7	1.3	18	496	4.4	1.5
Infrequently sexually active	13	488	2.9	1.1	14	496	4.1	1.6
Concerned about side effects	13	488	2.4	0.9	16	496	3.2	1.1
Currently pregnant	34	488	6.3	1.3	13	496	2.2	0.7
Menopausal	7	488	1.5	0.6	9	496	2.0	0.8
Against religious beliefs	3	488	1.0	0.6	11	496	1.9	1.0
Using contraception interferes with normal body processes	44	488	6.8	1.7	10	496	1.7	0.6
Breastfeeding	23	488	4.0	1.1	11	496	1.6	0.6
Mistrust health center staff	7	488	1.4	0.5	6	496	1.4	0.9
Knows no source for methods	4	488	0.8	0.6	8	496	1.2	0.5
Opposed to use	9	488	1.8	0.6	7	496	1.1	0.6
Unmarried	13	488	2.7	0.8	4	496	1.0	0.6
The health facility is too far away	4	488	0.7	0.3	3	496	0.9	0.7
Health facility staff difficult to deal with	1	488	0.2	0.2	3	496	0.8	0.4
Infertile	8	488	3.4	1.5	1	496	0.6	0.5
No menstrual period since giving birth	9	488	1.9	0.8	2	496	0.3	0.2
Could not find transportation to a health facility	1	488	0.2	0.2	2	496	0.3	0.3
Could not afford transportation	1	488	0.2	0.2	1	496	0.2	0.2
Preferred method was not available	0	488	0.0	-	1	496	0.2	0.2
Others opposed to use	1	488	0.2	0.2	1	496	0.1	0.1
Virgin	0	488	0.0	-	0	496	0.0	-
Have undergone hysterectomy	3	488	0.7	0.5	0	496	0.0	-
The method is too expensive	11	488	1.8	0.6	0	496	0.0	-
No method was available	4	488	0.9	0.6	0	496	0.0	-
Other	93	488	19.6	3.2	22	496	3.9	1.1

* "Using contraception affects health" was an option offered in the second follow-up, but was not available at baseline. 93 women selected this as a reason for not using family planning at the second follow-up.
* categories not mutually exclusive (select all that apply)

D5.5 Family Planning Intentions and Decision-Making

D5.5.1 Participation in family planning decision

In this setting in the second follow-up, 79.5% of women report that decisions about family planning methods are jointly made by the respondent and her partner. In only 6.9% of cases, the decision to use family planning methods is up to the respondent's partner alone.

Table D5.9: Participation in family planning decision-making, women 15-49 years of age who are married or partnered and are currently using family planning methods

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Joint decision	269	86.3	2.8	185	79.5	3.8
Mostly the respondent	22	5.8	2.3	34	13.3	3.8
Mostly respondent's spouse/partner	21	7.3	2.1	17	6.9	2.4
Others	0	0.0	-	1	0.3	0.3
Not applicable - not partnered	1	0.5	0.5	0	0.0	-
Don't know	1	-	-	2	-	-
Decline to respond	0	-	-	2	-	-

D5.5.2 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 D5.10 shows the percent of women currently using family planning methods who were told about other options for contraception (56% of women in the second follow-up).

Table D5.10: Family planning decision-making, informed choice, women 15-49 years of age who are married or partnered and who are currently using family planning methods

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Informed about other family planning options by a doctor, nurse, or community health worker	154	312	51	4.8	141	239	56	5.8

D5.6 Exposure to Family Planning Information

D5.6.1 Family planning messages delivered by health care providers

Respondents were asked about their exposure to family planning messages delivered by health care providers (Table D5.11). Fifty two percent of women in the second follow-up reported being advised about family planning at the health care facility they attend during the past 12 months. Nine percent of all respondents indicated that they had been visited by a health promoter who provided information about family planning in the last 12 months. Just 2.4% 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 D5.11: Family planning messages delivered by health care providers in the last 12 months, women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Discussion about family planning methods with staff member at a health facility	108	232	46.9	5.7	151	277	52.4	3.7
Discussion about family planning methods during health promoter visit	110	784	13.6	2.1	80	697	9.4	1.6
Visit by promotor, among women who had not visited a health facility	67	548	11.3	2.3	12	415	2.4	0.8

D5.7 Age at First Birth

D5.7.1 Age at first birth

Sixty seven percent of respondents in the second follow-up had ever given birth (Table D5.12). Of these women, the median age of the women when their first child was born was 19 years old. Only a quarter of women were 21 years old or older when their first child was born. Four percent of women reported a history of stillbirth, miscarriage, and/or abortion.

Table D5.12: Parity and age at first birth, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Ever given birth	910	1226	68.0	2.2	758	1004	67.4	2.4
Ever had a stillbirth, miscarriage, or abortion	113	1218	9.1	1.2	35	1004	3.8	0.7

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Age at first birth, among parous women	889	0	12	17	19	21	37
Second follow-up 2018							
Age at first birth, among parous women	720	0	12	17	19	21	46

D6. CHAPTER 6: MATERNAL HEALTH CARE

This chapter summarizes key indicators pertaining to antenatal care, delivery care, and postpartum care for the most recent live birth in the last two years as reported by women of reproductive age (15-49 years) participating in the SMI-Guatemala second follow-up household survey. Participating women were interviewed about all live births in the last five years, but to reduce the impact of recall bias, results reported here are for each woman's most recent birth in the last two years. At the baseline, 544 women were interviewed about at least one birth in the last two years. At the second follow-up, 368 women were interviewed about births in the last two years.

D6.1 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.

D6.1.1 Antenatal care coverage

Early and regular checkups by trained medical providers are important in assessing the physical status of women during pregnancy and 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 same details were recorded for up to eight antenatal care visits.

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 D6.1. Definition of "most recent birth" changed between baseline and second follow-up. The type of facility where antenatal care was sought is detailed in Table D6.2.

Among women with a child under the age of 2 in the second follow-up, 82.6% attended at least one antenatal care visit and 75.1% of women had at least one antenatal care visit with a doctor or professional nurse. At the second follow-up, 15% of women had an antenatal care visit during the first trimester (first 12 weeks) with a doctor or professional nurse, compared to 16.9% at the baseline. The median age of gestation at the first antenatal care visit during the second follow-up was 4 months.

Table D6.1: Antenatal care coverage for the most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Attended at least one antenatal care visit	493	540	91.2	1.6	302	366	82.6	3.3
Attended at least one antenatal care visit with doctor or professional nurse	287	540	54.5	3.7	276	366	75.1	4.1
Antenatal care visit with doctor or professional nurse in the first trimester (12 weeks)	90	533	16.9	2.2	55	356	15.0	2.1

* Definition of most recent birth changed between baseline and second follow-up

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Month of gestation of first ANC visit	486	7	0.2	2	3	5	9
Second follow-up 2018							
Month of gestation of first ANC visit	292	10	0.9	3	4	5	9

Regarding the type of facility where antenatal care was usually sought during the second follow-up (Table D6.2), most women who attended antenatal care for their most recent delivery in the last two years sought care in a Public health unit (69.9%) or Public health center/clinic (11.7%). Only 2.6% of women sought antenatal care with a traditional healer.

Table D6.2: Usual antenatal care location, women 15-49 years of age who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Public health unit	107	21.8	2.8	209	69.9	4.4
Public health center/clinic	96	19.5	3.1	37	11.7	2.8
Traditional healer	5	1.1	0.6	7	2.6	1.1
Public hospital	23	5.1	1.3	8	2.4	0.9
Private health center/clinic	11	2.6	1.1	5	1.4	0.7
Community health worker	7	1.7	0.9	2	1.0	1.0
Private hospital	6	1.5	0.7	2	0.6	0.4
Other public health facility	4	0.7	0.4	1	0.3	0.3
Private doctor's office	6	1.3	0.9	1	0.3	0.3
Pharmacy	0	0.0	-	1	0.3	0.3
Public mobile clinic	0	0.0	-	0	0.0	-
Private mobile clinic	2	0.4	0.3	0	0.0	-
Other private health facility	2	0.8	0.5	0	0.0	-
Other	219	43.6	4.3	29	9.7	2.8
Don't know	3	-	-	0	-	-
Decline to respond	2	-	-	0	-	-

D6.1.2 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 until delivery. According to the national norm in Guatemala, it is recommended that women receive a minimum of four antenatal care visits. The frequency of antenatal care visits is summarized in Table D6.3. Table D6.4 shows the percentage of women with four or more visits with skilled providers and according to best practices.

In the second follow-up, 55.5% of women reported having four or more antenatal care visits during their most recent pregnancy in the last two years. Ten 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. As shown in Table D6.4, 2 percent of all women in the second follow-up survey had four or more antenatal care visits, at least one of which was with a doctor or professional nurse, and with each of 10 defined best practices performed at least once during pregnancy (measurement of blood type, test for anemia, test for syphilis, test for HIV, test of blood glucose, test for proteinuria, measurement of maternal blood pressure, measurement of maternal weight, measurement of fundal height, and measurement of fetal heartbeat).

Table D6.3: Frequency of antenatal care visits for the most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
None	47	9.1	1.6	64	17.9	3.4
1-3 visits	151	27.8	2.6	95	26.7	2.1
4-6 visits	192	37.7	2.1	161	45.4	3.3
7-9 visits	92	17.3	2.0	34	9.6	1.8
10+ visits	39	8.1	1.7	2	0.5	0.3
Don't know	16	-	-	10	-	-
Decline to respond	0	-	-	0	-	-

Table D6.4: Frequency of antenatal care visits with skilled provider for the most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
At least four antenatal care visits with doctor or professional nurse	199	523	39.9	4.0	186	356	52.4	4.0
At least four antenatal care visits with doctor or professional nurse according to best practices*	10	524	1.6	0.6	7	356	2.0	1.2

*measuring blood type, anemia, syphilis, HIV, glucose, proteinuria, blood pressure, weight, fundal height, fetal heartbeat

D6.1.3 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 D6.5 and Table D6.6). 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 during the second follow-up: measured maternal weight (87%), measured maternal blood pressure (73.7%), tested for anemia (68.3%), measured fetal heartbeat (63.5%), measured blood type (61.5%), tested for proteinuria (53.4%), measured fundal height (51.7%), measured blood glucose (36.7%), tested for HIV (24%), and tested for syphilis (20.2%). Women were unfamiliar with several tests, as evidenced by the high number of missing responses for proteinuria and syphilis in particular.

Table D6.5: Content of antenatal care visits - best practices, among women 15-49 years who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Measured maternal weight	338	491	69.4	3.0	260	298	87.0	2.7
Measured maternal blood pressure	265	478	57.9	4.3	219	298	73.7	3.3
Tested for anemia	69	138	45.6	5.1	84	119	68.3	5.9
Measured fetal heartbeat	295	491	61.9	3.8	188	295	63.5	4.9
Measured blood type	81	136	59.0	3.7	68	107	61.5	7.2
Tested for proteinuria	67	142	47.1	5.0	66	125	53.4	4.8
Measured fundal height	319	484	67.1	3.4	153	291	51.7	5.1
Measured blood glucose	32	142	23.5	3.9	46	117	36.7	7.8
Tested for HIV	59	490	11.8	2.7	72	283	24.0	3.7
Tested for syphilis	25	138	15.3	4.7	24	114	20.2	6.9

Most women in the second follow-up had a collected urine specimen (50.2%) and a tested for diabetes (48.1%) collected during their antenatal care visits for the most recent birth during the past two years.

Table D6.6: Content of antenatal care visits - other services provided, among women 15-49 years who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Collected urine specimen	162	491	35.6	4.2	152	298	50.2	4.6
Tested for diabetes	14	32	51.4	11.2	22	45	48.1	7.7
Collected blood specimen	144	490	31.3	4.1	131	296	43.2	4.9
Performed an ultrasound	147	492	31.4	4.0	111	295	36.3	4.8
Offered an HIV test	64	490	13.5	2.9	59	285	19.7	3.6

D6.1.4 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 only requires 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.

As shown in Table D6.7, the coverage of sufficient tetanus toxoid vaccination during pregnancy was 58.3% among women who received antenatal care during the second follow-up. Eighteen percent of women

received one vaccination during the pregnancy and 54.5% received two or more. Among women with antenatal care, 29.5% had 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, 14.9% had never been vaccinated.

Table D6.7: Coverage of tetanus toxoid vaccinations during pregnancy, among women 15-49 years who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Two or more injections during pregnancy	247	56.3	4.2	132	54.5	5.4
One injection during pregnancy, one <10 years before	21	5.4	2.1	10	3.8	1.3
One injection during pregnancy, none <10 years before	38	9.6	1.6	35	14.6	2.8
No injections during pregnancy, one or more <10 years before	26	6.7	2.0	27	12.2	3.5
No injections during pregnancy nor during the 10 years prior	83	22.2	2.3	35	14.9	3.0
Don't know	76	-	-	60	-	-
Decline to respond	2	-	-	3	-	-

D6.1.5 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 D6.8 shows the percentage of women in the second follow-up who were exposed to the following messages: counseled about pregnancy (70.2%); advised to deliver in a facility (54.5%); given information about in-facility delivery (51.9%); counseled about danger signs during pregnancy (51.1%); counseled about nutrition during pregnancy (50.9%); counseled about breastfeeding (50.4%); counseled about childcare (42.2%).

Exposure to safe pregnancy practices increased from baseline to second follow-up for all counseling categories. In the second follow-up, 33.9% of women were counseled about contraception after delivery compared to 36.2% at baseline. 28.4% of women in the second follow-up, compared to 22% at baseline, were counseled about making a transportation plan for delivery. Compared to 22.7% of women at baseline, 20.1% of women in the second follow-up were advised to have a Cesarean section.

Table D6.8: Exposure to safe pregnancy practices, women 15-49 years of age who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Counseled about pregnancy	313	482	64.8	2.7	202	289	70.2	3.0
Advised to deliver in a facility	245	493	50.5	3.9	158	288	54.5	4.5
Given information about in-facility delivery	227	489	46.8	3.1	146	288	51.9	4.4
Counseled about danger signs during pregnancy	242	488	50.6	3.4	147	284	51.1	3.8
Counseled about nutrition during pregnancy	267	484	56.4	3.3	150	291	50.9	3.8
Counseled about breastfeeding	349	491	72.3	3.1	146	290	50.4	3.6
Counseled about childcare	230	489	47.5	3.4	119	286	42.2	3.8
Counseled about contraception after delivery	176	489	36.2	2.3	98	286	33.9	4.0
Counseled about making a transportation plan for delivery	107	492	22.0	2.4	85	290	28.4	3.8
Advised to have a Cesarean section	107	489	22.7	3.3	59	286	20.1	3.9

D6.2 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 place of delivery and assistance at delivery were captured for all births in the five years preceding the survey. To reduce recall bias, only data from the most recent delivery within the last two years are summarized.

D6.2.1 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 D6.9. The majority of births occurred in own homes (68.6%) and public hospitals (16.6%). Yet 70.6% of women reported giving birth at home or at another person's home. Deliveries in private-sector facilities were rare (4.4%). Among women who delivered in a facility, 89.5% indicated that they used a private vehicle for transport (Table D6.10).

Table D6.9: Place of delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Own home	346	63.2	5.1	249	68.6	4.6
Public hospital	101	17.8	2.8	64	16.6	3.7
Public health center/clinic	54	10.5	3.0	25	7.3	1.8
Private hospital	15	2.8	0.9	9	2.4	0.8
Other house	10	2.1	0.9	8	2.0	0.9
Private health center/clinic	7	1.8	1.1	7	1.6	0.7
Other private health facility	1	0.2	0.2	2	0.4	0.3
Public health ward	1	0.2	0.2	0	0.0	-
Other public health facility	1	0.4	0.4	0	0.0	-
Private medical ward	0	0.0	-	0	0.0	-
Other	6	1.0	0.6	4	1.0	0.6
Don't know	1	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Table D6.10: Transportation to place of delivery for most recent birth in the last two years, among women 15-49 years of age who delivered in a facility

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Private vehicle	139	180	74.8	5.0	95	107	89.5	3.3
Ambulance	31	180	17.7	3.2	8	107	7.1	3.7
On foot	6	180	4.0	2.0	5	107	4.4	2.6
Other public transit	13	180	7.8	1.7	5	107	4.4	2.0

*categories not mutually exclusive (select all that apply)

Women were asked about the proximity to the health facility used to deliver. Of the 107 women from the second follow-up who delivered in a facility, 25 were able to estimate the distance to the facility (Table D6.11). The median number of women reported travelling less than 2 km. Fifty percent of women traveled more than one hours to the facility to deliver.

Table D6.11: Proximity to health care facilities: health facility for delivery

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	112	68	0	3.1	20	64.9	100
Travel time, min	171	9	2	35.7	120	180	2700
Second follow-up 2018							
Distance, km	25	82	1	1	2	30	50
Travel time, min	103	4	1	30	60	120	2700

D6.2.2 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 (98.2% of all births in the second follow-up), the percentage by type of delivery attendant is detailed in Table D6.12. 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 D6.12, most in-facility deliveries during the second follow-up were accompanied by a midwife/comadrona (60.7%) and/or a medical doctor (27.7%). For 22.6% of the deliveries an relative was in attendance. For 19.9% a professional nurse was in attendance.

Table D6.12: Types of attendants: assistance at delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Midwife/comadrona	324	541	59.9	5.6	222	368	60.7	5.5
Medical doctor	162	541	30.4	4.8	104	368	27.7	4.5
Relative	95	540	17.2	2.4	78	368	22.6	4.7
Professional nurse	91	542	17.3	4.0	76	368	19.9	3.7
Auxiliary nurse	97	539	18.6	4.0	60	368	15.6	2.6
Community health worker	1	538	0.1	0.1	4	367	1.3	1.3
Traditional healer	2	540	0.3	0.2	3	368	0.8	0.7
Pharmacist	1	539	0.4	0.4	1	368	0.3	0.3
Laboratory technician	8	539	1.6	0.8	0	368	0.0	-
Other	4	538	0.8	0.5	7	368	1.8	1.2

Fifty eight percent of women in the second follow-up delivered with one attendant, 27.9% with two attendants, and 11.8% with three attendants (Table D6.13). For women's most recent live birth in the past two years, 30% of deliveries had a skilled attendant present and 25.1% delivered with a skilled attendant in a CAP, CAIMI, or hospital (Table D6.14).

Table D6.13: Number of attendants: assistance at delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
None	13	2.3	0.7	7	1.8	0.6
One	340	61.4	4.5	214	58.2	4.6
Two	136	26.4	2.8	101	27.9	4.4
Three	46	8.8	2.2	45	11.8	2.4
Four or more	8	1.2	0.5	1	0.3	0.3
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Table D6.14: In-facility delivery with skilled birth attendant: assistance at delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Delivery with a skilled birth attendant	186	542	34.7	5.3	113	368	30.0	4.6
Delivery in a health facility, any attendant	180	542	33.6	5.4	107	368	28.4	4.7
Delivery in a CAP, CAIMI, or hospital, with any birth attendant	164	542	29.5	4.7	96	368	25.4	4.4
Delivery with a skilled birth attendant in a CAP, CAIMI, or hospital	162	541	29.3	4.7	95	368	25.1	4.3

D6.2.3 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 is detailed in Table D6.15 along with the percentage of planned in-facility deliveries. Table D6.16 displays the percentage of women with specific complications.

In the second follow-up, 82.4% of women indicated that they attended the facility for emergency care during their most recent birth in the last two years. Few women reported seizures prior to delivery (1%). Approximately 1.8% of infants were transferred to an intensive care unit after delivery, and 8.8% of women reported excessive bleeding after delivery (more than 1 cup over a two-day period of time).

Table D6.15: Mode of delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Mode of delivery						
Vaginal	482	88.1	2.6	336	91.4	2.0
Emergency c-section	47	9.1	2.1	24	6.4	1.6
Planned c-section	12	2.8	0.9	8	2.1	0.8
Don't know	1	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Reason for seeking delivery care, among in-facility births						
Because of emergency	122	70.0	4.7	87	82.4	3.5
According to birth plan	54	30.0	4.7	20	17.6	3.5
Other reason	0	0.0	-	0	0.0	-
Don't know	4	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Table D6.16: Delivery complications for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Respondent experienced excessive bleeding in the first day after delivery	205	527	41.1	4.5	31	368	8.8	1.5
Child entered neonatal intensive care unit after delivery	10	541	1.7	0.6	7	368	1.8	0.7
Respondent experienced seizures prior to delivery	51	508	10.0	2.6	4	368	1.0	0.5

D6.2.4 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 D6.17).

In the second follow-up, many women perceived their infant to be average in size (79%). With most births occurring in institutional settings, it is not surprising that 75.3% of newborns were weighed at birth. Among those who were weighed, 9.1% weighed less than 2.5 kilograms according to the mother's recall (low birth weight).

Table D6.17: Birth size and weight for most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Very large	45	8.2	2.3	6	1.7	1.1
Larger than average	46	8.1	1.4	29	7.5	1.5
Average	328	62.6	3.5	282	79.0	3.2
Smaller than average	56	11.1	1.7	30	9.0	1.9
Very small	52	10.0	1.4	12	2.9	1.1
Don't know	16	-	-	9	-	-
Decline to respond	0	-	-	0	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Child was weighed at birth	424	538	79.3	3.3	261	343	75.3	5.2
Low birth weight (<2.5kg), among those weighed	56	413	12.9	2.2	22	237	9.1	2.1

15.2.5 *Cultural sensitivity*

The help that a woman receives during delivery has important consequences for the health of the mother and child. Proper medical conditions during delivery can reduce the risk of complications, infections, and even death for the mother and newborn baby. When women giving birth in institutional settings are given options for delivery that take cultural differences into account, they are more likely to return to health facilities for future deliveries and seek more institutional treatment. At baseline and second follow-up, mothers were asked about five different standards for cultural sensitivity during their most recent institutional birth in the past two years: whether (1) health facility personnel used the language spoken by the mother, (2) she was able to drink traditional liquids or remedies that she wanted to take, (3) she was able to choose her position of delivery, (4) she was able to choose the clothing she wore, and (5) she was allowed to be accompanied by family member or midwife. Eight additional questions were added in the second follow-up to further capture how women were treated during institutional births: (1) Selected sex of delivery attendant, (2) facility personnel explained actions, (3) Understood explanations from facility personnel, (4) Given placenta after birth, (5) warm enough in facility, (6) a bed was provided and put in preferred position, (7) treated with respect, and (8) facility was clean. Table D6.18 shows that 77.6% of women indicated that their language was spoken during a vaginal birth in a Guatemala health facility in the past 2 years, while only 19.2% of women were accompanied by family or midwife. Fifty seven percent of women reported they were provided with two or more standards of cultural sensitivity.

Table D6.18: Cultural sensitivity during delivery for most recent live birth in the past two years, women with a vaginal delivery in a health facility in Guatemala

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Woman's language spoken	77	107	68.1	9.4	48	60	77.6	6.7
Drinks and remedies allowed	16	107	18.8	6.0	22	60	36.8	7.9
Allowed to choose delivery position	28	107	25.9	5.4	22	60	36.4	7.9
Allowed to choose clothing	21	107	22.3	5.2	16	60	25.9	4.1
Accompanied by family or midwife	28	107	27.4	4.1	12	60	19.2	4.9
Met at least 2 standards for cultural sensitivity	44	109	44.5	6.1	35	61	56.6	8.0

	Second Follow-Up 2018			
	n	N	%	SE
Space was clean	55	61	89.8	4.4
Treated with respect	52	61	85.9	5.4
Warm enough in facility	43	60	73.5	5.5
Understood explanations from facility personnel	41	60	66.2	8.2
Facility personnel explained actions	40	59	66.0	8.6
A bed was provided and changed to preferred position	31	60	50.1	8.9
Given placenta after birth	13	59	21.2	5.9
Selected sex of facility personnel attending delivery	4	59	6.6	2.6

* Not collected at baseline, added for follow-up evaluation.

D6.3 Early initiation of breastfeeding

Coverage of early initiation of breastfeeding is defined as the percentage of women who had a live birth in the past two years and put the child to the breast with one hour of birth. Table D6.19 shows that 85.8% of women initiated breastfeeding within one hour of birth.

Table D6.19: Early initiation of breastfeeding for most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Early initiation of breastfeeding	350	541	62.3	4.1	312	365	85.8	2

D6.4 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.

D6.4.1 Postnatal checkup for the mother

Data on postnatal care for the mother are summarized in Table D6.20. Table D6.20 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 with a skilled attendant (doctor, nurse, or auxiliary nurse); and every 15 minutes during the first hour after delivery for institutional births.

Only 36.3% of women recalled being checked after delivery during the second follow-up, and 21.3% reported being checked one week after delivery by a health care provider. Only 41.2% of women with an institutional birth recalled being checked every 15 minutes for the first hour post-partum.

Table D6.21 shows the percent distribution of women who were checked at any time after delivery by type of personnel. Among women with postnatal care visits in the second follow-up, most received care from a midwife/comadrona (30%) or professional nurse (29.3%).

Table D6.20: Postnatal checkup for the mother for most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any checkup after delivery	194	535	37.6	3.2	131	366	36.3	3.4
Checked every 15 minutes during the first hour after delivery, among in-facility births	62	92	68.0	5.7	28	61	41.2	6.2
Checked within a week after delivery by a skilled provider	95	535	17.9	2.3	78	366	21.3	3.4

Table D6.21: Provider of care at first postnatal checkup for the mother, most recent live birth in the past two years, among women who attended at least one postnatal care visit

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Midwife/comadrona	71	36.3	7.2	39	30.0	6.0
Professional nurse	33	17.4	3.6	36	29.3	5.7
Doctor	67	35.2	5.8	31	22.6	4.7
Auxiliary nurse	16	8.5	3.4	25	18.1	4.7
Laboratory technician	1	0.6	0.6	0	0.0	-
Community health worker	2	1.2	0.8	0	0.0	-
Pharmacy assistant	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Relative	0	0.0	-	0	0.0	-
Other	2	0.9	0.7	0	0.0	-
Don't know	2	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

D6.4.2 Postnatal checkup for the infant

The results regarding postnatal care for the neonate are shown in Table D6.22: percentage of women with a birth in the last two years whose infants were checked after delivery; percentage of infants who were checked by skilled personnel within 24 hours of delivery; and percentage of infants who were checked by skilled personnel within one week of delivery.

Approximately 56.8% of women in the second follow-up reported that their infant was checked at any time after delivery. Among all deliveries, 21.8% of women reported that a qualified medical professional checked on their infant within 24 hours of delivery. Table D6.23 shows the attendants for neonatal postnatal care. Most women indicated that a auxiliary nurse performed a checkup (48.2%). Doctor and professional nurse were also reported, though much less frequently.

Table D6.22: Postnatal checkup for neonate for woman's most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any checkup after delivery	194	537	37.1	3.6	207	363	56.8	3.7
Checked within 24 hours after delivery by a skilled provider	67	527	12.3	2.5	79	356	21.8	3.3
Checked within a week after delivery by a skilled provider	96	527	18.4	2.9	122	356	34.2	4.8

Table D6.23: Provider of care at first postnatal checkup for the infant, woman's most recent live birth in the past two years, among women whose child attended at least one postnatal care visit

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Auxiliary nurse	24	12.9	3.2	97	48.2	5.7
Doctor	83	43.4	6.5	49	22.5	4.5
Professional nurse	56	30.2	5.5	36	19.1	4.5
Midwife/comadrona	11	5.7	1.8	18	8.8	2.7
Relative	0	0.0	-	1	0.5	0.5
Laboratory technician	1	0.4	0.4	0	0.0	-
Community health worker	5	2.1	0.9	0	0.0	-
Pharmacy assistant	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Other	10	5.2	2.7	2	0.9	0.9
Don't know	3	-	-	4	-	-
Decline to respond	1	-	-	0	-	-

D7. Chapter 7: CHILD HEALTH

This chapter summarizes the health status of children aged 0-59 months whose caregivers participated in the SMI-Guatemala Second Follow-up Household Survey. All data summarized in this chapter are based on the caregiver's report.

D7.1 Health status

The age and sex distribution of the de facto population of children aged 0-59 months participating in the caregiver interview module or the anthropometric measures in Guatemala at the second follow-up is shown in Figure D7.2 by six- or 12-month age groups.

Twenty two percent of children surveyed at baseline and 19% of children surveyed at the second follow-up were under 1 year old at the time of the interview. The age distributions of female and male children are similar.

Figure D7.1: Age and sex of children aged 0-59 months in child health survey or anthropometric measures of the de facto population by six- to twelve-month age groups, baseline survey unweighted

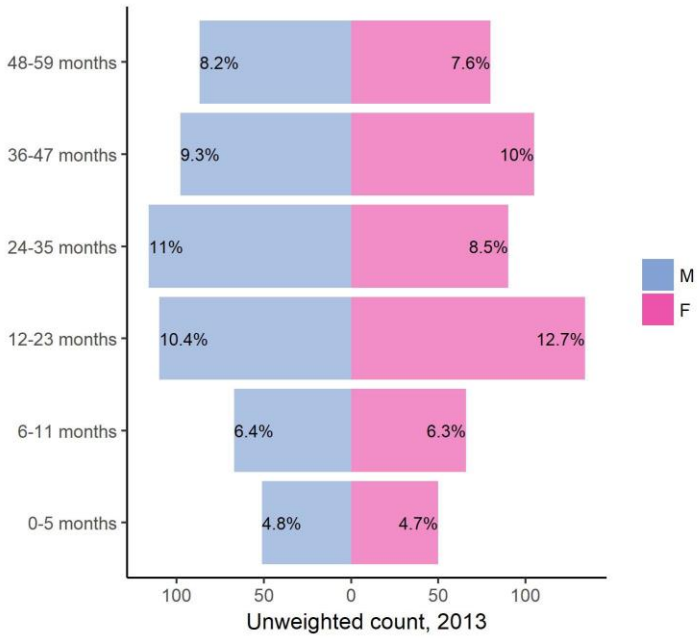
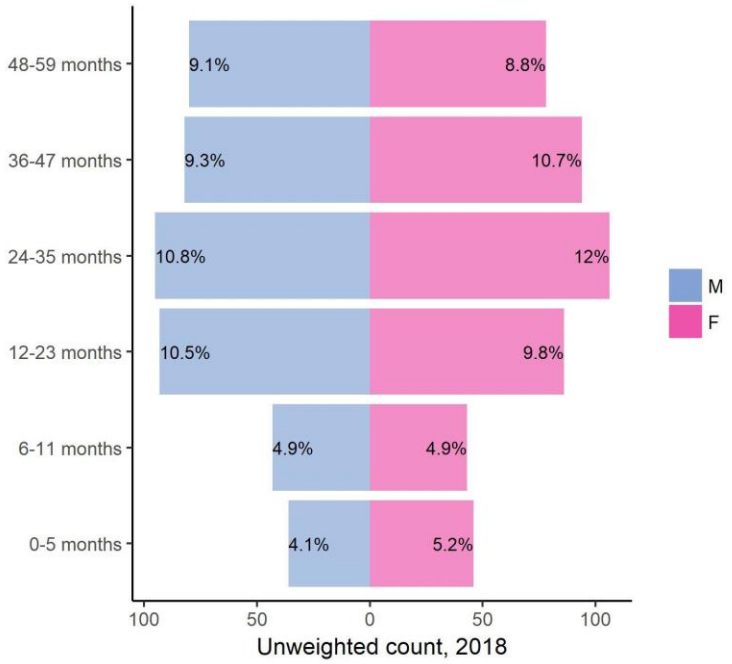


Figure D7.2: Age and sex of children aged 0-59 months in child health survey or anthropometric measures of the de facto population by six- to twelve-month age groups, follow-up survey unweighted



D7.1.1 Current health status

Table D7.1 shows the current health status of all children aged 0-59 months, as reported by their caregivers. The table includes the caregiver's evaluation of current health relative to health the previous year and the percentage of children who can easily perform daily activities. In the second follow-up, approximately 86.3% of children's health was considered by their caregiver to be "good," "very good," or "excellent," compared to 66.7% at baseline.

Relative to the past year, caregivers in the second follow-up evaluation reported that 42% of children's health was "about the same" in the second follow-up. While 54.6% of children's health had improved, 3.4% of children experienced reportedly worse health on the day of the interview, compared to last year. Ninety seven percent of children could "easily" perform their daily activities (e.g., playing and going to school) according to their caregivers. Three percent of children had some degree of difficulty performing these activities, 0.1% of children had a significant degree of difficulty performing these activities, and 0.1% of children were unable to complete daily activities, according to their caregivers.

Table D7.1: Current health status, among children aged 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Current health status						
Excellent	69	7.2	2.2	202	22.5	4.4
Very good	140	12.6	1.7	84	9.8	2.1
Good	507	46.9	3.4	475	54.0	4.1
Fair	294	29.2	2.3	109	12.3	2.0
Poor	33	3.9	0.9	12	1.4	0.5
Don't know	2	-	-	0	-	-
Decline to respond	4	-	-	0	-	-
Health status relative to a year ago						
Better	362	47.0	2.3	375	54.6	4.0
Worse	22	3.1	0.7	22	3.4	0.7
About the same	389	50.0	2.5	285	42.0	3.9
Don't know	5	-	-	1	-	-
Decline to respond	2	-	-	0	-	-
Ability to perform daily activities						
Easily	916	88.4	1.8	855	97.0	0.6
With some difficulty	106	10.5	1.8	23	2.8	0.5
With much difficulty	7	0.7	0.3	1	0.1	0.1
Unable to do	5	0.4	0.2	1	0.1	0.1
Don't know	11	-	-	2	-	-
Decline to respond	4	-	-	0	-	-

D7.1.2 Recent illness

Caregivers were asked a series of questions about any illnesses or health problems that their children had in the two weeks preceding the interview. In the second follow-up survey, approximately 17% of children were reported as sick during that time (Table D7.2). Of the 147 children who were recently ill, fever (30.3%), cough (20.4%), and diarrhea without blood (16.1%) were the most commonly specified complaints.

Table D7.2: Recent illness, among children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Child was sick in the last two weeks	303	1042	31.2	2.8	147	882	16.7	2

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Recent illness among children ill in the last 2 weeks						
Fever	100	34.3	3.6	44	30.3	3.1
Cough	45	13.4	2.5	31	20.4	3.2
Diarrhea without blood	62	19.7	2.7	23	16.1	3.6
Skin rash/infection	6	2.7	1.2	5	3.8	1.6
Eye/ear infection	3	1.4	0.8	3	2.4	1.3
Abdominal pain	2	0.6	0.4	3	2.1	1.1
Vomiting	10	3.3	0.8	3	1.9	1.0
Pneumonia	0	0.0	-	2	1.8	1.2
Anemia	1	0.2	0.2	2	1.3	0.9
Difficulty urinating	0	0.0	-	1	0.7	0.7
Malaria	1	0.3	0.3	0	0.0	-
Tuberculosis	1	0.3	0.3	0	0.0	-
Asthma	0	0.0	-	0	0.0	-
Bronchitis	3	0.8	0.6	0	0.0	-
Diarrhea with blood	6	1.8	0.7	0	0.0	-
Measles	2	0.7	0.7	0	0.0	-
Jaundice	0	0.0	-	0	0.0	-
Headache	8	2.4	1.2	0	0.0	-
Stroke	0	0.0	-	0	0.0	-
Diabetes	0	0.0	-	0	0.0	-
HIV/AIDS	0	0.0	-	0	0.0	-
Paralysis	0	0.0	-	0	0.0	-
Chest infection	0	0.0	-	0	0.0	-
Blood in urine	0	0.0	-	0	0.0	-
Swelling in legs, ankles, or feet	0	0.0	-	0	0.0	-
Other	52	18.0	2.2	30	19.3	3.2
Don't know	1	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Options for "Swelling in legs, ankles, or feet", "Blood in urine", and "Chest infection" were available only in the follow-up survey. In the baseline, "Chest infection" was included within the "Cough" answer choice.

D7.1.3 Utilization of health services for recent illness

Table D7.3 summarizes data regarding the utilization of health services among the 147 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.

In the second follow-up survey, care was sought for 53.4% of these cases. Care was typically sought at Public health unit (68.3%) or Public health center/clinic (14%) facilities; some attended pharmacies (6.6%). Only one child was hospitalized for their recent illness.

Table D7.3: Utilization of health services for recent illness in the last two weeks, among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for recent illness	207	303	68.7	3.3	77	147	53.4	4.7
Child was hospitalized for recent illness	3	128	2.1	1.2	1	42	2.9	3.0

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of medical facility where care was sought						
Public health unit	59	29.9	5.0	52	68.3	6.8
Public health center/clinic	68	33.7	4.3	11	14.0	4.7
Public hospital	5	2.1	1.2	5	6.6	3.5
Private doctor's office	4	1.7	1.1	2	2.2	1.5
Pharmacy	33	16.0	3.6	2	2.0	1.4
Private health center/clinic	4	2.0	0.9	1	1.6	1.6
Private hospital	0	0.0	-	1	1.5	1.4
Other public health facility	3	1.2	0.7	1	1.3	1.3
Community health worker	5	2.3	1.2	1	1.3	1.3
Public mobile clinic	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Traditional healer	6	2.3	1.4	0	0.0	-
Other	19	8.7	2.5	1	1.3	1.3
Don't know	0	-	-	0	-	-
Decline to respond	1	-	-	0	-	-

D7.2 Acute respiratory infection

Acute respiratory infection is a leading cause of morbidity and mortality among children. Early diagnosis and treatment with antibiotics can prevent deaths resulting from pneumonia, a common acute respiratory disease. The prevalence of acute respiratory infection was estimated by asking caregivers 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 symptoms of an acute respiratory infection, the caregiver was asked about what was done to treat the symptoms and feeding practices during the illness.

D7.2.1 Prevalence of acute respiratory infection and fever

The prevalence of cough, suspected acute respiratory infection, and fever among children aged 0-59 months, as reported by their caregivers, is displayed in Table D7.4. In the second follow-up, 9% of children experienced cough, 4.6% had symptoms of an acute respiratory infection, and 9.7% had a fever in the two weeks preceding the interview.

Table D7.4: Prevalence of suspected acute respiratory infection and fever in the last two weeks, among children 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Child had cough in the last two weeks, by type						
No cough	779	73.9	2.3	795	90.7	1.5
Cough without difficulty breathing	125	12.5	1.4	42	4.8	1.1
With difficulty breathing due to congested/runny nose	56	6.0	1.2	15	1.7	0.8
With difficulty breathing due to chest problem and congested/runny nose	19	1.8	0.5	13	1.5	0.5
With difficulty breathing due to chest problem	55	5.6	1.3	12	1.3	0.5
With difficulty breathing due to other reason	2	0.2	0.1	1	0.1	0.1
Don't know	9	-	-	4	-	-
Decline to respond	4	-	-	0	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Symptoms of acute respiratory infection in the last two weeks	134	1038	13.9	2.1	41	878	4.6	0.9
Fever in last two weeks	271	1041	27.6	3.0	84	880	9.7	1.4

D7.2.2 Utilization of health services for suspected acute respiratory infection

Forty nine percent of children with symptoms of acute respiratory infection were taken for evaluation and/or treatment of their condition at the second follow-up (Table D7.5).

Table D7.5: Utilization of health services for suspected acute respiratory infection in the last two weeks, among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for suspected acute respiratory infection	199	352	59.4	3.5	65	136	48.9	4.5

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of medical facility where care was sought						
Public health unit	56	29.0	4.4	44	68.5	6.7
Public health center/clinic	53	27.6	5.0	11	17.2	4.0
Pharmacy	40	18.7	3.6	4	5.1	2.9
Public hospital	3	1.5	0.9	3	4.5	2.5
Private hospital	2	1.2	0.8	1	1.8	1.7
Community health worker	3	1.1	0.7	1	1.5	1.6
Private health center/clinic	5	2.5	1.1	1	1.3	1.3
Public mobile clinic	1	0.5	0.5	0	0.0	-
Other public health facility	2	0.8	0.6	0	0.0	-
Private doctor's office	2	1.0	0.7	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Traditional healer	4	1.6	0.9	0	0.0	-
Other	28	14.5	5.1	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

D7.2.3 Utilization of medications for suspected acute respiratory infection

Fifty three percent of children with symptoms of acute respiratory infection were given some type of medication for their condition during the second follow-up (Table D7.6). Forty two percent of children were administered antibiotic syrups for a suspected acute respiratory infection. Acetaminophen (72.4%) and ibuprofen (2.9%) were also commonly administered. Sixteen percent of children received a treatment other than those listed.

Table D7.6: Utilization of medications for suspected acute respiratory infection in the last two weeks, among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any treatment	263	350	77.3	2.2	71	136	53.0	4.1
Antibiotic injection	19	263	8.3	1.8	6	71	9.3	3.6
Antibiotic pill	25	263	9.3	2.3	8	71	11.2	4.0
Antibiotic syrup	141	262	53.5	4.3	31	71	41.5	5.7
Aspirin	49	262	18.8	4.0	4	71	5.2	2.4
Acetaminophen	181	263	70.8	4.3	50	71	72.4	5.1
Ibuprofen	13	263	5.7	1.9	2	71	2.9	2.0
Oral rehydration therapy	29	263	12.1	2.2	2	71	3.3	2.5
Other	64	262	24.0	5.1	12	71	16.0	3.8

D7.2.4 Feeding practices during suspected acute respiratory infection

Data on feeding practices during the recent episode of suspected acute respiratory infection are summarized in Table D7.7. The table shows the volume of fluids and the volume of solids given during the illness. At the second follow-up, only 5.1% of children were given more fluids than usual. In total, 51% of children were offered less fluid than usual (or none at all). Thirty nine percent of children were offered the same volume of solid food as usual during their illness. Approximately 59% of children were given less than the usual amount of solid food (or none at all).

Table D7.7: Feeding practices during suspected acute respiratory infection in the last two weeks, among children 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Volume of fluids (including breastmilk) given during illness						
No fluids	7	2.0	0.8	1	0.7	0.8
Much less	32	9.3	2.3	21	15.7	3.8
Somewhat less	114	32.9	3.5	47	34.6	3.3
About the same	149	42.1	3.2	60	43.8	3.6
More	50	13.7	2.1	6	5.1	2.2
Don't know	0	-	-	1	-	-
Decline to respond	0	-	-	0	-	-
Volume of solid foods given during illness						
No solids	31	8.8	1.7	4	3.1	1.4
Much less	45	13.1	2.8	19	14.7	3.2
Somewhat less	158	45.2	3.8	55	41.6	3.6
About the same	111	31.5	3.0	53	38.9	4.2
More	5	1.3	0.6	2	1.8	1.3
Don't know	2	-	-	3	-	-
Decline to respond	0	-	-	0	-	-

D7.3 Diarrhea

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

D7.3.1 Prevalence

Table D7.8 shows the proportion of children aged 0-59 months with diarrhea in the two weeks preceding the interview, as reported by their caregivers (7.4% at the second follow-up). Zero percent of children had

bloody diarrhea.

Table D7.8: Prevalence of diarrhea in the last two weeks, among children aged 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
No diarrhea	853	81.2	2.1	817	92.6	1.3
Diarrhea without blood	169	17.5	1.9	61	7.1	1.3
Diarrhea with blood	13	1.3	0.5	2	0.3	0.2
Don't know	10	-	-	2	-	-
Decline to respond	4	-	-	0	-	-

D7.3.2 Utilization of health services for diarrhea

In the second follow-up, % of children with diarrhea were taken for evaluation and/or treatment of their condition (Table D7.9). Care for these children was often sought in the public sector, although private health centers were visited by 0% of these cases.

Table D7.9: Utilization of health services for diarrhea in the last two weeks, among children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for diarrhea	117	182	65.5	3.9	30	63	48.2	4.6

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of medical facility where care was sought						
Public health unit	30	25.7	6.4	23	77.0	8.3
Public health center/clinic	34	30.6	5.9	3	8.7	5.1
Private health center/clinic	2	2.0	1.3	1	4.0	4.1
Private hospital	0	0.0	-	1	3.9	3.9
Other public health facility	1	0.9	0.9	1	3.2	3.0
Public hospital	1	0.6	0.6	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Private doctor's office	2	2.0	1.3	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	25	21.4	4.6	0	0.0	-
Community health worker	1	0.9	0.9	0	0.0	-
Traditional healer	4	2.6	1.4	0	0.0	-
Other	16	13.3	4.8	1	3.2	3.0
Don't know	0	-	-	0	-	-
Decline to respond	1	-	-	0	-	-

D7.3.3 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 rehydration salts, commercially-produced bottled oral serums, or homemade fluids usually prepared from sugar, salt, and water. Other treatments, including zinc, may be administered as well.

Although care was sought in only 48.2% of diarrhea cases, 84% of cases were given some form of treatment at the second follow-up. Bottled oral rehydration serum was the most common form oral rehydration therapy (33.8%). Sixteen percent of cases were treated with zinc syrup or pills. Seventeen percent of cases were treated with an antibiotic pill.

Table D7.10: Utilization of treatments for diarrhea during the last two weeks, among children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any treatment	160	181	88.6	2.3	52	62	84.0	4.1
Fluids								
Bottled oral rehydration serum	72	182	42.0	3.6	21	63	33.8	7.8
Fluid made with powdered oral rehydration salts	59	182	32.3	3.2	21	63	32.5	5.4
Homemade fluid recommended by health authorities	45	181	23.8	4.6	15	63	23.6	5.2
Medications								
Antibiotic pill	24	181	13.0	3.4	11	63	17.0	4.1
Antidiarrheal pill	19	181	9.7	1.9	7	62	11.8	3.8
Zinc pill	4	181	3.2	2.0	7	63	11.1	4.5
Other type of pill	5	181	2.7	1.1	2	62	3.0	2.0
Unknown pill	8	181	4.2	1.6	3	63	4.3	3.2
Antibiotic injection	6	181	2.9	1.6	1	63	1.4	1.4
Non-antibiotic injection	0	181	0.0	-	0	63	0.0	-
Unknown injection	0	181	0.0	-	0	63	0.0	-
Intravenous therapy	0	181	0.0	-	0	63	0.0	-
Home remedy/herbal medicine	70	180	37.1	6.3	20	63	30.7	7.7
Antibiotic syrup	45	181	26.2	4.0	6	63	10.1	2.4
Antidiarrheal syrup	26	181	15.0	2.8	7	63	11.4	3.8
Zinc syrup	1	181	0.3	0.3	3	63	5.0	3.3
Other syrup	5	181	3.1	1.2	1	63	1.4	1.4
Unknown syrup	3	181	2.0	1.1	0	63	0.0	-

*7 women selected 'Other antibiotic' as a treatment for diarrhea at the second follow-up, which was not an option in the baseline survey.

D7.3.4 Feeding practices during diarrhea

Caregivers 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 D7.11. The table shows the volume of fluids and the volume of solids given during the illness. Only 10.6% of children were given more fluids than usual in the second follow-up survey. Approximately 53% of children were offered less fluid than usual (or none at all). Twenty nine percent of children were offered the same volume of solid food as usual during their illness. Approximately 70% of children were given less than the usual amount of solid food (or none at all).

Table D7.11: Feeding practices among children aged 0-59 months who had diarrhea in the last two weeks

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Volume of fluids (including breastmilk) given during illness						
No fluids	3	1.7	1.0	0	0.0	-
Much less	23	12.7	3.1	10	15.8	2.9
Somewhat less	62	34.8	6.4	24	37.6	5.1
About the same	41	21.0	2.8	22	36.0	6.9
More	53	29.7	4.9	7	10.6	3.9
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Volume of solid foods given during illness						
No solids	25	11.8	3.2	1	1.5	1.5
Much less	29	16.6	3.7	11	17.7	3.5
Somewhat less	88	48.4	5.0	32	50.5	6.1
About the same	30	18.5	3.7	17	28.7	5.1
More	8	4.7	1.8	1	1.5	1.5
Don't know	0	-	-	1	-	-
Decline to respond	2	-	-	0	-	-

D7.4 Immunization against common childhood illnesses

Information on immunization coverage was collected for all children aged 0-59 months whose caregivers participated in the survey. Both caregiver's report and review of vaccination card (if available) were used to determine coverage. A vaccination card was available for review for 668 children at the second follow-up (75.7% of the sample, unweighted). In Table D7.12, coverage is estimated by vaccine type to include all children with full compliance for age as specified in the national immunization scheme at the time of the survey, according to either an affirmative response from the caregiver that the immunization was received, or a mark that the immunization was received on the vaccination card (for children with a vaccination card available for review at the time of the interview). Children too young to have received a specific vaccine are counted as covered in order to maintain a comparable all-ages sample across vaccine types.

Table D7.12: Immunization against common childhood illnesses, children aged 0-59 months, according to caretaker recall and vaccination card

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
BCG vaccine (tuberculosis)	946	958	98.6	0.4	690	741	93.3	1.2
Hepatitis B vaccine	320	939	33.6	4.0	345	731	47.2	3.7
Polio vaccine	768	959	77.4	3.6	544	744	73.1	2.5
Pentavalent vaccine (DPT, HepB, HiB)	863	963	88.4	3.0	617	746	82.9	3.1
Rotavirus vaccine	543	950	55.9	2.5	583	739	78.9	2.7
Measles, mumps, and rubella (MMR) vaccine	913	969	93.9	1.2	683	754	90.6	1.8
Diphtheria, tetanus, and pertussis (DPT) vaccine	921	979	93.8	1.0	630	768	82.4	2.7

	Second Follow-Up 2018			
	n	N	%	SE
Pneumococcal conjugate vaccine	598	735	81.2	2.2

*Pneumococcal vaccine was only asked and required for full compliance according to the vaccine scheme at follow-up.

In Table D7.13, 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. When considering only caregivers' recall, only 9.8% of children aged 0-59 months were fully immunized for age at the second follow-up survey, reflecting many "Don't know" or "Decline" responses that call into question the reliability and validity of the caregiver recall data. Caregivers were able to definitively answer the entire vaccine recall section for only 132 children at the second follow-up. Immunization coverage for children 0-59 months based only upon the vaccine card is 24.3%, and when combined with recall-based information, the estimate of full vaccination for age among children 0-59 months is 28.3%.

Table D7.13: Full immunization compliance for age, children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
According to recall + card	207	926	21.0	2.8	203	722	28.3	3.5
According to vaccine card	187	1029	16.8	2.4	212	881	24.3	3.3
According to caregiver's recall	40	592	5.9	1.4	13	132	9.8	2.8

*Pneumococcal vaccine was not asked or required at baseline. At follow-up it was asked and required for full compliance according to the vaccine scheme.

D7.5 Deworming treatment

Administration of deworming treatment every six months has been shown to reduce the prevalence of anemia in children. Only 16.1% of children aged 12-59 months received at least two doses of deworming treatment in the year preceding the second follow-up interview (Table D7.14).

Table D7.14: Deworming treatment among children aged 12-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
No deworming	316	41.5	2.6	259	38.8	3.6
One dose	241	33.2	2.8	299	45.1	3.5
Two or more doses	192	25.3	2.4	110	16.1	1.4
Don't know	29	-	-	32	-	-
Decline to respond	2	-	-	1	-	-

D8. Chapter 8: INFANT AND YOUNG CHILDREN FEEDING PRACTICES

This chapter summarizes the feeding practices of infants and children aged 0-59 months whose caregivers participated in the SMI-Guatemala Household Survey. All data summarized in this chapter are based on the caregiver's report.

D8.1 Breastfeeding

D8.1.1 Exclusive breastfeeding

Coverage of 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 in which the caregiver indicates what the child consumed during the previous day and night. In Guatemala during the second follow-up, the sample includes 82 children who are under 6 months of age, and 69 of those children have sufficiently complete dietary recall information to determine whether they are exclusively breastfed. Table D8.1 shows that 86.1% of children under 6 months of age are exclusively breastfed.

D8.1.2 Continued breastfeeding at 1 year

Coverage of continued breastfeeding at 1 year is defined as the percentage of children 12-15 months old who received breast milk during the previous day according to caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 65 children who are between 12 and 15 months of age, and 49 of those children have adequate responses to determine their breastfeeding status. Table D8.1 shows that 74.3% of children continue to receive breast milk at 1 year.

Table D8.1: Breastfeeding among children

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Exclusive breastfeeding among children <6 months	71	100	68.8	5.8	69	81	86.1	3.5
Continued breastfeeding at one year among children 12-15 months	58	74	78.7	4.4	49	65	74.3	8.0

D8.2 Acceptable diet

D8.2.1 Introduction of solid, semi-solid, or soft foods

Coverage of appropriate 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 according to caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 41 children who are 6-8 months of age,

and 29 of those children have sufficiently complete dietary recall information. Table D8.2 shows that 71% of children consumed solid or semi-soft foods.

D8.2.2 Dietary diversity

Coverage of 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 according to caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 265 children who are 6-23 months of age, and 102 of those children have sufficiently complete dietary recall information to determine dietary diversity. Table D8.2 shows that 38.4% of children achieved the minimum dietary diversity during the previous day.

D8.2.3 Meal frequency

Coverage of 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 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 is four times for all children 6-23 months of age. This information is obtained through caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 265 children who are 6-23 months of age, and 128 of those children have sufficiently complete dietary recall information to determine meal frequency. Table D8.2 shows that 54.8% of children achieved the minimum meal frequency during the previous day.

D8.2.4 Minimum acceptable diet

Coverage of 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 caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 265 children who are 6-23 months of age, and 257 of those children have sufficiently complete dietary recall information to determine minimum acceptable diet. Table D8.2 shows that 21.3% of children achieved the minimum acceptable diet during the previous day.

D8.2.5 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), an iron supplement, or a fortified food that is specially designed for infants and young children, or a food fortified in the home with a product that included iron during the previous day. This information is obtained through caregiver's dietary recall. In Guatemala during the

second follow-up, the sample includes 265 children who are 6-23 months of age and 99 of those children have sufficiently complete dietary recall information to determine iron consumption. Table D8.2 shows that 37.3% of children consumed an iron-rich food during the previous day.

Table D8.2: Acceptable diet among children 6-23 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Introduction of solid foods among children 6-8 months	35	60	57.5	6.8	29	41	71.0	6.5
Minimum meal frequency among children 6-23 months	128	306	41.9	4.4	128	234	54.8	5.8
Minimum dietary diversity among children 6-23 months	149	377	41.3	4.1	102	265	38.4	4.4
Consumption of iron-rich foods among children 6-23 months	185	377	50.6	5.2	99	265	37.3	3.0
Minimum acceptable diet among children 6-23 months	70	360	20.2	2.9	55	257	21.3	4.2

D8.3 Micronutrient supplementation

D8.3.1 Vitamin A

Interviewers asked the caregiver if their child received a dose of vitamin A in the last six months. Table D8.3 shows that of the 882 sampled children 0-59 months of age in the second follow-up, 43.9% received a dose of vitamin A in the last six months.

D8.3.2 Iron

Interviewers showed the caregiver photos of common types of bottles, powders, or syrups and asked if their child received iron pills, powder, or syrup in the last day. Table D8.3 shows that of the 882 children 0-59 months of age in the second follow-up sample, 20.5% received a dose of iron in the last day.

Table D8.3: Vitamin A and Iron consumption among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Vitamin A in the last six months	416	1008	41.9	3.0	345	791	43.9	3.9
Iron supplement the previous day	227	1032	21.8	1.6	180	872	20.5	3.4

D8.3.3 Packets of micronutrients

Interviewers showed the caregiver a card with packets of micronutrients and asked how many packets their child received from a health facility and consumed in the last six months. Children are intended

to take 60 consecutive daily doses of micronutrient powder in each of three rounds, beginning at age 6, 12, and 18 months, with an adequate consumption considered to be 60 packets. Table D8.4 shows that among children 6-23 months of age sampled in the second follow-up, 70.7% received no packets of micronutrients from a health facility in the last six months.

Table D8.4: Micronutrient powders among children 6-23 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Received any micronutrient packets from health facility in the last six months	93	363	25.8	3.2	76	258	29.3	3.7
Consumed any micronutrient packets	90	361	24.9	3.1	73	255	28.5	3.6
Received 60 micronutrient packets	19	363	5.2	1.1	11	258	4.0	1.5
Consumed adequate dose (>=60 packets) of micronutrient powders	27	361	7.5	1.1	18	255	6.6	2.1

* Identical questions were asked in baseline and second follow-up surveys, but the second follow-up interview included photos of the micronutrient products. The baseline survey predated the intervention, so it is possible that questions about receipt and consumption were interpreted by caregivers to include different types of micronutrient supplements at baseline.

D9. 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 SMI-Guatemala Second Follow-up 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, with altitude adjustment) 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.

A total of 882 children aged 0-59 months participated in the SMI-Guatemala second follow-up. In practice, 839 of these children underwent the physical measurement module. Height and weight data are presented for 839 of these children (100%, unweighted). Seven hundred fifty eight children 6-59 months of age were eligible for the anemia test. Hemoglobin was measured in 610 children (80.5%, unweighted, of children 6-59 months of age). Parental consent was refused for 142 children, one were not measured because anthropometrists could not obtain a sufficient capillary blood sample or any sample at all, and four cases were not tested for other reasons (for example, because the child did not cooperate). The age and sex distribution of children participating in the physical measurement module in second follow-up is displayed in Figure D9.2 and Figure D9.4.

Figure D9.1: Height and weight measured: Age and sex of sample, unweighted percent distribution of the de facto population, baseline survey

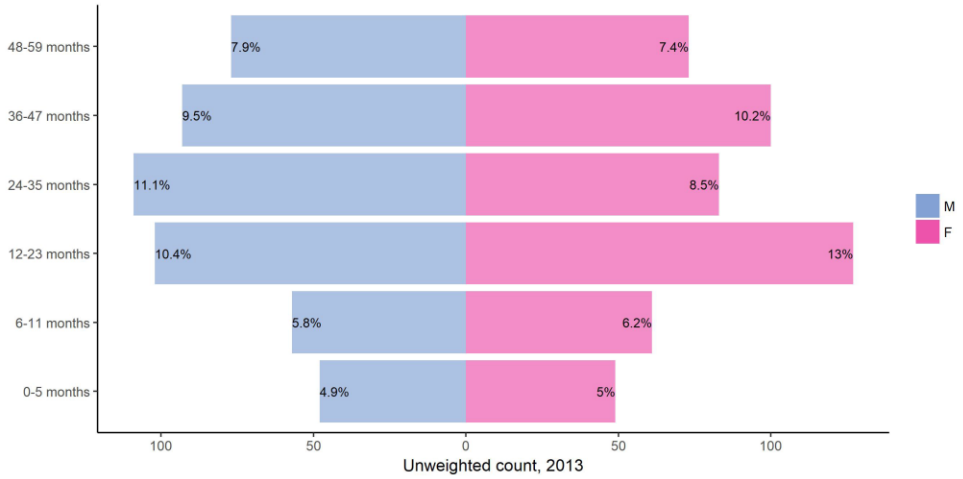


Figure D9.2: Height and weight measured: Age and sex of sample, unweighted percent distribution of the de facto population, follow-up survey

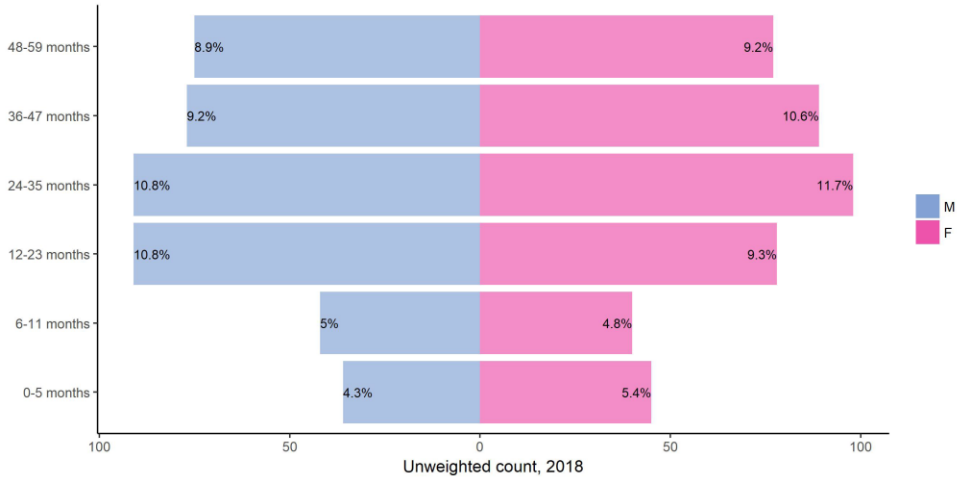


Figure D9.3 Hemoglobin measured: Age and sex of sample, unweighted percent distribution of the de facto population, baseline survey

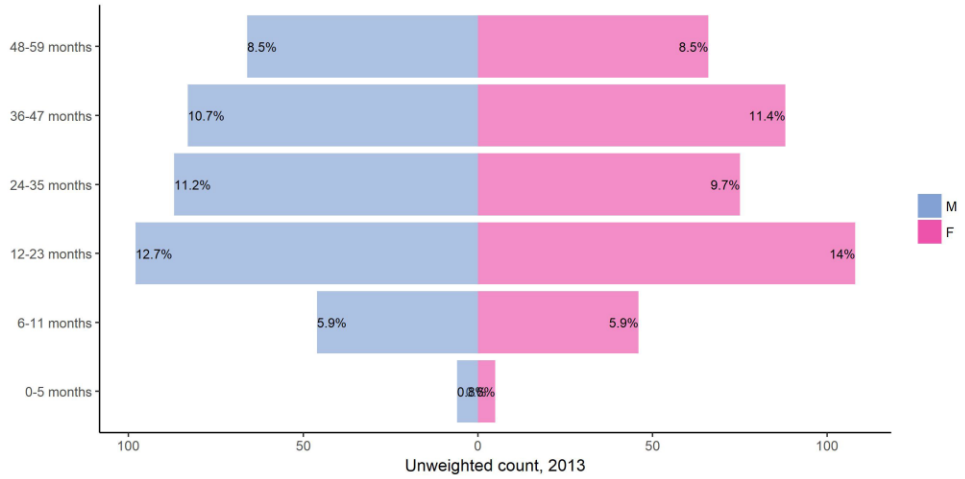
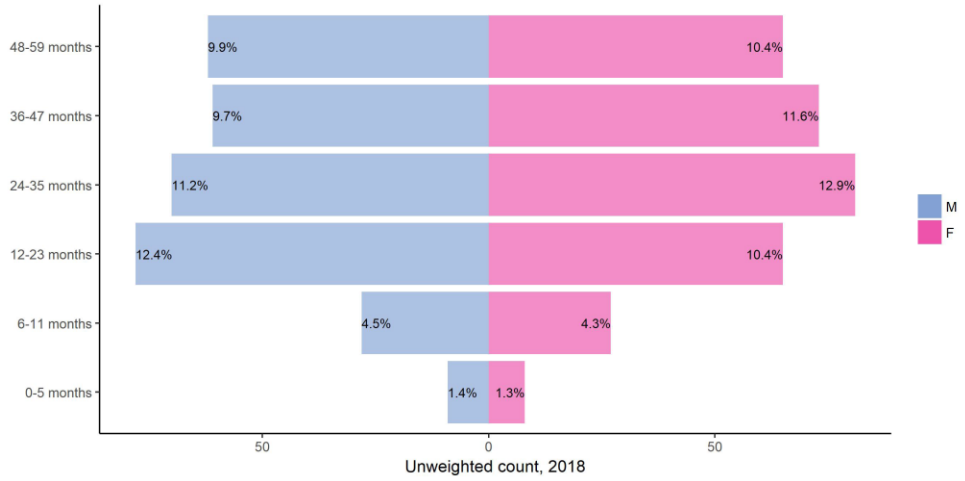


Figure D9.4: Hemoglobin measured: Age and sex of sample, unweighted percent distribution of the de facto population, follow-up survey



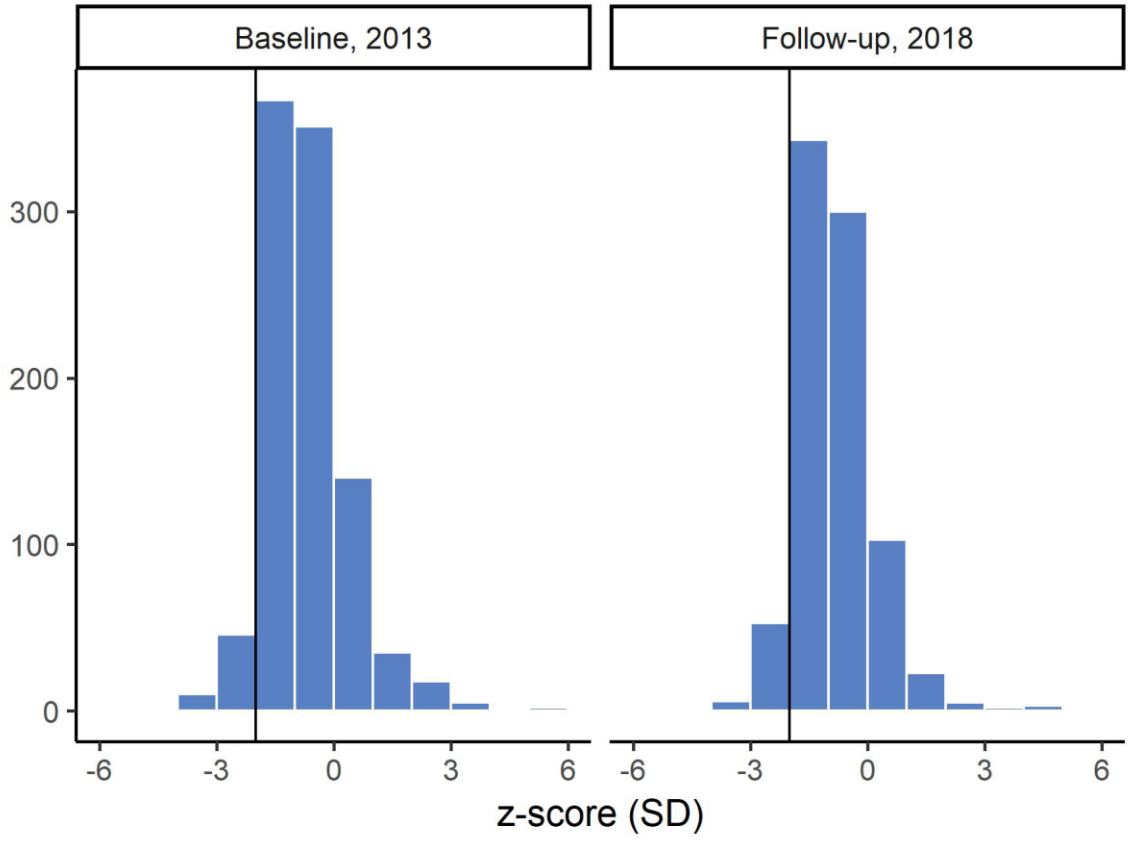
D9.1 Weight-for-Age

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.

D9.1.1 Unweighted distribution of weight-for-age z-scores

Figure D9.5 shows the distribution of weight-for-age z-scores among all children aged 0-59 months whose measurements were taken. The vertical black lines in the figure denote minus two standard deviations – children to the left of the line are classified as underweight.

Figure D9.5: Distribution of weight-for-age z-scores among children 0-59 months, unweighted



D9.1.2 Prevalence of underweight

As shown in Table D9.1, 16.4% of children aged 0-59 months in the second follow-up are underweight (have low weight-for-age) and 2.8% are severely underweight. The proportion of underweight children is highest (18.3%) in the age groups 24 to 59 months and lowest (5.5%) among those under 6 months. Female children (14.8%) are less likely to be underweight than male children (18.1%).

Table D9.1: Prevalence of underweight in children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of underweight in children 0-59 months, by sex and age (< -2 SD)								
Male	74	484	14.9	2.0	75	412	18.1	2.2
Female	71	494	13.5	1.8	65	427	14.8	2.0
0-5 months	2	97	2.0	1.4	4	81	5.5	2.9
6-11 months	12	117	9.8	3.1	5	82	5.9	2.1
12-23 months	35	229	15.2	2.1	37	169	21.2	3.0
24-59 months	95	534	16.8	1.9	94	507	18.3	2.7
0-59 months	144	977	14.1	1.6	140	839	16.4	1.6
6-23 months	47	346	13.4	2.1	42	251	16.2	2.4
Prevalence of severe underweight in children 0-59 months, by sex and age (< -3 SD)								
Male	12	484	2.5	0.7	13	412	3.0	0.8
Female	17	494	3.3	0.9	12	427	2.6	0.8
0-5 months	1	97	0.8	0.8	1	81	1.6	1.7
6-11 months	2	117	1.7	1.2	1	82	1.2	1.2
12-23 months	6	229	2.6	1.3	8	169	4.4	1.8
24-59 months	19	534	3.5	0.7	15	507	2.7	0.9
0-59 months	28	977	2.8	0.5	25	839	2.8	0.7
6-23 months	8	346	2.3	1.1	9	251	3.4	1.3
Prevalence of high weight for age in children 0-59 months, by sex and age (> 2 SD)								
Male	17	484	3.6	1.0	6	412	1.5	0.6
Female	6	494	1.2	0.5	5	427	1.3	0.7
0-5 months	15	97	15.3	3.0	11	81	14.3	4.4
6-11 months	4	117	3.7	2.2	0	82	0.0	-
12-23 months	2	229	1.0	0.7	0	169	0.0	-
24-59 months	2	534	0.4	0.4	0	507	0.0	-
0-59 months	23	977	2.4	0.6	11	839	1.4	0.4
6-23 months	6	346	1.9	1.0	0	251	0.0	-

D9.2 Height-for-Age

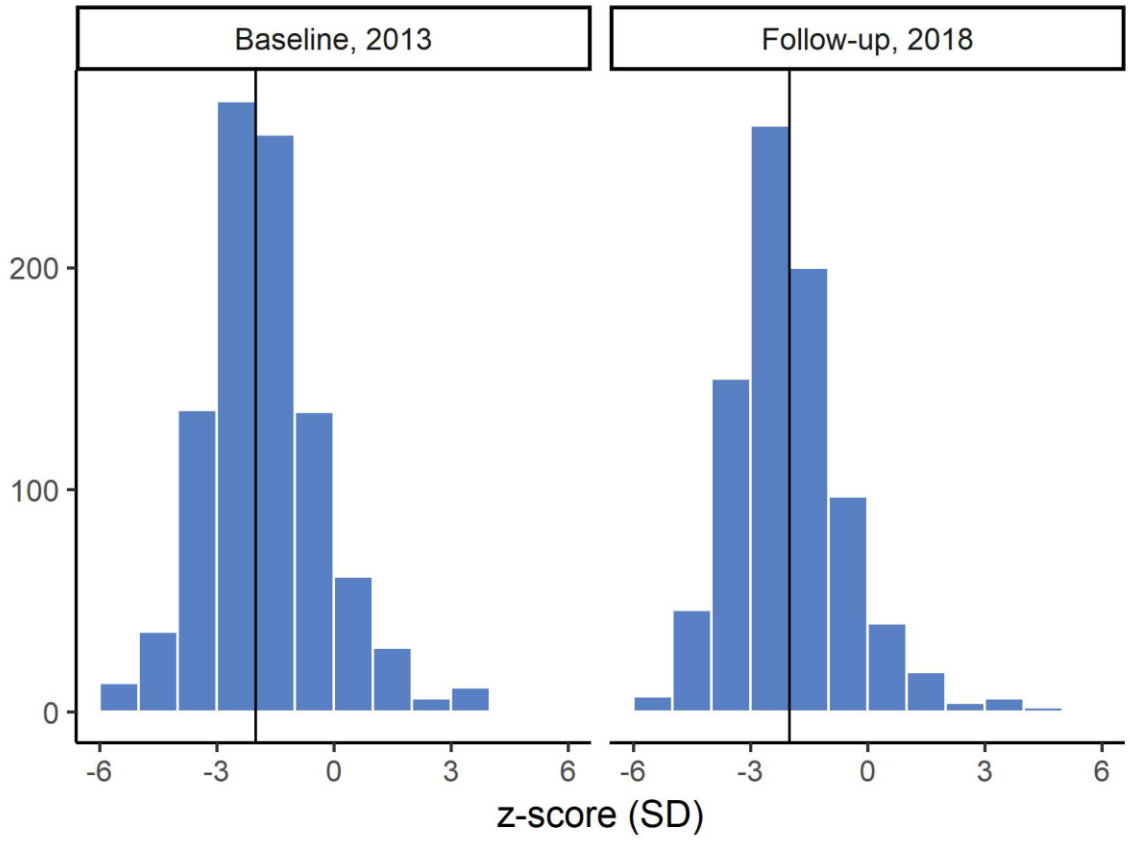
Height-for-age is an indicator of linear growth retardation and cumulative growth deficits in children. Children whose height-for-age z-score is below minus two standard deviations (-2 SD) from the median of the WHO reference population are considered short for their age (stunted) or chronically malnourished. 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.

D9.2.1 Distribution of height-for-age z-scores

Figure D9.6 presents the distribution of height-for-age z-scores among all children aged 0-59 months whose measurements were taken. The vertical black lines in the figure denotes minus two standard

deviations – children to the left of the line are classified as stunted.

Figure D9.6: Distribution of height-for-age z-scores among children 0-59 months, unweighted



D9.2.2 Prevalence of stunting

Table D9.2 presents the prevalence of stunting in children aged 0-59 months as measured by height-for-age. In the second follow-up, 55.8% of children under age 5 are stunted and 24.8% are severely stunted. Analysis of the indicator by age group shows that stunting is highest (63%) in children 24-59 months and lowest (14.6%) in children aged 0-5 months. Children 12-23 months old have the highest proportion of severely stunted children (32.3%) while the youngest age group (0-5 months) has the lowest proportion (8.4%). A higher proportion (59.1%) of male children is stunted compared with the proportion of female children (52.7%).

Table D9.2: Prevalence of stunting in children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of stunting in children 0-59 months, by sex and age (< -2 SD)								
Male	223	484	44.3	3.3	245	412	59.1	4.5
Female	247	492	48.7	3.6	224	427	52.7	3.9
0-5 months	6	97	5.8	2.3	12	81	14.6	3.4
6-11 months	28	117	22.4	5.1	29	82	35.5	6.2
12-23 months	117	228	49.5	4.8	109	169	64.2	5.4
24-59 months	318	533	57.5	3.2	319	507	63.0	3.7
0-59 months	469	975	46.4	2.9	469	839	55.8	3.6
6-23 months	145	345	40.7	4.2	138	251	54.8	4.8
Prevalence of severe stunting in children 0-59 months, by sex and age (< -3 SD)								
Male	102	484	19.7	2.5	118	412	28.3	3.8
Female	95	492	18.3	2.5	91	427	21.4	3.1
0-5 months	2	97	2.3	1.6	7	81	8.4	3.3
6-11 months	9	117	6.6	2.4	9	82	11.4	3.6
12-23 months	47	228	19.3	2.9	56	169	32.3	4.9
24-59 months	138	533	24.4	2.9	137	507	27.1	3.7
0-59 months	196	975	19.0	2.3	209	839	24.8	3.0
6-23 months	56	345	15.2	2.2	65	251	25.4	3.5

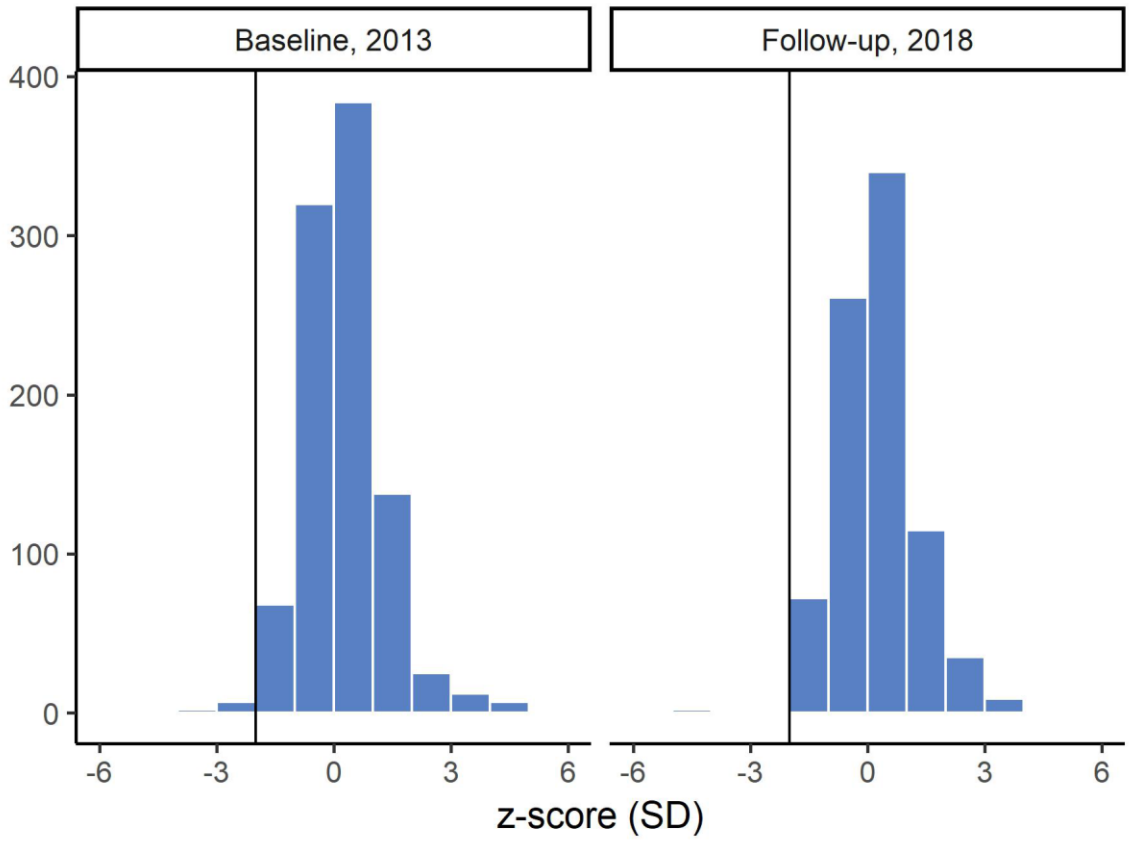
D9.3 Weight-for-Height

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 over-weight and obesity. Children more than two standard deviations (+2 SD) above the median weight-for-height are considered overweight or obese.

D9.3.1 Distribution of weight-for-height z-scores

Figure D9.7 shows the distribution of weight-for-height z-scores among all children aged 0-59 months whose measurements were taken. The vertical black lines in the figure denote minus two standard deviations – children to the left of the line are classified as wasted.

Figure D9.7: Distribution of weight-for-height z-scores among children 0-59 months, unweighted



D9.3.2 Prevalence of Wasting

Table D9.3 shows the breakdown of nutritional status of children aged 0-59 months as measured by weight-for-height by age groups and sex. In the second follow-up, 1.4% of children are wasted and 0.4% of children are severely wasted. Analysis of the indicator by age group shows that wasting is highest (3.1%) in children 12-23 months old and lowest (0%) in children aged 6-11 months. Male children are more likely to be wasted than female children (1.8% to 1%). Male children are slightly more likely to be severely wasted (0.7%) than females (0.2%).

Overweight and obesity affect a greater proportion of children in SMI areas Guatemala than wasting. In this sample, 4.9% 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 Guatemala.

Table D9.3: Prevalence of wasting in children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of wasting in children 0-59 months, by sex and age (< -2 SD)								
Male	7	484	1.2	0.5	8	412	1.8	0.8
Female	8	491	1.5	0.5	4	427	1.0	0.5
0-5 months	1	97	1.1	1.1	1	81	1.2	1.2
6-11 months	4	117	2.9	1.4	0	82	0.0	-
12-23 months	4	228	1.7	0.8	5	169	3.1	1.3
24-59 months	6	533	0.9	0.4	6	507	1.1	0.6
0-59 months	15	975	1.3	0.4	12	839	1.4	0.5
6-23 months	8	345	2.0	0.8	5	251	2.1	0.9
Prevalence of severe wasting in children 0-59 months, by sex and age (< -3 SD)								
Male	4	484	0.7	0.3	3	412	0.7	0.4
Female	4	491	0.7	0.4	1	427	0.2	0.2
0-5 months	0	97	0.0	-	0	81	0.0	-
6-11 months	3	117	2.2	1.2	0	82	0.0	-
12-23 months	2	228	0.9	0.6	2	169	1.0	0.7
24-59 months	3	533	0.5	0.3	2	507	0.3	0.2
0-59 months	8	975	0.7	0.3	4	839	0.4	0.2
6-23 months	5	345	1.3	0.7	2	251	0.7	0.5
Prevalence of overweight in children 0-59 months, by sex and age (> 2 SD)								
Male	28	484	5.8	1.3	22	412	5.5	1.2
Female	20	491	4.0	1.1	17	427	4.3	1.4
0-5 months	14	97	15.5	4.7	17	81	21.2	5.5
6-11 months	10	117	8.1	2.5	6	82	7.5	2.6
12-23 months	7	228	2.8	1.0	2	169	1.3	0.8
24-59 months	17	533	3.2	1.0	14	507	3.0	0.6
0-59 months	48	975	4.9	1.0	39	839	4.9	0.8
6-23 months	17	345	4.5	1.3	8	251	3.3	1.0

D9.4 Anemia

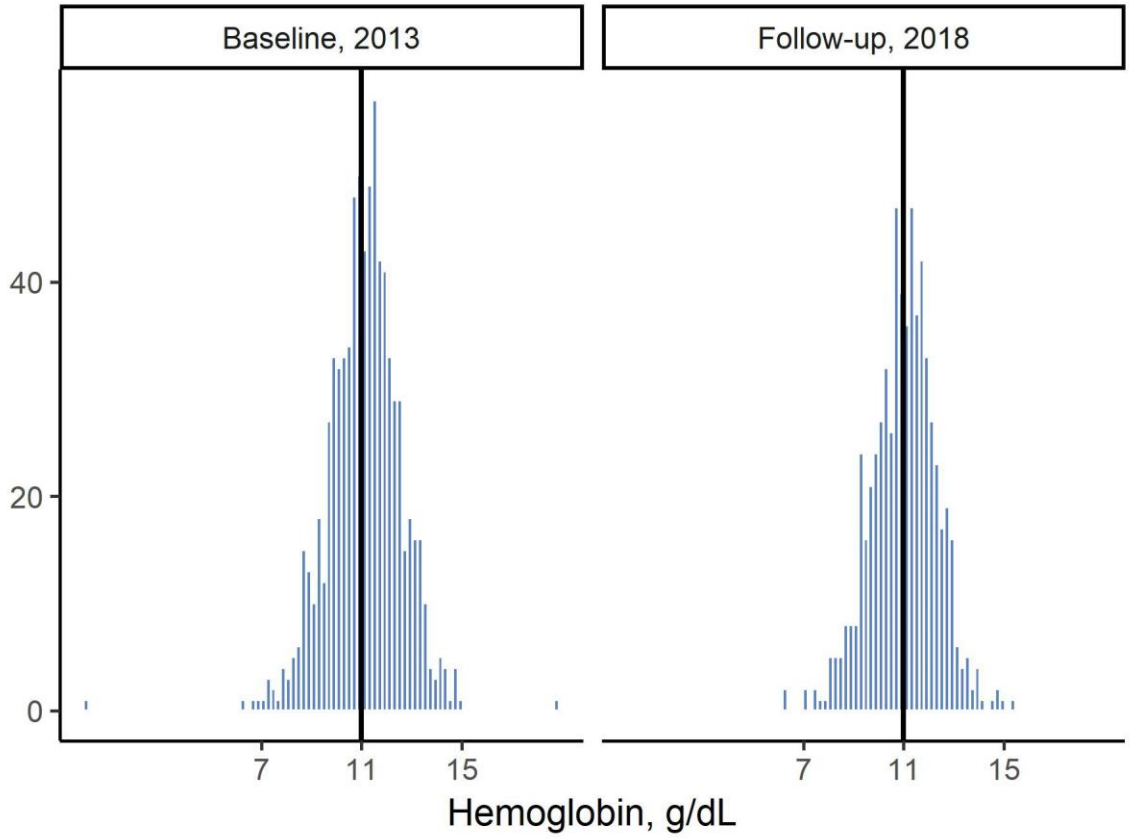
Anemia is a condition characterized by low concentration of hemoglobin in the blood. Hemoglobin is necessary for transporting oxygen to tissues and organs in the body. The reduction in oxygen available to organs and tissues when hemoglobin levels are low is responsible for most of the symptoms experienced 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.

D9.4.1 Distribution of hemoglobin values

Figure D9.8 shows the distribution of hemoglobin values (in g/dL) among children 0-59 months of age. The vertical black lines in the figure denote a hemoglobin concentration of 11.0 g/dL – children to the left of the line are classified as anemic.

Figure D9.8: Distribution of altitude-adjusted hemoglobin values among children 0-59 months, unweighted



D9.4.2 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. The cutpoints for anemia are adjusted (raised) in settings where altitude is more than 1,000 meters above sea level, to account for lower oxygen partial pressure, a reduction in oxygen saturation of blood, and an increase in red blood cell production. Although some regions of Guatemala are mountainous and well above 1,000 meters, the majority of the population resides at lower levels. The highest elevation of a surveyed household at the second follow-up was 2,974 meters above sea level; 79.5% of children (unweighted) lived above 1,000 meters. Correction for elevation was applied to anemia diagnosis where data collectors measured altitude over 1,000m (using a handheld GPS device).

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 D9.4 indicates that 45.5% of children under age 5 in Guatemala are anemic. Overall, the anemia prevalence is mostly mild to moderate (45.2%), with only 0.3% of children under 5 years presenting as severely anemic. Anemia prevalence is highest among children aged 0-5 months (10.8%) compared with the other children. More than 63% of all children aged 6-23 months, our targeted population for anemia intervention, were found to be anemic.

Table D9.4: Prevalence of anemia, children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of anemia in children 0-59 months, by sex and age								
Male	170	386	42.3	4.3	147	308	47.7	4.5
Female	162	388	41.1	4.5	139	319	43.5	5.2
0-5 months	5	11	45.0	18.7	2	17	10.8	8.1
6-11 months	55	92	57.6	6.2	34	55	62.5	6.6
12-23 months	104	206	50.4	5.0	91	143	63.2	6.1
24-59 months	168	465	34.8	4.0	159	412	38.6	4.6
0-59 months	332	774	41.7	4.0	286	627	45.5	4.6
6-23 months	159	298	52.5	4.5	125	198	63.0	5.4
Prevalence of severe anemia in children 0-59 months, by sex and age								
Male	2	386	0.5	0.3	1	308	0.3	0.3
Female	2	388	0.7	0.5	1	319	0.3	0.3
0-5 months	0	11	0.0	-	0	17	0.0	-
6-11 months	0	92	0.0	-	1	55	1.8	1.8
12-23 months	3	206	1.7	1.0	0	143	0.0	-
24-59 months	1	465	0.2	0.2	1	412	0.2	0.2
0-59 months	4	774	0.6	0.3	2	627	0.3	0.2
6-23 months	3	298	1.2	0.7	1	198	0.5	0.5

D10. CHAPTER 10: SMI HOUSEHOLD INDICATORS

Table D10.1: Performance of payment indicators, SMI-Guatemala Second Follow-up Survey

		Baseline 2013				Second Follow-Up 2017			
	Indicator	n	N	%	SE	n	N	%	SE
2080	Women (age 15-49) who report having received information about family planning methods from a health facility personnel or community health workers in the last 12 months	181	779	22.8	3.4	169	691	21.8	3.9
4015	Women (age 15-49) who delivered in a CAPS, CAIMI, or hospital for most recent birth in the last two years	164	542	29.5	4.7	96	368	25.4	4.4
4670	Women (age 15-49) whose most recent institutional birth (CAPS, CAIMI, or hospital) in the past two years met at least two of five identified standards for cultural sensitivity, excluding C-sections and deliveries outside Guatemala	44	109	44.5	6.1	35	61	56.6	8.0
4100	Infants receiving neonatal care by skilled personnel in a health facility within 48 hours of birth in the last two years	84	608	13.7	3.1	83	377	21.4	2.9
5060	Children 0-59 months who received ORS and zinc in the last episode of diarrhea in the past two weeks	4	182	3.2	2.0	9	63	14.7	5.5
5070	Children 6-23 months who have received at least 60 packets of micronutrients in the last six months	19	363	5.2	1.1	11	258	4.0	1.5

Table D10.2: Performance of monitoring indicators, SMI-Guatemala Follow-up Survey

		Baseline 2013				Second Follow-Up 2017			
	Indicator	n	N	%		n	N	%	SE
6110	Out-of-pocket health expenditures were 10% or more of total itemized household expenditure reported in the last month	135	858	16.0	2.6	45	748	6.5	1.5
6110	Out-of-pocket health expenditures were 25% or more of total itemized household expenditure reported in the last month	63	858	7.4	1.5	28	748	4.0	1.0
6110	Out-of-pocket health expenditures were 40% or more of total itemized household expenditure reported in the last month	43	858	5.3	1.3	18	748	2.4	0.7
1080	Women aged 15-49 with a live birth in the last year	218	1226	13.3	1.1	152	1009	10.6	1.0
1090	Women aged 15-19 with a live birth in the last year	36	272	9.6	2.1	25	232	6.4	1.5
2010	Women (age 15-49) currently using (or whose partner is using) a modern method of family planning	190	610	31.3	3.0	152	553	28.1	3.6
2020	Women (age 15-49) who did not wish to become pregnant and who were not using/not have access to family planning methods (temporary and permanent)	420	610	68.7	3.0	401	553	71.9	3.6
2030	Women (age 15-49) who report having stopped using a method of family planning during the previous year	24	193	13.1	3.6	18	173	9.4	2.4
4110	Women (age 15-49) with a birth in the last two years who can recognize at least five danger signs in newborns	148	403	36.2	3.8	78	331	23.1	3.4
6010	Women 15-49 who report having any illness in the past two weeks	179	1226	15.9	3.0	96	1008	9.8	1.5
6020	Women (age 15-49) who report having any illness in the past two weeks but did not seek health care	89	178	51.0	4.4	55	96	55.8	8.2
6050	Women (age 15-49) who used health facility services in the past two weeks	169	1225	13.3	2.2	129	1006	11.9	1.7
6130	Women who reported satisfaction with health care services at their most recent visit to a health facility	378	410	90.5	2.2	302	314	96.4	1.0

(continued)

		Baseline 2013				Second Follow-Up 2017			
	Indicator	n	N	%	SE	n	N	%	SE
6140	Women who reported satisfaction with cleanliness of the facility at their most recent visit to a health facility	186	405	49.3	4.6	180	313	58.3	5.8
6150	Women who reported satisfaction with competence of the medical personnel at their most recent visit to a health facility	356	372	93.9	1.7	292	308	96.3	1.0
6160	Women who reported they were treated with respect at their most recent visit to a health facility	201	410	49.1	4.1	179	314	59.0	4.8
3010	Women (age 15-49) who received at least one antenatal care visit by skilled personnel in their most recent pregnancy in the last two years	287	540	54.5	3.7	276	366	75.1	4.1
4020	Women (age 15-49) who received postpartum care by skilled personnel within the first 48 hours in their most recent pregnancy in the last two years	81	535	14.7	2.0	69	366	18.8	3.3
4035	Women (age 15-49) who received postpartum care by skilled personnel between 7 and 42 days after delivery in their most recent pregnancy in the last two years	33	535	7.8	2.1	12	366	3.3	0.9
4040	Women (age 15-49) who received postpartum care by skilled personnel within 24 hours after delivery, a second check before 7 days, and a third check between 7 and 42 days after delivery in their most recent pregnancy in the last two years	0	535	0.0	-	0	366	0.0	-
4102	Infants receiving neonatal care by skilled personnel in a health facility within seven days of birth in the last two years	96	608	15.9	3.4	86	377	22.3	2.8
5050	Children born in the last two years who were breastfed within one hour after birth	408	625	63.2	3.6	331	386	86.1	1.8
5010	Children 12-59 months who received two doses of deworming in the last year	192	749	25.3	2.4	110	668	16.1	1.4
5040	Children 0-5 months who were exclusively breastfed on the previous day	71	100	68.8	5.8	69	81	86.1	3.5
5080	Children 12-15 months who were breastfed on the previous day	58	74	78.7	4.4	49	65	74.3	8.0
5090	Children 6-8 months who received solid or semi-solid food on the previous day	35	60	57.5	6.8	29	41	71.0	6.5
5100	Children 6-23 months who received foods from four or more food groups during the previous day	149	377	41.3	4.1	102	265	38.4	4.4
5110	Children 6-23 months breastfed or complimentary feeding who received solid, semi-solid, or soft foods the minimum number of times or more during the previous day	128	306	41.9	4.4	128	234	54.8	5.8
5120	Children 6-23 months who received the minimum acceptable diet (apart from breastmilk) during the previous day	70	360	20.2	2.9	55	257	21.3	4.2
6030	Children 0-59 months who had any illness in the past two weeks, according to report of mother or caregiver	303	1042	31.2	2.8	147	882	16.7	2.0
6040	Children 0-59 months who had any illness in the past two weeks but did not seek health care, according to report of mother or caregiver	3	297	0.7	0.5	2	142	1.4	0.9
5020	Children 0-59 months fully vaccinated for age, according to vaccine card and recall	207	926	21.0	2.8	203	722	28.3	3.5
1060	Children 6-23 months with hemoglobin <110g/L	159	298	52.5	4.5	125	198	63.0	5.4
1070	Children 0-59 months with height < -2 SD of the mean of the reference population for age	471	977	46.5	3.0	469	839	55.8	3.6

		Baseline 2013			Second Follow-Up 2017		
	Indicator	N	mean	SE	N	mean	SE
6090	Average out-of-pocket household itemized health expenditure for the last month (Q)	839	107.7	25.5	744	96.9	57.5
6100	Average household itemized expenditure for the last month (Q)	858	1497.4	156.1	748	1437.2	109.9
6080	Average travel time to nearest health facility (min)	1170	42.5	10.5	927	22.7	3.4
6085	Average distance to nearest health facility (km)	930	4.7	1.0	361	1.6	0.2
6120	Average wait time at most recent visit to a health facility (min)	402	61.4	7.9	306	21.2	2.2
6082	Average travel time to delivery location for most recent birth in the last two years (min)	171	276.8	58.8	103	207.5	52.7

APPENDIX E. INTERVENTION AND COMPARISON AREAS

E1 CHAPTER 1

E1.1 Report structure

The chapters in the main body of the report present characteristics of the surveyed SMI-Guatemala sample in intervention areas only. Each table is presented for comparison areas only in Appendix D, and pooled intervention and comparison areas in Appendix E. Most tables take one of three types. Tabulations of select-only-one question types are mutually exclusive, so the proportions sum to 100%. Counts are shown for non-response ("Don't know" or "Decline to respond" recorded), but these cases are always excluded from the denominator.

Tabulations of select-all-that-apply question types do not have mutually-exclusive categories, as respondents can report more than one option, and thus proportions do not sum to 100%. The table shows affirmative cases (n) and non-missing cases (N). Non-response is the difference between non-missing cases (N) and the total sample eligible for that section of the questionnaire, indicated at the start of the chapter. Where statistics are reported for subpopulations, the size of the subpopulation is reported in the same table or the preceding table for straightforward comparison.

Tabulations of continuous variables, where respondents were requested to provide a numeric response, present the range and quartiles (25th percentile, median, 75th percentile) in order to illustrate the distribution of responses across the sample. Counts of non-response are listed in the table and excluded from the count of non-missing cases (N).

E2 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 SMI-Guatemala Baseline and Second Follow-up Household Survey.

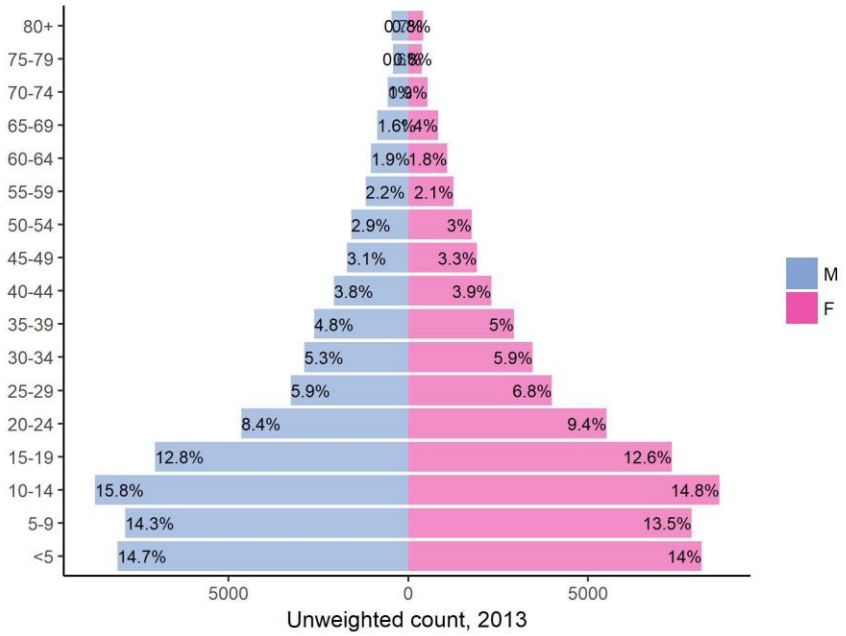
E2.1 Characteristics of Participating Households

A total of 2,637 households in the Guatemala second follow-up completed the household characteristics questionnaire. In the baseline, 4,358 completed the survey. 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.

E2.2 Age and Sex Composition, SMI Census

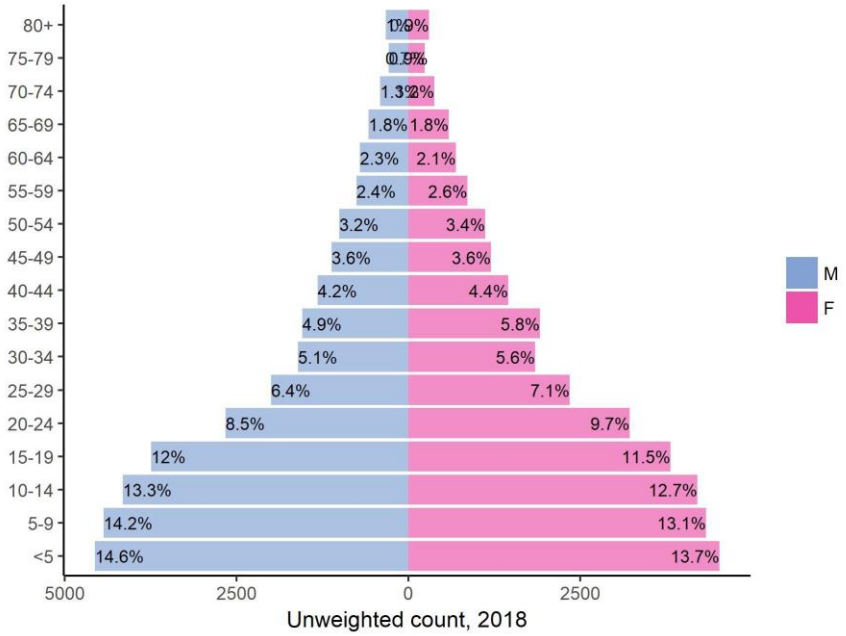
The unweighted distribution of the de facto household population in the surveyed households in the SMI-Guatemala household census by five-year age groups and by sex is shown for baseline (Figure E2.1) and second follow-up (Figure E2.2). Guatemala has a larger proportion of its population in the younger age groups than in the older age groups. Figure E2.2 indicates that in the second follow-up, just under 41% of the population in the Second Follow-up is under age 15 years, more than half (54%) of the population is in the economically productive age range (15-64), and the remaining 5% is age 65 and above.

Figure E2.1: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, baseline survey



* 28 people were excluded due to missing age.

Figure E2.2: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, follow-up survey



E2.3 Household Characteristics, SMI Household Survey

The number of households, women and children in the sample are displayed in Table E2.1; and the percent distribution of households by head of household, number of usual members, and marital status are shown in Table E2.2.

Eighty two percent of households in Guatemala identify as dual-headed in the second follow-up. Males are the head of the household in 3.6% of surveyed households in Guatemala, with females as the head of household in the remaining 14.1%. The median household size in Guatemala is five members, with another 15% of households having seven or more members.

Table E2.1: SMI household survey sample sizes: number of total households, women 15-49 years of age, and children 0-59 months

	Baseline 2013	Second Follow-Up 2018
Households	4358	2637
Women	5899	3742
Children	5271	3094

Table E2.2: Household characteristics, SMI household sample

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Head of household						
Dual-headed household	3710	83.4	0.9	2220	82.4	0.9
Single head, female	545	14.1	0.9	323	14.1	0.9
Single head, male	103	2.5	0.4	94	3.6	0.4

Dual-headed households are those where (a) two individuals were identified as "head" by the respondent or (b) both the person identified as "head" and his or her spouse or partner are household members

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Number of usual household members	4358	0	1	4	5	7	25
Second follow-up 2018							
Number of usual household members	2637	0	1	4	5	7	19

E2.4 Drinking Water Access and Treatment

E2.4.1 Sanitation facilities and waste disposal

A household's source of drinking water is an important determinant of the health status of household members. 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, location of water source, and information about sanitation facilities is shown in Table E2.3. The majority of surveyed households (83.6%) have water piped to dwelling, and 16.4% of households have to go outside their home or yard to a water source.

Many households (56.3%) use a pit latrine and 20.9% of households use a flush toilet. Three percent of households report having no toilet, compared to 5.6% at baseline.

Table E2.3: Household water source and sanitation facilities

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Household water source						
Piped to dwelling	3321	77.4	1.9	2206	83.6	2.2
Piped to yard/plot	312	7.1	1.0	96	3.7	0.7
Protected dug well	167	4.1	0.7	82	3.3	0.8
Protected spring	45	0.9	0.2	47	1.7	0.6
Unprotected spring	58	1.2	0.2	37	1.5	0.5
Rainwater collection	53	1.0	0.3	35	1.3	0.7
Unprotected dug well	178	3.6	0.6	21	0.9	0.3
Tubewell/borehole	58	1.1	0.2	20	0.8	0.3
Public tap/standpipe	13	0.2	0.1	20	0.6	0.4
Surface water	56	1.5	0.5	14	0.5	0.2
Water jug	3	0.0	-	2	0.1	0.1
Tanker truck	0	0.0	-	1	0.0	-
Cart with small tank/drum	1	0.0	-	0	0.0	-
Bottled water	1	0.0	-	0	0.0	-
Other	90	1.9	0.4	55	2.0	0.5
Don't know	2	-	-	1	-	-
Decline to respond	0	-	-	0	-	-
Time it takes to retrieve water (min)						
Water on premises	3866	90.5	1.1	2443	93.3	1.4
Less than 30 minutes	377	7.5	0.8	142	5.8	1.3
30 minutes or longer	86	2.0	0.4	27	0.9	0.3
Don't know	28	-	-	11	-	-
Decline to respond	1	-	-	0	-	-
Sanitation facilities						
Pit latrine	2753	62.7	2.3	1553	56.3	3.0
Flush toilet	803	19.9	2.3	497	20.9	2.9
Pour flush toilet	273	5.7	0.8	267	10.5	1.4
Dry toilet	264	5.8	0.8	229	9.2	1.4
No toilet	252	5.6	1.0	74	2.6	0.8
Other	8	0.3	0.1	17	0.4	0.1
Don't know	4	-	-	0	-	-
Decline to respond	1	-	-	0	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Shared toilet/facilities	208	4093	5	0.6	126	2546	4.6	0.6

E2.4.2 Cooking fuel sources

Cooking fuel source and the location for cooking food are included in Table E2.4. The percentage of households with a separate kitchen is also shown. The two most commonly reported cooking fuel sources

used in households during the second follow-up are wood (98.1%) and gas tank (9.4%). Among those households with non-missing responses as to what cooking fuel sources they use, 54.7% report normally cooking food in a separate building, 44.3% normally cook food inside the house, and 1% normally cook food outdoors. Eighty nine percent of households have a separate kitchen.

Table E2.4: Cooking fuel source and cooking location

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Wood	4285	4358	98.0	0.5	2587	2636	98.1	0.6
Gas tank	234	4358	5.9	1.2	215	2636	9.4	1.7
Electricity	27	4358	0.6	0.2	30	2636	1.1	0.3
Coal	11	4358	0.2	0.1	2	2636	0.0	-
Straw/twigs/grass	36	4358	0.8	0.2	0	2636	0.0	-
Agricultural crops	1	4358	0.0	-	0	2636	0.0	-
No food cooked at home	1	4358	0.0	-	0	2636	0.0	-
Other	0	4358	0.0	-	1	2636	0.1	0.1

*categories not mutually exclusive (select all that apply)

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Location for cooking food, if cooking fuel source reported						
In a separate building	2014	45.4	1.8	1446	54.7	1.6
Inside house	2267	52.4	1.8	1160	44.3	1.6
Outdoors	74	2.1	0.4	29	1.0	0.3
Other	3	0.1	0.0	1	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Separate kitchen, if cooking fuel source reported and food cooked in the home	1832	2263	81.6	1.9	1021	1159	89.4	1.2

E2.4.3 Household wealth

The median number of bedrooms per household is less than two (Table E2.5). Fifty three percent of households in the second follow-up own agricultural land and 4.8% of households rent agricultural land (Table E2.6).

The availability of durable consumer goods is a good indicator of a household's socioeconomic status. Table E2.6 shows the availability of selected consumer goods by household. The large majority of

households (88%) have electricity, and the most commonly owned items are mobile phone (85.5%), radio (65.5%), and television (53.2%). Many households (13.4%) own a car and 10% own a motorcycle/scooter.

Table E2.5: Number of bedrooms per household

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Number of bedrooms	4355	3	0	1	1	2	7
Second follow-up 2018							
Number of bedrooms	2632	5	0	1	2	2	7

Table E2.6: Household assets

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Household assets								
Electricity	3463	4358	80.5	1.8	2282	2637	88.0	1.7
Mobile phone	3206	4356	73.3	1.7	2229	2636	85.5	1.4
Radio	2574	4358	59.2	1.7	1716	2637	65.5	1.6
Television	1838	4354	42.6	2.1	1325	2636	53.2	2.6
Watch	944	4356	22.8	1.3	427	2636	17.1	1.4
Sound system	426	4357	9.7	0.9	390	2637	16.5	1.9
Refrigerator	379	4355	9.0	1.1	354	2636	15.6	2.0
Bank account	337	4291	8.5	1.0	324	2547	14.7	1.5
Computer	165	4357	4.2	0.7	129	2636	5.9	1.1
Washing machine	44	4357	1.3	0.4	40	2636	2.2	0.6
Guitar	91	4356	2.1	0.4	56	2637	2.2	0.4
Landline phone	36	4357	1.3	0.4	21	2634	1.0	0.3
Transportation assets								
Car	309	4356	7.5	0.8	301	2636	13.4	1.5
Motorcycle/scooter	152	4356	3.6	0.5	231	2636	10.0	1.3
Bicycle	294	4357	7.0	0.8	209	2635	7.6	0.9
Truck	33	4354	0.6	0.2	14	2636	0.8	0.3
Animal cart	4	4357	0.1	-	4	2637	0.1	0.1
Agricultural assets: Livestock ownership								
Chickens	3018	4358	68.3	1.8	1858	2635	70.1	2.1
Pigs	1579	4357	34.5	2.1	812	2637	29.9	2.1
Sheep or goats	529	4357	11.9	1.5	395	2636	14.6	2.1
Cattle	377	4355	8.7	1.1	320	2637	10.9	1.6
Horses, donkeys, or mules	495	4354	10.8	1.2	222	2637	8.1	1.3

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Agricultural assets: Own or rent agricultural land						
No agricultural land	1678	39.1	2.1	1077	42.2	2.4
Owns agricultural land	2340	53.9	2.1	1339	53.0	2.3
Rents agricultural land	298	6.9	0.8	140	4.8	0.6
Shared/community-held land	10	0.2	0.1	3	0.1	0.1
Don't know	28	-	-	19	-	-
Decline to respond	4	-	-	59	-	-

E2.5 Household expenditure

E2.5.1 Total expenditures by type

Households are surveyed about the amount of money spent over the last month. After reporting total household expenditures, households are then asked how much was spent on specific categories (e.g., food, housing, education, and medical care) over the last four weeks. Table E2.7 shows the itemized monthly expenditure per person living in the household summarized by expenditure quintile. All data are presented in current quetzal (Q), with no adjustment for inflation. Itemized expenditure information was sufficiently complete to report for 2338 households at the second follow-up. The lowest quintile in the study area spent less than 117 Q per person over the last month in the second follow-up.

Table E2.8 shows the budget share, defined as the weighted average expenditure on each category across a quintile divided by the weighted average total itemized household expenditure in the same quintile. Table E2.8 shows that the poorest 20% of households in the study area spend 72.8% of their monthly expenditure on food, on average. In comparison, the wealthiest households spend 45.9% on food. The poorest households spent 0.8% of their expenditure on medical care, while the wealthiest spent 14.9%.

Table E2.7: Total itemized per- capita expenditure quintiles, current Guatemala Quetzal

	N	DK/DTR	p20	p40	p60	p80
Baseline 2013						
Per capita monthly household expenditure	3627	81	98	159	230	356
Second follow-up 2018						
Per capita monthly household expenditure	2338	0	117	182	256	388

* Not adjusted for inflation

Table E2.8: Itemized household expenditure by total household budget share

	Bottom quintile	2nd quintile	3rd quintile	4th quintile	Top quintile
Baseline 2013					
Food	70.0	71.4	68.6	66.9	53.2
Alcoholic beverages and tobacco	0.8	0.6	0.9	0.8	0.5
Education expenses	4.3	4.3	3.9	3.8	3.6
Furniture and domestic appliances	0.1	0.2	0.1	0.5	0.9
Recreation	0.1	0.0	0.1	0.1	0.2
Housing and utilities	13.2	11.8	12.4	10.5	9.5
Clothing and shoes	4.3	4.3	5.2	7.5	12.8
Transportation	3.1	3.2	3.8	3.5	3.1
Communication	2.7	2.1	2.3	2.4	2.2
Out-of-pocket medical expenses	1.4	1.9	2.8	4.1	13.8
Social security premiums	0.0	0.0	0.0	0.0	0.1
Private insurance premiums	0.0	0.0	0.0	0.0	0.1
Other costs to access health care	0.0	0.1	0.0	0.0	0.1
Second Follow-Up 2018					
Food	72.8	70.9	67.3	64.1	45.9
Alcoholic beverages and tobacco	0.3	0.5	0.8	1.1	2.4
Education expenses	3.1	2.7	2.9	2.4	3.6
Furniture and domestic appliances	0.0	0.1	0.1	0.1	0.2
Recreation	0.0	0.0	0.1	0.1	0.1
Housing and utilities	12.2	13.4	14.7	14.2	9.7
Clothing and shoes	5.1	5.5	6.2	10.1	17.2
Transportation	2.9	3.1	3.2	3.5	3.7
Communication	2.7	2.6	2.4	2.5	2.5
Out-of-pocket medical expenses	0.8	1.3	2.5	2.0	14.9
Social security premiums	0.1	0.1	0.0	0.0	0.0
Private insurance premiums	0.0	0.0	0.0	0.0	0.0
Other costs to access health care	0.0	0.0	0.0	0.0	0.1

E2.5.2 Health expenditures

Of the 2338 households with expenditure data at the second follow-up, 350 reported having health expenditures in the last four weeks. Table E2.9 shows health expenditure by type among households reporting non-zero out-of-pocket health expenditure. Very few households had spending in each category.

Table E2.9: Out-of-pocket medical expenditures by type, last four weeks, current Guatemala Quetzal

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Diagnostic and laboratory tests, X-rays, blood tests	702	1	0	0	0	0	7000
Care that required overnight stay in hospital/clinic	700	3	0	0	0	0	6100
Medications prescribed by health personnel	700	3	0	0	81.9	300	6000
Care by health professionals not requiring overnight stay	702	1	0	0	0	0	5500
Health products (glasses, hearing aids, prosthetics, etc.)	703	0	0	0	0	0	5000
Care or non-prescription medications from pharmacist	703	0	0	0	0	30	1500
Other costs associated with overnight stay in hospital/clinic	700	3	0	0	0	0	1000
Other health care products or services	703	0	0	0	0	0	700
Care by traditional/alternative healers/birth attendants	703	0	0	0	0	0	600
Dentists	703	0	0	0	0	0	300
Second Follow-Up 2018							
Diagnostic and laboratory tests, X-rays, blood tests	350	0	0	0	0	0	1800
Care that required overnight stay in hospital/clinic	350	0	0	0	0	0	7500
Medications prescribed by health personnel	349	1	0	0	0	250	5900
Care by health professionals not requiring overnight stay	350	0	0	0	0	0	12000
Health products (glasses, hearing aids, prosthetics, etc.)	350	0	0	0	0	0	1700
Care or non-prescription medications from pharmacist	348	2	0	0	0	0	1500
Other costs associated with overnight stay in hospital/clinic	350	0	0	0	0	0	2000
Other health care products or services	349	1	0	0	0	0	12000
Care by traditional/alternative healers/birth attendants	350	0	0	0	0	0	300
Dentists	350	0	0	0	0	0	800

* Not adjusted for inflation

E2.5.3 Source of health expenditure financing

Of the 2338 households with expenditure data at the second follow-up, 53 reported that members of the household went to a hospital and stayed overnight at least once during the last 12 months and paid for expenses associated with the overnight stays. The maximum paid for a hospital stay was 7500 Q.

Table E2.10 shows the source and amount of financing for medical expenditures for overnight hospital stays. No single funding source was used by more than about 25% of households with hospital stays.

Table E2.10: Health care financing by source, last 12 months, current Guatemala Quetzal

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Property sold	165	2	0	0	0	0	50000
Loan from a source other than family or friends	166	1	0	0	0	0	30000
Money from relatives or friends outside the household	165	2	0	0	0	1136.5	20000
Remittances from family or friends abroad	165	2	0	0	0	0	14000
Savings	165	2	0	0	0	0	10000
Reducing other household spending	165	2	0	0	0	0	10000
Other source	165	2	0	0	0	0	8000
Any household member's current income	165	2	0	0	0	300	6000
Conditional cash transfer programs	165	2	0	0	0	0	5000
Items sold	165	2	0	0	0	0	5000
Health insurance plan payment/reimbursement	165	2	0	0	0	0	4200
Political donations or grants	165	2	0	0	0	0	500
Second Follow-Up 2018							
Property sold	53	2	0	0	0	0	25000
Loan from a source other than family or friends	53	2	0	0	0	408.7	20000
Money from relatives or friends outside the household	53	2	0	0	0	965.5	7500
Remittances from family or friends abroad	53	2	0	0	0	0	12000
Savings	52	3	0	0	0	0	5500
Reducing other household spending	53	2	0	0	0	0	2000
Other source	53	2	0	0	0	0	19000
Any household member's current income	51	4	0	0	0	500	6000
Conditional cash transfer programs	53	2	0	0	0	0	0
Items sold	53	2	0	0	0	0	3000
Health insurance plan payment/reimbursement	53	2	0	0	0	0	15000
Political donations or grants	53	2	0	0	0	0	0

* Not adjusted for inflation

E3 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 SMI-Guatemala second follow-up household survey.

E3.1 Demographic Characteristics

E3.1.1 Age, marital status, relation to head of household

The age distribution of the de facto population of women of reproductive age participating in the women's health or pregnancy interviews in Guatemala is shown in Figure E3.1 by five-year age groups. About 60% of all women participating in the second follow-up SMI-Guatemala household survey were younger than 30 years of age, 27% were between the ages of 30 and 39, and 13% were between the ages of 40 and 49. While 29% of women reported being married and 44% being partnered, 23% indicated they were never married. Seven percent of women were reported at the SMI-Guatemala census to be the head of household, 49.1% to be the spouse of the head of the household, and 29.3% to be the biological child of the head of the household.

Figure E3.1: Age of respondents, unweighted

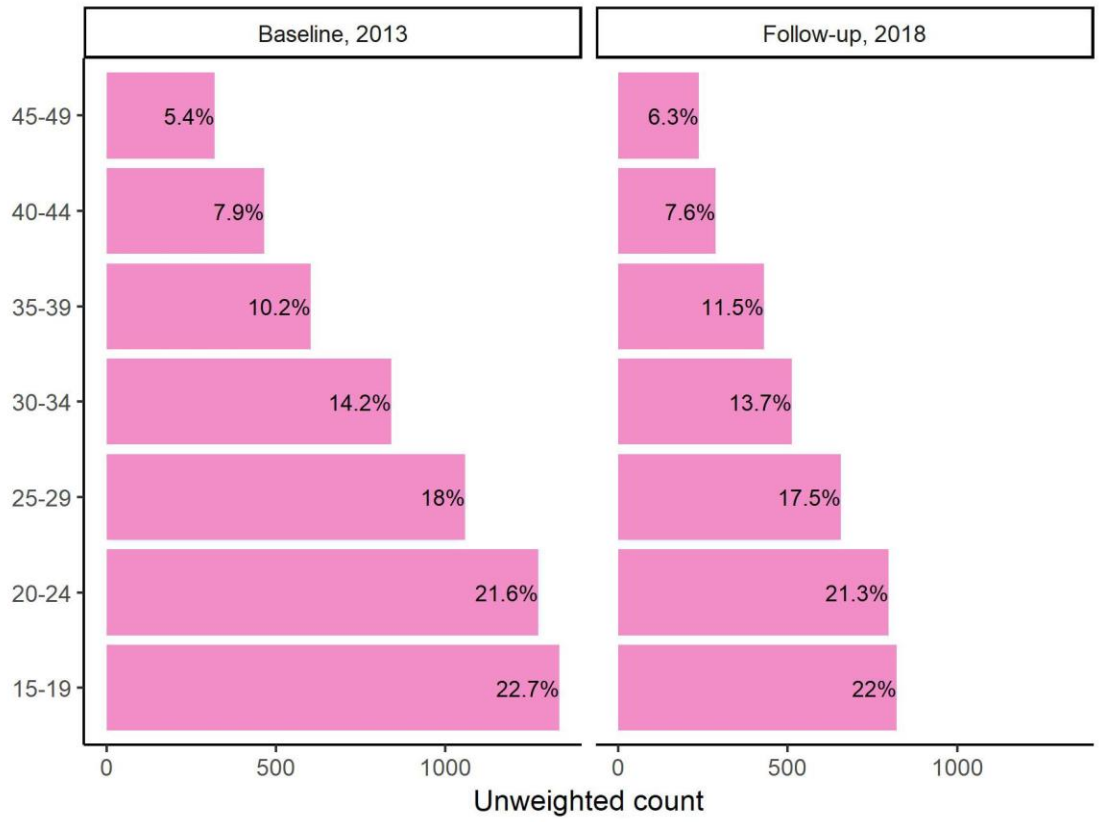


Table E3.1: Demographic characteristics of respondents

	Baseline 2013		Second Follow-Up 2018	
	n	%	n	%
Marital status				
Single	1540	26.1	994	26.6
Married	1751	29.7	1012	27.0
Civil union/partnered	2294	38.9	1542	41.2
Divorced	11	0.2	1	0.0
Separated	209	3.5	148	4.0
Widowed	85	1.4	43	1.1
NA	1	0.0	0	0.0
Other	4	0.1	1	0.0
Don't know	2	0.0	0	0.0
Decline to respond	2	0.0	2	0.1
Respondent's relationship to head of household				
Head of household	468	7.9	247	6.6
Spouse	3070	52.0	1837	49.1
Biological child	1575	26.7	1096	29.3
Adopted or stepchild	14	0.2	9	0.2
Grandchild	57	1.0	71	1.9
Niece/nephew	12	0.2	10	0.3
Parent	19	0.3	2	0.1
Sibling	48	0.8	24	0.6
Daughter-in-law/son-in-law	532	9.0	374	10.0
Sister-in-law/brother-in-law	17	0.3	11	0.3
Grandparent	2	0.0	0	0.0
Mother-in-law/father-in-law	1	0.0	0	0.0
Other relative	12	0.2	8	0.2
Unrelated person	6	0.1	7	0.2
Partner	28	0.5	29	0.8
NA	36	0.6	16	0.4
Other	2	0.0	2	0.1
Don't know	0	0.0	0	0.0
Decline to respond	0	0.0	0	0.0

*At baseline, marital status is reported by the respondent in the Census. In the second follow-up, marital status is reported by the woman at the start of the Household Survey
* "NA" represents women who were missed in the census and added individually into the household survey, so relationship to the head of household was not registered.

E3.2 Education Attainment and Literacy

Seventy five percent of second follow-up survey participants had some formal education (Table E3.2). For 69.6% of these women, 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." Fifty four percent of women surveyed were able to read the whole sentence. Twenty seven percent of women could not read the sentence at all.

Table E3.2: Education attainment and literacy

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Ever attended school	3890	5823	65.8	1.6	2843	3737	75.2	1.7
Attended literacy course	299	5824	5.7	0.7	117	3737	3.0	0.4

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Educational attainment and literacy						
Primary	2785	69.1	2.2	2018	69.6	2.6
Secondary	589	15.9	1.0	450	16.9	1.3
High school	457	13.4	1.4	320	11.9	1.6
University	51	1.6	0.4	46	1.7	0.4
Don't know	6	-	-	8	-	-
Decline to respond	2	-	-	1	-	-
Literacy						
Cannot read at all	1856	33.5	1.6	968	27.4	1.8
Can read parts	1306	22.2	0.9	689	18.5	1.4
Can read entire sentence	2510	44.1	1.9	2078	54.1	2.6
Visually impaired	5	0.2	0.1	0	0.0	-
Don't know	113	-	-	3	-	-
Decline to respond	39	-	-	0	-	-

E3.3 Employment

As summarized in Table E3.3, the vast majority of respondents in the second follow-up were homemakers (76.2%). Of the 197 women who reported being employed and working at the time of the interview, most (96.3%) identified "Employee" as their occupational role.

Table E3.3: Employment

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Employment status						
Homemaker	4958	83.8	1.3	2933	76.2	1.6
Self-employed	0	0.0	-	284	7.9	1.2
Student	387	7.9	0.7	232	7.7	1.0
Employed/paid for work	307	6.2	0.9	197	5.7	0.6
Employed by a family member without pay	103	1.5	0.3	52	1.8	0.5
Employed, but did not work in last week	10	0.2	0.0	11	0.3	0.1
Retired	1	0.0	-	10	0.3	0.1
Unable to work due to disability	12	0.3	0.1	6	0.1	0.1
Don't know	42	-	-	12	-	-
Decline to respond	9	-	-	1	-	-
Occupational role, among women employed and being paid for work						
Employee	278	89.8	2.7	189	96.3	1.8
Proprietor	15	6.1	2.0	2	2.2	1.8
Independent contractor	10	3.9	1.6	2	0.9	0.7
Employer	1	0.2	0.2	2	0.5	0.4
Don't know	2	-	-	2	-	-
Decline to respond	1	-	-	0	-	-

* Self-employed option was not included in the baseline survey

E3.4 Exposure to Mass Media

Respondents were asked about their exposure to newspapers, radio, and television. As displayed in Table E3.4, among women who demonstrated full or partial literacy in the second follow-up, 40.5% had weekly exposure to newspapers. Sixty three percent of all women had weekly exposure to radio, and 49.8% had weekly exposure to television.

Table E3.4: Exposure to mass media

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Newspapers, among literate women						
At least once a week	1504	41.2	2.0	1092	40.5	2.2
Less than once a week	966	25.5	1.3	481	17.7	1.6
Never	1304	33.3	2.0	1141	41.8	2.3
Don't know	26	-	-	51	-	-
Decline to respond	13	-	-	0	-	-
Not applicable	3	-	-	2	-	-
Radio						
At least once a week	3505	62.7	2.0	2333	63.4	2.3
Less than once a week	714	12.9	1.1	512	13.8	1.5
Never	1374	24.4	1.8	863	22.9	1.7
Don't know	22	-	-	27	-	-
Decline to respond	11	-	-	2	-	-
Not applicable	203	-	-	1	-	-
Television						
At least once a week	2352	43.4	2.2	1801	49.8	2.7
Less than once a week	589	11.1	1.0	343	9.6	1.1
Never	2482	45.5	2.2	1574	40.6	2.5
Don't know	14	-	-	15	-	-
Decline to respond	11	-	-	5	-	-
Not applicable	381	-	-	0	-	-

E3.5 Access to Health Services

E3.5.1 Proximity to health care facilities

Table E3.5 - Table 3.7 display the responses to several survey questions that were used to assess access 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.

Excluding the 1874 women who were unable to estimate the distance to the closest health facility in the second follow-up, 75% of women reported living 2 kilometers or less from a health facility (Table E3.5). Three-quarters of the sample indicated that it took less than 30 minutes to reach this facility by the usual means of transportation. One-quarter estimated the travel time from their household to the closest health facility to be 30 minutes or more.

Women were also asked for the travel distance and time to their usual health facility, if they had a usual health facility. Excluding the 1477 women who did not know the distance to the facility in the second follow-up, three-quarters of the women reported traveling up to 2 kilometers, and three-quarters of the women could travel to the closest facility in less than 30 minutes (Table E3.6).

Of the 1,210 women who reported a recent health facility visit for themselves or for family members in the second follow-up, three-quarters traveled less than 2 kilometers for care. Twenty-five percent of women traveled 2 to 124 kilometers for care. Half of women traveled for less than 15 minutes, and one-quarter spent 30 minutes or more traveling for care. The longest travel time reported for a recent illness was approximately 10 hours.

Table E3.5: Proximity to health care facilities: nearest health facility

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	4282	1547	0	0.8	1	4	70
Travel time, min	5396	203	1	10	20	35	2700
Second Follow-Up 2018							
Distance, km	1864	1874	0	1	1	2	45
Travel time, min	3345	154	1	10	15	30	1800

Table E3.6: Proximity to health care facilities: usual health facility

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	3607	909	0	0.5	1	4	200
Travel time, min	4444	64	1	10	20	35	2700
Second Follow-Up 2018							
Distance, km	1647	1477	0	1	1	2	50
Travel time, min	2918	76	1	10	20	30	1800

Table E3.7: Proximity to health care facilities: health facility for recent illness

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	1660	277	0	0.5	1	4	200
Travel time, min	1901	10	1	10	20	30	2700
Second Follow-Up 2018							
Distance, km	585	610	0	1	1	2	124
Travel time, min	1137	11	1	10	15	30	600

E3.6 Health Status

E3.6.1 Current health status

Table E3.8 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, 58.5% reported that their health was "about the same" in the second follow-up. While 37.8% reported that their health had improved, 3.7% reported worse health on the day of the interview, compared to last year. Eighty nine percent could "easily" perform their daily activities (e.g., work, housework, and childcare). About 11% of women reported at least some degree of difficulty performing these tasks that was related to their health status.

Table E3.8: Current health status

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Current health relative to last year						
Better	2386	40.2	1.6	1386	37.8	2.3
Worse	278	5.1	0.5	141	3.7	0.4
About the same	3140	54.7	1.6	2188	58.5	2.4
Don't know	21	-	-	21	-	-
Decline to respond	4	-	-	2	-	-
Ability to perform daily activities						
Easily	4921	83.5	1.2	3338	89.4	1.0
With some difficulty	813	14.5	1.0	344	9.0	0.9
With much difficulty	69	1.4	0.3	46	1.3	0.3
Unable to do	17	0.5	0.2	7	0.2	0.1
Don't know	7	-	-	1	-	-
Decline to respond	2	-	-	2	-	-

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Days in the last month that physical health was not good						
No days	4789	81.4	1.4	3104	83.5	1.3
1 to 3 days	380	6.7	0.7	244	6.8	0.7
4 to 7 days	615	11.8	1.0	370	9.7	1.2
7 to 29 days	0	0.0	-	0	0.0	-
All month	0	0.0	-	0	0.0	-
Don't know	40	-	-	19	-	-
Decline to respond	5	-	-	1	-	-
Days in the last month that mental health was not good						
No days	5309	91.0	0.9	3469	92.9	0.8
1 to 3 days	193	3.5	0.4	146	4.3	0.7
4 to 7 days	253	5.5	0.7	103	2.8	0.4
7 to 29 days	0	0.0	-	0	0.0	-
All month	0	0.0	-	0	0.0	-
Don't know	70	-	-	17	-	-
Decline to respond	4	-	-	3	-	-

E3.6.2 Recent illness

Women were asked a series of questions about any illnesses or health problems they had in the two weeks preceding the interview. Out of the women in the second follow-up, 12.4% reported being sick during that time (Table E3.9). Of the 469 women who reported a recent illness, headache (17.5%), cough (15.6%), fever (13.5), and abdominal pain (12.5%) were the most commonly elicited specific complaints. Twenty three percent of women specified a different health problem not listed in the questionnaire.

Table E3.9: Recent illness (in the last two weeks)

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Respondent was sick during the past two weeks	782	5825	14.2	1.2	469	3735	12.4	1.1

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of illness, among those sick in the past two weeks						
Headache	196	25.2	2.1	79	17.5	2.2
Cough	64	7.9	1.2	77	15.6	2.3
Fever	123	14.7	1.6	77	13.5	1.9
Abdominal pain	93	11.7	1.8	54	12.5	1.9
Gynecologic problem	26	2.8	0.7	12	4.5	1.4
Eye/ear infection	9	1.2	0.4	7	3.2	1.4
Swelling in legs, ankles, or feet	0	0.0	-	15	3.1	0.9
Diarrhea without blood	23	2.5	0.6	9	2.3	1.0
Toothache	1	0.0	-	5	1.2	0.7
Vomiting	8	1.6	0.8	6	1.1	0.5
Diarrhea with vomiting	2	0.2	0.2	3	0.8	0.5
Diabetes	3	0.4	0.3	2	0.5	0.4
Skin rash/infection	7	0.7	0.3	3	0.4	0.2
Diarrhea with blood	0	0.0	-	2	0.3	0.2
Anemia	0	0.0	-	2	0.2	0.2
Obstetric problem	4	0.5	0.3	1	0.2	0.2
Tuberculosis	2	0.3	0.2	1	0.1	0.1
Blood in urine	0	0.0	-	1	0.1	0.1
Malaria	0	0.0	-	0	0.0	-
Asthma	0	0.0	-	0	0.0	-
Bronchitis	1	0.1	0.1	0	0.0	-
Pneumonia	1	0.4	0.4	0	0.0	-
Measles	0	0.0	-	0	0.0	-
Jaundice	0	0.0	-	0	0.0	-
Stroke	0	0.0	-	0	0.0	-
Hypertension	7	1.9	0.8	0	0.0	-
HIV/AIDS	0	0.0	-	0	0.0	-
Paralysis	0	0.0	-	0	0.0	-
Chest infection	0	0.0	-	0	0.0	-
Other	209	27.9	2.4	113	23.0	2.7
Don't know	3	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Options for "Swelling in legs, ankles, or feet", "Blood in urine", and "Chest infection" were available only in the follow-up survey. In the baseline, "Chest infection" was included within the "Cough" answer choice.

E3.6.3 Utilization of health services

Table E3.10 summarizes data regarding the utilization of health services among the 469 women who reported an illness in the two weeks preceding the second follow-up interview. One hundred ninety four (42.5%) of these women sought care at a health care facility. Many of these women attended a Public health unit health unit (61.3%); another 19.5% attended a Public health center/clinic clinic. Only eleven women were hospitalized for their recent illness (4.8% of those who sought care).

Table E3.10: Utilization of health services for illness in the last two weeks

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for recent illness	324	781	40.8	2.1	194	468	42.5	3.4
Admitted to hospital for care*	29	304	7.9	1.9	11	187	4.8	1.7

*Among women who sought care at a public or private hospital, health center/clinic, mobile clinic, or other health facility; public health unit; private office; or pharmacy

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of facility where care was sought						
Public health unit	138	43.1	4.2	111	61.3	4.9
Public health center/clinic	113	35.0	5.1	38	19.5	4.2
Private doctor's office	8	3.2	1.1	10	4.9	2.1
Public hospital	14	4.1	1.3	8	3.9	2.1
Private health center/clinic	8	2.1	0.8	8	2.8	1.0
Pharmacy	11	4.5	1.8	6	2.4	1.1
Private hospital	8	2.4	0.9	4	1.9	1.1
Community health worker	7	1.7	0.7	3	1.1	0.6
Traditional healer	2	0.8	0.6	1	0.4	0.4
Other public health facility	1	0.1	0.1	1	0.3	0.3
Other private health facility	0	0.0	-	1	0.3	0.3
Public mobile clinic	3	0.9	0.6	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other	10	2.0	0.8	3	1.1	0.7
Don't know	1	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

E3.6.4 Insurance coverage

Less than 27% of women reported being covered by any type of health insurance in the second follow-up (Table E3.11).

Table E3.11: Insurance coverage

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
No insurance	5329	92.2	1.2	2557	73.4	2.1
Ministry of Public Health and Social Assistance (MSPAS)	399	6.3	1.1	897	24.8	2.1
Guatemalan Institute of Social Security (IGSS)	79	1.3	0.3	43	1.3	0.3
Private insurance	2	0.0	-	4	0.2	0.1
Armed forces	1	0.0	-	0	0.0	-
Other	6	0.1	0.1	12	0.4	0.1
Don't know	9	-	-	224	-	-
Decline to respond	4	-	-	1	-	-

E3.6.5 Other barriers to health care access

There are many other barriers to accessing health care. Women who reported that they sometimes or never sought care when they felt sick were asked what reasons prevented them from receiving health care when it was needed. Interviewers were instructed to ask in an open-ended manner for all applicable reasons, and to mark the appropriate response options in the questionnaire based on the woman's response. Table E3.12 summarizes the responses to this section. The most commonly cited factors influencing health care access in the second follow-up were the preference for treatment at home (44.6%) and the belief that the health center does not have sufficient medicines (29.2%). Sixteen percent of women did not believe they were ill enough to seek treatment. Access and quality of care were also important barriers: numeric(0)% of women said the health center did not carry sufficient medication, 3% said they did not trust facility personnel, and 2.8% said the care was too expensive.

Table E3.12: Other barriers to health care utilization, women 15-49 years of age who were sick in the last two weeks but did not seek care

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Treated self at home	217	440	49.3	3.4	119	262	44.6	4.5
Health center does not have sufficient medicines	79	440	17.4	2.4	69	262	29.2	4.6
Not sick enough to seek treatment	82	440	16.8	2.5	42	262	16.3	3.0
Health center is not well-equipped	27	440	6.0	1.5	10	262	4.9	1.8
Too busy with work, children, or other commitments	24	440	5.6	1.3	14	262	4.9	1.7
Do not trust the personnel	15	440	3.4	1.3	8	262	3.0	1.3
Health center is too far away	37	440	6.6	1.5	11	262	2.9	1.0
Care is too expensive	62	440	15.5	2.3	9	262	2.8	1.4
Health center infrastructure is poor	9	440	1.7	0.6	7	262	2.7	1.2
It is difficult to deal with health center personnel	3	440	0.6	0.4	5	262	2.4	1.3
Tried, but no staff was at the center	7	440	2.1	1.1	5	262	2.3	1.1
Did not want to go alone	2	440	0.3	0.2	5	262	1.5	0.7
Could not afford transportation	11	440	2.7	1.0	4	262	1.3	0.8
Tried, but was refused care	3	440	0.7	0.4	2	262	0.5	0.3
Could not get permission to go to the doctor	0	440	0.0	-	2	262	0.5	0.3
Did not know where to go	3	440	1.1	0.8	2	262	0.4	0.3
Health center personnel not knowledgeable	4	440	1.8	1.1	1	262	0.2	0.2
Could not find transportation	9	440	2.0	0.9	0	262	0.0	-
Was previously mistreated	3	440	0.6	0.3	0	262	0.0	-
Religious or cultural beliefs	0	440	0.0	-	0	262	0.0	-
Other	47	440	10.7	2.1	31	262	10.1	1.6

*categories not mutually exclusive (select all that apply)

E4 CHAPTER 4: EXPOSURE TO HEALTH SYSTEM INTERVENTIONS

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

E4.1 Exposure to Community Health Workers

Respondents were asked about their exposure to community health workers. One percent of women reported meeting with a community health worker in the month preceding the second follow-up interview (Table E4.1). Of the women in the second follow-up, 0.9% met only once, and 0.3% met two or more times.

Table E4.1: Exposure to community health workers, women 15-49 years

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Did not meet	5465	95.5	0.4	3651	98.8	0.3
One time	261	3.7	0.4	45	0.9	0.2
Two times	31	0.5	0.1	9	0.3	0.1
Three times	7	0.2	0.1	2	0.0	-
Four or more times	9	0.2	0.1	0	0.0	-
Don't know	48	-	-	30	-	-
Decline to respond	5	-	-	0	-	-

Referral and advice services provided by community health workers are summarized in Table E4.2. Among women who met with a community health worker in the last month during the second follow-up, vaccination for children was the most common service provided (55.6%). Advice about family planning methods or counseling (53.6%) and referral for antenatal care (34.3%) was also frequently reported.

Table E4.2: Services provided by community health workers, women 15-49 years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Vaccination for children	256	315	74.9	3.5	31	56	55.6	7.6
Family planning methods or counseling	184	316	54.8	3.8	28	55	53.6	7.4
Referral for antenatal care	129	312	41.8	4.3	17	56	34.3	8.2
Child nutrition counseling	191	316	58.4	4.4	16	55	30.1	7.3
Referral for postnatal care	82	310	24.9	3.5	9	54	23.3	8.0
Referral for in-facility delivery	71	312	20.5	3.1	3	53	10.3	7.3
Information, education, and communication sessions (IEC)	87	314	24.6	3.5	5	54	7.9	2.8
Referral for voluntary HIV/syphilis counseling and testing*	74	310	21.6	3.2	2	54	3.3	2.3

* For the prevention of HIV/syphilis transmission from mother to child

	Second Follow-Up 2018			
	n	N	%	SE
Provided deworming treatments	22	56	41.1	6.6
Provided micronutrients	17	56	31.9	6.9
Provided diarrhea treatment with ORS and zinc	11	54	22.7	7.3
Other	3	54	6.4	3.9

Questions about these topics were not asked at baseline. They were added to the second follow-up survey to track exposure to SMI interventions.

E4.2 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, information provided by community health workers, and respectfulness of community health workers. Results are displayed in Table E4.3.

Table E4.3: Satisfaction with community health workers, women 15-49 years of age who met with community health workers in the last month

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Satisfaction with number visits from community health workers						
Very dissatisfied	7	3.3	1.6	10	19.1	7.6
Dissatisfied	42	12.9	2.5	17	32.3	8.3
Satisfied	249	77.8	3.3	30	43.9	8.5
Very satisfied	23	6.0	1.7	3	4.7	2.7
Don't know	12	-	-	5	-	-
Decline to respond	0	-	-	1	-	-
Satisfaction of knowledge and training of community health workers						
Very dissatisfied	5	2.7	1.5	9	18.4	7.6
Dissatisfied	29	9.3	2.3	16	25.2	6.5
Satisfied	265	82.7	3.3	31	53.0	9.0
Very satisfied	19	5.2	1.6	2	3.4	2.5
Don't know	15	-	-	7	-	-
Decline to respond	0	-	-	1	-	-
Satisfaction with information provided by community health workers						
Very dissatisfied	5	1.6	0.8	11	21.0	7.5
Dissatisfied	25	8.4	2.1	16	23.8	5.8
Satisfied	269	84.2	2.5	31	50.6	8.8
Very satisfied	21	5.8	1.6	3	4.6	2.7
Don't know	13	-	-	4	-	-
Decline to respond	0	-	-	1	-	-
Satisfaction with respectfulness shown by community health workers						
Very dissatisfied	6	3.2	1.7	11	21.3	7.6
Dissatisfied	31	10.2	2.4	13	19.5	5.6
Satisfied	241	79.4	3.5	34	55.9	8.6
Very satisfied	25	7.1	1.8	2	3.3	2.4
Don't know	30	-	-	5	-	-
Decline to respond	0	-	-	1	-	-

E4.3 Counseling provided in health facilities

Respondents who had visited a health facility in the last 12 months (1,150 women at the second follow-up) were asked whether they were given counseling about certain topics by health center personnel. Approximately 19.8% of women in the second follow-up reported receiving guidance or advice about breastfeeding in the 12 months preceding the interview (Table E4.4). Approximately 21.1% of women in the second follow-up reported receiving guidance or advice about child nutrition in the 12 months preceding the interview (Table E4.4). Approximately 24.7% of women in the second follow-up reported receiving guidance or advice about danger signs for children's health in the 12 months preceding the interview (Table E4.4).

Table E4.4: Exposure to breastfeeding, child nutrition, and child health interventions, women 15-49 years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Breastfeeding	509	1540	31.0	2.1	265	1144	19.8	1.6
Child nutrition	550	1540	32.8	2.1	281	1147	21.1	1.7
Danger signs for children's health	450	1531	27.6	2.1	325	1142	24.7	2.1

E4.4 Counseling provided in health facilities to women with children

In the follow-up survey, respondents who had visited a health facility in the last 12 months and who had children (1,023 women at the second follow-up) were asked whether they were given counseling about certain topics by health center personnel.

Table E4.5: Counseling provided in health facilities to women with children

	Second Follow-Up 2018			
	n	N	%	SE
Deworming	295	1015	27.4	2.2
Micronutrients	232	1014	20.7	1.9
Diarrhea treatment with ORS and zinc	212	1013	19.3	1.8

Questions about these topics were not asked at baseline. They were added to the second follow-up survey to track exposure to SMI interventions.

E5 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 SMI-Guatemala second follow-up household survey.

Family planning questions were asked only to women of reproductive age who were married or partnered. During the SMI-Guatemala baseline household survey, family planning questions were asked to women whose marital status was reported as "married" or "partnered" by the SMI-Guatemala household census respondent. During the second follow-up, the family planning section was instead conditioned on a question about marital status asked to the respondent herself at the start of the woman's health interview. This captured participants who had a change in marital status between the census and household survey and participants whose marital status was incorrectly recorded in the census. At the baseline, 3,992 women qualified for the family planning questions, and at the second follow-up, 2,549 women qualified.

E5.1 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 are certain days when a woman is more likely to become pregnant, and when during the menstrual cycle those days occur. Responses to these questions are summarized in Table E5.1. In the second follow-up, 36.9% of women indicated that there were certain days when a woman is more likely to become pregnant, and of these women, only 42.9% identified the correct timing of the fertile period (halfway between two periods).

Table E5.1: Knowledge of the fertile period, women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Knowledge of the fertile period	1009	1958	50.4	2.2	614	1667	36.9	2.6

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Knowledge of timing of fertile period, among women who know of fertile period						
Just before period	84	8.5	1.2	64	11.3	1.9
During period	28	2.4	0.5	91	13.2	2.3
Just after period	669	70.8	2.8	201	32.4	3.0
Halfway between periods	163	18.0	2.5	231	42.9	2.9
Other	5	0.4	0.2	1	0.2	0.2
Don't know	59	-	-	25	-	-
Decline to respond	1	-	-	1	-	-

E5.2 Use of Family Planning Methods

E5.2.1 Current use

The coverage 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. Women who said they had heard of a family planning method were asked if they were currently using that method. Table E5.2 displays the percentage of all women using at least one family planning method, as well as the percentage of women reporting use of more than one family planning method at the time of the interview. Twenty four percent of all survey respondents in the second follow-up reported current use of at least one family planning method.

Women considered "in need" of family planning methods are those who are married or partnered, excluding those who report the following characteristics: does not have sexual relations, virgin, menopausal, infertile, hysterectomy, pregnant, or wants to become pregnant. Even women not considered "in need" of contraception may use a method. Table E5.3 shows the uptake of modern family planning methods among all married and partnered women (24.5%), and among women considered "in need" of contraception (31.6%).

Table E5.2: Current use of family planning methods, women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Currently in need of contraception	2982	3989	74.0	1.2	1976	2548	75.4	1.4
Current use of any method, among married or partnered women	919	3989	22.7	1.3	639	2548	24.5	1.7

Table E5.3: Current use of modern family planning methods, women 15-49 years of age who are married or partnered and in need of contraception

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Current use of any method, among women in need of contraception	879	2982	28.9	1.7	622	1976	31.6	2.2
Current use of modern method, among women in need of contraception	831	2982	26.8	1.6	593	1976	30.3	2.2

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Number of methods the respondent is currently using						
Not using any family planning methods	2117	71.5	1.6	1356	68.5	2.2
Using 1 family planning method	855	28.0	1.6	617	31.2	2.2
Using 2 family planning methods	8	0.2	0.1	3	0.3	0.2

Table E5.4 displays the percentage of all women using specific family planning methods. The methods most commonly in use during the second follow-up are injectables (15.4%) and female sterilization (5.4%).

Table E5.4: Current use of family planning methods, by type of method, for women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Injectable	608	3955	14.0	0.9	426	2523	15.4	1.2
Female sterilization	126	3953	3.8	0.5	112	2521	5.4	0.8
Implant	59	3956	1.4	0.3	33	2521	1.1	0.2
Rhythm	25	3955	1.1	0.3	20	2522	0.8	0.2
Oral contraceptive	35	3954	1.1	0.3	14	2524	0.6	0.2
Intrauterine device (IUD)	26	3953	0.6	0.2	8	2524	0.4	0.2
Male condom	9	3953	0.2	0.1	9	2523	0.4	0.2
Other traditional method	11	3954	0.6	0.3	5	2523	0.3	0.2
Withdrawal	6	3954	0.1	0.1	7	2523	0.2	0.1
Male sterilization	2	3956	0.2	0.1	2	2523	0.1	-
Female condom	0	3956	0.0	-	0	2522	0.0	-
Diaphragm	0	3956	0.0	-	1	2523	0.0	-
Sponge	0	3955	0.0	-	0	2522	0.0	-
Lactational amenorrhea	13	3955	0.3	0.1	2	2523	0.0	-
Emergency contraception (Plan B)	0	3954	0.0	-	0	2524	0.0	-
Other modern method	2	3956	0.0	-	0	2524	0.0	-

* categories not mutually exclusive (select all that apply)

E5.3 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 are summarized in Table E5.5.

The public sector is the source most commonly reported by users of most modern family planning methods, including female sterilization. Pharmacies are important sources for injectables, the pill, and male condoms. Women report learning about traditional methods in the public sector, from friends or relatives, or at church (Table E5.6).

Table E5.5: Source of modern family planning methods, women 15-49 years of age who are married or partnered

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Injectable						
Public health unit	299	48.8	3.5	261	61.7	4.2
Public health center/clinic	208	31.5	2.9	106	24.4	3.6
Pharmacy	25	6.0	1.5	40	9.4	1.7
Public hospital	16	2.8	1.1	8	2.1	1.4
Private hospital	0	0.0	-	4	0.9	0.5
Private doctor's office	0	0.0	-	2	0.6	0.5
Other public health facility	1	0.1	0.1	1	0.3	0.3
Community health worker	35	6.4	1.6	2	0.3	0.2
Public mobile clinic	0	0.0	-	0	0.0	-
Private health center/clinic	2	0.3	0.2	0	0.0	-
Private mobile clinic	1	0.2	0.1	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	1	0.9	0.9	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	1	0.1	0.1	0	0.0	-
Other	19	2.8	1.0	2	0.4	0.3
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Female sterilization						
Public hospital	66	44.1	5.9	52	47.3	6.4
Private hospital	10	13.6	5.1	19	19.1	5.0
Public health unit	12	11.1	5.7	12	9.6	3.2
Public health center/clinic	21	15.9	4.4	10	9.4	2.9
Other public health facility	1	0.3	0.3	3	2.7	1.7
Private doctor's office	3	1.6	0.9	5	2.7	1.2
Private health center/clinic	6	4.0	2.4	3	2.6	1.6
Other private health facility	0	0.0	-	1	0.5	0.5
Public mobile clinic	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	1	1.4	1.4	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	6	8.0	3.9	7	6.2	5.0
Don't know	0	-	-	1	-	-
Decline to respond	0	-	-	0	-	-
Oral contraceptive						
Public health unit	14	38.7	13.0	8	47.9	17.1
Public health center/clinic	13	44.8	12.7	4	40.9	19.4
Pharmacy	2	3.9	2.4	1	7.3	7.2

(continued)

	n	%	SE	n	%	SE
Public hospital	0	0.0	-	1	4.0	3.9
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	1	3.3	3.4	0	0.0	-
Private doctor's office	1	1.6	1.7	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Community health worker	3	5.8	3.4	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	1	1.8	1.8	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Intrauterine device (IUD)						
Public health unit	5	13.5	6.3	4	42.4	20.3
Private health center/clinic	0	0.0	-	1	33.1	24.2
Public health center/clinic	12	32.6	10.8	2	15.8	11.8
Other public health facility	0	0.0	-	1	8.7	8.9
Public hospital	5	17.2	7.8	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private doctor's office	1	9.6	9.0	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	1	3.3	3.3	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	2	23.9	15.0	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Implant						
Public health unit	17	27.7	7.8	15	48.6	9.9
Public health center/clinic	32	55.4	8.9	14	36.5	8.9
Private health center/clinic	1	1.1	1.1	2	9.6	7.2
Public hospital	1	1.1	1.2	2	5.4	3.9
Public mobile clinic	1	1.3	1.3	0	0.0	-
Other public health facility	1	3.7	3.6	0	0.0	-
Private hospital	2	1.9	1.4	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-

(continued)

	n	%	SE	n	%	SE
Community health worker	1	1.8	1.8	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	3	6.0	3.5	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Male condom						
Public health unit	4	37.1	16.1	3	60.7	19.3
Pharmacy	3	40.6	17.6	6	39.3	19.3
Public hospital	0	0.0	-	0	0.0	-
Public health center/clinic	2	22.3	14.9	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	0	0.0	-	0	0.0	-
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Male sterilization						
Private health center/clinic	0	0.0	-	1	48.2	35.6
Public hospital	0	0.0	-	0	0.0	-
Public health unit	1	43.7	34.8	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	0	0.0	-	0	0.0	-
Other	1	56.3	34.8	1	51.8	35.6
Don't know	0	-	-	0	-	-

(continued)

	n	%	SE	n	%	SE
Decline to respond	0	-	-	0	-	-

*Diaphragm and emergency contraceptive (Plan B) omitted from table because no women reported receiving them in baseline or follow-up.

Table E5.6: Source of knowledge about traditional family planning methods, women 15-49 years of age who are married or partnered

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Lactational amenorrhea						
Public health unit	2	15.4	11.8	2	100.0	0.0
Public hospital	0	0.0	-	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	1	7.7	6.5	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	3	25.7	12.7	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Friend/parent	1	10.2	10.0	0	0.0	-
Other	4	40.9	18.2	0	0.0	-
Don't know	2	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Rhythm						
Friend/parent	8	29.8	11.9	10	56.1	14.3
Public health unit	2	6.0	4.7	4	21.5	12.4
Public health center/clinic	4	19.0	10.9	2	6.6	4.7
Public hospital	1	2.5	2.5	1	4.3	4.2
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	1	2.5	2.2	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	2	2.7	2.0	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	1	1.5	1.5	0	0.0	-

Other	6	36.0	13.6	3	11.5	7.0
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Withdrawal						
Friend/parent	2	34.5	22.7	4	65.5	20.0
Public health unit	2	51.8	25.3	1	18.2	16.5
Public hospital	0	0.0	-	0	0.0	-
Public health center/clinic	0	0.0	-	0	0.0	-
Public mobile clinic	0	0.0	-	0	0.0	-
Other public health facility	0	0.0	-	0	0.0	-
Private hospital	0	0.0	-	0	0.0	-
Private health center/clinic	0	0.0	-	0	0.0	-
Private doctor's office	0	0.0	-	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Pharmacy	0	0.0	-	0	0.0	-
Community health worker	0	0.0	-	0	0.0	-
Traditional healer	0	0.0	-	0	0.0	-
Store	0	0.0	-	0	0.0	-
Market	0	0.0	-	0	0.0	-
Church	0	0.0	-	0	0.0	-
Other	1	13.8	13.8	1	16.3	15.1
Don't know	1	-	-	0	-	-
Decline to respond	0	-	-	1	-	-

E5.4 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.

E5.4.1 Prevalence of interruption

The prevalence of interruption and non-use of family planning methods is summarized in Table E5.7. Of women participating in the second follow-up survey, 75.4% are considered "in need" of contraception (i.e., they did not report any of the following: does not have sexual relations, virgin, menopausal, infertile, hysterectomy, pregnant, or wants to become pregnant). Among these women in need, 1.8% reported any interruption in the use of family planning methods in the previous year.

Table E5.7: Interruption and non-use of family planning methods, among women 15-49 years of age who are married or partnered and in need of contraception

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Discontinuation rate*	81	2982	2.7	0.4	38	1976	1.8	0.4

* any interruption in use during the last year, among women in need of contraception

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Number of interruptions in use during the last year						
none	2901	97.3	0.4	1938	98.2	0.4
once	55	1.8	0.3	26	1.2	0.3
2-6 times per year	26	0.9	0.2	12	0.6	0.3
7-12 times per year	0	0.0	-	0	0.0	-
>12 times per year	0	0.0	-	0	0.0	-

E5.4.2 Reasons for non-use

Women who indicated they were not using any method on the day of the interview were asked to specify all reasons why they did not use a method. The interviewer matched responses provided by the respondent to a list of reasons in the questionnaire (Table E5.8). The most commonly cited reasons for non-use at the time of the second follow-up interview were, do not like to use contraception (23.5%), respondent is married (16.4%), and respondent knows no method (11.6%).

Table E5.8: Reasons for non-use of family planning methods, women 15-49 years of age who are married or partnered and who are not using family planning methods

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Do not like to use contraception	580	2664	21.3	1.4	440	1779	23.5	1.8
Married	66	2664	3.1	0.6	282	1779	16.4	2.8
Knows no method	486	2664	18.0	1.5	207	1779	11.6	2.0
Not sexually active	195	2664	7.8	0.9	132	1779	8.8	1.3
Trying to become pregnant	235	2664	9.2	0.8	129	1779	8.1	1.1
Spouse or partner opposed to use	319	2664	10.7	1.0	141	1779	7.3	0.9
Using contraception is uncomfortable	159	2664	4.9	0.7	115	1779	5.6	0.8
Infrequently sexually active	98	2664	4.3	0.6	73	1779	4.8	0.9
Currently pregnant	129	2664	4.1	0.5	65	1779	3.3	0.5
Using contraception interferes with normal body processes	164	2664	5.7	0.8	48	1779	2.5	0.5
Concerned about side effects	108	2664	4.1	0.6	44	1779	2.4	0.5
Against religious beliefs	32	2664	1.3	0.3	44	1779	2.2	0.5
Knows no source for methods	67	2664	2.1	0.4	44	1779	2.2	0.5
Breastfeeding	85	2664	2.6	0.4	51	1779	2.0	0.4
Infertile	41	2664	2.2	0.5	21	1779	1.7	0.4
Menopausal	39	2664	1.9	0.4	18	1779	1.6	0.4
Opposed to use	102	2664	3.8	0.7	36	1779	1.6	0.4
Unmarried	45	2664	2.0	0.4	21	1779	1.3	0.3
Mistrust health center staff	28	2664	0.9	0.2	14	1779	0.8	0.4
The health facility is too far away	22	2664	0.6	0.2	10	1779	0.7	0.3
No menstrual period since giving birth	29	2664	1.1	0.3	13	1779	0.6	0.2
No method was available	8	2664	0.3	0.1	7	1779	0.5	0.2
Health facility staff difficult to deal with	7	2664	0.2	0.1	6	1779	0.4	0.2
Have undergone hysterectomy	14	2664	0.5	0.2	3	1779	0.2	0.2
Preferred method was not available	3	2664	0.2	0.2	3	1779	0.2	0.1
Others opposed to use	8	2664	0.4	0.2	2	1779	0.1	0.1
Could not find transportation to a health facility	7	2664	0.2	0.1	3	1779	0.1	0.1
Could not afford transportation	6	2664	0.2	0.1	2	1779	0.1	0.1
The method is too expensive	28	2664	1.0	0.3	2	1779	0.1	0.1
Virgin	5	2664	0.1	0.1	0	1779	0.0	-
Other	232	2664	8.7	0.9	76	1779	4.2	0.7

* "Using contraception affects health" was an option offered in the second follow-up, but was not available at baseline. 359 women selected this as a reason for not using family planning at the second follow-up.

* categories not mutually exclusive (select all that apply)

E5.5 Family Planning Intentions and Decision-Making

E5.5.1 Participation in family planning decision

In this setting in the second follow-up, 80.2% of women report that decisions about family planning methods are jointly made by the respondent and her partner. In only 7.7% of cases, the decision to use family planning methods is up to the respondent's partner alone.

Table E5.9: Participation in family planning decision-making, women 15-49 years of age who are married or partnered and are currently using family planning methods

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Joint decision	1144	87.0	1.6	697	80.2	2.1
Mostly the respondent	63	5.0	1.2	100	11.1	1.8
Mostly respondent's spouse/partner	89	7.6	1.1	73	7.7	1.3
Others	4	0.3	0.1	4	0.9	0.5
Not applicable - not partnered	1	0.1	0.1	1	0.1	0.1
Don't know	19	-	-	16	-	-
Decline to respond	5	-	-	8	-	-

E5.5.2 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 E5.10 shows the percent of women currently using family planning methods who were told about other options for contraception (47.4% of women in the second follow-up).

Table E5.10: Family planning decision-making, informed choice, women 15-49 years of age who are married or partnered and who are currently using family planning methods

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Informed about other family planning options by a doctor, nurse, or community health worker	646	1301	49.7	2.7	424	887	47.4	2.9

E5.6 Exposure to Family Planning Information

E5.6.1 Family planning messages delivered by health care providers

Respondents were asked about their exposure to family planning messages delivered by health care providers (Table E5.11). Forty seven percent of women in the second follow-up reported being advised about family planning at the health care facility they attend during the past 12 months. Eight percent of all respondents indicated that they had been visited by a health promoter who provided information about family planning in the last 12 months. Just 2.4% 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 E5.11: Family planning messages delivered by health care providers in the last 12 months, women 15-49 years of age who are married or partnered

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Discussion about family planning methods with staff member at a health facility	592	1171	49.1	2.3	435	904	47.1	2.3
Discussion about family planning methods during health promoter visit	450	3950	10.7	1.0	219	2534	7.9	0.8
Visit by promotor, among women who had not visited a health facility	160	2762	5.2	0.7	43	1613	2.4	0.5

E5.7 Age at First Birth

E5.7.1 Age at first birth

Sixty nine percent of respondents in the second follow-up had ever given birth (Table E5.12). Of these women, the median age of the women when their first child was born was 19 years old. Only a quarter of women were 21 years old or older when their first child was born. Four percent of women reported a history of stillbirth, miscarriage, and/or abortion.

Table E5.12: Parity and age at first birth, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Ever given birth	4510	5829	71.0	1.0	2812	3725	68.7	1.2
Ever had a stillbirth, miscarriage, or abortion	337	5803	5.6	0.5	133	3729	3.6	0.4

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Age at first birth, among parous women	4305	0	10	17	19	21	45
Second follow-up 2018							
Age at first birth, among parous women	2678	0	12	17	19	21	46

E6 CHAPTER 6: MATERNAL HEALTH CARE

This chapter summarizes key indicators pertaining to antenatal care, delivery care, and postpartum care for the most recent live birth in the last two years as reported by women of reproductive age (15-49 years) participating in the SMI-Guatemala second follow-up household survey. Participating women were interviewed about all live births in the last five years, but to reduce the impact of recall bias, results reported here are for each woman's most recent birth in the last two years. At the baseline, 5015 women were interviewed about at least one birth in the last two years. At the second follow-up, 2988 women were interviewed about births in the last two years.

E6.1 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.

E6.1.1 Antenatal care coverage

Early and regular checkups by trained medical providers are important in assessing the physical status of women during pregnancy and 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 same details were recorded for up to eight antenatal care visits.

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 E6.1. Definition of "most recent birth" changed between baseline and second follow-up. The type of facility where antenatal care was sought is detailed in Table E6.2.

Among women with a child under the age of 2 in the second follow-up, 84.8% attended at least one antenatal care visit and 73.3% of women had at least one antenatal care visit with a doctor or professional nurse. At the second follow-up, 17.2% of women had an antenatal care visit during the first trimester (first 12 weeks) with a doctor or professional nurse, compared to 11.5% at the baseline. The median age of gestation at the first antenatal care visit during the second follow-up was 3 months.

Table E6.1: Antenatal care coverage for the most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Attended at least one antenatal care visit	3954	4983	79.1	1.4	2555	2975	84.8	1.2
Attended at least one antenatal care visit with doctor or professional nurse	1877	4983	38.3	1.8	2201	2975	73.3	1.5
Antenatal care visit with doctor or professional nurse in the first trimester (12 weeks)	552	4866	11.5	0.8	506	2823	17.2	1.1

* Definition of most recent birth changed between baseline and second follow-up

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Month of gestation of first ANC visit	3837	113	0.2	2	3	4	9
Second follow-up 2018							
Month of gestation of first ANC visit	2403	151	0.2	3	3	5	9

Regarding the type of facility where antenatal care was usually sought during the second follow-up (Table E6.2), most women who attended antenatal care for their most recent delivery in the last two years sought care in a Public health unit (61.8%) or Public health center/clinic (16.6%). Only 2.8% of women sought antenatal care with a public hospital.

Table E6.2: Usual antenatal care location, women 15-49 years of age who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Public health unit	960	24.0	1.5	1532	61.8	2.5
Public health center/clinic	711	18.7	1.5	452	16.6	2.0
Public hospital	112	3.2	0.8	75	2.8	0.7
Traditional healer	123	3.5	0.8	59	2.4	0.5
Private health center/clinic	46	1.3	0.2	24	1.0	0.3
Community health worker	146	3.9	0.6	22	1.0	0.5
Private hospital	32	0.9	0.2	24	0.9	0.3
Private doctor's office	43	1.0	0.3	24	0.8	0.2
Other public health facility	13	0.3	0.1	7	0.3	0.1
Public mobile clinic	15	0.4	0.2	2	0.1	0.0
Other private health facility	7	0.3	0.1	2	0.1	0.1
Private mobile clinic	2	0.0	-	1	0.0	-
Pharmacy	1	0.0	-	1	0.0	-
Other	1705	42.4	1.9	314	12.2	1.2
Don't know	30	-	-	6	-	-
Decline to respond	7	-	-	10	-	-

E6.1.2 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 until delivery. According to the national norm in Guatemala, it is recommended that women receive a minimum of four antenatal care visits. The frequency of antenatal care visits is summarized in Table E6.3. Table E6.4 shows the percentage of women with four or more visits with skilled providers and according to best practices.

In the second follow-up, 55.7% of women reported having four or more antenatal care visits during their most recent pregnancy in the last two years. Ten 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. As shown in Table E6.4, 1.2 percent of all women in the second follow-up survey had four or more antenatal care visits, at least one of which was with a doctor or professional nurse, and with each of 10 defined best practices performed at least once during pregnancy (measurement of blood type, test for anemia, test for syphilis, test for HIV, test of blood glucose, test for proteinuria, measurement of maternal blood pressure, measurement of maternal weight, measurement of fundal height, and measurement of fetal heartbeat).

Table E6.3: Frequency of antenatal care visits for the most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
None	1029	21.4	1.4	420	16.1	1.3
1-3 visits	1175	24.1	1.1	817	28.2	1.3
4-6 visits	1663	34.0	1.2	1283	45.7	1.6
7-9 visits	696	14.0	0.9	252	8.8	0.8
10+ visits	300	6.6	0.7	36	1.2	0.3
Don't know	105	-	-	161	-	-
Decline to respond	0	-	-	3	-	-

Table E6.4: Frequency of antenatal care visits with skilled provider for the most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
At least four antenatal care visits with doctor or professional nurse	1311	4872	27.2	1.6	1403	2811	49.7	1.9
At least four antenatal care visits with doctor or professional nurse according to best practices*	54	4877	1.0	0.2	36	2811	1.2	0.3

*measuring blood type, anemia, syphilis, HIV, glucose, proteinuria, blood pressure, weight, fundal height, fetal heartbeat

E6.1.3 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 E6.5 and Table E6.6). 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 during the second follow-up: measured maternal weight (84.9%), measured maternal blood pressure (70.4%), tested for anemia (62.7%), measured blood type (58.9%), tested for proteinuria (54.1%), measured fetal heartbeat (53.5%), measured fundal height (48.4%), measured blood glucose (32.8%), tested for syphilis (20%), and tested for HIV (19.2%). Women were unfamiliar with several tests, as evidenced by the high number of missing responses for proteinuria and syphilis in particular.

Table E6.5: Content of antenatal care visits - best practices, among women 15-49 years who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Measured maternal weight	2274	3876	59.1	1.8	2146	2526	84.9	1.2
Measured maternal blood pressure	1698	3842	44.9	2.1	1760	2509	70.4	1.5
Tested for anemia	339	622	54.0	3.2	493	795	62.7	2.7
Measured blood type	394	628	62.7	2.8	436	747	58.9	2.7
Tested for proteinuria	318	669	46.2	2.7	448	833	54.1	2.3
Measured fetal heartbeat	1659	3822	43.8	2.0	1329	2518	53.5	2.7
Measured fundal height	2170	3798	57.8	1.9	1177	2440	48.4	2.2
Measured blood glucose	185	625	30.6	2.9	255	788	32.8	3.2
Tested for syphilis	141	620	21.5	2.6	162	786	20.0	2.6
Tested for HIV	323	3787	8.3	0.9	463	2444	19.2	1.5

Most women in the second follow-up had a tested for diabetes (53%) and a collected urine specimen (39.3%) collected during their antenatal care visits for the most recent birth during the past two years.

Table E6.6: Content of antenatal care visits - other services provided, among women 15-49 years who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Tested for diabetes	102	180	58.6	5.3	135	252	53.0	4.4
Collected urine specimen	784	3899	21.0	1.6	977	2501	39.3	1.9
Collected blood specimen	679	3909	17.7	1.5	865	2502	34.9	2.1
Performed an ultrasound	660	3829	17.4	1.6	837	2516	33.2	2.2
Offered an HIV test	365	3798	9.6	1.0	380	2450	15.7	1.5

E6.1.4 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 only requires 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.

As shown in Table E6.7, the coverage of sufficient tetanus toxoid vaccination during pregnancy was 57.2% among women who received antenatal care during the second follow-up. Fifteen percent of women

received one vaccination during the pregnancy and 52.4% received two or more. Among women with antenatal care, 29% had never been vaccinated before and 18.6% had received a vaccine in the last 10 years. Among women who were not vaccinated during prenatal care visits, 18.8% had never been vaccinated.

Table E6.7: Coverage of tetanus toxoid vaccinations during pregnancy, among women 15-49 years who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Two or more injections during pregnancy	1853	63.2	1.7	984	52.4	2.2
One injection during pregnancy, one <10 years before	69	2.5	0.5	91	4.8	0.7
One injection during pregnancy, none <10 years before	172	5.9	0.7	178	10.2	1.1
No injections during pregnancy, one or more <10 years before	333	11.0	1.1	259	13.8	1.4
No injections during pregnancy nor during the 10 years prior	504	17.4	1.2	358	18.8	1.3
Don't know	1013	-	-	671	-	-
Decline to respond	8	-	-	14	-	-

E6.1.5 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 E6.8 shows the percentage of women in the second follow-up who were exposed to the following messages: counseled about pregnancy (63.6%); counseled about danger signs during pregnancy (50.2%); advised to deliver in a facility (48.6%); counseled about breastfeeding (45.9%); counseled about nutrition during pregnancy (45.3%); given information about in-facility delivery (44.6%); counseled about childcare (37.8%).

Exposure to safe pregnancy practices increased from baseline to second follow-up for all counseling categories. In the second follow-up, 30.1% of women were counseled about contraception after delivery compared to 23% at baseline. 22.8% of women in the second follow-up, compared to 12% at baseline, were counseled about making a transportation plan for delivery. Compared to 13.5% of women at baseline, 17% of women in the second follow-up were advised to have a Cesarean section.

Table E6.8: Exposure to safe pregnancy practices, women 15-49 years of age who attended at least one antenatal care visit for most recent birth in the last two years

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Counseled about pregnancy	2163	3859	56.0	1.5	1553	2477	63.6	1.8
Counseled about danger signs during pregnancy	1363	3803	35.9	1.6	1222	2443	50.2	2.0
Advised to deliver in a facility	1498	3819	39.1	1.8	1173	2452	48.6	1.8
Counseled about breastfeeding	1860	3819	49.1	2.1	1113	2472	45.9	1.9
Counseled about nutrition during pregnancy	1552	3797	41.7	1.8	1114	2480	45.3	1.9
Given information about in-facility delivery	1285	3824	33.5	1.6	1077	2459	44.6	2.0
Counseled about childcare	1236	3810	32.5	1.6	898	2448	37.8	1.9
Counseled about contraception after delivery	885	3802	23.0	1.4	714	2446	30.1	1.9
Counseled about making a transportation plan for delivery	468	3809	12.0	0.9	544	2470	22.8	1.7
Advised to have a Cesarean section	524	3811	13.5	1.2	407	2442	17.0	1.4

E6.2 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 place of delivery and assistance at delivery were captured for all births in the five years preceding the survey. To reduce recall bias, only data from the most recent delivery within the last two years are summarized.

E6.2.1 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 E6.9. The majority of births occurred in own homes (70.6%) and public hospitals (15.5%). Yet 72.4% of women reported giving birth at home or at another person's home. Deliveries in private-sector facilities were rare (3.5%). Among women who delivered in a facility, 81.8% indicated that they used a private vehicle for transport (Table E6.10).

Table E6.9: Place of delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Own home	3851	77.2	1.8	2092	70.6	2.3
Public hospital	656	13.0	1.2	478	15.5	1.7
Public health center/clinic	278	5.3	0.7	235	7.8	0.9
Private hospital	71	1.5	0.4	66	2.2	0.4
Other house	59	1.3	0.2	54	1.8	0.3
Private health center/clinic	32	0.8	0.3	35	1.2	0.3
Other public health facility	10	0.2	0.1	4	0.1	0.1
Other private health facility	6	0.1	0.0	4	0.1	0.1
Public health ward	1	0.0	-	1	0.0	-
Private medical ward	0	0.0	-	1	0.0	-
Other	27	0.5	0.1	17	0.6	0.2
Don't know	7	-	-	0	-	-
Decline to respond	10	-	-	1	-	-

Table E6.10: Transportation to place of delivery for most recent birth in the last two years, among women 15-49 years of age who delivered in a facility

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Private vehicle	775	1049	71.4	3.2	661	823	81.8	1.9
Ambulance	135	1049	12.6	1.6	109	823	12.6	1.7
On foot	79	1049	9.7	3.2	45	823	5.0	1.6
Other public transit	88	1049	8.7	1.2	44	823	5.0	0.9

*categories not mutually exclusive (select all that apply)

Women were asked about the proximity to the health facility used to deliver. Of the 824 women from the second follow-up who delivered in a facility, 314 were able to estimate the distance to the facility (Table E6.11). The median number of women reported travelling less than 15 km. Fifty percent of women traveled more than one hours to the facility to deliver.

Table E6.11: Proximity to health care facilities: health facility for delivery

	N	DK/DTR	Min	25th Percentile	Median	75th Percentile	Max
Baseline 2013							
Distance, km	730	324	0	3	20	45	100
Travel time, min	1000	54	1	30	60	120	2700
Second follow-up 2018							
Distance, km	314	510	0	1	15	30	100
Travel time, min	804	20	1	30	60	120	13800

E6.2.2 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 (98% of all births in the second follow-up), the percentage by type of delivery attendant is detailed in Table E6.12. 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 E6.12, most in-facility deliveries during the second follow-up were accompanied by a midwife/comadrona (67%) and/or a medical doctor (26.1%). For 18.8% of the deliveries an relative was in attendance. For 17.5% a professional nurse was in attendance.

Table E6.12: Types of attendants: assistance at delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Midwife/comadrona	3583	4983	72.1	2.0	2002	2978	67.0	2.6
Medical doctor	961	4979	19.3	1.7	796	2984	26.1	2.2
Relative	926	4982	19.1	1.6	537	2976	18.8	1.9
Professional nurse	574	4979	11.2	1.2	521	2964	17.5	1.7
Auxiliary nurse	526	4970	10.6	1.2	468	2959	15.4	1.5
Laboratory technician	68	4970	1.3	0.3	17	2967	0.6	0.2
Community health worker	17	4977	0.4	0.1	14	2975	0.6	0.3
Traditional healer	14	4982	0.3	0.2	18	2977	0.6	0.2
Pharmacist	5	4979	0.1	0.1	2	2977	0.1	0.1
Other	75	4971	1.6	0.2	50	2967	1.8	0.5

Sixty one percent of women in the second follow-up delivered with one attendant, 26.5% with two attendants, and 9.6% with three attendants (Table E6.13). For women's most recent live birth in the past two years, 28.3% of deliveries had a skilled attendant present and 24.5% delivered with a skilled attendant in a CAP, CAIMI, or hospital (Table E6.14).

Table E6.13: Number of attendants: assistance at delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
None	159	3.2	0.4	56	2.0	0.4
One	3439	68.2	1.9	1817	60.6	2.4
Two	1030	21.1	1.4	779	26.5	2.1
Three	287	5.7	0.7	296	9.6	1.1
Four or more	93	1.8	0.3	40	1.3	0.3
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

Table E6.14: In-facility delivery with skilled birth attendant: assistance at delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Delivery with a skilled birth attendant	1091	4976	21.8	1.8	863	2985	28.3	2.3
Delivery in a health facility, any attendant	1054	4991	21.0	1.8	824	2987	27.0	2.2
Delivery in a CAP, CAIMI, or hospital, with any birth attendant	965	4991	18.9	1.6	758	2987	24.7	2.1
Delivery with a skilled birth attendant in a CAP, CAIMI, or hospital	953	4973	18.8	1.6	750	2985	24.5	2.1

E6.2.3 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 is detailed in Table E6.15 along with the percentage of planned in-facility deliveries. Table E6.16 displays the percentage of women with specific complications.

In the second follow-up, 77% of women indicated that they attended the facility for emergency care during their most recent birth in the last two years. Few women reported seizures prior to delivery (3.1%). Approximately 2.3% of infants were transferred to an intensive care unit after delivery, and 13.4% of women reported excessive bleeding after delivery (more than 1 cup over a two-day period of time).

Table E6.15: Mode of delivery for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Mode of delivery						
Vaginal	4705	94.3	0.6	2735	91.5	0.9
Emergency c-section	227	4.5	0.5	197	6.6	0.7
Planned c-section	55	1.2	0.2	55	1.8	0.4
Don't know	4	-	-	0	-	-
Decline to respond	0	-	-	0	-	-
Reason for seeking delivery care, among in-facility births						
Because of emergency	782	73.9	2.7	621	77.0	2.0
According to birth plan	255	25.9	2.7	189	22.4	1.9
Other reason	2	0.2	0.2	6	0.5	0.3
Don't know	14	-	-	6	-	-
Decline to respond	1	-	-	2	-	-

Table E6.16: Delivery complications for most recent birth in the last two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Respondent experienced excessive bleeding in the first day after delivery	1597	4752	33.9	2.1	420	2963	13.4	1.1
Respondent experienced seizures prior to delivery	230	4879	4.8	0.5	105	2953	3.1	0.5
Child entered neonatal intensive care unit after delivery	68	4971	1.4	0.2	73	2986	2.3	0.3

E6.2.4 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 E6.17).

In the second follow-up, many women perceived their infant to be average in size (77.1%). With most births occurring in institutional settings, it is not surprising that 78.7% of newborns were weighed at birth. Among those who were weighed, 12.7% weighed less than 2.5 kilograms according to the mother's recall (low birth weight).

Table E6.17: Birth size and weight for most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Very large	169	3.6	0.6	52	1.8	0.3
Larger than average	365	7.2	0.5	227	7.9	0.7
Average	3252	68.7	1.5	2214	77.1	1.5
Smaller than average	689	15.0	1.1	291	9.9	0.8
Very small	258	5.5	0.5	97	3.3	0.4
Don't know	260	-	-	106	-	-
Decline to respond	14	-	-	1	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Child was weighed at birth	2633	4838	53.9	2.1	2240	2800	78.7	2.2
Low birth weight (<2.5kg), among those weighed	323	2506	12.6	0.9	268	2049	12.7	0.9

24.2.5 *Cultural sensitivity*

The help that a woman receives during delivery has important consequences for the health of the mother and child. Proper medical conditions during delivery can reduce the risk of complications, infections, and even death for the mother and newborn baby. When women giving birth in institutional settings are given options for delivery that take cultural differences into account, they are more likely to return to health facilities for future deliveries and seek more institutional treatment. At baseline and second follow-up, mothers were asked about five different standards for cultural sensitivity during their most recent institutional birth in the past two years: whether (1) health facility personnel used the language spoken by the mother, (2) she was able to drink traditional liquids or remedies that she wanted to take, (3) she was able to choose her position of delivery, (4) she was able to choose the clothing she wore, and (5) she was allowed to be accompanied by family member or midwife. Eight additional questions were added in the second follow-up to further capture how women were treated during institutional births: (1) Selected sex of delivery attendant, (2) facility personnel explained actions, (3) Understood explanations from facility personnel, (4) Given placenta after birth, (5) warm enough in facility, (6) a bed was provided and put in preferred position, (7) treated with respect, and (8) facility was clean. Table E6.18 shows that 60.8% of women indicated that their language was spoken during a vaginal birth in a Guatemala health facility in the past 2 years, while only 27.2% of women were accompanied by family or midwife. Fifty two percent of women reported they were provided with two or more standards of cultural sensitivity.

Table E6.18: Cultural sensitivity during delivery for most recent live birth in the past two years, women with a vaginal delivery in a health facility in Guatemala

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Woman's language spoken	200	373	50.3	5.0	137	235	60.8	4.8
Drinks and remedies allowed	71	371	21.3	3.1	75	234	33.7	3.8
Allowed to choose clothing	65	370	19.7	2.7	69	234	29.4	3.1
Allowed to choose delivery position	121	369	35.2	3.3	61	232	27.5	4.0
Accompanied by family or midwife	94	372	25.8	2.7	65	234	27.2	3.2
Met at least 2 standards for cultural sensitivity	142	381	40.1	3.5	120	236	52.0	4.3

	Second Follow-Up 2018			
	n	N	%	SE
Space was clean	202	230	88.1	2.5
Treated with respect	203	235	86.8	2.8
Warm enough in facility	145	232	65.3	3.6
Understood explanations from facility personnel	139	230	61.3	3.9
Facility personnel explained actions	138	230	60.6	4.1
A bed was provided and changed to preferred position	93	233	41.1	4.6
Given placenta after birth	38	234	17.0	2.9
Selected sex of facility personnel attending delivery	15	233	6.2	1.6

* Not collected at baseline, added for follow-up evaluation.

E6.3 Early initiation of breastfeeding

Coverage of early initiation of breastfeeding is defined as the percentage of women who had a live birth in the past two years and put the child to the breast with one hour of birth. Table E6.19 shows that 83.7% of women initiated breastfeeding within one hour of birth.

Table E6.19: Early initiation of breastfeeding for most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Early initiation of breastfeeding	3626	4928	72.6	1.9	2455	2940	83.7	0.9

E6.4 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.

E6.4.1 Postnatal checkup for the mother

Data on postnatal care for the mother are summarized in Table E6.20. Table E6.20 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 with a skilled attendant (doctor, nurse, or auxiliary nurse); and every 15 minutes during the first hour after delivery for institutional births.

Only 41.6% of women recalled being checked after delivery during the second follow-up, and 22.1% reported being checked one week after delivery by a health care provider. Only 41.6% of women with an institutional birth recalled being checked every 15 minutes for the first hour post-partum.

Table E6.21 shows the percent distribution of women who were checked at any time after delivery by type of personnel. Among women with postnatal care visits in the second follow-up, most received care from a midwife/comadrona (35.1%) or auxiliary nurse (23.2%).

Table E6.20: Postnatal checkup for the mother for most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any checkup after delivery	1315	4906	26.6	1.5	1259	2965	41.6	1.9
Checked every 15 minutes during the first hour after delivery, among in-facility births	251	505	50.8	3.7	210	480	41.6	3.1
Checked within a week after delivery by a skilled provider	531	4906	10.6	0.9	667	2965	22.1	1.5

Table E6.21: Provider of care at first postnatal checkup for the mother, most recent live birth in the past two years, among women who attended at least one postnatal care visit

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Midwife/comadrona	483	37.0	3.2	437	35.1	3.4
Auxiliary nurse	238	17.9	2.2	302	23.2	2.0
Doctor	358	27.5	2.3	285	22.1	1.8
Professional nurse	184	14.1	1.5	224	19.1	2.2
Community health worker	23	1.9	0.5	5	0.3	0.2
Traditional healer	3	0.3	0.2	2	0.1	0.1
Laboratory technician	1	0.1	0.1	0	0.0	-
Pharmacy assistant	0	0.0	-	0	0.0	-
Relative	9	0.7	0.2	0	0.0	-
Other	8	0.6	0.3	0	0.0	-
Don't know	8	-	-	4	-	-
Decline to respond	0	-	-	0	-	-

E6.4.2 Postnatal checkup for the infant

The results regarding postnatal care for the neonate are shown in Table E6.22: percentage of women with a birth in the last two years whose infants were checked after delivery; percentage of infants who were checked by skilled personnel within 24 hours of delivery; and percentage of infants who were checked by skilled personnel within one week of delivery.

Approximately 57% of women in the second follow-up reported that their infant was checked at any time after delivery. Among all deliveries, 18.4% of women reported that a qualified medical professional checked on their infant within 24 hours of delivery. Table E6.23 shows the attendants for neonatal postnatal care. Most women indicated that a auxiliary nurse performed a checkup (47.4%). Doctor and professional nurse were also reported, though much less frequently.

Table E6.22: Postnatal checkup for neonate for woman's most recent live birth in the past two years, women 15-49 years of age

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any checkup after delivery	1406	4922	28.2	1.9	1700	2939	57.0	2.0
Checked within 24 hours after delivery by a skilled provider	358	4856	7.2	0.8	520	2867	18.4	1.7
Checked within a week after delivery by a skilled provider	611	4856	12.5	1.1	948	2867	33.1	2.4

Table E6.23: Provider of care at first postnatal checkup for the infant, woman's most recent live birth in the past two years, among women whose child attended at least one postnatal care visit

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Auxiliary nurse	374	26.6	2.6	790	47.4	2.6
Doctor	484	35.8	2.9	394	23.0	2.1
Professional nurse	353	25.5	2.4	310	18.9	2.2
Midwife/comadrona	100	7.0	1.0	165	9.4	1.6
Traditional healer	0	0.0	-	3	0.2	0.1
Laboratory technician	2	0.1	0.1	1	0.1	0.1
Community health worker	55	3.6	0.8	3	0.1	0.1
Relative	3	0.2	0.1	1	0.1	0.1
Pharmacy assistant	1	0.1	0.1	0	0.0	-
Other	17	1.2	0.5	11	0.8	0.3
Don't know	14	-	-	21	-	-
Decline to respond	3	-	-	1	-	-

E7 Chapter 7: CHILD HEALTH

This chapter summarizes the health status of children aged 0-59 months whose caregivers participated in the SMI-Guatemala Second Follow-up Household Survey. All data summarized in this chapter are based on the caregiver's report.

E7.1 Health status

The age and sex distribution of the de facto population of children aged 0-59 months participating in the caregiver interview module or the anthropometric measures in Guatemala at the second follow-up is shown in Figure E7.2 by six- or 12-month age groups.

Twenty one percent of children surveyed at baseline and 20% of children surveyed at the second follow-up were under 1 year old at the time of the interview. The age distributions of female and male children are similar.

Figure E7.1: Age and sex of children aged 0-59 months in child health survey or anthropometric measures of the de facto population by six- to twelve-month age groups, baseline survey unweighted

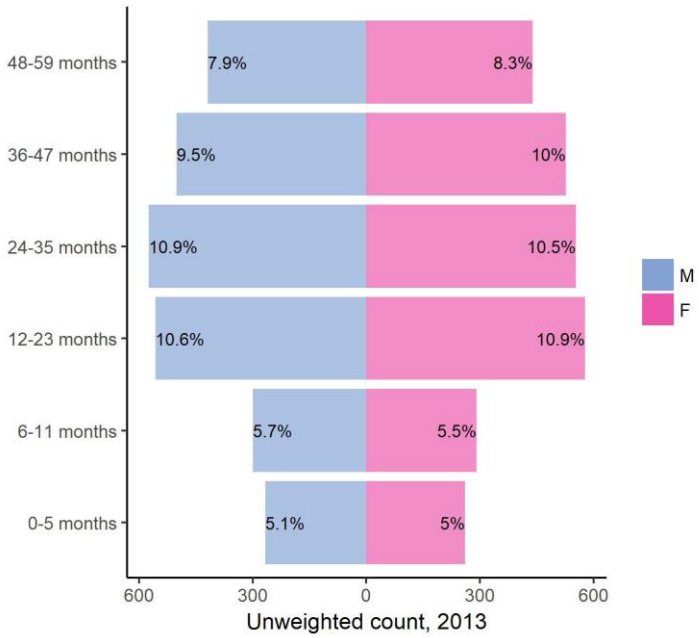


Figure E7.2: Age and sex of children aged 0-59 months in child health survey or anthropometric measures of the de facto population by six- to twelve-month age groups, follow-up survey unweighted

E7.1.1 Current health status

Table E7.1 shows the current health status of all children aged 0-59 months, as reported by their caregivers. The table includes the caregiver's evaluation of current health relative to health the previous year and the percentage of children who can easily perform daily activities. In the second follow-up, approximately 85.5% of children's health was considered by their caregiver to be "good," "very good," or "excellent," compared to 70.8% at baseline.

Relative to the past year, caregivers in the second follow-up evaluation reported that 48.6% of children's health was "about the same" in the second follow-up. While 48.4% of children's health had improved, 2.9% of children experienced reportedly worse health on the day of the interview, compared to last year. Ninety six percent of children could "easily" perform their daily activities (e.g., playing and going to school) according to their caregivers. Four percent of children had some degree of difficulty performing these activities, 0.2% of children had a significant degree of difficulty performing these activities, and 0.1% of children were unable to complete daily activities, according to their caregivers.

Table E7.1: Current health status, among children aged 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Current health status						
Excellent	532	10.3	1.1	710	22.9	2.4
Very good	638	12.0	0.8	311	10.2	1.1
Good	2561	48.5	1.6	1605	52.4	2.3
Fair	1338	26.0	1.3	405	13.0	1.0
Poor	152	3.1	0.3	49	1.6	0.3
Don't know	7	-	-	0	-	-
Decline to respond	7	-	-	0	-	-
Health status relative to a year ago						
Better	1918	47.9	1.6	1122	48.4	2.4
Worse	115	3.0	0.3	66	2.9	0.4
About the same	1930	49.1	1.6	1186	48.6	2.3
Don't know	16	-	-	7	-	-
Decline to respond	4	-	-	0	-	-
Ability to perform daily activities						
Easily	4651	89.5	0.8	2936	95.9	0.4
With some difficulty	446	8.9	0.7	122	3.8	0.4
With much difficulty	32	0.6	0.1	9	0.2	0.1
Unable to do	49	1.0	0.2	4	0.1	0.1
Don't know	47	-	-	9	-	-
Decline to respond	10	-	-	0	-	-

E7.1.2 Recent illness

Caregivers were asked a series of questions about any illnesses or health problems that their children had in the two weeks preceding the interview. In the second follow-up survey, approximately 19% of children were reported as sick during that time (Table E7.2). Of the 603 children who were recently ill, fever (33.4%), diarrhea without blood (23.6%), and cough (19.5%) were the most commonly specified complaints.

Table E7.2: Recent illness, among children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Child was sick in the last two weeks	1277	5220	25.4	1.3	603	3077	19.1	1.4

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Recent illness among children ill in the last 2 weeks						
Fever	440	34.7	1.8	202	33.4	1.9
Diarrhea without blood	289	22.6	1.3	149	23.6	2.1
Cough	186	14.3	1.2	118	19.5	1.7
Skin rash/infection	25	2.2	0.5	13	2.5	0.6
Abdominal pain	23	2.1	0.5	8	1.4	0.5
Diarrhea with blood	30	2.6	0.5	8	1.1	0.4
Pneumonia	10	0.8	0.3	5	1.0	0.5
Eye/ear infection	7	0.6	0.2	4	1.0	0.5
Vomiting	21	1.7	0.3	5	0.9	0.4
Anemia	2	0.1	0.1	2	0.4	0.3
Headache	15	1.1	0.3	2	0.3	0.2
Difficulty urinating	0	0.0	-	1	0.2	0.2
Bronchitis	11	0.8	0.3	1	0.1	0.1
Malaria	1	0.1	0.1	0	0.0	-
Tuberculosis	2	0.1	0.1	0	0.0	-
Asthma	0	0.0	-	0	0.0	-
Measles	3	0.2	0.2	0	0.0	-
Jaundice	1	0.1	0.1	0	0.0	-
Stroke	0	0.0	-	0	0.0	-
Diabetes	0	0.0	-	0	0.0	-
HIV/AIDS	0	0.0	-	0	0.0	-
Paralysis	0	0.0	-	0	0.0	-
Chest infection	0	0.0	-	0	0.0	-
Blood in urine	0	0.0	-	0	0.0	-
Swelling in legs, ankles, or feet	0	0.0	-	0	0.0	-
Other	209	16.0	1.2	84	14.6	1.6
Don't know	2	-	-	1	-	-
Decline to respond	0	-	-	0	-	-

Options for "Swelling in legs, ankles, or feet", "Blood in urine", and "Chest infection" were available only in the follow-up survey. In the baseline, "Chest infection" was included within the "Cough" answer choice.

E7.1.3 Utilization of health services for recent illness

Table E7.3 summarizes data regarding the utilization of health services among the 603 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.

In the second follow-up survey, care was sought for 59% of these cases. Care was typically sought at Public health unit (64%) or Public health center/clinic (17%) facilities; some attended pharmacies (7.8%). Only four children were hospitalized for their recent illness.

Table E7.3: Utilization of health services for recent illness in the last two weeks, among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for recent illness	847	1277	66.8	1.9	359	603	59	2.6
Child was hospitalized for recent illness	14	519	2.4	0.9	4	217	2	1.1

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of medical facility where care was sought						
Public health unit	344	40.4	2.5	226	64.0	3.8
Public health center/clinic	249	29.4	2.2	62	17.0	2.9
Pharmacy	102	12.4	1.8	32	7.8	1.6
Public hospital	25	3.0	0.9	9	3.0	1.2
Private doctor's office	12	1.3	0.4	9	2.3	0.8
Private health center/clinic	13	1.6	0.4	6	1.7	0.7
Private hospital	4	0.7	0.4	2	0.7	0.5
Traditional healer	10	1.0	0.4	2	0.5	0.3
Other public health facility	5	0.5	0.2	1	0.4	0.4
Community health worker	31	3.8	0.9	1	0.4	0.4
Public mobile clinic	1	0.1	0.1	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	1	0.1	0.1	0	0.0	-
Other	48	5.6	0.9	8	2.2	0.8
Don't know	1	-	-	1	-	-
Decline to respond	1	-	-	0	-	-

E7.2 Acute respiratory infection

Acute respiratory infection is a leading cause of morbidity and mortality among children. Early diagnosis and treatment with antibiotics can prevent deaths resulting from pneumonia, a common acute respiratory disease. The prevalence of acute respiratory infection was estimated by asking caregivers 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 symptoms of an acute respiratory infection, the caregiver was asked about what was done to treat the symptoms and feeding practices during the illness.

E7.2.1 Prevalence of acute respiratory infection and fever

The prevalence of cough, suspected acute respiratory infection, and fever among children aged 0-59 months, as reported by their caregivers, is displayed in Table E7.4. In the second follow-up, 11% of children experienced cough, 4.7% had symptoms of an acute respiratory infection, and 12.8% had a fever in the two weeks preceding the interview.

Table E7.4: Prevalence of suspected acute respiratory infection and fever in the last two weeks, among children 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Child had cough in the last two weeks, by type						
No cough	4239	81.5	1.1	2704	88.9	1.1
Cough without difficulty breathing	471	9.1	0.6	208	6.4	0.8
With difficulty breathing due to congested/runny nose	215	4.4	0.5	57	1.9	0.4
With difficulty breathing due to chest problem and congested/runny nose	80	1.5	0.2	46	1.5	0.3
With difficulty breathing due to chest problem	181	3.5	0.4	40	1.3	0.3
With difficulty breathing due to other reason	4	0.1	0.0	1	0.0	-
Don't know	36	-	-	24	-	-
Decline to respond	9	-	-	0	-	-

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Symptoms of acute respiratory infection in the last two weeks	487	5197	9.6	0.9	145	3057	4.7	0.6
Fever in last two weeks	1019	5216	19.8	1.1	412	3076	12.8	1.1

E7.2.2 Utilization of health services for suspected acute respiratory infection

Fifty three percent of children with symptoms of acute respiratory infection were taken for evaluation and/or treatment of their condition at the second follow-up (Table E7.5).

Table E7.5: Utilization of health services for suspected acute respiratory infection in the last two weeks, among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for suspected acute respiratory infection	777	1365	58.1	1.8	310	590	52.8	2.5

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of medical facility where care was sought						
Public health unit	332	42.4	2.8	201	65.2	3.6
Public health center/clinic	196	24.8	2.3	49	16.3	2.8
Pharmacy	110	14.1	2.0	33	9.8	2.0
Private doctor's office	10	1.2	0.4	7	1.9	0.8
Public hospital	17	2.4	0.9	4	1.6	0.8
Private hospital	5	0.8	0.4	3	1.2	0.7
Private health center/clinic	13	1.7	0.6	3	1.0	0.6
Community health worker	28	3.7	0.8	1	0.5	0.5
Public mobile clinic	4	0.6	0.4	0	0.0	-
Other public health facility	5	0.7	0.3	0	0.0	-
Private mobile clinic	0	0.0	-	0	0.0	-
Other private health facility	2	0.3	0.2	0	0.0	-
Traditional healer	7	0.8	0.3	0	0.0	-
Other	48	6.6	1.5	9	2.6	0.8
Don't know	0	-	-	0	-	-
Decline to respond	0	-	-	0	-	-

E7.2.3 Utilization of medications for suspected acute respiratory infection

Sixty three percent of children with symptoms of acute respiratory infection were given some type of medication for their condition during the second follow-up (Table E7.6). Forty two percent of children were administered antibiotic syrups for a suspected acute respiratory infection. Acetaminophen (66.9%) and ibuprofen (4.7%) were also commonly administered. Twenty percent of children received a treatment other than those listed.

Table E7.6: Utilization of medications for suspected acute respiratory infection in the last two weeks, among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any treatment	965	1363	70.8	1.6	380	590	63.2	2.4
Antibiotic injection	73	957	8.1	1.1	23	377	6.4	1.5
Antibiotic pill	75	956	7.8	1.2	31	378	8.6	1.8
Antibiotic syrup	491	959	52.3	2.2	158	378	41.6	2.9
Aspirin	113	961	12.2	1.5	32	378	7.9	1.5
Acetaminophen	663	961	69.0	2.0	249	378	66.9	3.0
Ibuprofen	61	959	6.1	1.0	18	378	4.7	1.1
Oral rehydration therapy	55	959	6.2	1.1	12	378	3.2	1.0
Other	165	960	16.5	1.8	77	378	19.8	2.2

E7.2.4 Feeding practices during suspected acute respiratory infection

Data on feeding practices during the recent episode of suspected acute respiratory infection are summarized in Table E7.7. The table shows the volume of fluids and the volume of solids given during the illness. At the second follow-up, only 8.4% of children were given more fluids than usual. In total, 51% of children were offered less fluid than usual (or none at all). Thirty seven percent of children were offered the same volume of solid food as usual during their illness. Approximately 58% of children were given less than the usual amount of solid food (or none at all).

Table E7.7: Feeding practices during suspected acute respiratory infection in the last two weeks, among children 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Volume of fluids (including breastmilk) given during illness						
No fluids	30	2.3	0.4	8	1.3	0.5
Much less	128	9.4	1.1	87	14.7	1.9
Somewhat less	476	35.3	1.6	206	34.8	2.0
About the same	546	39.9	1.7	235	40.7	2.2
More	182	13.2	1.0	52	8.4	1.3
Don't know	4	-	-	3	-	-
Decline to respond	0	-	-	0	-	-
Volume of solid foods given during illness						
No solids	146	11.0	1.1	10	1.9	0.6
Much less	166	12.1	1.2	72	12.4	1.7
Somewhat less	577	42.6	1.6	258	43.9	2.3
About the same	451	33.3	1.6	215	37.3	2.3
More	15	1.0	0.2	28	4.5	1.1
Don't know	10	-	-	7	-	-
Decline to respond	1	-	-	1	-	-

E7.3 Diarrhea

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

E7.3.1 Prevalence

Table E7.8 shows the proportion of children aged 0-59 months with diarrhea in the two weeks preceding the interview, as reported by their caregivers (10.5% at the second follow-up). One percent of children

had bloody diarrhea.

Table E7.8: Prevalence of diarrhea in the last two weeks, among children aged 0-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
No diarrhea	4438	85.1	1.0	2720	89.5	0.9
Diarrhea without blood	693	13.7	0.9	317	9.8	0.9
Diarrhea with blood	57	1.2	0.2	23	0.7	0.2
Don't know	41	-	-	19	-	-
Decline to respond	6	-	-	1	-	-

E7.3.2 Utilization of health services for diarrhea

In the second follow-up, % of children with diarrhea were taken for evaluation and/or treatment of their condition (Table E7.9). Care for these children was often sought in the public sector, although private health centers were visited by 1% of these cases.

Table E7.9: Utilization of health services for diarrhea in the last two weeks, among children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Sought care for diarrhea	455	750	62.2	2.2	206	340	59.4	2.8

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Type of medical facility where care was sought						
Public health unit	156	33.6	3.3	137	67.9	4.2
Pharmacy	79	17.9	2.9	25	10.7	2.5
Public health center/clinic	139	31.6	2.8	20	9.8	2.2
Private health center/clinic	5	1.3	0.6	5	2.7	1.3
Traditional healer	5	0.8	0.4	6	2.6	1.2
Private doctor's office	4	1.1	0.5	3	1.2	0.7
Private hospital	2	0.6	0.4	1	0.9	0.9
Other public health facility	2	0.4	0.3	1	0.7	0.7
Public hospital	6	1.3	0.5	1	0.5	0.5
Public mobile clinic	0	0.0	-	0	0.0	-
Private mobile clinic	1	0.2	0.2	0	0.0	-
Other private health facility	0	0.0	-	0	0.0	-
Community health worker	15	3.4	1.1	0	0.0	-
Other	38	7.9	1.6	6	3.1	1.4
Don't know	2	-	-	1	-	-
Decline to respond	1	-	-	0	-	-

E7.3.3 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 rehydration salts, commercially-produced bottled oral serums, or homemade fluids usually prepared from sugar, salt, and water. Other treatments, including zinc, may be administered as well.

Although care was sought in only 59.4% of diarrhea cases, 80.7% of cases were given some form of treatment at the second follow-up. Fluid made with powdered oral rehydration salts was the most common form oral rehydration therapy (30.9%). Fourteen percent of cases were treated with zinc syrup or pills. Eighteen percent of cases were treated with an antibiotic pill.

Table E7.10: Utilization of treatments for diarrhea during the last two weeks, among children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Any treatment	612	741	82.9	1.5	271	338	80.7	2.3
Fluids								
Fluid made with powdered oral rehydration salts	249	744	33.9	2.2	101	339	30.9	3.4
Bottled oral rehydration serum	189	745	26.8	2.5	82	338	25.0	3.0
Homemade fluid recommended by health authorities	129	743	16.4	2.1	52	337	15.9	2.5
Medications								
Antibiotic pill	68	743	9.1	1.1	60	336	18.1	2.3
Antidiarrheal pill	87	743	11.2	1.6	31	337	9.2	1.6
Zinc pill	7	743	1.0	0.5	33	338	9.5	1.8
Other type of pill	23	740	3.0	0.7	13	336	3.8	1.1
Unknown pill	41	742	5.5	1.0	14	336	4.0	1.1
Antibiotic injection	11	743	1.2	0.5	10	336	2.9	0.8
Non-antibiotic injection	1	743	0.1	0.1	3	337	0.7	0.4
Unknown injection	3	743	0.5	0.3	3	338	0.6	0.4
Intravenous therapy	2	743	0.3	0.2	3	337	0.8	0.5
Home remedy/herbal medicine	228	744	28.9	2.7	95	337	28.7	3.0
Antibiotic syrup	180	742	25.8	2.0	52	336	14.9	1.9
Antidiarrheal syrup	72	742	10.2	1.5	41	337	11.8	1.9
Zinc syrup	2	741	0.2	0.1	13	336	4.3	1.4
Other syrup	18	741	2.6	0.7	6	337	1.7	0.8
Unknown syrup	37	742	5.0	1.0	5	337	1.3	0.6

*46 women selected 'Other antibiotic' as a treatment for diarrhea at the second follow-up, which was not an option in the baseline survey.

E7.3.4 Feeding practices during diarrhea

Caregivers 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 E7.11. The table shows the volume of fluids and the volume of solids given during the illness. Only 9.8% of children were given more fluids than usual in the second follow-up survey. Approximately 57% of children were offered less fluid than usual (or none at all). Thirty percent of children were offered the same volume of solid food as usual during their illness. Approximately 66% of children were given less than the usual amount of solid food (or none at all).

Table E7.11: Feeding practices among children aged 0-59 months who had diarrhea in the last two weeks

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
Volume of fluids (including breastmilk) given during illness						
No fluids	30	4.1	0.8	7	1.8	0.7
Much less	97	13.1	1.7	52	15.2	1.9
Somewhat less	281	38.0	2.4	135	39.8	3.0
About the same	183	24.6	2.1	111	33.4	3.2
More	159	20.2	1.9	34	9.8	1.8
Don't know	0	-	-	1	-	-
Decline to respond	0	-	-	0	-	-
Volume of solid foods given during illness						
No solids	111	14.3	1.8	13	3.7	1.2
Much less	134	18.7	1.7	55	16.5	2.0
Somewhat less	330	44.1	1.9	153	45.8	3.2
About the same	147	20.6	1.8	100	29.9	2.7
More	18	2.3	0.6	15	4.2	1.1
Don't know	7	-	-	4	-	-
Decline to respond	3	-	-	0	-	-

E7.4 Immunization against common childhood illnesses

Information on immunization coverage was collected for all children aged 0-59 months whose caregivers participated in the survey. Both caregiver's report and review of vaccination card (if available) were used to determine coverage. A vaccination card was available for review for 2,213 children at the second follow-up (71.9% of the sample, unweighted). In Table E7.12, coverage is estimated by vaccine type to include all children with full compliance for age as specified in the national immunization scheme at the time of the survey, according to either an affirmative response from the caregiver that the immunization was received, or a mark that the immunization was received on the vaccination card (for children with a vaccination card available for review at the time of the interview). Children too young to have received a specific vaccine are counted as covered in order to maintain a comparable all-ages sample across vaccine types.

Table E7.12: Immunization against common childhood illnesses, children aged 0-59 months, according to caretaker recall and vaccination card

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
BCG vaccine (tuberculosis)	4725	4796	98.4	0.2	2364	2537	93.2	0.9
Hepatitis B vaccine	1218	4632	25.5	1.5	1216	2470	48.7	2.2
Polio vaccine	3907	4803	80.9	1.1	1748	2539	69.5	1.3
Pentavalent vaccine (DPT, HepB, HiB)	4404	4821	91.2	0.8	2031	2537	80.4	1.8
Rotavirus vaccine	2756	4689	57.7	1.3	1956	2505	77.9	1.6
Measles, mumps, and rubella (MMR) vaccine	4573	4813	95.0	0.5	2346	2601	90.3	1.0
Diphtheria, tetanus, and pertussis (DPT) vaccine	4498	4892	91.9	0.6	2193	2655	82.6	1.3

	Second Follow-Up 2018			
	n	N	%	SE
Pneumococcal conjugate vaccine	1963	2493	78.8	1.4

*Pneumococcal vaccine was only asked and required for full compliance according to the vaccine scheme at follow-up.

In Table E7.13, 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. When considering only caregivers' recall, only 14.7% of children aged 0-59 months were fully immunized for age at the second follow-up survey, reflecting many "Don't know" or "Decline" responses that call into question the reliability and validity of the caregiver recall data. Caregivers were able to definitively answer the entire vaccine recall section for only 614 children at the second follow-up. Immunization coverage for children 0-59 months based only upon the vaccine card is 23.7%, and when combined with recall-based information, the estimate of full vaccination for age among children 0-59 months is 28.6%.

Table E7.13: Full immunization compliance for age, children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
According to recall + card	817	4573	16.9	1.3	702	2427	28.6	1.9
According to vaccine card	729	5157	13.3	1.1	721	3045	23.7	1.9
According to caregiver's recall	242	2845	8.2	1.0	97	614	14.7	2.0

*Pneumococcal vaccine was not asked or required at baseline. At follow-up it was asked and required for full compliance according to the vaccine scheme.

E7.5 Deworming treatment

Administration of deworming treatment every six months has been shown to reduce the prevalence of anemia in children. Only 17.2% of children aged 12-59 months received at least two doses of deworming treatment in the year preceding the second follow-up interview (Table E7.14).

Table E7.14: Deworming treatment among children aged 12-59 months

	Baseline 2013			Second Follow-Up 2018		
	n	%	SE	n	%	SE
No deworming	2180	57.2	1.4	959	40.7	1.9
One dose	1007	25.4	1.1	962	42.1	1.9
Two or more doses	681	17.4	1.0	414	17.2	0.9
Don't know	110	-	-	86	-	-
Decline to respond	5	-	-	4	-	-

E8 Chapter 8: INFANT AND YOUNG CHILDREN FEEDING PRACTICES

This chapter summarizes the feeding practices of infants and children aged 0-59 months whose caregivers participated in the SMI-Guatemala Household Survey. All data summarized in this chapter are based on the caregiver's report.

E8.1 Breastfeeding

E8.1.1 Exclusive breastfeeding

Coverage of 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 in which the caregiver indicates what the child consumed during the previous day and night. In Guatemala during the second follow-up, the sample includes 268 children who are under 6 months of age, and 221 of those children have sufficiently complete dietary recall information to determine whether they are exclusively breastfed. Table E8.1 shows that 85.5% of children under 6 months of age are exclusively breastfed.

E8.1.2 Continued breastfeeding at 1 year

Coverage of continued breastfeeding at 1 year is defined as the percentage of children 12-15 months old who received breast milk during the previous day according to caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 212 children who are between 12 and 15 months of age, and 162 of those children have adequate responses to determine their breastfeeding status. Table E8.1 shows that 75.2% of children continue to receive breast milk at 1 year.

Table E8.1: Breastfeeding among children

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Exclusive breastfeeding among children <6 months	415	520	79.5	2.2	221	260	85.5	2.1
Continued breastfeeding at one year among children 12-15 months	297	384	77.6	2.3	162	212	75.2	4.3

E8.2 Acceptable diet

E8.2.1 Introduction of solid, semi-solid, or soft foods

Coverage of appropriate 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 according to caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 164 children who are 6-8 months of age,

and 105 of those children have sufficiently complete dietary recall information. Table E8.2 shows that 65.8% of children consumed solid or semi-soft foods.

E8.2.2 Dietary diversity

Coverage of 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 according to caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 972 children who are 6-23 months of age, and 355 of those children have sufficiently complete dietary recall information to determine dietary diversity. Table E8.2 shows that 36.8% of children achieved the minimum dietary diversity during the previous day.

E8.2.3 Meal frequency

Coverage of 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 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 is four times for all children 6-23 months of age. This information is obtained through caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 972 children who are 6-23 months of age, and 421 of those children have sufficiently complete dietary recall information to determine meal frequency. Table E8.2 shows that 51.4% of children achieved the minimum meal frequency during the previous day.

E8.2.4 Minimum acceptable diet

Coverage of 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 caregiver's dietary recall. In Guatemala during the second follow-up, the sample includes 972 children who are 6-23 months of age, and 946 of those children have sufficiently complete dietary recall information to determine minimum acceptable diet. Table E8.2 shows that 19.1% of children achieved the minimum acceptable diet during the previous day.

E8.2.5 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), an iron supplement, or a fortified food that is specially designed for infants and young children, or a food fortified in the home with a product that included iron during the previous day. This information is obtained through caregiver's dietary recall. In Guatemala during the

second follow-up, the sample includes 972 children who are 6-23 months of age and 376 of those children have sufficiently complete dietary recall information to determine iron consumption. Table E8.2 shows that 38.2% of children consumed an iron-rich food during the previous day.

Table E8.2: Acceptable diet among children 6-23 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Introduction of solid foods among children 6-8 months	190	303	62.1	3.5	105	164	65.8	4.3
Minimum meal frequency among children 6-23 months	640	1479	43.4	2.1	421	828	51.4	2.9
Consumption of iron-rich foods among children 6-23 months	718	1713	41.3	2.0	376	972	38.2	1.7
Minimum dietary diversity among children 6-23 months	500	1713	28.7	1.5	355	972	36.8	2.1
Minimum acceptable diet among children 6-23 months	251	1685	14.9	1.1	179	946	19.1	2.0

E8.3 Micronutrient supplementation

E8.3.1 Vitamin A

Interviewers asked the caregiver if their child received a dose of vitamin A in the last six months. Table E8.3 shows that of the 3,079 sampled children 0-59 months of age in the second follow-up, 42.5% received a dose of vitamin A in the last six months.

E8.3.2 Iron

Interviewers showed the caregiver photos of common types of bottles, powders, or syrups and asked if their child received iron pills, powder, or syrup in the last day. Table E8.3 shows that of the 3,079 children 0-59 months of age in the second follow-up sample, 20.2% received a dose of iron in the last day.

Table E8.3: Vitamin A and Iron consumption among children 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Vitamin A in the last six months	2325	5059	45.5	1.8	1161	2737	42.5	1.9
Iron supplement the previous day	906	5164	17.0	1.0	617	3045	20.2	1.6

E8.3.3 Packets of micronutrients

Interviewers showed the caregiver a card with packets of micronutrients and asked how many packets their child received from a health facility and consumed in the last six months. Children are intended

to take 60 consecutive daily doses of micronutrient powder in each of three rounds, beginning at age 6, 12, and 18 months, with an adequate consumption considered to be 60 packets. Table E8.4 shows that among children 6-23 months of age sampled in the second follow-up, 65.6% received no packets of micronutrients from a health facility in the last six months.

Table E8.4: Micronutrient powders among children 6-23 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Received any micronutrient packets from health facility in the last six months	370	1662	21.7	1.5	341	953	34.4	2.0
Consumed any micronutrient packets	345	1640	20.4	1.4	314	930	32.6	2.0
Received 60 micronutrient packets	40	1662	2.2	0.4	52	953	5.3	1.1
Consumed adequate dose (>=60 packets) of micronutrient powders	71	1640	4.5	0.6	82	930	8.3	1.1

* Identical questions were asked in baseline and second follow-up surveys, but the second follow-up interview included photos of the micronutrient products. The baseline survey predated the intervention, so it is possible that questions about receipt and consumption were interpreted by caregivers to include different types of micronutrient supplements at baseline.

E9 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 SMI-Guatemala Second Follow-up 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, with altitude adjustment) 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.

A total of 3,080 children aged 0-59 months participated in the SMI-Guatemala second follow-up. In practice, 2,951 of these children underwent the physical measurement module. Height and weight data are presented for 2,951 of these children (100%, unweighted). Two thousand six hundred ninety children 6-59 months of age were eligible for the anemia test. Hemoglobin was measured in 2,352 children (87.4%, unweighted, of children 6-59 months of age). Parental consent was refused for 322 children, four were not measured because anthropometrists could not obtain a sufficient capillary blood sample or any sample at all, and ten cases were not tested for other reasons (for example, because the child did not cooperate). The age and sex distribution of children participating in the physical measurement module in second follow-up is displayed in Figure E9.2 and Figure E9.4.

Figure E9.1: Height and weight measured: Age and sex of sample, unweighted percent distribution of the de facto population, baseline survey

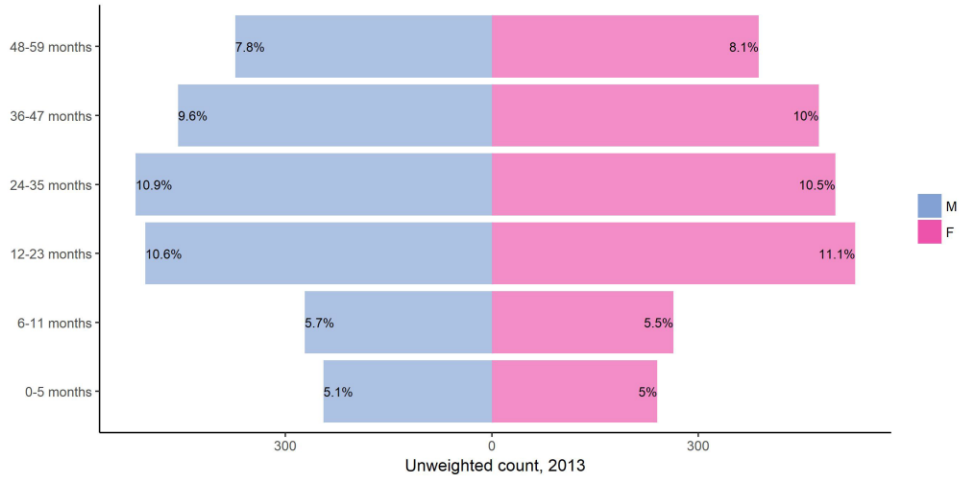


Figure E9.2: Height and weight measured: Age and sex of sample, unweighted percent distribution of the de facto population, follow-up survey

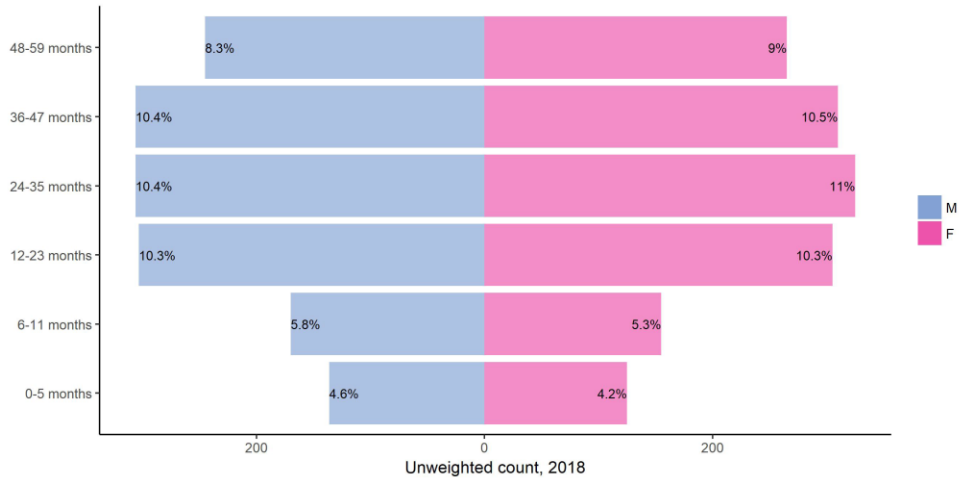


Figure E9.3: Hemoglobin measured: Age and sex of sample, unweighted percent distribution of the de facto population, baseline survey

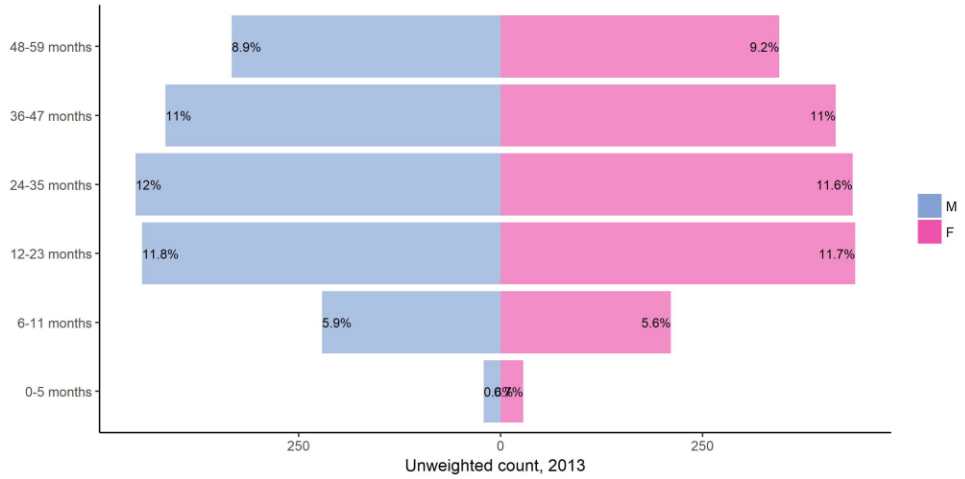
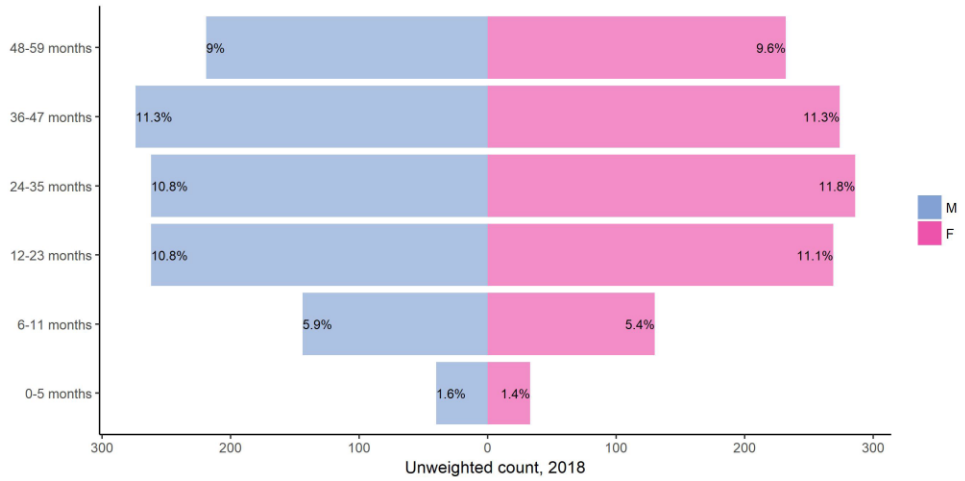


Figure E9.4: Hemoglobin measured: Age and sex of sample, unweighted percent distribution of the de facto population, follow-up survey



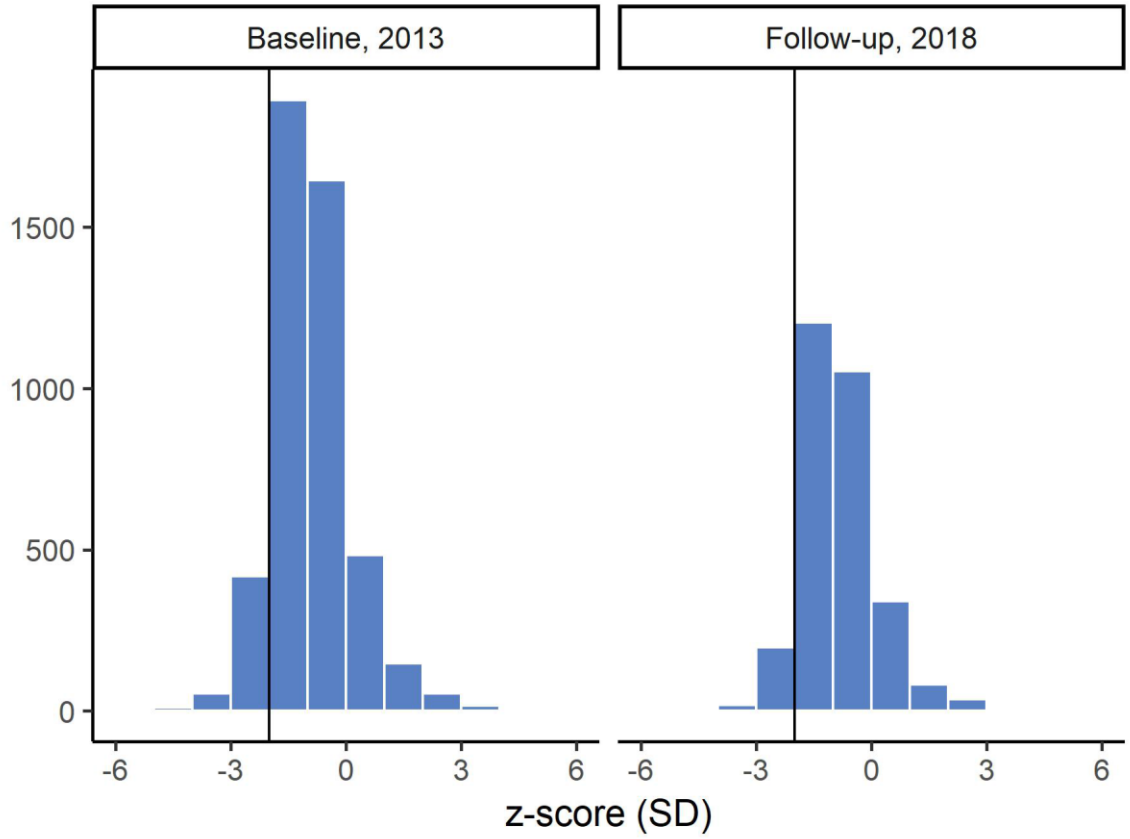
E9.1 Weight-for-Age

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.

E9.1.1 Unweighted distribution of weight-for-age z-scores

Figure E9.5 shows the distribution of weight-for-age z-scores among all children aged 0-59 months whose measurements were taken. The vertical black lines in the figure denote minus two standard deviations – children to the left of the line are classified as underweight.

Figure E9.5: Distribution of weight-for-age z-scores among children 0-59 months, unweighted



E9.1.2 Prevalence of underweight

As shown in Table E9.1, 17.2% of children aged 0-59 months in the second follow-up are underweight (have low weight-for-age) and 3.2% are severely underweight. The proportion of underweight children is highest (19.5%) in the age groups 24 to 59 months and lowest (3.9%) among those under 6 months. Female children (15.5%) are less likely to be underweight than male children (18.9%).

Table E9.1: Prevalence of underweight in children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of underweight in children 0-59 months, by sex and age (< -2 SD)								
Male	507	2365	21.2	1.2	277	1466	18.9	1.3
Female	447	2394	18.3	1.1	229	1485	15.5	1.3
0-5 months	25	485	5.1	1.0	9	261	3.9	1.5
6-11 months	66	535	11.8	1.5	37	325	10.4	1.7
12-23 months	222	1032	21.5	1.8	118	608	19.7	1.8
24-59 months	640	2706	23.3	1.3	342	1757	19.5	1.4
0-59 months	953	4758	19.7	1.0	506	2951	17.2	1.1
6-23 months	288	1567	18.2	1.4	155	933	16.6	1.5
Prevalence of severe underweight in children 0-59 months, by sex and age (< -3 SD)								
Male	131	2365	5.5	0.5	52	1466	3.5	0.5
Female	108	2394	4.6	0.5	43	1485	3.0	0.5
0-5 months	10	485	2.0	0.6	2	261	1.0	0.8
6-11 months	14	535	2.5	0.6	5	325	1.4	0.7
12-23 months	53	1032	5.2	0.8	28	608	4.6	1.0
24-59 months	161	2706	6.1	0.6	60	1757	3.4	0.6
0-59 months	238	4758	5.0	0.4	95	2951	3.2	0.5
6-23 months	67	1567	4.3	0.6	33	933	3.5	0.7
Prevalence of high weight for age in children 0-59 months, by sex and age (> 2 SD)								
Male	54	2365	2.2	0.4	22	1466	1.5	0.4
Female	41	2394	1.7	0.3	23	1485	1.5	0.3
0-5 months	65	485	13.1	1.5	38	261	14.7	2.5
6-11 months	13	535	2.1	0.6	2	325	0.5	0.4
12-23 months	11	1032	1.2	0.4	2	608	0.3	0.2
24-59 months	6	2706	0.2	0.1	3	1757	0.1	0.1
0-59 months	95	4758	2.0	0.2	45	2951	1.5	0.2
6-23 months	24	1567	1.5	0.3	4	933	0.4	0.2

E9.2 Height-for-Age

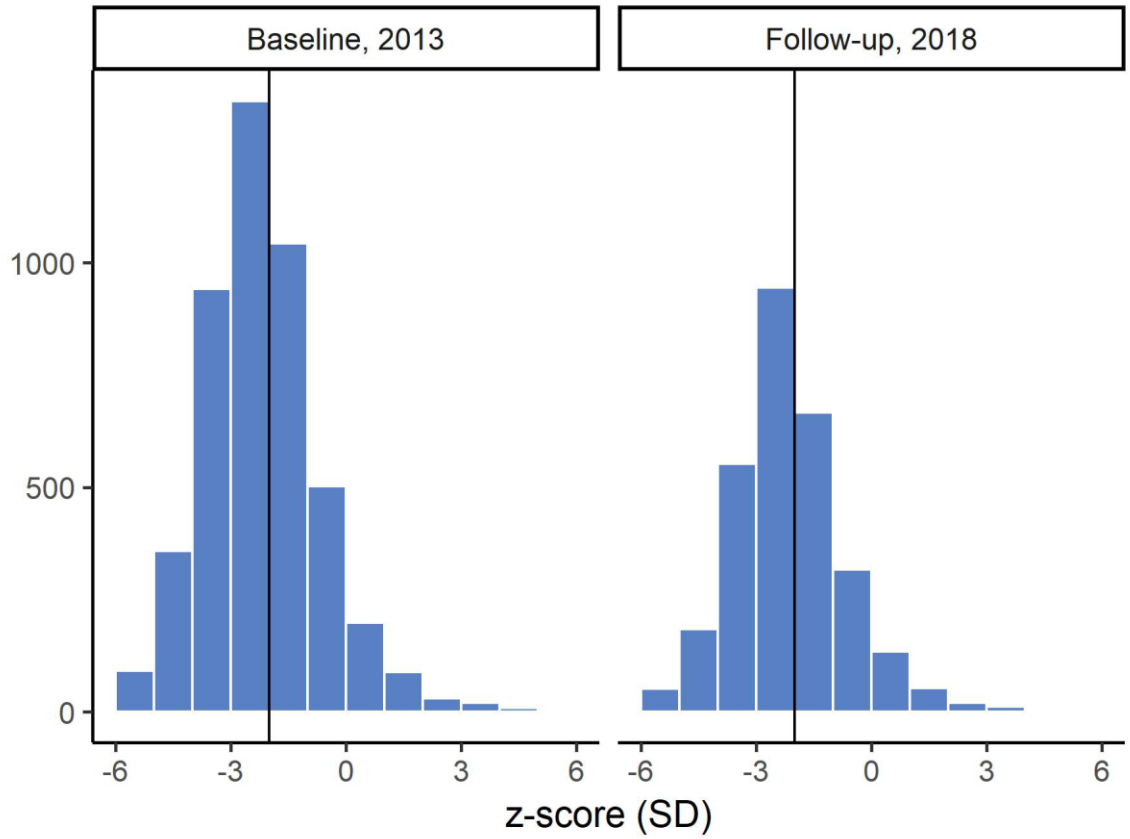
Height-for-age is an indicator of linear growth retardation and cumulative growth deficits in children. Children whose height-for-age z-score is below minus two standard deviations (-2 SD) from the median of the WHO reference population are considered short for their age (stunted) or chronically malnourished. 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.

E9.2.1 Distribution of height-for-age z-scores

Figure E9.6 presents the distribution of height-for-age z-scores among all children aged 0-59 months whose measurements were taken. The vertical black lines in the figure denotes minus two standard

deviations – children to the left of the line are classified as stunted.

Figure E9.6: Distribution of height-for-age z-scores among children 0-59 months, unweighted



E9.2.2 Prevalence of stunting

Table E9.2 presents the prevalence of stunting in children aged 0-59 months as measured by height-for-age. In the second follow-up, 59.1% of children under age 5 are stunted and 27.4% are severely stunted. Analysis of the indicator by age group shows that stunting is highest (67%) in children 24-59 months and lowest (17.7%) in children aged 0-5 months. Children 12-23 months old have the highest proportion of severely stunted children (31.3%) while the youngest age group (0-5 months) has the lowest proportion (8.9%). A higher proportion (60.9%) of male children is stunted compared with the proportion of female children (57.4%).

Table E9.2: Prevalence of stunting in children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of stunting in children 0-59 months, by sex and age (< -2 SD)								
Male	1453	2361	61.3	1.5	895	1466	60.9	2.2
Female	1374	2383	57.1	1.6	854	1485	57.4	2.0
0-5 months	82	483	16.0	1.7	47	261	17.7	2.3
6-11 months	192	535	35.1	2.4	127	325	39.1	3.1
12-23 months	631	1024	61.7	2.0	394	608	64.8	2.8
24-59 months	1921	2701	70.8	1.6	1181	1757	67.0	2.0
0-59 months	2826	4743	59.2	1.4	1749	2951	59.1	1.9
6-23 months	823	1559	52.7	1.8	521	933	56.0	2.3
Prevalence of severe stunting in children 0-59 months, by sex and age (< -3 SD)								
Male	801	2361	33.8	1.7	442	1466	30.2	2.0
Female	686	2383	28.6	1.5	363	1485	24.5	1.7
0-5 months	31	483	6.0	1.1	23	261	8.9	2.0
6-11 months	78	535	14.3	1.5	53	325	16.0	2.1
12-23 months	336	1024	32.9	2.0	188	608	31.3	2.5
24-59 months	1041	2701	38.4	1.9	541	1757	30.8	2.0
0-59 months	1486	4743	31.2	1.4	805	2951	27.4	1.6
6-23 months	414	1559	26.6	1.5	241	933	26.1	1.9

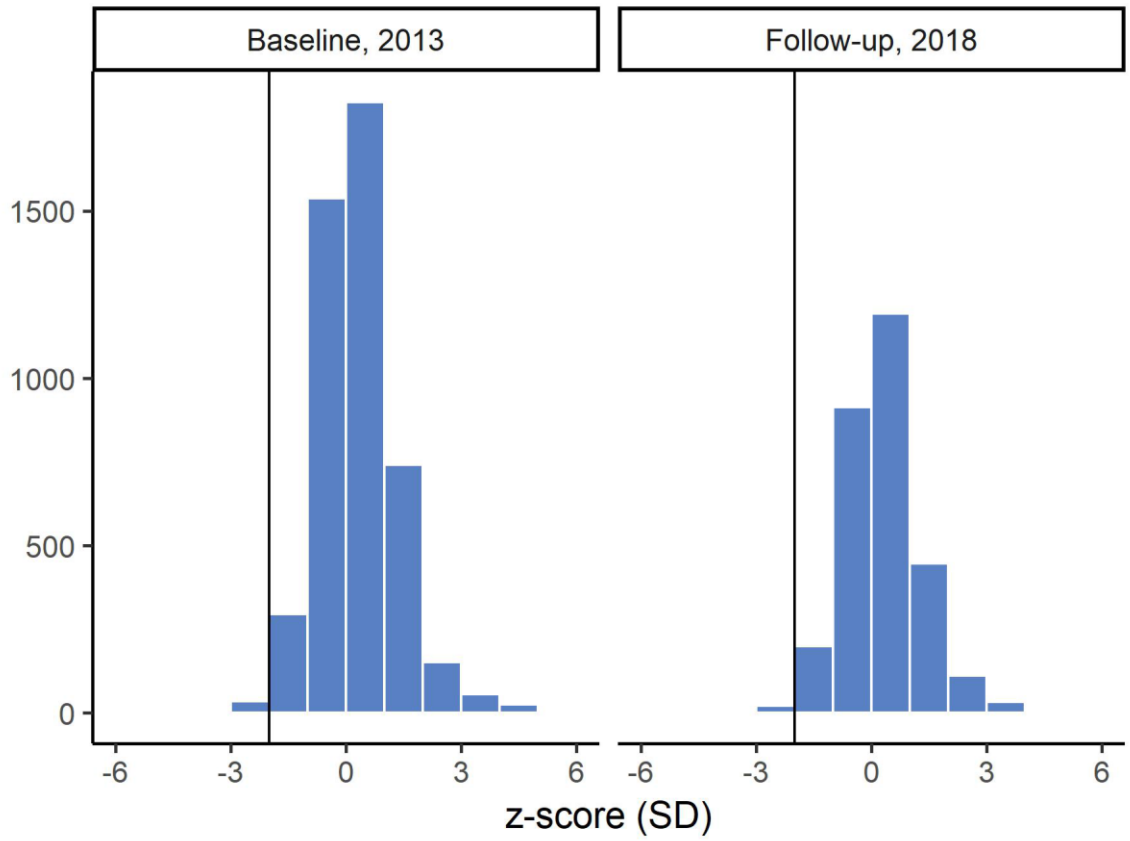
E9.3 Weight-for-Height

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 over-weight and obesity. Children more than two standard deviations (+2 SD) above the median weight-for-height are considered overweight or obese.

E9.3.1 Distribution of weight-for-height z-scores

Figure E9.7 shows the distribution of weight-for-height z-scores among all children aged 0-59 months whose measurements were taken. The vertical black lines in the figure denote minus two standard deviations – children to the left of the line are classified as wasted.

Figure E9.7: Distribution of weight-for-height z-scores among children 0-59 months, unweighted



E9.4 Prevalence of Wasting

Table E9.3 shows the breakdown of nutritional status of children aged 0-59 months as measured by weight-for-height by age groups and sex. In the second follow-up, 1.8% of children are wasted and 0.5% of children are severely wasted. Analysis of the indicator by age group shows that wasting is highest (2.6%) in children 12-23 months old and lowest (1.9%) in children aged 6-11 months. Male children are more likely to be wasted than female children (2.5% to 1.1%). Male children are slightly more likely to be severely wasted (0.7%) than females (0.2%).

Overweight and obesity affect a greater proportion of children in SMI areas Guatemala than wasting. In this sample, 5% 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 Guatemala.

Table E9.3: Prevalence of wasting in children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of wasting in children 0-59 months, by sex and age (< -2 SD)								
Male	41	2351	1.7	0.3	39	1465	2.5	0.4
Female	38	2376	1.5	0.3	17	1485	1.1	0.3
0-5 months	11	483	2.1	0.7	5	260	2.0	0.9
6-11 months	11	535	1.8	0.7	7	325	1.9	0.8
12-23 months	29	1024	2.8	0.6	15	608	2.6	0.6
24-59 months	28	2685	1.0	0.2	29	1757	1.5	0.4
0-59 months	79	4727	1.6	0.2	56	2950	1.8	0.3
6-23 months	40	1559	2.5	0.4	22	933	2.4	0.5
Prevalence of severe wasting in children 0-59 months, by sex and age (< -3 SD)								
Male	14	2351	0.5	0.2	10	1465	0.7	0.2
Female	14	2376	0.6	0.2	4	1485	0.2	0.1
0-5 months	4	483	0.7	0.4	0	260	0.0	-
6-11 months	6	535	0.9	0.4	1	325	0.3	0.3
12-23 months	7	1024	0.6	0.2	4	608	0.7	0.4
24-59 months	11	2685	0.4	0.1	9	1757	0.5	0.2
0-59 months	28	4727	0.6	0.1	14	2950	0.5	0.1
6-23 months	13	1559	0.7	0.2	5	933	0.5	0.2
Prevalence of overweight in children 0-59 months, by sex and age (> 2 SD)								
Male	139	2351	5.7	0.6	85	1465	5.9	0.7
Female	101	2376	4.2	0.5	62	1485	4.2	0.7
0-5 months	82	483	17.1	2.1	62	260	23.6	3.1
6-11 months	33	535	5.3	0.9	22	325	7.2	1.4
12-23 months	41	1024	4.1	0.7	17	608	2.5	0.6
24-59 months	84	2685	3.0	0.4	46	1757	2.7	0.4
0-59 months	240	4727	5.0	0.4	147	2950	5.0	0.4
6-23 months	74	1559	4.5	0.6	39	933	4.1	0.6

E9.5 Anemia

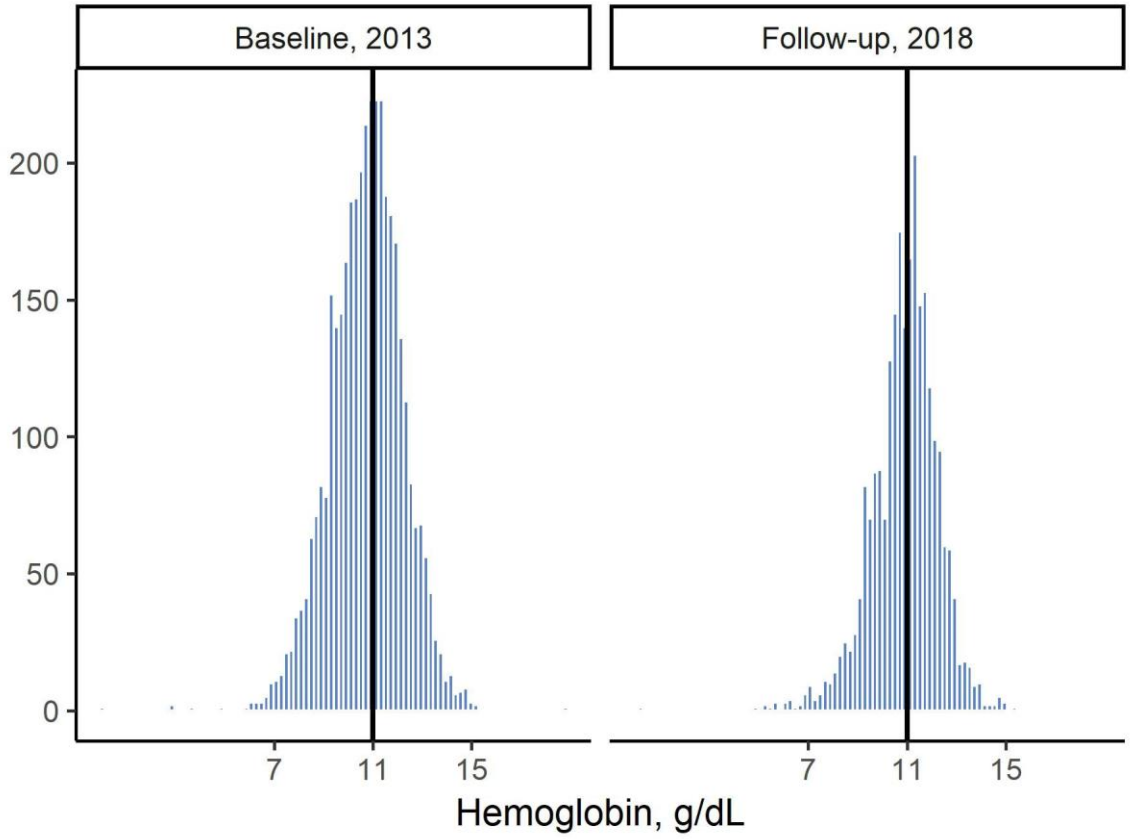
Anemia is a condition characterized by low concentration of hemoglobin in the blood. Hemoglobin is necessary for transporting oxygen to tissues and organs in the body. The reduction in oxygen available to organs and tissues when hemoglobin levels are low is responsible for most of the symptoms experienced 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.

E9.5.1 Distribution of hemoglobin values

Figure E9.8 shows the distribution of hemoglobin values (in g/dL) among children 0-59 months of age. The vertical black lines in the figure denote a hemoglobin concentration of 11.0 g/dL – children to the left of the line are classified as anemic.

Figure E9.8: Distribution of altitude-adjusted hemoglobin values among children 0-59 months, unweighted



E9.5.2 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. The cutpoints for anemia are adjusted (raised) in settings where altitude is more than 1,000 meters above sea level, to account for lower oxygen partial pressure, a reduction in oxygen saturation of blood, and an increase in red blood cell production. Although some regions of Guatemala are mountainous and well above 1,000 meters, the majority of the population resides at lower levels. The highest elevation of a surveyed household at the second follow-up was 3,501 meters above sea level; 92.9% of children (unweighted) lived above 1,000 meters. Correction for elevation was applied to anemia diagnosis where data collectors measured altitude over 1,000m (using a handheld GPS device).

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 E9.4 indicates that 46.4% of children under age 5 in Guatemala are anemic. Overall, the anemia prevalence is mostly mild to moderate (45.5%), with only 0.9% of children under 5 years presenting as severely anemic. Anemia prevalence is highest among children aged 0-5 months (45.7%) compared with the other children. More than 58.6% of all children aged 6-23 months, our targeted population for anemia intervention, were found to be anemic.

Table E9.4: Prevalence of anemia, children aged 0-59 months

	Baseline 2013				Second Follow-Up 2018			
	n	N	%	SE	n	N	%	SE
Prevalence of anemia in children 0-59 months, by sex and age								
Male	1037	1886	55.2	2.5	574	1201	48.0	2.3
Female	964	1874	51.8	2.4	550	1224	44.9	2.6
0-5 months	32	49	65.7	7.1	38	73	45.7	7.1
6-11 months	309	432	72.0	2.7	171	274	63.0	3.8
12-23 months	546	883	62.4	2.8	295	531	56.4	3.0
24-59 months	1114	2396	46.6	2.4	620	1547	40.2	2.4
0-59 months	2001	3760	53.5	2.2	1124	2425	46.4	2.2
6-23 months	855	1315	65.6	2.5	466	805	58.6	2.7
Prevalence of severe anemia in children 0-59 months, by sex and age								
Male	16	1886	0.9	0.2	15	1201	1.1	0.4
Female	15	1874	0.9	0.3	9	1224	0.7	0.2
0-5 months	0	49	0.0	-	2	73	2.3	1.7
6-11 months	9	432	2.4	0.8	9	274	3.1	1.1
12-23 months	10	883	1.1	0.4	6	531	0.9	0.4
24-59 months	12	2396	0.6	0.2	7	1547	0.4	0.2
0-59 months	31	3760	0.9	0.2	24	2425	0.9	0.2
6-23 months	19	1315	1.5	0.4	15	805	1.6	0.5

E10 CHAPTER 10: SMI HOUSEHOLD INDICATORS

Table E10.1: Performance of payment indicators, SMI-Guatemala Second Follow-up Survey

		Baseline 2013				Second Follow-Up 2017			
	Indicator	n	N	%		n	N	%	SE
2080	Women (age 15-49) who report having received information about family planning methods from a health facility personnel or community health workers in the last 12 months	782	3932	18.5	1.4	507	2516	18.6	1.8
4015	Women (age 15-49) who delivered in a CAPS, CAIMI, or hospital for most recent birth in the last two years	537	2433	21.3	1.8	359	1315	26.4	2.4
4670	Women (age 15-49) whose most recent institutional birth (CAPS, CAIMI, or hospital) in the past two years met at least two of five identified standards for cultural sensitivity, excluding C-sections and deliveries outside Guatemala	142	381	40.1	3.5	120	236	52.0	4.3
4100	Infants receiving neonatal care by skilled personnel in a health facility within 48 hours of birth in the last two years	264	2685	9.6	1.0	276	1324	20.5	1.8
5060	Children 0-59 months who received ORS and zinc in the last episode of diarrhea in the past two weeks	7	743	1.0	0.5	34	337	10.8	2.2
5070	Children 6-23 months who have received at least 60 packets of micronutrients in the last six months	40	1662	2.2	0.4	52	953	5.3	1.1

Table E10.2: Performance of monitoring indicators, SMI-Guatemala Follow-up Survey

		Baseline 2013				Second Follow-Up 2017			
	Indicator	n	N	%		n	N	%	SE
6110	Out-of-pocket health expenditures were 10% or more of total itemized household expenditure reported in the last month	501	4277	11.6	1.0	237	2637	8.3	0.9
6110	Out-of-pocket health expenditures were 25% or more of total itemized household expenditure reported in the last month	238	4277	5.5	0.6	123	2637	4.2	0.5
6110	Out-of-pocket health expenditures were 40% or more of total itemized household expenditure reported in the last month	139	4277	3.3	0.4	64	2637	2.3	0.4
1080	Women aged 15-49 with a live birth in the last year	1013	5829	13.2	0.5	560	3738	10.6	0.5
1090	Women aged 15-19 with a live birth in the last year	200	1325	11.0	1.0	96	820	7.6	0.9
2010	Women (age 15-49) currently using (or whose partner is using) a modern method of family planning	831	2982	26.8	1.6	593	1976	30.3	2.2
2020	Women (age 15-49) who did not wish to become pregnant and who were not using/not have access to family planning methods (temporary and permanent)	2151	2982	73.2	1.6	1383	1976	69.7	2.2
2030	Women (age 15-49) who report having stopped using a method of family planning during the previous year	81	852	9.8	1.5	38	658	5.6	1.1
4110	Women (age 15-49) with a birth in the last two years who can recognize at least five danger signs in newborns	470	1959	23.7	1.8	297	1180	24.3	2.0
6010	Women 15-49 who report having any illness in the past two weeks	782	5825	14.2	1.2	469	3735	12.4	1.1
6020	Women (age 15-49) who report having any illness in the past two weeks but did not seek health care	457	781	59.2	2.1	274	468	57.5	3.4
6050	Women (age 15-49) who used health facility services in the past two weeks	715	5819	11.3	0.8	502	3723	12.5	0.9
6130	Women who reported satisfaction with health care services at their most recent visit to a health facility	1535	1703	89.1	1.3	1072	1150	94.0	0.9

(continued)

		Baseline 2013				Second Follow-Up 2017			
	Indicator	n	N	%	SE	n	N	%	SE
6140	Women who reported satisfaction with cleanliness of the facility at their most recent visit to a health facility	936	1718	53.1	2.2	543	1151	50.4	3.1
6150	Women who reported satisfaction with competence of the medical personnel at their most recent visit to a health facility	1478	1584	92.3	1.1	1042	1098	95.6	0.8
6160	Women who reported they were treated with respect at their most recent visit to a health facility	918	1732	51.4	2.2	524	1151	49.8	2.8
3010	Women (age 15-49) who received at least one antenatal care visit by skilled personnel in their most recent pregnancy in the last two years	1010	2433	41.8	1.9	1024	1311	77.6	2.0
4020	Women (age 15-49) who received postpartum care by skilled personnel within the first 48 hours in their most recent pregnancy in the last two years	250	2387	10.0	0.9	276	1308	20.6	1.8
4035	Women (age 15-49) who received postpartum care by skilled personnel between 7 and 42 days after delivery in their most recent pregnancy in the last two years	126	2387	5.7	0.8	60	1308	4.4	0.6
4040	Women (age 15-49) who received postpartum care by skilled personnel within 24 hours after delivery, a second check before 7 days, and a third check between 7 and 42 days after delivery in their most recent pregnancy in the last two years	1	2387	0.0	-	1	1308	0.1	0.1
4102	Infants receiving neonatal care by skilled personnel in a health facility within seven days of birth in the last two years	311	2685	11.4	1.1	305	1324	22.6	1.9
5050	Children born in the last two years who were breastfed within one hour after birth	2004	2725	72.7	1.9	1139	1356	84.5	1.2
5010	Children 12-59 months who received two doses of deworming in the last year	681	3868	17.4	1.0	414	2335	17.2	0.9
5040	Children 0-5 months who were exclusively breastfed on the previous day	415	520	79.5	2.2	221	260	85.5	2.1
5080	Children 12-15 months who were breastfed on the previous day	297	384	77.6	2.3	162	212	75.2	4.3
5090	Children 6-8 months who received solid or semi-solid food on the previous day	190	303	62.1	3.5	105	164	65.8	4.3
5100	Children 6-23 months who received foods from four or more food groups during the previous day	500	1713	28.7	1.5	355	972	36.8	2.1
5110	Children 6-23 months breastfed or complimentary feeding who received solid, semi-solid, or soft foods the minimum number of times or more during the previous day	640	1479	43.4	2.1	421	828	51.4	2.9
5120	Children 6-23 months who received the minimum acceptable diet (apart from breastmilk) during the previous day	251	1685	14.9	1.1	179	946	19.1	2.0
6030	Children 0-59 months who had any illness in the past two weeks, according to report of mother or caregiver	1277	5220	25.4	1.3	603	3077	19.1	1.4
6040	Children 0-59 months who had any illness in the past two weeks but did not seek health care, according to report of mother or caregiver	7	1253	0.4	0.2	4	585	0.8	0.4
5020	Children 0-59 months fully vaccinated for age, according to vaccine card and recall	817	4573	16.9	1.3	702	2427	28.6	1.9
1060	Children 6-23 months with hemoglobin <110g/L	855	1315	65.6	2.5	466	805	58.6	2.7
1070	Children 0-59 months with height < -2 SD of the mean of the reference population for age	2828	4745	59.2	1.4	1749	2951	59.1	1.9

		Baseline 2013			Second Follow-Up 2017		
	Indicator	N	mean		N	mean	SE
6090	Average out-of-pocket household itemized health expenditure for the last month (Q)	4243	77.5	11.2	2626	69.8	23.4
6100	Average household itemized expenditure for the last month (Q)	4277	1250.4	55.7	2637	1412.5	57.8
6080	Average travel time to nearest health facility (min)	5396	42.3	3.8	3345	27.7	2.4
6085	Average distance to nearest health facility (km)	4282	4.1	0.4	1864	2.1	0.4
6120	Average wait time at most recent visit to a health facility (min)	1700	51.1	3.5	1096	26.5	1.8
6082	Average travel time to delivery location for most recent birth in the last two years (min)	557	194.3	21.7	381	241.9	40.5