

Salud Mesoamérica Initiative
3rd Operation Measurement (2022)
Household and Health Facility Survey Report
Honduras

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Acronyms

BMGF - Bill & Melinda Gates Foundation

CAPI - Computer-assisted personal interview

CSF - Carlos Slim Foundation

EONC - Essential Obstetric and Neonatal Care

ICD - International Classification of Diseases

IDB - Inter-American Development Bank

IHME - Institute for Health Metrics and Evaluation

LQAS - Lot Quality Assurance Sampling

MRR - Medical record review

RBF - Results-based financing

SMI - Salud Mesoamérica Initiative

WHO - World Health Organization

Executive summary

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. 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. The Institute for Health Metrics and Evaluation (IHME) is the independent external evaluator for the Initiative.

SMI third operation measurement

The objectives of the SMI survey are to assess whether countries are reaching the performance indicator targets set by the Initiative and to evaluate the results of specific interventions. In Honduras, baseline measurement (2013) and second operation measurement (2017) data were collected at households and health facilities in intervention and comparison areas, while the first operation measurement data collection took place at health facilities in intervention areas only (2014). The third operation measurement (2022), which was delayed two years due to the COVID-19 pandemic, was performed at households and health facilities in intervention and comparison areas. 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 household and health facility surveys is a defining feature of the evaluation, designed to capture key indicators in a robust and multidimensional manner. The SMI third operation measurement is comprised of three components: a census of households, a follow-up survey of a sample of households with eligible women and children, and a survey of health facilities, including review of medical records. Data collection completed in Honduras across all measurements is summarized in Table E.1 and Table E.2.

Table E.1: Summary of health facility data collection, SMI Honduras

	Baseline		1st Operation	2nd Operation		3rd Operation	
	Int.	Comp.	Int.	Int.	Comp.	Int.	Comp.
Health facilities	59	31	60	60	30	37	22
Medical records	1,523	940	1,517	1,381	896	Pre-Eval: 466; Eval: 1168	Pre-Eval: 326; Eval: 742

*Records were reviewed from two periods at the third operation to account for the effects of the COVID-19 pandemic

Table E.2: Summary of household data collection, SMI Honduras

	Baseline		2nd Operation		3rd Operation	
	Int.	Comp.	Int.	Comp.	Int.	Comp.
Census	8,131	7,609	8,711	3,854	5,929	2,599
Household	1,526	1,445	1,683	756	1,410	598
Women	1,868	1,712	2,124	975	1,620	715
Children	1,633	1,559	1,722	770	1,174	556

Summary of results

In Honduras, a total of 10 performance indicators were measured at the third operation, five from the household survey and five from the medical record review. In total, four indicators were met (two measured in the household survey and two measured in the medical record review), and six were not met. The performance indicator results of the third operation measurement are summarized in Table E.3 and Table E.4.

Table E.3: Summary of third operation performance indicator results, SMI Honduras

Source	Indicator #	Indicator	Indicator Value (%)	CI	Target (%)	Status
Household	I1060	Children (6-23mo) with hemoglobin <110g/L	37.0	(29 - 45.9)	52.0	Met
Household	I5060	Diarrhea treatment with ORS and zinc (0-59mo)	9.6	(4.1 - 21)	25.0	Not met
Household	I4010	Institutional delivery	86.9	(83.1 - 90)	91.7	Not met
Household	I4100	Postpartum care for neonates (72 hours)	34.0	(28.8 - 39.6)	41.3	Not met
Household	I2010	Use of modern contraceptive methods	79.8	(75 - 83.9)	80.4	Met
Health facility	I3050	Antenatal care with quality*	63.8	(56.4 - 70.6)	90.0	Not met
Health facility	I4103	Routine newborn care with quality**	78.8	(71.3 - 84.7)	82.5	Met
Health facility	I4070	Management of neonatal complications	68.3	(58.6 - 76.6)	61.7	Met
Health facility	I4080	Management of obstetric complications	66.4	(57 - 74.6)	82.9	Not met

Source	Indicator #	Indicator	Indicator Value (%)	CI	Target (%)	Status
Health facility	I6005	Cervical cancer screening with quality	57.4	(51.1 - 63.4)	70.0	Not met

* Notes on baseline and first operation results: Referral not captured, so the subsequent exception cannot be applied as it is at second and third operation. Uterine height and fetal checkups are only evaluated at first visit, if eligible based on gestational age. RPR not captured as VDRL alternative for syphilis test.

** Temperature check not captured at baseline or first operation.

Table E.4: Summary of third operation intervention and comparison indicator results, SMI Honduras

Source	Indicator	Description	Time Period	Intervention			Comparison		
				N	%	CI	N	%	CI
Household	I1060	Children (6-23mo) with hemoglobin <110g/L	Baseline	437	35	(29.3 - 41.2)	438	40.5	(33.8 - 47.6)
			1st Operation	Not measured at 1st operation			Not measured at 1st operation		
			2nd Operation	458	62	(56 - 67.7)	205	74.1	(67.6 - 79.7)
			3rd Operation	260	37	(29 - 45.9)	137	50.2	(42.8 - 57.6)
Household	I5060	Diarrhea treatment with ORS and zinc (0-59)	Baseline	77	0	(-)	72	6.1	(2.4 - 14.7)
			1st Operation	Not measured at 1st operation			Not measured at 1st operation		
			2nd Operation	49	8.3	(3 - 21)	41	0	(-)
			3rd Operation	75	9.6	(4.1 - 21)	46	11.3	(4.6 - 25.1)
Household	I4010	Institutional delivery	Baseline	666	68.9	(60.8 - 75.9)	647	69.7	(63.4 - 75.3)
			1st Operation	Not measured at 1st operation			Not measured at 1st operation		
			2nd Operation	709	85.2	(79.1 - 89.8)	310	78	(69.7 - 84.4)
			3rd Operation	606	86.9	(83.1 - 90)	260	80	(71.8 - 86.3)
Household	I4100	Postpartum care for neonates (72 hours)	Baseline	630	47.3	(40.7 - 54)	629	44.1	(39.2 - 49.2)
			1st Operation	Not measured at 1st operation			Not measured at 1st operation		
			2nd Operation	636	33.3	(25.8 - 41.7)	270	52.7	(36.7 - 68.2)
			3rd Operation	543	34	(28.8 - 39.6)	235	32.1	(24.3 - 41.1)
Household	I2010	Use of modern contraceptive methods	Baseline	969	69.3	(62.6 - 75.3)	892	63.6	(55.4 - 71.1)
			1st Operation	Not measured at 1st operation			Not measured at 1st operation		
			2nd Operation	1198	75.4	(69.9 - 80.2)	540	74.7	(66.5 - 81.4)

				Intervention			Comparison		
Source	Indicator	Description	Time Period	N	%	CI	N	%	CI
			3rd Operation	934	79.8	(75 - 83.9)	366	73.4	(64.7 - 80.6)
Health Facility	I3050	Antenatal care with quality	Baseline	125	12.8	(7.9 - 20)	58	32.8	(21.7 - 46.2)
			1st Operation	228	43	(36.7 - 49.5)	Not measured at 1st operation		
			2nd Operation	272	82	(76.9 - 86.1)	76	40.8	(30.1 - 52.4)
			3rd Op. Pre-evaluation	82	61	(49.8 - 71.1)	31	41.9	(25.3 - 60.6)
			3rd Op. Evaluation	177	63.8	(56.4 - 70.6)	61	44.3	(32.1 - 57.2)
Health Facility	I4103	Routine newborn care with quality	Baseline	120	21.7	(15.1 - 30.1)	88	35.2	(25.8 - 45.9)
			1st Operation	119	59.7	(50.5 - 68.2)	Not measured at 1st operation		
			2nd Operation	150	74.7	(67 - 81)	168	74.4	(67.2 - 80.5)
			3rd Op. Pre-evaluation	78	67.9	(56.6 - 77.5)	66	69.7	(57.3 - 79.8)
			3rd Op. Evaluation	146	78.8	(71.3 - 84.7)	131	55	(46.3 - 63.4)
Health Facility	I4070	Management of neonatal complications	Baseline	70	10	(4.8 - 19.8)	77	7.8	(3.5 - 16.5)
			1st Operation	Not measured at 1st operation			Not measured at 1st operation		
			2nd Operation	84	41.7	(31.4 - 52.7)	80	6.3	(2.6 - 14.4)
			3rd Op. Pre-evaluation	33	36.4	(21.3 - 54.7)	26	11.5	(3.5 - 32.1)
			3rd Op. Evaluation	104	68.3	(58.6 - 76.6)	69	18.8	(11.1 - 30.1)
Health Facility	I4080	Management of obstetric complications	Baseline	100	36	(27.1 - 46)	100	22	(14.8 - 31.3)
			1st Operation	Not measured at 1st operation			Not measured at 1st operation		
			2nd Operation	105	62.9	(53.1 - 71.7)	108	42.6	(33.5 - 52.2)
			3rd Op. Pre-evaluation	36	61.1	(43.7 - 76.1)	24	33.3	(16.7 - 55.5)
			3rd Op. Evaluation	113	66.4	(57 - 74.6)	76	39.5	(28.9 - 51.1)
Health Facility	I6005	Cervical cancer screening with quality	Baseline	Not measured at baseline			Not measured at baseline		
			1st Operation	Not measured at 1st operation			Not measured at 1st operation		
			2nd Operation	Not measured at 2nd operation			Not measured at 2nd operation		
			3rd Op. Pre-evaluation	Not measured at 3rd operation pre-evaluation			Not measured at 3rd operation pre-evaluation		
			3rd Op. Evaluation	251	57.4	(51.1 - 63.4)	104	16.3	(10.3 - 24.9)

Key findings

Many indicators showed notable improvement since baseline. In particular, medical record review indicators measuring antenatal care, routine newborn care, and obstetric and neonatal complications improved manifold over baseline results in intervention areas, while increases in comparison areas were more modest. Antenatal care performance in the third operation decreased compared to the second operation results in intervention areas. The decrease can be attributed primarily to a reduction in the number of antenatal care patients who received at least five visits during the course of their pregnancy and underwent all of the appropriate laboratory tests. Reduced routine care attendance is likely linked to pandemic response behavioral changes. The novel performance indicator at the third operation, designed to measure the outcomes of interventions related to cervical cancer screenings, also displayed promising results in intervention areas, but was likely also hampered by diminished care-seeking due to COVID-19.

Household indicators measuring institutional delivery and use of modern family planning methods showed the most progress over baseline estimates. Smaller improvements were observed in indicators measuring anemia rates in children under 2 years of age and diarrhea treatment in children under five years of age, suggesting an area for potential further intervention. The only indicator for which performance decreased compared to baseline measured immediate postpartum care for neonates by skilled personnel, which may have been affected by reduced care-seeking behavior due to COVID-19.

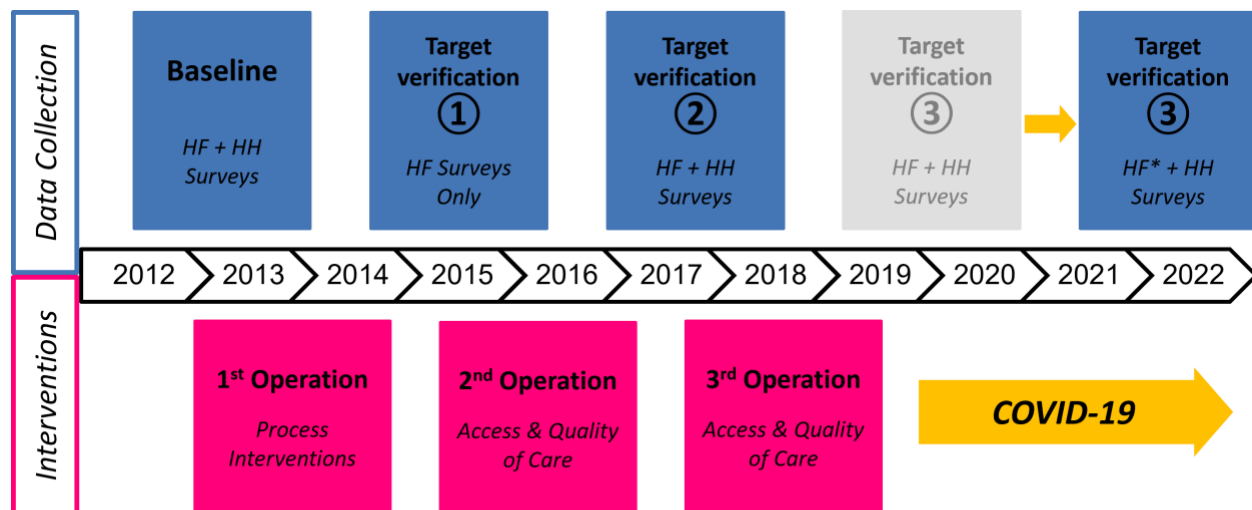
Chapter 1: Introduction

1.1 Overview

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 financing (RBF) 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.

The objectives of the SMI survey are to assess whether countries are reaching the performance indicator targets set by the Initiative and to evaluate the results of specific interventions. In Honduras, baseline (2013) and second operation (2017) data were collected at households and health facilities in intervention and comparison areas, while the first operation data collection took place at health facilities in intervention areas only (2014). The third operation measurement (2022), which was delayed two years due to the COVID-19 pandemic, was performed at households and health facilities in intervention and comparison areas. 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 household and health facility surveys is a defining feature of the evaluation, designed to capture key indicators in a robust and multidimensional manner. The timeline of interventions and data collection is shown in Figure 1.1.

Figure 1.1: SMI Honduras timeline



* Due to the delay in caused by the pandemic, medical records for the third operation measurement were reviewed from two distinct time periods (2019-mid 2020; mid 2020-2022). This allowed for a comparative analysis of treatment before and during the pandemic as well as through the evaluation period. For more details on medical record collection time periods, see chapter 2.

1.2 Components of the SMI third operation measurement

The SMI third operation measurement is comprised of three components: a census of households, a follow-up survey of a sample of households with eligible women and children, and a survey of health facilities, including review of medical records.

1.2.1 Census survey components

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. The household survey is typically conducted within one month of the household census.

1.2.2 Household survey components

The objectives of the SMI 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 via household surveys 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.

The SMI household survey includes three components: the Household Characteristics Questionnaire, the Maternal and Child Health Questionnaire, and the Physical Measurements Module.

The Household Characteristics 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 contraceptive methods (including barriers to use), and exposure to health system interventions. 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.

1.2.3 Health facility survey components

The objectives of the SMI health facility survey are to assess facility conditions, evaluate service provision and utilization, and measure quality of care. Patient medical records are examined to evaluate facilities' treatment practices retrospectively over the course of the evaluation period. Health facility data collection aims to capture changes produced by interventions at the level of the health services access point, which may foretell changes in population health outcomes.

The SMI health facility survey includes three components: the Interview Questionnaire, the Observation Checklist, and Medical Record Review (MRR).

The Interview Questionnaire captures information reported by the facility director, manager, or person in charge of the health facility. Data are collected on general facility characteristics, infrastructure, and human resource composition, supply logistics, infection control, child health care, vaccine availability, contraceptive services, and maternal, antenatal, delivery, and postpartum care.

The Observation Checklist captures the surveyors' direct observations of equipment and medications at the time of the survey, and includes the review of administrative records to determine the inventory of certain inputs in the three months prior to the survey.

The MRR assesses a variety of treatment and care practices related to maternal and child health, including obstetric and neonatal complications, routine antenatal care, uncomplicated delivery care, postpartum care, cervical cancer screening, and diarrhea treatment among children 0-5 years of age.

1.3 Indicators

The SMI-Honduras third operation survey measures indicators defined by IDB and the Honduras Secretary of Health (*Secretaría de Salud*). For a subset of these indicators, performance targets were set according to results from previous measurements to evaluate the implementation and efficacy of SMI interventions. Achievement of these performance targets in intervention areas determines the disbursement of the SMI award tranche. These indicators are hereafter referred to as "*performance indicators*" (numeric indicator codes in tables are prefixed with "*I*"). The remaining indicators (hereafter referred to as "*monitoring indicators*", prefixed "*MI*") are defined by IDB and the Honduras Secretary of Health for monitoring purposes only and do not contribute to the evaluation of performance targets.

The body of this report focuses largely on the results of these indicators in SMI-Honduras intervention areas. For comparable tables detailing the results in comparison areas, see appendix D. Matrices summarizing intervention-area indicator results are provided in appendix A. Detailed definitions of each indicator are provided in appendix B.

1.4 Report tables

Most tables that do not display indicator results take one of two forms. Tabulations of responses for which only one answer was permitted show categories that 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 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).

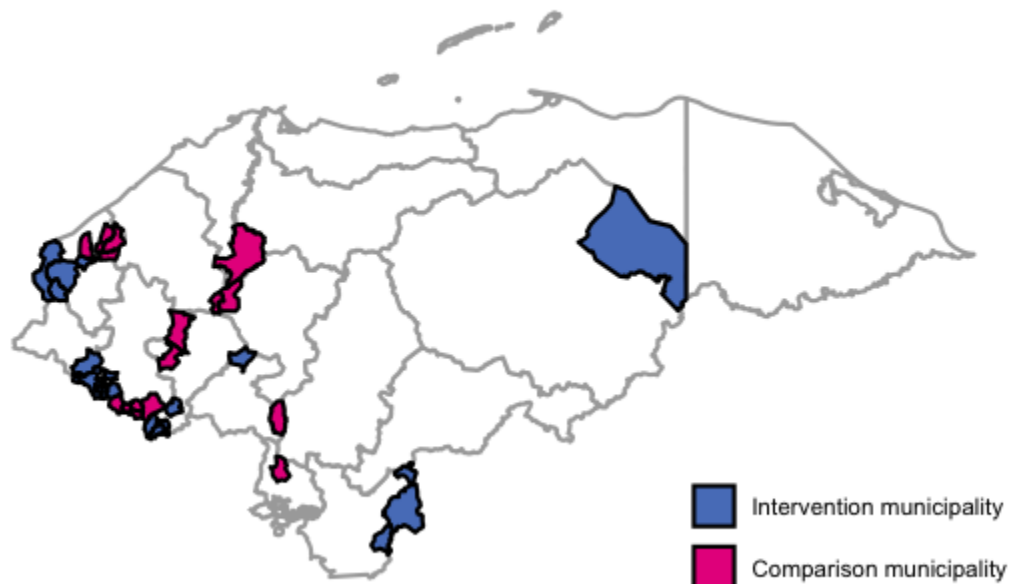
Chapter 2: Survey methodology

2.1 Study area

The study design for the SMI-Honduras 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 Honduras.

The primary administrative unit in Honduras is the department. Honduras has 18 departments, and nine were purposefully selected for SMI in Honduras: Comayagua, Copán, Cortés, Intibucá, La Paz, Lempira, Valle, Choluteca, and Olancho. From those nine departments, IDB identified 34 municipalities in which to conduct the baseline SMI survey for the Initiative on the basis of their high concentration of residents in the country's lowest wealth quintile, then randomized the receipt of the intervention package by health system manager (*“gestor”*). The study includes 18 intervention and 16 comparison municipalities (Figure 2.1).

Figure 2.1: Map of Salud Mesoamérica Initiative study area



2.2 Household sample selection and description

From the 34 municipalities described above, a two-stage clustered random sample of eligible households was selected to reach the sample sizes shown in Table 2.1.

2.2.1 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-Honduras household census, the primary sampling unit (PSU) is the *aldea* (village) from the 2013 Honduras Population 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. Samples for intervention and comparison strata, and for baseline and follow-up measurements, 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 Honduras during the third operation measurement, two segments in the departments of Choluteca and one segment in the department of Intibucá were replaced due to safety concerns as well as inaccessibility resulting from inclement weather. Counts by municipality of segments where data collection was completed successfully are shown in Table 2.1.

Table 2.1: Number of segments per municipality in SMI area

Intervention					Comparison				
Department	Municipality	2013	2017	2022	Department	Municipality	2013	2017	2022
Choluteca	Concepción De María	6	6	5	Comayagua	San José De Comayagua	2	1	1
Choluteca	Duyure	1	1	1	Comayagua	Taulabé	5	3	2
Choluteca	San Marcos De Colón	5	6	5	Copán	La Jigua	1	0	1
Copán	Cabañas	3	1	3	Copán	Nueva Arcadia	7	5	3
Copán	Copán Ruinas	8	10	7	Copán	San Antonio	3	0	1
Copán	San Jerónimo	1	1	1	Copán	San Nicolás	1	1	0
Copán	Santa Rita	6	8	6	Cortés	Santa Cruz De Yojoa	15	9	7
Intibucá	Concepción	2	2	3	Intibucá	San Francisco De Opalaca	2	1	1
Intibucá	Magdalena	1	1	0	Intibucá	San Miguelito	1	0	0
Intibucá	San Antonio	2	1	1	La Paz	Aguaqueterique	1	1	0
Intibucá	Santa Lucía	1	1	1	Lempira	Candelaria	1	0	1
La Paz	Santiago De Puringla	3	5	3	Lempira	La Virtud	1	1	0
Lempira	Cololaca	2	2	1	Lempira	Mapulaca	1	0	1
Lempira	Guarita	2	2	2	Lempira	Piraera	3	1	1

Intervention					Comparison				
Department	Municipality	2013	2017	2022	Department	Municipality	2013	2017	2022
Lempira	San Juan Guarita	1	1	1	Lempira	Virginia	0	1	0
Lempira	Tomalá	1	2	1	Valle	Langue	4	1	1
Lempira	Valladolid	1	1	1					
Olancho	Dulce Nombre De Culmí	5	5	5					

2.2.2 Second-stage sample selection: households

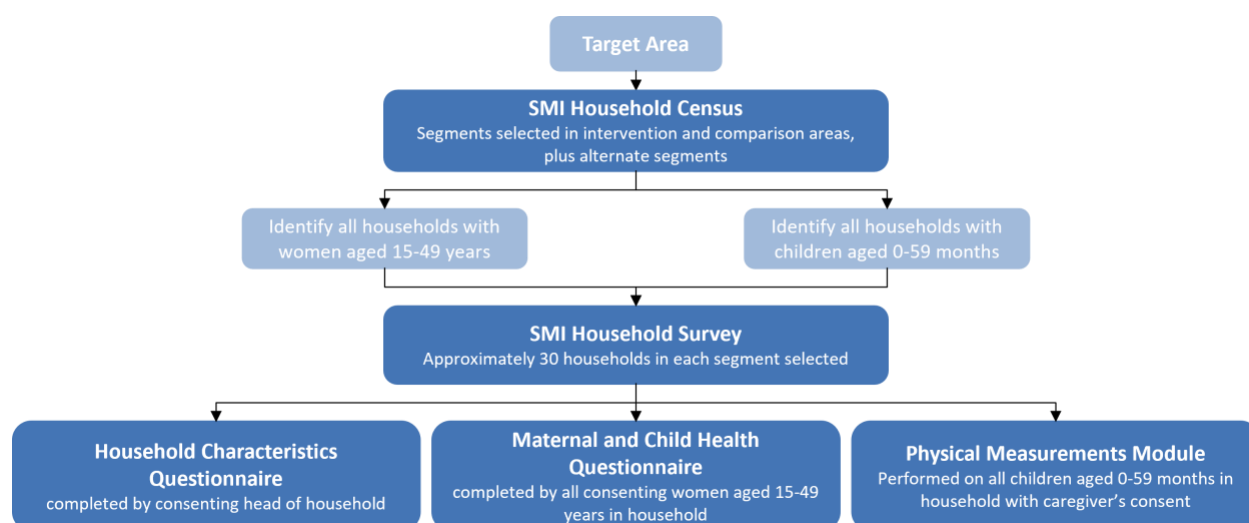
The SMI-Honduras third operation household census is conducted in each of the randomly selected segments prior to the household survey in order to identify all eligible women and children for second-stage sampling. Interviewers visit every household in the segment and create a household roster capturing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

Eligible households are systematically selected from the complete census listing for participation in the SMI-Honduras 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 2.2. For a detailed description of household sampling methodology, see appendix C.

Figure 2.2: Schematic diagram of SMI census and household survey implementation



2.2.3 Response rates

The total number of completed interviews with heads of households in the census is shown in Table 2.2, and the total number of completed interviews with heads of households in the household survey is shown in Table 2.3. The total number of women of reproductive age who participated in the household survey for each department in Honduras is shown in Table 2.4, and the total number of physical measurements of children aged 0-59 months performed, with corresponding response rates by department, is shown in Table 2.5. Response rates were calculated using the following formula: $(\text{[# surveyed]} \div \text{[# selected participants]})$. High non-response may affect the reliability of the estimates.

Table 2.2: Households participating in the SMI census and response rates, by department

	No. segments			No. households			No. households eligible			No. households censused			Census response rate, %		
	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.
Choluteca	12	13	11	2,095	2,464	1,641	1,873	2,212	1,479	1,855	2,139	1,401	99.0	96.7	94.7
Comayagua	7	4	3	1,131	824	349	1,094	690	295	1,079	646	278	98.6	93.6	94.2
Copán	30	26	22	5,606	4,728	3,452	5,115	4,341	3,198	5,065	4,207	3,030	99.0	96.9	94.7
Cortés	15	9	7	2,691	1,768	1,165	2,459	1,639	1,007	2,406	1,578	920	97.8	96.3	91.4
Intibucá	9	6	6	1,521	1,079	789	1,509	964	658	1,491	952	602	98.8	98.8	91.5
La Paz	4	6	3	639	1,281	501	632	1,091	452	627	1,014	432	99.2	92.9	95.6
Lempira	13	11	9	1,845	1,546	1,339	1,782	1,207	1,184	1,778	1,085	1,130	99.8	89.9	95.4
Olancho	5	5	5	866	985	776	843	789	639	834	762	609	98.9	96.6	95.3
Valle	4	1	1	745	210	152	639	193	141	605	182	126	94.7	94.3	89.4

	No. segments			No. households			No. households eligible			No. households censused			Census response rate, %		
	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.
Intervention	51	56	47	8,696	10,268	6,985	8,198	9,046	6,252	8,131	8,711	5,929	99.2	96.3	94.8
Comparison	48	25	20	8,443	4,617	3,179	7,748	4,080	2,801	7,609	3,854	2,599	98.2	94.5	92.8

Table 2.3: Households participating in SMI household survey and response rates, by department

	No. households selected			No. households interviewed			Household response rate, %			Overall response rate, %		
	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.
Choluteca	402	398	383	365	391	334	90.8	98.2	87.2	89.9	95.0	82.6
Comayagua	220	123	103	210	120	90	95.5	97.6	87.4	94.1	91.3	82.3
Copán	946	837	764	913	783	666	96.5	93.5	87.2	95.6	90.7	82.6
Cortés	508	283	239	453	272	210	89.2	96.1	87.9	87.3	92.5	80.3
Intibucá	317	183	199	264	180	182	83.3	98.4	91.5	82.3	97.1	83.7
La Paz	125	183	105	120	180	90	96.0	98.4	85.7	95.2	91.4	81.9
Lempira	412	372	302	392	333	270	95.1	89.5	89.4	94.9	80.5	85.3
Olancho	178	161	174	152	150	149	85.4	93.2	85.6	84.5	90.0	81.6
Valle	133	30	31	129	30	30	97.0	100.0	96.8	91.8	94.3	86.5
Intervention	1,667	1,770	1,619	1,540	1,683	1,420	92.4	95.1	87.7	91.6	91.6	83.2
Comparison	1,574	800	681	1,458	756	601	92.6	94.5	88.3	91.0	89.3	81.9

Table 2.4: Women participating in SMI women's health and/or pregnancy interview, by department

	No. women eligible			No. women interviewed			Woman response rate, %			Overall response rate, %		
	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.
Choluteca	541	521	428	441	521	408	81.5	100.0	95.3	73.3	95.0	78.7
Comayagua	287	158	112	261	158	110	90.9	100.0	98.2	85.6	91.3	80.9
Copán	1,218	937	751	1,119	932	740	91.9	99.5	98.5	87.8	90.2	81.4
Cortés	667	360	260	500	356	253	75.0	98.9	97.3	65.4	91.5	78.1
Intibucá	360	254	221	306	254	210	85.0	100.0	95.0	69.9	97.1	79.5
La Paz	155	224	105	148	224	103	95.5	100.0	98.1	90.9	91.4	80.4
Lempira	551	405	310	479	405	308	86.9	100.0	99.4	82.5	80.5	84.8

	No. women eligible			No. women interviewed			Woman response rate, %			Overall response rate, %		
	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.
Olancho	209	207	171	168	206	165	80.4	99.5	96.5	67.9	89.5	78.7
Valle	196	43	39	158	43	38	80.6	100.0	97.4	74.0	94.3	84.3
Intervention	2,138	2,127	1,668	1,868	2,124	1,620	87.4	99.9	97.1	80.1	91.4	80.8
Comparison	2,046	982	729	1,712	975	715	83.7	99.3	98.1	76.1	88.6	80.3

Table 2.5: Children participating in SMI child health interview and/or physical measurements by department

	No. children eligible			No. children participated			Child response rate, %			Overall response rate, %		
	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.	BL	2nd Op.	3rd Op.
Choluteca	388	417	271	369	417	259	95.1	100.0	95.6	85.5	95.0	78.9
Comayagua	247	125	68	245	125	68	99.2	100.0	100.0	93.4	91.3	82.3
Copán	1,060	824	577	1,020	818	573	96.2	99.3	99.3	92.0	90.0	82.0
Cortés	498	306	227	453	304	224	91.0	99.3	98.7	79.4	91.9	79.2
Intibucá	274	191	155	264	191	147	96.4	100.0	94.8	79.3	97.1	79.4
La Paz	128	179	82	126	179	81	98.4	100.0	98.8	93.8	91.4	80.9
Lempira	422	273	210	404	273	207	95.7	100.0	98.6	90.9	80.5	84.1
Olancho	162	155	152	152	155	147	93.8	100.0	96.7	79.3	90.0	78.9
Valle	123	30	24	110	30	24	89.4	100.0	100.0	82.1	94.3	86.5
Intervention	1,690	1,726	1,203	1,622	1,722	1,174	96.0	99.8	97.6	87.9	91.4	81.2
Comparison	1,612	774	563	1,521	770	556	94.4	99.5	98.8	85.8	88.8	80.9

2.3 Health facility sample selection and description

2.3.1 Health facility sample

For this survey, a sample of 37 intervention-area health facilities was selected from a list of all facilities serving the 18 SMI intervention municipalities. In addition, 22 comparison-area health facilities were selected from the corresponding 16 comparison area municipalities. The list of facilities was constructed according to a referral network outlined by the Honduras Secretary of Health. Facilities are grouped according to three levels of Essential Obstetric and Neonatal Care (EONC) services provided: ambulatory, basic, and complete. Ambulatory facilities provide outpatient care, basic facilities are able to attend uncomplicated deliveries and provide immediate emergency obstetric and neonatal care, and complete facilities have surgical capacity in addition to the services above and have capacity to attend complicated deliveries.

All 27 basic and complete facilities (14 intervention and 13 comparison area facilities) in the study area are included in order to ensure sufficient sample size for the medical record-derived indicators relating to delivery and postpartum care. To complete the facility sample, a stratified random sample of 32 ambulatory facilities (23 intervention and 9 comparison area facilities) is taken, where 50% are facilities visited in previous measurements and 50% are facilities not visited in previous measurements.

Two backup facilities per municipality are selected in case sampled facilities cannot be interviewed due to security or logistic concerns. In Honduras during the third operation measurement, two ambulatory facilities were replaced due to long term closures. Additionally, one hospital was replaced with an ambulatory facility after multiple attempts to conduct interviews due to a health workers' strike.

2.3.2 Sampling for medical record review

To complete the medical record portion of the survey, records of care conducted during the evaluation period are randomly selected according to the level of services provided at the facility. Quotas of each type of medical record collected are determined according to the number of applicable facilities within the study sample in order to reach a set total sample size of records for each review module. Records of antenatal care were evaluated in all facilities. At ambulatory facilities, routine attention records for women aged 25-64 were evaluated for the presence and quality of cervical cancer screenings. Diarrhea care records for children aged 0-59 months were also collected at ambulatory facilities. Records of delivery, postpartum care, maternal complications and neonatal complications were evaluated at the basic and complete facility level.

Medical record review quotas are set per facility by dividing the total number of records to be reviewed in intervention and comparison areas by the number of facilities in the sample at each level of EONC. Quota calculations take into account the prevalence of each type of record as measured in the SMI baseline, first, and second operation surveys, as well as the statistical power necessary to detect projected differences from baseline through the third operation for performance indicators measuring SMI interventions. Cases of obstetric and neonatal complications were sampled at random from Secretary of Health registries and, if required, additional cases were sampled using a systematic sampling technique in-facility. For the remaining medical record modules, cases were sampled from attention logs and registries using a systematic sampling technique in-facility.

The COVID-19 pandemic and the subsequent delay of the third operation measurement posed significant challenges to the the sampling and evaluation of medical records related to SMI interventions. Routine medical services such as antenatal care, child health care, and vaccination were greatly reduced during the third operation evaluation time period, and the strain on health systems caused by the pandemic impacted record keeping practices. Additionally, the timing of the pandemic called into question the capacity of medical records to accurately evaluate interventions implemented before the onset of COVID-19.

To address these challenges and capture a more complete picture of the pandemic's impact on health care practices, medical records for the third operation measurement were reviewed from two distinct time periods. One third of the overall medical record quota was allocated to the time period from January 1, 2019 through June 30, 2020 (hereafter referred to as the "pre-evaluation period"). While these records do not contribute to the calculation of performance or monitoring indicator results, they allow for a comparative analysis of indicator

performance before and during the pandemic. The remaining two thirds of the overall medical record quota were allocated to the time period from July 1, 2020 through June 30, 2022 (hereafter referred to as the “evaluation period”). This two year window directly preceded the third operation data collection, aligning with the standard evaluation practice of the previous study operations.

An overview of health facility data collection is displayed in Table 2.6.

Table 2.6: Summary of health facility data collection

	Baseline		1st Operation	2nd Operation		3rd Operation	
	Int.	Comp.	Int.	Int.	Comp.	Int.	Comp.
Health facilities	59	31	60	60	30	37	22
Medical records	1,523	940	1,517	1,381	896	Pre-Eval: 466; Eval: 1168	Pre-Eval: 326; Eval: 742

2.4 Survey implementation

2.4.1 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 before each subsequent measurement round.

All surveys were conducted using a computer-assisted personal interview (CAPI). For the third operation measurement, the CAPI was programmed using SurveyCTO and installed onto touch-screen tablets. 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.

2.4.2 Training and supervision of data collectors

Training sessions for the third operation survey were conducted in Honduras in September 2022. Nine doctors and nurses were trained to conduct the health facility surveys. For household and census data collection, 15 surveyors, six supervisors, 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 review of each survey, proper conduct of the survey, in-depth review of the instrument, research protocols, ethical considerations, and hands-on training on the CAPI software.

Household 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. Health facility surveyors

participated in a two-day pilot at health facilities of different EONC levels where they applied the questionnaire, conducted observation exercises, and practiced medical record sampling and review. Representatives from IHME, IDB, and the Honduras Secretary of Health provided oversight during pilot exercises.

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 and health facilities.

2.4.3 Data collection, management, and analysis

In Honduras, the SMI health facility survey, including the Interview Questionnaire, the Observation Checklist, and Medical Record Review, was conducted between September 12, 2022 and December 7, 2022.

The third operation household census, which captures basic demographic characteristics of all usual household occupants, was carried out between September 12, 2022 and December 15, 2022.

Data collection for the third operation household survey began on October 12, 2022, and was completed on December 20, 2022. To ensure completeness of the sample, field staff were instructed to conduct up to three visits to selected households (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. Doctors and nurses were deployed to conduct interviews, observations, and medical record review at health facilities.

Data were collected using touch-screen tablets equipped with CAPI software. Field team leaders monitored the implementation of the survey and reported feedback. Data collection using CAPI allowed data to be transferred instantaneously once a survey was completed via a secure connection to IHME. Modifications based on suggestions and surveyor feedback were incorporated into the instruments and readily transmitted to the field.

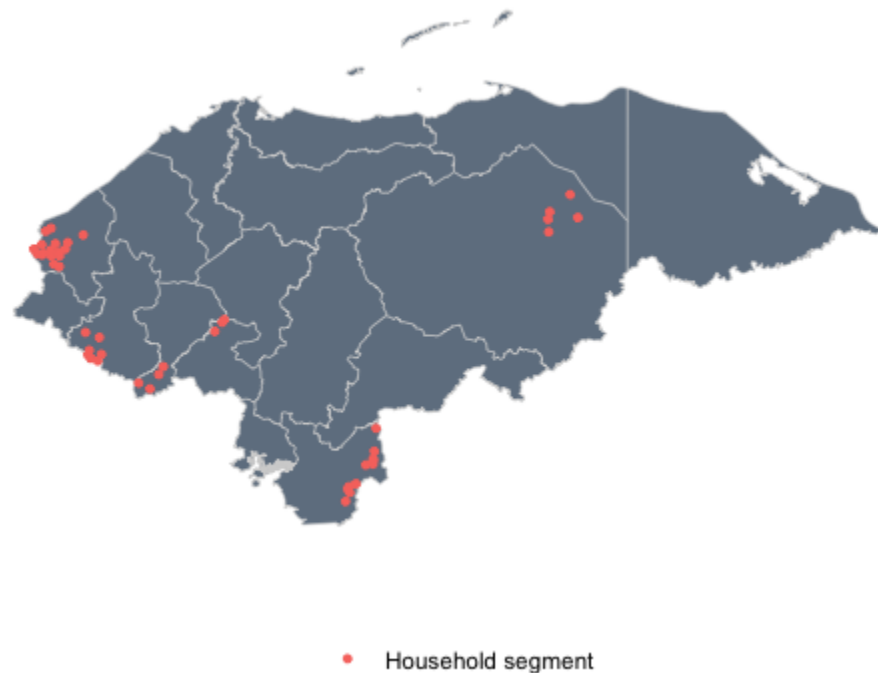
IHME conducted real-time monitoring of incoming data throughout the duration of the survey, providing feedback and guidance to data collectors in the field. Any discrepancies and errors were identified at IHME using bespoke quality assurance programs and subsequently resolved through continuous correspondence with the field team. Progress towards sample quotas was also monitored in order to strategize and adapt to logistical challenges.

Data analysis was conducted at IHME using R version 4 and STATA version 17. Performance and monitoring indicators were calculated at IHME following indicator definitions provided by IDB.

Chapter 3: Household survey results

This chapter provides a descriptive summary of the basic demographic, socioeconomic, and environmental characteristics of the households sampled in intervention areas for the SMI-Honduras baseline, second, and third operation household surveys. At the third operation household interviews were conducted in 47 segments across 17 municipalities in intervention areas, shown here in Figure 3.1.

Figure 3.1: Map of household intervention segments in the Honduras third operation



3.1 Household characteristics

3.1.1 Characteristics of participating households

A total of 1,410 households in the Honduras third operation completed the household characteristics questionnaire. In the baseline, 1,526 completed the survey, and in the second operation 1,683 completed the survey.

3.1.2 Age and sex composition, SMI census

The unweighted distribution of the de facto household population in the surveyed households in the SMI-Honduras household census by five-year age groups and by sex is shown for baseline (Figure 3.2) and third operation (Figure 3.3). Honduras has a larger proportion of its population in the younger age groups than in the older age groups. Figure 3.3 indicates that in the third operation, just over 29% of the population is under age 15,

more than half (62%) of the population is in the economically productive age range (15-64), and the remaining 9% is age 65 and above.

Figure 3.2: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, baseline survey

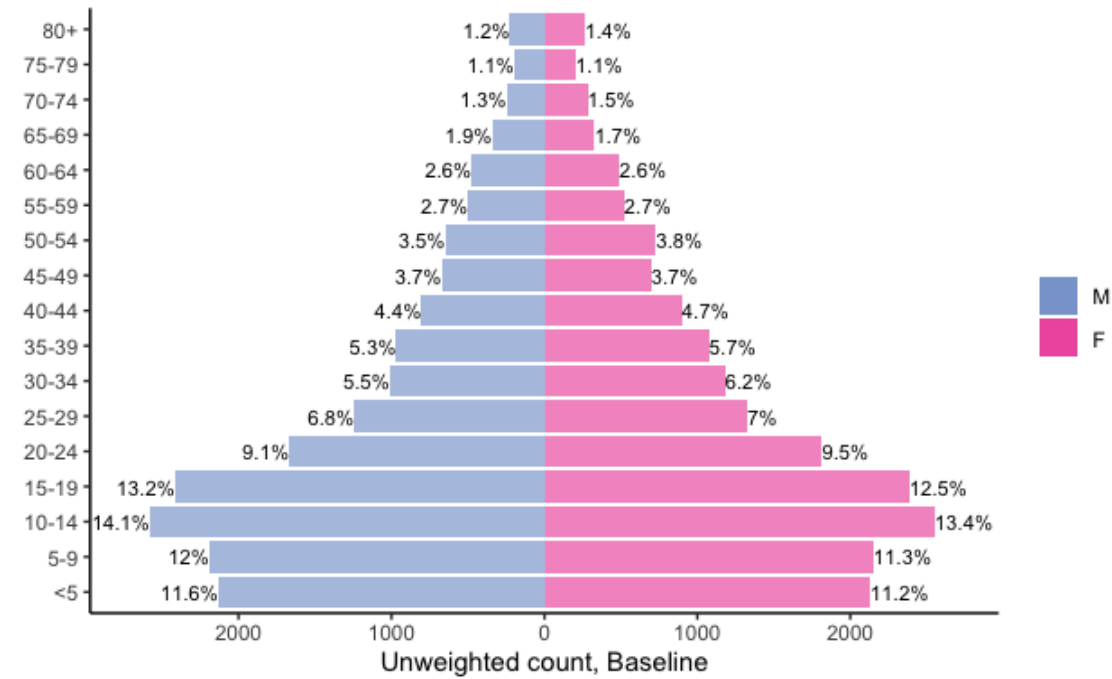
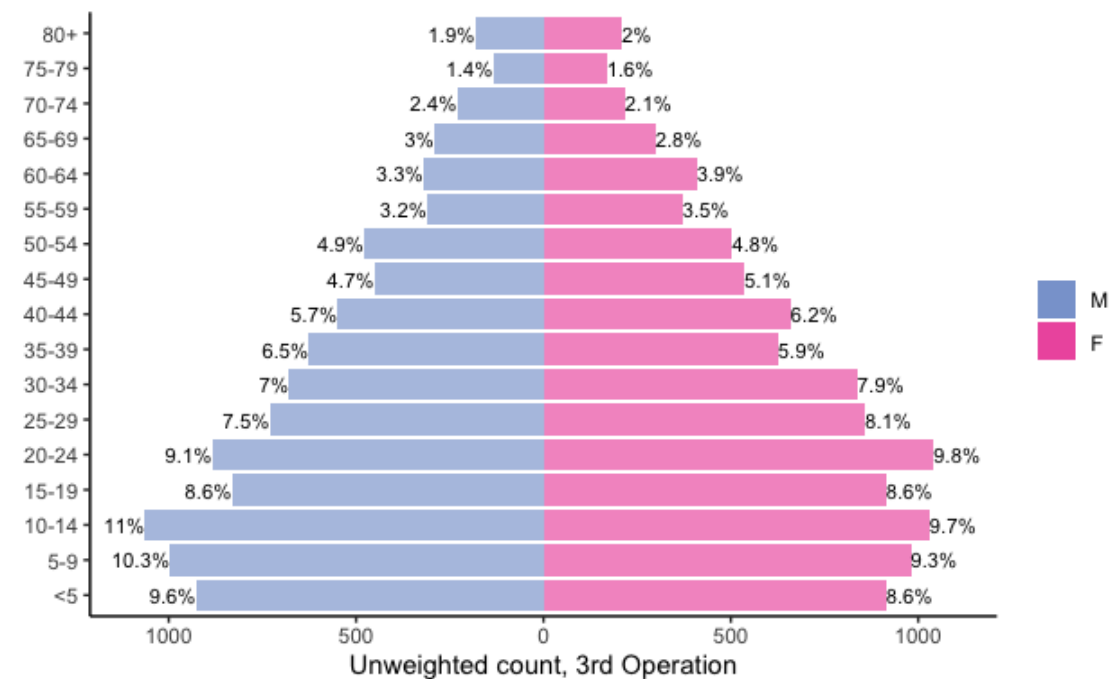


Figure 3.3: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, third operation survey



3.1.3 Household characteristics, SMI household survey

The number of households, women and children in the sample are displayed in Table 3.1; and the percent distribution of households by head of household and number of usual members are shown in tables Table 3.2 and Table 3.3 respectively.

Sixty-nine percent of households in Honduras identify as dual-headed in the third operation. Males are the head of the household in 6.7% of surveyed households in Honduras, with females as the head of household in the remaining 24.7% (Table 3.2). The median household size in Honduras is four members, with another 25% of households having five or more members (Table 3.3).

Table 3.1: SMI household survey sample sizes: number of total households, women 15-49 years of age, and children 0-59 months

	Baseline	2nd Operation	3rd Operation
Households	1526	1683	1410
Women	1868	2124	1620
Children	1633	1722	1174

Table 3.2: Household characteristics, SMI household sample

	Baseline			2nd Operation			3rd Operation		
	n	%	CI	n	%	CI	n	%	CI
Dual-headed household	1,220	77.5	(73.8 - 81.3)	1,267	73.8	(69.1 - 78.5)	982	68.6	(64.3 - 73)
Single head, female	257	18.3	(15.1 - 21.6)	292	19.6	(15.6 - 23.7)	324	24.7	(20.9 - 28.4)
Single head, male	49	4.1	(2.2 - 6)	124	6.5	(4.4 - 8.6)	104	6.7	(4.2 - 9.2)

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

Table 3.3: Number of usual household members, SMI household sample (percentiles)

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum
Baseline	1,526	0	1	3	5	6	14
2nd Operation	1,683	0	1	3	4	6	17
3rd Operation	1,410	0	1	3	4	5	17

DK/DTR = Number of 'Don't know' and 'Decline to Respond' responses

3.1.4 Household expenditures

Households were surveyed about the amount of money spent over the last month. After reporting total household expenditures, households were then asked how much was spent on specific categories (e.g., food, housing, education, and medical care) over the last four weeks. Table 3.4 shows the itemized monthly expenditure per person living in the household summarized by expenditure quintile. All data are presented in nominal Lempira (L), with no adjustment for inflation. Itemized expenditure information was sufficiently complete to report for 1,103 households at the third operation. The lowest quintile in the study area spent less than 656 L per person over the

last month in the third operation. Table 3.5 shows the average out-of-pocket health expenditures and total itemized expenditures in the last month. In Honduras at the third operation households spent 6,494 L on average, compared to 3,367 L at the baseline.

Table 3.4: Total itemized per- capita expenditure quintiles, nominal Honduras Lempira*

Operation	N	DK/DTR	p20	p40	p60	p80
Baseline	1,333	2	301	466	707	1,111
2nd Operation	1,555	2	382	657	908	1,471
3rd Operation	1,103	40	656	1,119	1,681	2,527

*Not adjusted for inflation

Table 3.5: Average household expenditures for the last month, nominal Honduras Lempira (L) (MI6090/MI6100), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	mean	CI	N	mean	CI	N	mean	CI
Average out-of-pocket household health expenditure for the last month (MI6090)*	1496	185.4	(101-269.9)	1679	190.9	(108.7-273.1)	1307	482.8	(324.7-640.9)
Average household itemized expenditure for the last month (L) (MI6100)	1524	3367.4	(3035.5-3699.3)	1681	4393.7	(3899.4-4888)	1370	6494	(5766-7222.1)

*2 outlier observations above 50,000 L excluded for third operation

3.2 Women's health

This section summarizes the demographic characteristics, socioeconomic status, and health status of women of reproductive age (15-49 years) participating in the SMI-Honduras third operation household survey.

3.2.1 Demographic characteristics

The age distribution of the de facto population of women of reproductive age participating in the women's health or pregnancy interviews in Honduras is shown in Figure 3.4 by five-year age groups. About 54% of all women participating in the third operation SMI-Honduras household survey were younger than 30 years of age, 29% were between the ages of 30 and 39, and 17% were between the ages of 40 and 49.

Table 3.6 shows the marital status of women in the sample and their relationship to the head of the household. While 21.4% of women reported being married and 45.8% being partnered, 27.4% indicated they were single. Twenty-two percent of women were reported at the SMI-Honduras census to be the head of the household, 33.1% to be the spouse of the head of the household, and 15% to be the partner of the head of the household.

Figure 3.4: Age of respondents among women of reproductive age, unweighted

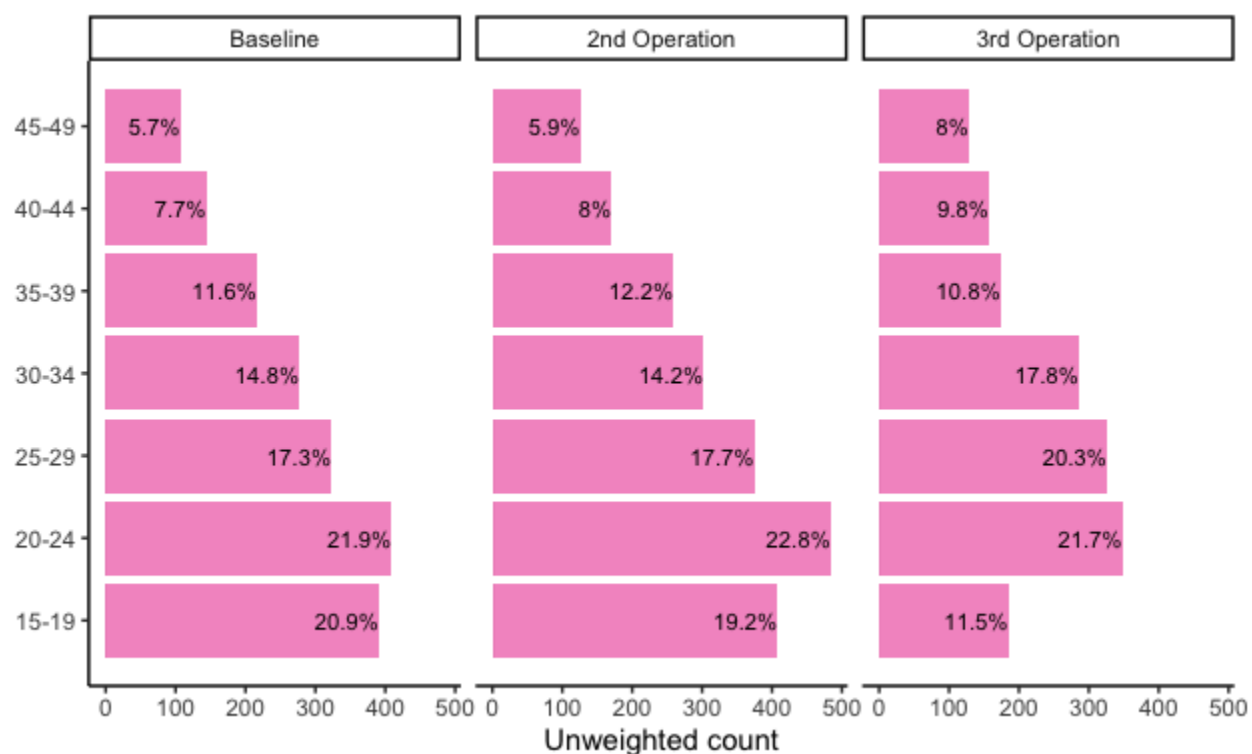


Table 3.6: Demographic characteristics of respondents, unweighted

	Baseline		2nd Operation		3rd Operation	
	n	%	n	%	n	%
Marital status*						
Single	577	30.9	604	28.4	439	27.4
Married	563	30.1	516	24.3	343	21.4
Civil union/partnered	657	35.2	906	42.7	734	45.8
Divorced	1	0.1	4	0.2	2	0.1
Separated	50	2.7	74	3.5	70	4.4
Widowed	19	1	20	0.9	10	0.6
Other	1	0.1	0	0	4	0.2
Don't know	0	0	0	0	1	0.1
Decline to respond	0	0	0	0	1	0.1
Respondent's relationship to head of household						
Head of household	169	9	431	20.3	346	21.6
Spouse	530	28.4	639	30.1	531	33.1
Partner	452	24.2	261	12.3	240	15
Biological child	487	26.1	570	26.8	344	21.4
Adopted or stepchild	13	0.7	17	0.8	9	0.6
Grandchild	35	1.9	48	2.3	24	1.5

	Baseline		2nd Operation		3rd Operation	
	n	%	n	%	n	%
Niece/nephew	13	0.7	11	0.5	8	0.5
Parent	3	0.2	0	0	1	0.1
Sibling	17	0.9	11	0.5	12	0.7
Daughter-in-law	108	5.8	97	4.6	71	4.4
Sister-in-law	12	0.6	5	0.2	1	0.1
Mother-in-law	0	0	2	0.1	3	0.2
Other relative	9	0.5	9	0.4	4	0.2
Unrelated person	16	0.9	13	0.6	9	0.6
Not registered**	3	0.2	7	0.3	1	0.1
Other	1	0.1	3	0.1	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 and third operations, marital status is reported by the woman at the start of the Maternal Health Questionnaire

** Relationship to the head of household was not collected for women who were not registered in the SMI census and added at the time of the household survey.

3.2.2 Education attainment and literacy

Ninety-two percent of third operation survey participants had some formal education (Table 3.7). For 61.1% of these women, the highest level of education completed was primary schooling (Table 3.8). 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.” Seventy-seven percent of women surveyed were able to read the whole sentence. Eight percent of women could not read the sentence at all.

Table 3.7: Education attainment and literacy

	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Ever attended school	1846	89.2	(86 - 91.7)	2124	88.5	(84.7 - 91.5)	1617	92.2	(89.5 - 94.2)
Attended literacy course	1847	20.8	(16.4 - 25.9)	2117	10.7	(8.2 - 14)	1613	27.3	(21.1 - 34.5)

Table 3.8: Educational attainment and literacy, detailed

	Baseline			2nd Operation			3rd Operation		
	n	%	CI	n	%	CI	n	%	CI
Educational attainment and literacy									
Primary	1240	70.2	(64.2 - 76.2)	1304	69.2	(63.1 - 75.2)	906	61.1	(55.4 - 66.9)
Secondary	201	12.5	(9.8 - 15.1)	292	13.5	(10.6 - 16.4)	251	15.7	(12.8 - 18.6)
High School	208	15.4	(11.3 - 19.6)	265	13.2	(9 - 17.4)	261	16.7	(12.6 - 20.8)

	Baseline			2nd Operation			3rd Operation		
	n	%	CI	n	%	CI	n	%	CI
University	33	1.9	(0.8 - 3.1)	69	4.2	(1.6 - 6.8)	92	6.5	(3.3 - 9.6)
Don't know	0	0	-	0	0	-	0	0	-
Decline to respond	0	0	-	0	0	-	0	0	-
Literacy									
Cannot read at all	240	15.6	(11.8 - 19.3)	243	13.7	(10 - 17.4)	119	8.4	(6 - 10.8)
Can read parts	386	19	(15.8 - 22.2)	229	10.4	(7.8 - 13)	202	15	(11.6 - 18.5)
Can read entire sentence	1212	65.1	(60 - 70.1)	1642	75.8	(70.6 - 80.9)	1289	76.6	(72.3 - 80.9)
Visually impaired	4	0.4	(0 - 1)	6	0.2	(0 - 0.3)	0	0	-
Don't know	4	0	-	4	0	-	7	0	-
Decline to respond	1	0	-	0	0	-	0	0	-

3.2.3 Employment

As summarized in Table 3.9, the vast majority of respondents in the third operation were homemakers (73.4%). Of the 164 women who reported being employed and working at the time of the interview, most (95.4%) identified “Employee” as their occupational role.

Table 3.9: Employment

	Baseline			2nd Operation			3rd Operation		
	n	%	CI	n	%	CI	n	%	CI
Employment status									
Homemaker	1526	80.4	(75.4 - 85.3)	1701	76.3	(71.6 - 80.9)	1191	73.4	(68.5 - 78.3)
Employed/paid for work	182	11.7	(7.2 - 16.2)	203	9.7	(7 - 12.3)	164	11.7	(8.1 - 15.2)
Student	105	5.8	(3.8 - 7.8)	135	8.5	(5.7 - 11.4)	84	7.4	(5.1 - 9.7)
Self-employed*	-	-	-	58	4	(2.5 - 5.6)	75	4.8	(2.9 - 6.8)
Unable to work due to disability	7	0.7	(0 - 1.4)	3	0.2	(0 - 0.6)	8	0.9	(0 - 1.7)
Employed by a family member without pay	19	1.3	(0.4 - 2.1)	15	0.4	(0.1 - 0.7)	5	0.7	(0 - 1.4)
Employed, but did not work in last week	3	0.1	(0 - 0.2)	6	0.7	(0 - 1.5)	5	0.4	(0 - 0.9)
Retired	2	0.1	(0 - 0.1)	2	0.2	(0 - 0.5)	4	0.1	(0 - 0.3)
Other	0	0	-	0	0	-	10	0.7	(0.2 - 1.3)
Don't know	0	0	-	0	0	-	0	0	-
Decline to respond	0	0	-	1	0	-	15	0	-
Occupational role, among women employed and being paid for work									
Employee	157	82.9	(72.1 - 93.8)	190	91.2	(82.4 - 99.9)	158	95.4	(89.3 - 100)
Independent contractor	6	1.3	(0 - 2.6)	5	1.6	(0 - 3.2)	5	4.4	(0 - 10.6)
Proprietor	12	8.8	(0.9 - 16.7)	7	7.3	(0 - 16.2)	1	0.2	(0 - 0.6)
Employer	7	7	(0 - 14.6)	0	0	-	0	0	-
Don't know	0	0	-	1	0	-	0	0	-
Decline to respond	0	0	-	0	0	-	0	0	-

*Self-employed was not a response option at baseline

3.2.4 Contraception

The coverage of contraceptive methods is one of the indicators most frequently used to assess the success of contraception program activities. It is also widely used as a determinant of fertility. Table 3.10 shows the use of contraception among all women and among those women considered to be in need of contraception (those who are married or partnered, excluding those who report the following characteristics: does not have sexual relations, virgin, menopausal, infertile, pregnant, or wants to become pregnant). Even women not considered “in need” of contraception may use a method. Additionally, contraception methods are divided among traditional and modern methods (see appendix B for details). Seventy percent of all survey respondents in the third operation reported current use of at least one contraceptive method. Among women in need, 82.1% reported using at least one method of contraception, and 79.8% report using a modern method. Finally, Table 3.10 shows the prevalence of interruption of contraceptive methods, which poses major concerns for contraception program managers. At the

third operation, 7.4% of women who reported any use of contraception in the previous year reported any interruption in the use of contraceptive methods.

Table 3.10: Current use of modern contraception methods, women 15-49 years of age who are married or partnered and in need of contraception (I2010/MI2030), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women currently in need of contraception	1203	71.4	(66.9-75.5)	1422	81.2	(77.5-84.4)	1078	82.1	(78.1-85.4)
Women using any contraception, among all women	1203	56.6	(50.7-62.3)	1422	65	(59.7-70)	1078	69.7	(64.8-74.2)
Women using any method, among those in need	969	76.6	(70.1-82)	1198	77.4	(72.1-81.9)	934	82.1	(77.6-85.9)
Women (age 15-49) currently using a modern method of contraception (I2010)	969	69.3	(62.6-75.3)	1198	75.4	(69.9-80.2)	934	79.8	(75-83.9)
Women (age 15-49) who report having stopped using a method of contraception during the previous year (MI2030)	762	2.1	(1.2-3.7)	941	2.3	(1.1-4.5)	634	7.4	(4-13.1)

3.2.5 Access to health services

Several survey questions 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 Table 3.11, “Don’t know” responses to the distance questions were exceedingly common.

Table 3.11 shows the percentile responses and mean for distance and time across the three operations. Excluding the 1155 women who were unable to estimate the distance to the closest health facility in the third operation, 75% of women reported living 15 kilometers or less from a health facility. Three-quarters of the sample indicated that it took less than 60 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 60 minutes or more.

Table 3.11: Proximity to nearest health facility (percentiles) (MI6080/MI6085), intervention

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum	Mean	CI
Distance, km									
Baseline	468	1,379	0	1	2	5	60	4.6	(2.8 - 6.4)
2nd Operation	1,319	805	0	1	2	5	200	6.3	(3.4 - 9.2)
3rd Operation	462	1,155	0	1	3	15	100	12.8	(4.9 - 20.7)
Travel time, min									
Baseline	1,772	26	1	10	20	60	5,400	55.8	(41.9 - 69.7)
2nd Operation	2,042	12	1	10	30	60	2,700	57.7	(41.3 - 74.1)

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum	Mean	CI
3rd Operation	1,586	30	1	10	20	60	3,000	54.6	(36.1 - 73.2)

3.2.6 Health status

Women were asked a series of questions about any illnesses or health problems they had in the two weeks preceding the interview, as well as utilization of health services during the same time period. Out of the women in the third operation, 16.7% reported being sick during that time (Table 3.12). Of the 250 women who reported an illness in the two weeks preceding the interview, 55.8% of these women did not seek care at a health care facility.

Table 3.12: Recent illness, last two weeks (MI6010/MI6020), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women 15-49 who report having any illness in the past two weeks (MI6010)	1847	24.3	(20.5-28.6)	2122	17.5	(14.7-20.7)	1609	16.7	(13.5-20.5)
Women (age 15-49) who report having any illness in the past two weeks but did not seek health care (MI6020)	403	68.5	(60.9-75.2)	324	61.9	(51.9-71)	250	55.8	(45.7-65.5)

Table 3.13 shows the proportion of women who used health care services in the two weeks prior to the interview, regardless of reporting a recent illness. At the third operation, 13.9% of women in the household surveys had utilized health care services in the previous two weeks.

Table 3.13: Use of health services, last two weeks (MI6050), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women (age 15-49) who used health care services in the last two weeks (MI6050)	-	-	(-)	2123	12.4	(10-15.2)	1613	13.9	(11.4-17)

*Not asked at baseline

3.2.7 Satisfaction with health services

Women who reported a recent visit to a health facility were asked a series of questions related to their satisfaction with the attention they received during their most recent visit. Table 3.14 shows the proportion of women who were satisfied with quality of care they received overall, the cleanliness of the facility, the competence of the health care workers, and the proportion of women who reported that they were treated with respect. At the third operation, 95.1% of women were satisfied with the care they received overall, 72.4% were satisfied with the cleanliness of the facility, 97.3% were satisfied with the competence of the health care personnel, and 77.3% reported being treated with respect.

Table 3.14: Satisfaction with health care services during most recent visit to a health care facility (MI6130, MI6140, MI6150, MI6160), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women who reported satisfaction with health care services at their most recent visit to a health facility (MI6130)	995	96.5	(94.4-97.9)	1366	96.3	(94.6-97.5)	875	95.1	(92.1-97)
Women who reported satisfaction with cleanliness of the facility at their most recent visit to a health facility (MI6140)	998	64.4	(58.6-69.8)	1364	75.2	(70.4-79.4)	870	72.4	(66.9-77.2)
Women who reported satisfaction with competence of the medical personnel at their most recent visit to a health facility (MI6150)	984	98.2	(96.4-99.1)	1362	97.3	(95.9-98.2)	867	97.3	(95.1-98.5)
Women who reported they were treated with respect at their most recent visit to a health facility (MI6160)	1002	71.3	(66.7-75.4)	1368	73.5	(67.7-78.5)	874	77.3	(72.5-81.5)

Table 3.15 shows the average wait time during the most recent visit to a health facility across the three operations. At the third operation women waited 87 minutes on average.

Table 3.15: Average wait time at most recent visit to a health facility (min) (MI6120), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	mean	CI	N	mean	CI	N	mean	CI
Average wait time at most recent visit to a health facility (MI6120)	976	79.8	(66.6-92.9)	1298	94.9	(81.4-108.4)	871	87.1	(60.3-113.9)

3.2.8 Fertility

Table 3.16 shows the percentage of women with a live birth in the past year across two age groups: all women in the household surveys aged 15-49, and adolescents aged 15-19. At the third operation 6.1% of all women had a live birth in the last year, compared to 6.8% of adolescents aged 15-19.

Table 3.16: Women in the household surveys with a live birth in the past year (MI1080/MI1090), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women aged 15-49 with a live birth in the last year (MI1080)	1847	10.2	(8.8-11.8)	2124	7	(5.9-8.3)	1617	6.1	(4.9-7.5)
Women aged 15-19 with a live birth in the last year (MI1090)	388	10.7	(8.1-14)	408	7.4	(5.4-10.2)	192	6.8	(4.3-10.8)

3.2.9 Exposure to health system interventions

Women who receive antenatal care often receive guidance or advice about danger signs for children's health. In the household survey women were asked to name the danger signs that they can recognize in newborns (for the list of danger signs see appendix B). Table 3.17 displays the proportion of women who can recognize at least five danger signs in newborns. In Honduras at the third operation 32.5% of women with a birth in the last two years were able to recognize at least five danger signs in newborns.

Table 3.17: Proportion of women who can recognize at least 5 danger signs in newborns (MI4110), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women (age 15-49) with a birth in the last two years who can recognize at least 5 danger signs in newborns (MI4110)	584	20.5	(16.2-25.7)	600	33.6	(26.7-41.3)	306	32.5	(22.7-44.2)

3.3 Obstetric care

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, 666 women were interviewed about at least one birth in the last two years. At the second operation, 710 women were interviewed about births in the last two years, and at the third operation, 611 women with at least one birth in the last two years were interviewed. The definition of "most recent birth" in the data changed between the baseline and the second operation.

3.3.1 Antenatal care

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 the 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.

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 Honduras, it is recommended that women receive a minimum of four antenatal care visits. Table 3.18 shows the percentage of women who received at least one and at least four antenatal care visits with skilled professionals (i.e., doctor, nurse, or auxiliary nurse). At the third operation 93.1% received at least four antenatal care visits with skilled professionals, compared to 80.7% at the baseline.

Table 3.18: Antenatal care coverage for most recent birth in the last two years, women 15-49 years of age (MI3010/MI3020), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
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 (MI3010)	666	93.9	(90.3-96.3)	710	97.9	(96.2-98.8)	610	97.6	(96.3-98.5)
Women (age 15-49) who received at least four antenatal care visits by skilled personnel in their most recent pregnancy in the last two years (MI3020)	660	80.7	(74.5-85.6)	696	90.7	(87.7-93)	608	93.1	(89.9-95.3)

3.3.2 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.

Women were asked about the proximity to the health facility used to deliver. Of the 583 women from the third operation who delivered in a facility, 568 were able to estimate the travel time to the facility (Table 3.19). Fifty percent of women traveled more than two hours to the facility to deliver.

Table 3.19: Travel time in minutes to health facility for delivery, most recent birth in the last two years (MI6082), intervention

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum	Mean	CI
Baseline	479	34	1	60	120	180	5,400	148.6	(122.3 - 175)
2nd Operation	615	33	1	40	120	180	2,400	145.1	(124.7 - 165.5)
3rd Operation	568	15	2	60	120	180	1,800	138.1	(127.2 - 149)

The assistance a woman receives during childbirth has important health consequences for both mother and child. At the third operation 86.9% of women delivered in an SMI or hospital with a skilled birth attendant, compared to 68.9% at baseline.

Table 3.20: In-facility delivery with skilled birth attendant: most recent birth in the last two years, women 15-49 years of age (I4010), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women who delivered in any facility	666	75.7	(67.2-82.6)	709	90.5	(85.8-93.7)	606	95.6	(93.5-97)
Women who delivered in SMI or hospital	666	69.2	(61.2-76.2)	709	85.2	(79.1-89.8)	606	87.2	(83.3-90.3)
Women who delivered with skilled birth attendant	666	76.5	(67.7-83.5)	709	92.2	(87.5-95.3)	606	96.4	(94.4-97.7)
Women who delivered in SMI or hospital with skilled birth attendant (I4010)	666	68.9	(60.8-75.9)	709	85.2	(79.1-89.8)	606	86.9	(83.1-90)

3.3.3 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 within one hour of birth. Table 3.21 shows that 76.5% of women initiated breastfeeding within one hour of birth.

Table 3.21: Early initiation of breastfeeding for most recent birth in the past two years, women 15-49 years of age (MI5050), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children born in the last two years who were breastfed within one hour after birth (MI5050)	701	73.1	(68.1-77.7)	714	85	(81-88.4)	614	76.5	(72.1-80.4)

3.3.4 Postpartum care for woman

Postpartum 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 postpartum period is defined as the time between the delivery of the placenta and 42 days (six weeks) following the delivery. The timing of postpartum 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.

Table 3.22 shows the percentage of women with a birth in the last two years who received postpartum care within 48 hours of delivery and between 7 and 42 days after delivery, and women who received three postpartum care checks within 42 days of delivery. Twenty-eight percent of women reported being checked within 48 hours of delivery, 30.8% reported being checked between 7 and 42 days after delivery, and 3.7% reported being checked three times: once within 24 hours of delivery, once within 7 days of delivery, and once within 42 days of delivery.

Table 3.22: Postpartum checkup for mother for most recent birth in the past two years, women 15-49 years of age (MI4020, MI4035, MI4040), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women (age 15-49) who received postpartum care by skilled personnel within the first 48 hours after delivery in their most recent pregnancy in the last two years (MI4020)	662	45.3	(38.6-52.1)	710	40.6	(34.3-47.2)	589	27.5	(23.5-31.9)
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 (MI4035)	662	22.3	(18.2-27)	710	36.9	(29.4-45)	589	30.8	(25.5-36.6)
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 (MI4040)	662	6.3	(4.3-9.1)	710	7.9	(5.4-11.3)	589	3.7	(2.1-6.3)

3.3.5 Postnatal care for baby

The results regarding postnatal care for the neonate are shown in Table 3.23. The table shows the percentage of women with a birth in the last two years whose infants were checked after delivery; percent distributions of

infants who were ever checked by skilled personnel and those checked by skilled personnel within 24 hours of delivery; and percent distributions of infants who were checked by skilled personnel within 3 days of delivery.

At the third operation 87.8% of neonates received postnatal care, 87.2% received postnatal care by skilled personnel, and 34% received care by skilled personnel within 72 hours of delivery, compared to 47.3% at baseline.

Table 3.23: Postnatal checkup for neonate for woman's most recent birth in the past two years, women 15-49 years of age (I4100, MI4100, MI4101), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Infant was ever checked	630	70.6	(62.2-77.8)	636	72.1	(65.9-77.6)	543	87.8	(81.4-92.3)
Infant was checked within 3 days	630	48.6	(41.9-55.3)	636	33.9	(26.3-42.4)	543	34.5	(29.3-40)
Infant was ever checked by skilled personnel	630	69.8	(61.2-77.2)	636	70.6	(64.6-75.9)	543	87.2	(80.9-91.6)
Infant received postnatal care by skilled personnel within 72 hours (I4100)	630	47.3	(40.7-54)	636	33.3	(25.8-41.7)	543	34	(28.8-39.6)
Infant received postnatal care by skilled personnel in a health facility within 48 hours (MI4100)	630	45.9	(39.4-52.5)	636	30	(22.5-38.7)	543	31.7	(27.1-36.7)
Infant received postnatal care by skilled personnel in a health facility within 24 hours (MI4101)	630	36.4	(31.1-42)	636	19.8	(13.4-28.3)	543	28.3	(23.8-33.2)

3.4 Child health

The age and sex distribution of the de facto population of children in Honduras aged 0-59 months participating in the Child Health Interview or the anthropometric measures at the baseline and third operation are shown by six- or 12-month age groups in Figure 3.5 and Figure 3.6 respectively. Nineteen percent of children surveyed at baseline and 18% of children surveyed at the third operation were under 1 year old at the time of the interview. The age distributions of female and male children are similar.

Figure 3.5: 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

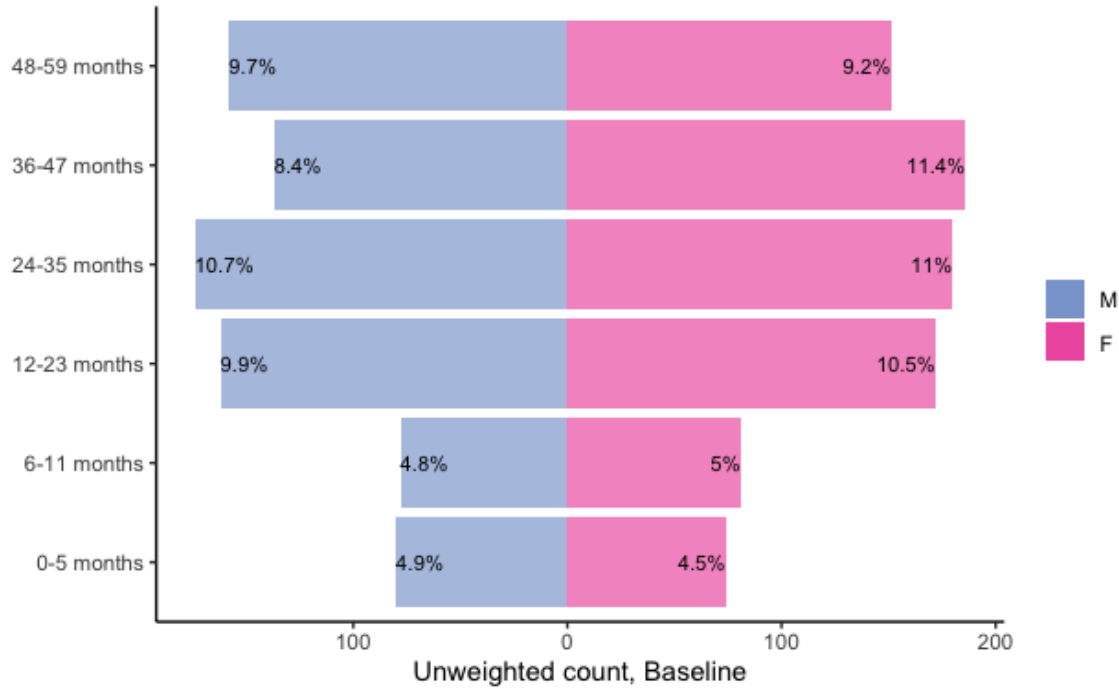
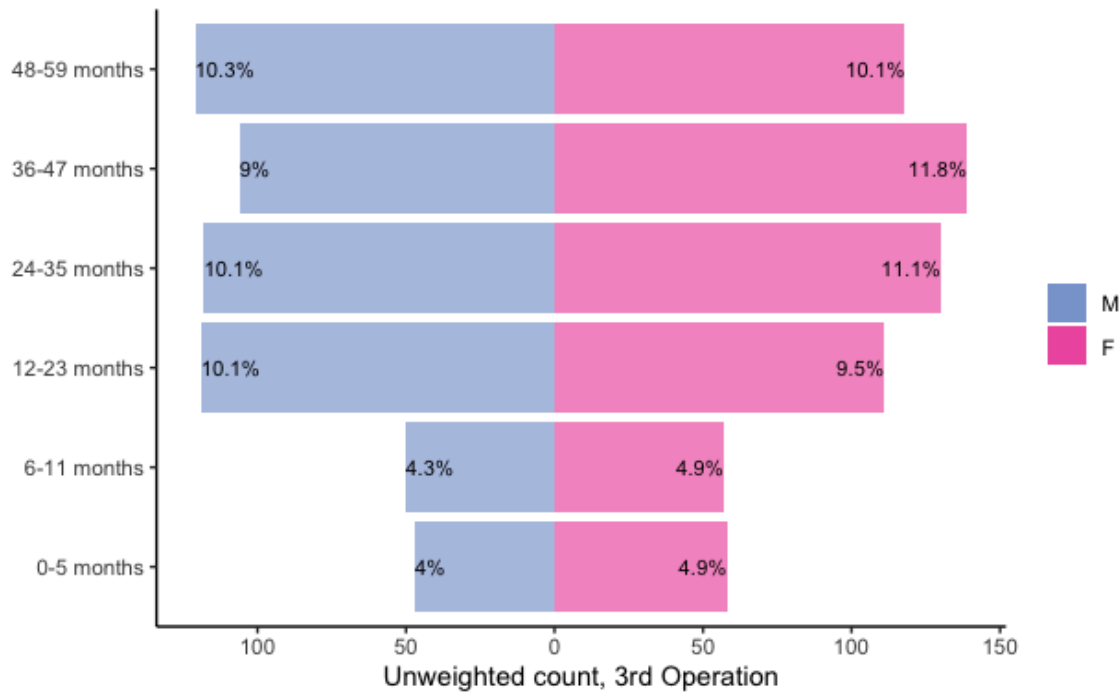


Figure 3.6: Age and sex of children aged 0-59 months in child health survey or anthropometric measures of the de facto population by six- to twelve-month age groups, third operation survey unweighted



3.4.1 Current health status

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 third operation, approximately 27.4% of children were reported as sick during that time, as shown in Table 3.24. Of these children with reported illness, 2% did not seek care according to the report of the mother or caregiver.

Table 3.24: Recent illness, among children aged 0-59 months (MI6030/MI6040), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children (0-59 months) who had any illness in the past two weeks, according to report of mother or caregiver (MI6030)	1596	33.9	(30.5-37.5)	1720	28.8	(25.5-32.4)	1173	27.4	(22.6-32.9)
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 (MI6040)	521	0.8	(0.2-2.6)	482	0.6	(0.2-1.9)	320	2	(0.9-4.4)

3.4.2 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. Table 3.25 shows that the third operation caregivers reported that 67.5% of children with pneumonia symptoms received antibiotics, compared to 54.8% at baseline.

Table 3.25: Utilization of antibiotics for suspected acute respiratory infection (MI4145), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children (0-59 months) with pneumonia symptoms who received antibiotics (MI4145)	138	54.8	(41.2-67.8)	126	51.5	(39.5-63.4)	79	67.5	(56.3-77)

3.4.3 Diarrhea

Dehydration caused by severe diarrhea is 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.

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 (ORS). 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. At the third operation 67.7% of children received ORS, while 12.1% received zinc.

Table 3.26: Diarrhea treatment with ORS and zinc (I5050), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
ORS administered	77	52.1	(38.1-65.8)	48	67.1	(49.1-81.2)	75	67.7	(54.3-78.8)
Zinc administered	77	5.6	(2.1-14.1)	49	8.3	(3-21)	75	12.1	(5.3-25.1)
ORS and zinc administered to standard (I5060)	77	0	(-)	49	8.3	(3-21)	75	9.6	(4.1-21)

3.4.4 Immunization

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. In Table 3.27, coverage is estimated to include all children with full compliance for age as specified in the national immunization scheme at the time of the survey (see appendix B for details), 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. At the third operation 55.5% of children were considered fully vaccinated for their age, compared to 41.1% at baseline.

Table 3.27: Immunization against common childhood illnesses, children aged 0-59 months, according to caretaker recall and vaccination card (MI5020), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children (0-59 months) fully vaccinated for age, according to vaccine card and recall (MI5020)	1495	41.1	(37.4-44.8)	1655	68.5	(64-72.6)	1074	55.5	(49.5-61.3)

3.4.5 Deworming

Administration of deworming treatment every six months has been shown to reduce the prevalence of anemia in children. Only 28.2% of children aged 12-59 months received at least two doses of deworming treatment in the year preceding the third operation interview (Table 3.28).

Table 3.28: Deworming treatment among children aged 12-59 months (MI5010), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 12-59 months who received 2 doses of deworming in the last year (MI5010)	1235	39.5	(34.9-44.4)	1379	26.8	(23.9-30)	910	28.2	(24.4-32.4)

3.4.6 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. 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.

Table 3.29 shows the proportion of children 0-5 months who are exclusively breastfed, and the proportion of children 12-15 months who are still breastfed. In Honduras during the third operation, the sample includes 105 children who are under 6 months of age and who have sufficiently complete dietary recall information to determine whether they are exclusively breastfed. Fifty-six percent of children under 6 months of age are exclusively breastfed. Additionally, of the 93 children between 12-15 months of age with sufficient dietary recall information, 69.5% received breast milk on the day prior to the interview.

Table 3.29: Breastfeeding among children (MI5040/MI5080), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 0-5 months who were exclusively breastfed on the previous day (MI5040)	152	54.8	(46-63.3)	145	51.8	(41-62.3)	105	56.1	(44.2-67.3)
Children 12-15 months who were breastfed on the previous day (MI5080)	118	82.4	(74.3-88.4)	133	78.2	(69.6-84.9)	93	69.5	(58.6-78.5)

3.4.7 Acceptable diet

Table 3.30 displays the dietary information for children in the Honduras third operation sample. Data were collected regarding the introduction of solid foods, dietary diversity, meal frequency, and the consumption of iron-rich 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 Honduras during the third operation, the sample includes 47 children who are 6-8 months of age, and of those with sufficiently complete dietary recall information 81.4% consumed solid or semi-soft foods.

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 Honduras during the third operation, the sample includes 337 children who are 6-23 months of age, and of those with sufficiently complete dietary recall information 62.2% achieved the minimum dietary diversity during the previous day.

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 Honduras during the third operation, the sample includes 325 children who are 6-23 months of age, and of those children with sufficiently complete dietary recall information 53.7% of children achieved the minimum meal frequency during the previous day.

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 Honduras during the third operation, the sample includes 330 children who are 6-23 months of age, and of those children with sufficiently complete dietary recall information to determine minimum acceptable diet, 34.6% of children achieved the minimum acceptable diet during the previous day.

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 Honduras during the third operation, the sample includes 337 children who are 6-23 months of age, and of those children with sufficiently complete dietary recall information to determine iron consumption, 63.5% of children consumed an iron-rich food during the previous day.

Table 3.30: Acceptable diet among children 6-23 months (MI5090, MI5100, MI5110, MI5120, MI5130), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 6-8 months who received solid or semi-solid food on the previous day (MI5090)	76	87	(76.1-93.4)	57	88.1	(74.4-94.9)	47	81.4	(68.3-89.8)
Children 6-23 months who received foods from 4 or more food groups during the previous day (MI5100)	481	39.4	(34-45.1)	507	56.6	(48.7-64.1)	337	62.2	(54.3-69.5)
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 (MI5110)	474	61.6	(55.3-67.6)	498	65.2	(59.1-70.9)	325	53.7	(44.9-62.4)
Children 6-23 months who received the minimum acceptable diet (apart from breastmilk) during the previous day (MI5120)	480	25.8	(20.7-31.5)	504	37	(30.5-43.9)	330	34.6	(27.1-43)
Children 6-23 months who received iron-rich or iron-fortified foods during the previous day (MI5130)	481	43.7	(36.9-50.8)	507	58.7	(51.6-65.5)	337	63.5	(57.3-69.4)

3.4.8 Micronutrients

Interviewers showed the caregiver a card with packets of micronutrients (chispitas) 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. Table 3.31 shows that among children 6-23 months of age sampled in the third operation, 8.8% consumed a complete dose of micronutrient powder.

Table 3.31: Micronutrient powders among children 6-23 months (MI5075), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 6 to 23 months who consumed any micronutrients in the last six months	478	19.8	(15.6-24.8)	496	67.9	(60.7-74.4)	310	8.8	(5.4-14)
Children 6 to 23 months who consumed at least 60 packets of micronutrients (complete dose) in the last six months (MI5075)	478	0	(-)	496	25.8	(20.4-32.1)	310	0	(-)

3.4.9 Nutritional status in children

The nutritional status of children aged 0-59 months is an important outcome measure of children's health. The SMI-Honduras third operation 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. Medically trained personnel who were specifically trained to standardize the anthropometric and hemoglobin measurements conducted the testing. 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.

The height-for-age indicator was 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 indicator is expressed in standard deviation units from the median in the Multicenter Growth Reference Study.

A total of 1,174 children aged 0-59 months participated in the SMI-Honduras third operation. In practice, 1,007 of these children underwent the physical measurement module. Height and weight data are presented for 1,003 of these children (99.6%, unweighted). Nine-hundred-twenty-six children 6-59 months of age were eligible for the anemia test. Hemoglobin was measured in 835 children (90.2%, unweighted, of children 6-59 months of age). Parental consent was refused for 84 children, zero were not measured because anthropometrists could not obtain a sufficient capillary blood sample or any sample at all, and seven cases were not tested for other reasons (for example, because the child did not cooperate).

3.4.10 Height-for-age

Height-for-age describes linear growth relative to age 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. 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. Table 3.32 shows the prevalence of stunting in children aged 0-59 months. At the third operation 14.5% of children aged 0-59 months are stunted.

Table 3.32: Prevalence of stunting in children aged 0-59 months (MI1070), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 0-59 months with height <-2 SD of the mean of the reference population for age (MI1070)	1480	23.6	(18.8-29.1)	1691	23.2	(18.9-28)	1003	14.5	(11.5-18)

3.4.11 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.

Children with hemoglobin levels of <11.0 g/dL were considered anemic. 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 Honduras 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 third operation was 1,463 meters above sea level; 20.2% 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).

Table 3.33 indicates that 27.5% of children under age 5 in Honduras are anemic. In Honduras at the third operation 37% of children aged 6-23 months, the targeted population for anemia intervention, were found to be anemic.

Table 3.33: Prevalence of anemia, children aged 0-59 months (I1060), intervention

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 6-59mo with hemoglobin <110g/L	1265	22.2	(18.8-26)	1433	47	(43.3-50.7)	835	27.5	(22.9-32.7)
Children 42-59mo with hemoglobin <110g/L	361	12.7	(9.7-16.6)	476	34.9	(29.7-40.6)	262	20	(15.4-25.4)
Children 24-41mo with hemoglobin <110g/L	467	17.5	(13.6-22.2)	499	43.9	(38.4-49.6)	313	26.1	(20.1-33.1)
Children 6-23mo with hemoglobin <110g/L (I1060)	437	35	(29.3-41.2)	458	62	(56-67.7)	260	37	(29-45.9)

Chapter 4: Health facility survey results

4.1 Summary of health facilities and medical record extraction

4.1.1 Health facility characteristics

A total of 37 facilities in intervention areas were surveyed for the third operation measurement. Results from these facilities are presented in this chapter. Results from comparison-area facilities are presented in appendix D. Twenty-three ambulatory EONC health units, 8 basic EONC units, and 6 complete EONC units were included in the intervention area sample. At the ambulatory level, UAPS/ZPP Tipo I (Unidades de Atención Primaria en Salud / Zonas de Promoción y Prevención - formerly *CESAR*) health facilities are categorized as units without a doctor, while CIS Tipo II (Centro Integrado de Salud - formerly *CESAMO*) health facilities are defined as ambulatory units with at least one doctor on staff. The basic level is made up of SMI Policlínico Tipo II (Servicios Materno Infantil - formerly *CMI*) units and the complete level includes all hospitals in SMI intervention areas. These health units are broken down by facility classification in Table 4.1.

Table 4.1: Health facility classification, intervention areas

Facility Type	Baseline	1st Operation	2nd Operation	3rd Operation
UAPS/ZPP Tipo I (CESAR)	27	33	31	15
CIS Tipo II (CESAMO)	18	13	15	8
SMI Policlínico Tipo III (CMI)	8	8	8	8
Hospital	6	6	6	6
Total	59	60	60	37

Figure 4.1 is a map of all intervention health facilities visited at the third operation evaluation. Table 4.2 displays the locations of health facilities by department and municipality in intervention areas from the baseline to third operation. Across all measurements, the health facilities have been surveyed within 7 departments and 23 municipalities.

Figure 4.1: Map of health facilities in 3rd Operation intervention areas



Table 4.2: Count of facilities by department and municipality, intervention areas

Department	Municipality	Baseline	1st Operation	2nd Operation	3rd Operation
Choluteca	Choluteca	1	1	1	1
Choluteca	Concepción de María	8	7	8	4
Choluteca	Duyure	1	1	0	1
Choluteca	San Marcos de Colón	5	4	6	3
Copán	Cabañas	1	2	2	1
Copán	Copán Ruinas	0	2	5	2
Copán	San Antonio	1	1	1	0
Copán	San Jeronimo	2	0	1	1
Copán	Santa Rita	3	2	5	3
Copán	Santa Rosa	1	1	1	1
Intibucá	Concepción	3	4	2	2
Intibucá	Intibuca	1	1	1	0
Intibucá	La Esperanza	0	0	0	1
Intibucá	Magdalena	1	1	1	0
Intibucá	San Antonio	3	3	1	1
Intibucá	Santa Lucía	2	3	2	2
La Paz	La Paz	1	1	1	1
La Paz	Santiago de Puringla	4	5	3	2
Lempira	Cololaca	2	2	2	1
Lempira	Guarita	4	3	2	1
Lempira	San Juan Guarita	1	2	1	1
Lempira	Tambla	0	2	2	1

Department	Municipality	Baseline	1st Operation	2nd Operation	3rd Operation
Lempira	Tomalá	1	1	1	1
Lempira	Valladolid	1	1	1	0
Ocotepeque	San Marcos de Ocotepeque	1	1	1	1
Olancho	Catacamas	1	0	0	0
Olancho	Dulce Nombre de Culmí	9	8	8	4
Olancho	Juticalpa	1	1	1	1
Total		59	60	60	37

4.1.2 Medical record extraction

The medical record review component of the study included a review of 1,634 medical records at the third operation, 466 from the pre-evaluation period and 1,168 from the evaluation period (see chapter 2 for details on medical record time periods). The number and type of medical records reviewed varied depending on the type of facility and services provided. Records of antenatal care, diarrhea, and pneumonia were collected from ambulatory facilities at the baseline, first, and second operations. Records of antenatal care and diarrhea were collected from ambulatory facilities at the baseline, first, second, and third operations. Records of uncomplicated delivery, immediate postpartum care, and obstetric and neonatal complications were collected from basic and complete facilities at the baseline, first, second, and third operations. Pneumonia records were collected from ambulatory facilities at the baseline, first, and second operations, but not at the third operation. Additionally, cervical cancer screening records were collected from ambulatory facilities for the first time at the third operation.

Table 4.3 below shows the total number of medical records of each type collected throughout this study. During the second operation measurement, records of obstetric and neonatal complications were recollected for the baseline time period to capture relevant data that reflect updated indicator definitions and standards of care that were not captured in the baseline or first operation surveys. The indicators and summaries detailed in chapter 4 of this report reflect only the re-collected baseline records for obstetric and neonatal complications, and omit records from the first operation.

As detailed in chapter 2, medical records reviewed for the third operation measurement were allocated into two time periods, pre-evaluation (January 1, 2019 through June 30, 2020) and evaluation (July 1, 2020 through June 30, 2022), to allow for a comparative analysis of indicator performance before and during the COVID-19 pandemic. Medical record indicator tables in this chapter display results for both pre-evaluation and evaluation time periods when available, while only the evaluation time period records are applicable to the performance indicator result.

Table 4.3: Medical record review sample size, intervention areas

MRR Type	Baseline	1st Operation	2nd Operation	3rd Operation, Pre-Evaluation	3rd Operation, Evaluation
Antenatal care	215	261	278	84	177
Cervical cancer screening	0	0	0	1	263
Diarrhea	177	226	258	71	105
Immediate postpartum care	157	130	154	78	146

MRR Type	Baseline	1st Operation	2nd Operation	3rd Operation, Pre-Evaluation	3rd Operation, Evaluation
Neonatal complications	295	233	167	76	166
Obstetric complications	281	208	158	78	165
Pneumonia	163	202	210	0	0
Uncomplicated delivery	235	257	156	78	146
Total	1,523	1,517	1,381	466	1,168

4.2 Women's health

Data were collected to evaluate both a health facility's capacity to offer women's health care (staff, facilities, equipment, medication), as well as a review of the actual women's health care supplied in antenatal care and cervical cancer screening medical records.

4.2.1 Antenatal care

Interviewers systematically selected antenatal care (ANC) records from ambulatory facilities for women who delivered in the last two years. ANC visits with quality are defined by the performance indicator 3050, which requires 5 ANC visits minimum, with physical checkups performed at each ANC visit. The first visit should occur at or before 12 weeks gestation. Additionally, specific laboratory tests must be performed at least once during the pregnancy. For a detailed definition of ANC standards required for indicator 3050, see appendix B.

The 3050 indicator was first measured at the baseline in which 12.8% of observations met the indicator. In the third operation evaluation period the proportion of observations that met the indicator increased from the baseline with 63.8% of observations meeting the indicator.

A reduction in care seeking resulting in fewer patients receiving at least five antenatal care visits drove performance of the indicator down since the second operation measurement. However, sustained improvement over the baseline of other components of the indicator related to lab tests is an important outcome of the third operation measurement.

Table 4.4: Antenatal care with quality (I3050), intervention, ambulatory facilities

Description	Baseline			1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI	N	%	CI
At least five ANC visits	125	72	(63.4-79.3)	236	61	(54.6-67.1)	272	91.5	(87.6-94.3)	82	75.6	(64.9-83.8)	177	76.3	(69.4-82)
First visit before 12 weeks gestation	125	59.2	(50.3-67.6)	228	58.8	(52.2-65)	272	88.2	(83.8-91.6)	82	81.7	(71.6-88.8)	177	87.6	(81.8-91.7)
All appropriate checks performed, at least five ANC visits*	125	99.2	(94.4-99.9)	236	59.3	(52.9-65.5)	272	90.1	(85.9-93.1)	82	70.7	(59.8-79.7)	177	74	(67-80)
All lab tests performed at least once during pregnancy:	125	27.2	(20-35.8)	236	88.1	(83.3-91.7)	272	98.2	(95.6-99.2)	82	91.5	(82.9-95.9)	177	91	(85.7-94.4)

	Baseline			1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
Blood group	125	85.6	(78.2-90.8)	236	97	(93.9-98.6)	272	98.5	(96.1-99.5)	82	97.6	(90.5-99.4)	177	96	(91.9-98.1)
Rh factor	125	85.6	(78.2-90.8)	236	96.6	(93.3-98.3)	272	98.5	(96.1-99.5)	82	97.6	(90.5-99.4)	177	96	(91.9-98.1)
Blood glucose	125	30.4	(22.9-39.1)	236	96.6	(93.3-98.3)	272	98.5	(96.1-99.5)	82	97.6	(90.5-99.4)	177	96.6	(92.6-98.5)
HIV test	125	94.4	(88.6-97.3)	236	96.2	(92.8-98)	272	99.3	(97.1-99.8)	82	100	(-)	177	97.2	(93.3-98.8)
Syphilis test (VDRL / RPR)**	125	84	(76.4-89.5)	236	91.9	(87.7-94.8)	272	98.9	(96.6-99.6)	82	96.3	(89-98.8)	177	94.9	(90.5-97.4)
Hemoglobin	125	83.2	(75.5-88.8)	236	91.1	(86.7-94.1)	272	98.5	(96.1-99.5)	82	98.8	(91.5-99.8)	177	97.2	(93.3-98.8)
Urinalysis	125	81.6	(73.7-87.5)	236	93.2	(89.2-95.8)	272	98.9	(96.6-99.6)	82	98.8	(91.5-99.8)	177	96.6	(92.6-98.5)
If patient referred during pregnancy, all visits were to standard (even if less than 5 visits)***	0			0			4	100	(-)	4	75	(4.1-99.5)	15	86.7	(54.6-97.2)
At least 5 antenatal care visits to standard (I3050)	125	12.8	(7.9-20)	228	43	(36.7-49.5)	272	82	(76.9-86.1)	82	61	(49.8-71.1)	177	63.8	(56.4-70.6)

* Baseline and first operation: uterine height and fetal checkups are only evaluated at first visit, if eligible based on gestational age.

** RPR not captured as VDRL alternative at baseline and 1st operation.

*** Referral not captured at baseline and 1st operation.

4.2.2 Cervical cancer screening

Interviewers systematically selected routine care records of women aged 25-64 from ambulatory facilities to evaluate the presence and quality of cervical cancer screenings. This module was introduced for the third operation survey to measure recent cervical cancer screening interventions implemented by SMI, and therefore has no data from previous operations. Records are evaluated for the recency and quantity of various types of screenings including Papanicolaou test (Pap smear), human papillomavirus (HPV) screening, and visual inspection of the cervix with acetic acid (IVAA). In the case of positive screening results, records are evaluated for proper follow-up and referral practices. For a detailed definition of cervical cancer screening standards required for indicator 6005, see appendix B.

Table 4.5: Cervical cancer screening with quality (I6005), intervention, ambulatory facilities

Description	3rd Operation: Evaluation		
	N	%	CI
Evidence of any HPV screening?	251	0	(-)
Evidence of any IVAA screening?	251	0.4	(0.1-2.8)
IVAA screening date recorded	1	0	(-)
Evidence of any PAP screening?	251	78.9	(73.4-83.5)
At least one positive/negative PAP result in past year	198	69.7	(62.9-75.7)
Negative PAP result in past year	198	67.2	(60.3-73.4)
Positive PAP result in past year	198	4	(2-7.9)

	3rd Operation: Evaluation		
Notification of positive PAP result within 8 weeks	8	75	(27.6-95.9)
Evidence notification was received	8	87.5	(31.9-99.1)
All requirements for positive PAP result in past year met	8	75	(27.6-95.9)
Two negative PAP screenings within past 3 years (if most recent result > 1 year ago)	60	11.7	(5.5-22.9)
PAP screening to standard (positive or negative)	198	72.7	(66-78.5)
No evidence of screening in record	251	21.1	(16.5-26.6)
Cervical cancer screening with quality (I6005)	251	57.4	(51.1-63.4)

4.3 Obstetric care

Data were collected to evaluate both a health facility's capacity to offer obstetric care (staff, facilities, equipment, medication), as well as a review of the actual obstetric care supplied in delivery, postpartum care, and obstetric complication medical records.

4.3.1 Management of obstetric complications

Interviewers evaluated records of obstetric complications (hemorrhage, severe pre-eclampsia, eclampsia, sepsis) that were systematically sampled by IHME from electronic discharge registries provided by the Secretary of Health. These records were used to evaluate quality of care, as defined by the maternal complications performance indicator 4080 (see appendix B for detailed definitions of the care requirements for indicator 4080). In the third operation measurement, only records from complete facilities were evaluated for the final performance indicator result. Results from basic facilities are displayed for monitoring purposes but do not contribute to the performance indicator result. Note that some records may have been evaluated for multiple obstetric complications.

The 4080 indicator was first measured at the baseline in which 36% of observations met the indicator. In the third operation evaluation period the proportion of observations that met the indicator increased from the baseline with 66.4% of observations meeting the indicator.

Table 4.6: Management of obstetric complications (I4080), intervention, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	18	50	(26.4-73.6)	20	85	(59.6-95.6)	0			8	100	(-)
Hemorrhage managed to standard	30	56.7	(37.8-73.8)	27	92.6	(72.8-98.3)	21	71.4	(47.1-87.5)	47	89.4	(76.2-95.7)
Pre-eclampsia managed to standard	46	17.4	(8.7-31.7)	51	37.3	(24.8-51.7)	13	46.2	(19.5-75.2)	50	48	(34.2-62.1)
Eclampsia managed to standard	6	33.3	(4.2-85.1)	7	71.4	(21.5-95.8)	3	66.7	(0.3-99.9)	8	12.5	(0.9-68.1)
Management of obstetric complications (I4080)	100	36	(27.1-46)	105	62.9	(53.1-71.7)	36	61.1	(43.7-76.1)	113	66.4	(57-74.6)

Table 4.7: Management of obstetric complications (I4080), intervention, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	7	85.7	(25.7-99)	2	100	(-)	1	100	(-)
Hemorrhage managed to standard	23	95.7	(71.6-99.5)	11	100	(-)	7	85.7	(25.7-99)
Pre-eclampsia managed to standard	15	40	(17.1-68.2)	27	37	(20.3-57.5)	41	41.5	(27-57.5)
Eclampsia managed to standard	3	0	(-)	2	100	(-)	3	66.7	(0.3-99.9)
Management of obstetric complications	48	70.8	(56-82.2)	42	59.5	(43.6-73.7)	52	50	(36.3-63.7)

Hemorrhage cases are evaluated as one component of the obstetric complications indicator 4080. Table 4.8 below displays hemorrhage management practices in each operation measurement. For a detailed definition of the standards required for appropriate hemorrhage management, see appendix B.

Table 4.9: Management of obstetric complications (I4080), intervention, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	30	100	(-)	27	100	(-)	21	100	(-)	47	100	(-)
Pulse / heart rate	30	100	(-)	27	100	(-)	21	100	(-)	47	100	(-)
Blood pressure	30	100	(-)	27	100	(-)	21	100	(-)	47	100	(-)
Ringer's lactate / Hartmann's / saline solution administered	30	90	(71.7-97)	27	96.3	(75.5-99.5)	21	95.2	(69.1-99.4)	47	97.9	(85.5-99.7)
Lab tests:	30	70	(50.5-84.2)	27	100	(-)	21	90.5	(66-97.9)	47	95.7	(83.8-99)
Hematocrit	30	80	(60.8-91.2)	27	100	(-)	21	90.5	(66-97.9)	47	95.7	(83.8-99)
Hemoglobin	30	80	(60.8-91.2)	27	100	(-)	21	90.5	(66-97.9)	47	100	(-)
Platelet count	30	70	(50.5-84.2)	27	100	(-)	21	95.2	(69.1-99.4)	47	100	(-)
Causes treated appropriately:	16	81.2	(51.4-94.7)	17	94.1	(62.7-99.3)	11	54.5	(22.6-83.2)	18	88.9	(61.1-97.6)
Abortion	0			0			1	100	(-)	2	100	(-)
Ectopic pregnancy	0			0			0			0		
Placenta previa	0			0			1	100	(-)	1	100	(-)
Placental abruption	0			0			1	100	(-)	0		
Uterine rupture	0			1	100	(-)	1	100	(-)	2	100	(-)
Uterine atony	6	66.7	(14.9-95.8)	11	90.9	(46.3-99.1)	6	50	(9.1-90.9)	4	100	(-)
Uterine inversion	0			0			1	0	(-)	0		
Retained product	10	90	(42.2-99.1)	8	100	(-)	3	66.7	(0.3-99.9)	12	83.3	(45.7-96.7)
Hemorrhage managed to standard	30	56.7	(37.8-73.8)	27	92.6	(72.8-98.3)	21	71.4	(47.1-87.5)	47	89.4	(76.2-95.7)

Table 4.10: Management of obstetric complications (I4080), hemorrhage, intervention, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	23	100	(-)	11	100	(-)	7	100	(-)
Pulse / heart rate	23	100	(-)	11	100	(-)	7	100	(-)
Blood pressure	23	100	(-)	11	100	(-)	7	100	(-)
Ringer's lactate / Hartmann's / saline solution administered	23	100	(-)	11	100	(-)	7	100	(-)
Causes treated appropriately:	12	91.7	(49.9-99.2)	6	100	(-)	4	75	(4.1-99.5)
Abortion	1	100	(-)	1	100	(-)	0		
Ectopic pregnancy	0			0			0		
Placenta previa	0			0			0		
Placental abruption	0			0			0		
Uterine rupture	0			0			0		
Uterine atony	5	80	(11.1-99.2)	0			0		
Uterine inversion	0			0			0		
Retained product	7	100	(-)	5	100	(-)	4	75	(4.1-99.5)
Hemorrhage managed to standard	23	95.7	(71.6-99.5)	11	100	(-)	7	85.7	(25.7-99)

Sepsis cases are evaluated as one component of the obstetric complications indicator 4080. Table 4.11 below displays sepsis management practices in each operation measurement. For a detailed definition of the standards required for appropriate sepsis management, see appendix B.

Table 4.11: Management of obstetric complications (I4080), sepsis, intervention, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	18	88.9	(61.1-97.6)	20	95	(67.7-99.4)	0			8	100	(-)
Pulse / heart rate	18	94.4	(64.5-99.4)	20	100	(-)	0			8	100	(-)
Blood pressure	18	94.4	(64.5-99.4)	20	100	(-)	0			8	100	(-)
Temperature	18	88.9	(61.1-97.6)	20	95	(67.7-99.4)	0			8	100	(-)
Lab tests (blood biometry):	18	55.6	(30.9-77.8)	20	95	(67.7-99.4)	0			8	100	(-)
Leukocyte count	18	55.6	(30.9-77.8)	20	95	(67.7-99.4)	0			8	100	(-)
Platelet count	18	55.6	(30.9-77.8)	20	100	(-)	0			8	100	(-)
Hemoglobin	18	61.1	(35.5-81.8)	20	100	(-)	0			8	100	(-)
Hematocrit	18	61.1	(35.5-81.8)	20	100	(-)	0			8	100	(-)
Antibiotics administered	18	94.4	(64.5-99.4)	20	100	(-)	0			8	100	(-)

	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Causes treated appropriately:	15	93.3	(58.4-99.3)	19	89.5	(62.9-97.7)	0			7	100	(-)
Pelvic abscess	0			0			0			0		
Retained product	0			5	60	(8.1-96.2)	0			2	100	(-)
Postpartum endometritis	12	91.7	(49.9-99.2)	16	100	(-)	0			5	100	(-)
Puerperal fever	4	100	(-)	7	100	(-)	0			3	100	(-)
Obstetric sepsis managed to standard	18	50	(26.4-73.6)	20	85	(59.6-95.6)	0			8	100	(-)

No applicable records reviewed in the third operation pre-evaluation measurement.

Table 4.12: Management of obstetric complications (I4080), sepsis, intervention, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	7	100	(-)	2	100	(-)	1	100	(-)
Pulse / heart rate	7	100	(-)	2	100	(-)	1	100	(-)
Blood pressure	7	100	(-)	2	100	(-)	1	100	(-)
Temperature	7	100	(-)	2	100	(-)	1	100	(-)
Antibiotics administered	7	85.7	(25.7-99)	2	100	(-)	1	100	(-)
Causes treated appropriately:	7	85.7	(25.7-99)	2	100	(-)	0		
Pelvic abscess	0			0			0		
Retained product	0			1	100	(-)	0		
Postpartum endometritis	2	100	(-)	1	100	(-)	0		
Puerperal fever	6	83.3	(18.6-99.1)	0			0		
Obstetric sepsis managed to standard	7	85.7	(25.7-99)	2	100	(-)	1	100	(-)

Pre-eclampsia cases are evaluated as one component of the obstetric complications indicator 4080. Table 4.13 below displays pre-eclampsia management practices in each operation measurement. For a detailed definition of the standards required for appropriate pre-eclampsia management, see appendix B.

Table 4.13: Management of obstetric complications (I4080), pre-eclampsia, intervention, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	46	84.8	(70.7-92.8)	51	86.3	(73.4-93.5)	13	61.5	(30.5-85.4)	50	66	(51.4-78.1)
Pulse / heart rate	46	100	(-)	51	100	(-)	13	100	(-)	50	98	(86.3-99.7)
Blood pressure	46	97.8	(85.2-99.7)	51	100	(-)	13	100	(-)	50	100	(-)
Respiratory rate	46	97.8	(85.2-99.7)	51	100	(-)	13	100	(-)	50	98	(86.3-99.7)
Patellar reflex	46	89.1	(75.8-95.6)	51	86.3	(73.4-93.5)	13	61.5	(30.5-85.4)	50	66	(51.4-78.1)

	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
Lab tests	46	19.6	(10.2-34.1)	51	43.1	(29.9-57.4)	13	53.8	(24.8-80.5)	50	66	(51.4-78.1)
Urine protein	46	82.6	(68.3-91.3)	51	90.2	(78-96)	13	69.2	(36.5-89.8)	50	84	(70.6-92)
Platelet count	46	91.3	(78.3-96.8)	51	94.1	(82.7-98.2)	13	92.3	(53.1-99.2)	50	100	(-)
Creatine	46	84.8	(70.7-92.8)	51	88.2	(75.6-94.8)	13	92.3	(53.1-99.2)	50	96	(84.7-99)
Uric acid	46	73.9	(58.8-84.9)	51	82.4	(68.9-90.8)	13	76.9	(42.8-93.7)	50	94	(82.4-98.1)
Aspartate aminotransferase / glutamic-oxalacetic transaminase	46	73.9	(58.8-84.9)	51	86.3	(73.4-93.5)	13	92.3	(53.1-99.2)	50	90	(77.6-95.9)
Alanine transaminase / glutamic-pyruvic transaminase	46	73.9	(58.8-84.9)	51	86.3	(73.4-93.5)	13	92.3	(53.1-99.2)	50	92	(80-97.1)
Lactate dehydrogenase	46	23.9	(13.5-38.9)	51	47.1	(33.5-61.1)	13	61.5	(30.5-85.4)	50	80	(66.1-89.1)
All appropriate medications administered	46	91.3	(78.3-96.8)	51	96.1	(85-99.1)	13	100	(-)	50	90	(77.6-95.9)
Magnesium sulfate	46	91.3	(78.3-96.8)	51	100	(-)	13	100	(-)	50	90	(77.6-95.9)
Hydralazine / labetalol / nifedipine (if diastolic blood pressure > 110)	21	100	(-)	22	90.9	(67.3-98)	0			6	100	(-)
Pre-eclampsia managed to standard	46	17.4	(8.7-31.7)	51	37.3	(24.8-51.7)	13	46.2	(19.5-75.2)	50	48	(34.2-62.1)

Table 4.14: Management of obstetric complications (I4080), pre-eclampsia, intervention, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Blood pressure checked	15	100	(-)	27	100	(-)	41	100	(-)
Urine protein lab test	15	100	(-)	27	81.5	(60.9-92.5)	41	85.4	(70.3-93.5)
All appropriate medications administered	15	93.3	(58.4-99.3)	27	48.1	(29.3-67.5)	41	68.3	(52-81.1)
Magnesium sulfate	15	100	(-)	27	59.3	(39-76.8)	41	82.9	(67.5-91.9)
Ringer's lactate / Hartmann's / saline solution	15	93.3	(58.4-99.3)	27	51.9	(32.5-70.7)	41	80.5	(64.8-90.2)
Referred	15	40	(17.1-68.2)	27	77.8	(57-90.2)	41	68.3	(52-81.1)
Pre-eclampsia managed to standard	15	40	(17.1-68.2)	27	37	(20.3-57.5)	41	41.5	(27-57.5)

Eclampsia cases are evaluated as one component of the obstetric complications indicator 4080. Table 4.15 below displays eclampsia management practices in each operation measurement. For a detailed definition of the standards required for appropriate eclampsia management, see appendix B.

Table 4.15: Management of obstetric complications (I4080), eclampsia, intervention, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	6	100	(-)	7	71.4	(21.5-95.8)	3	66.7	(0.3-99.9)	8	25	(4.1-72.4)
Pulse / heart rate	6	100	(-)	7	100	(-)	3	100	(-)	8	100	(-)
Blood pressure	6	100	(-)	7	100	(-)	3	100	(-)	8	100	(-)
Respiratory rate	6	100	(-)	7	85.7	(25.7-99)	3	100	(-)	8	100	(-)
Patellar reflex	6	100	(-)	7	85.7	(25.7-99)	3	66.7	(0.3-99.9)	8	25	(4.1-72.4)
Lab tests	6	33.3	(4.2-85.1)	7	85.7	(25.7-99)	3	66.7	(0.3-99.9)	8	37.5	(8.7-79.2)
Urine protein	6	100	(-)	7	100	(-)	3	100	(-)	8	62.5	(20.8-91.3)
Platelet count	6	83.3	(18.6-99.1)	7	100	(-)	3	100	(-)	8	100	(-)
Creatine	6	33.3	(4.2-85.1)	7	100	(-)	3	100	(-)	8	100	(-)
Uric acid	6	50	(9.1-90.9)	7	100	(-)	3	100	(-)	8	100	(-)
Aspartate aminotransferase / glutamic-oxalacetic transaminase	6	50	(9.1-90.9)	7	85.7	(25.7-99)	3	100	(-)	8	75	(27.6-95.9)
Alanine transaminase / glutamic-pyruvic transaminase	6	50	(9.1-90.9)	7	85.7	(25.7-99)	3	100	(-)	8	75	(27.6-95.9)
Lactate dehydrogenase	6	33.3	(4.2-85.1)	7	85.7	(25.7-99)	3	66.7	(0.3-99.9)	8	50	(14.3-85.7)
All appropriate medications administered	6	83.3	(18.6-99.1)	7	100	(-)	3	100	(-)	8	75	(27.6-95.9)
Magnesium sulfate	6	100	(-)	7	100	(-)	3	100	(-)	8	87.5	(31.9-99.1)
Hydralazine / labetalol / nifedipine (if diastolic blood pressure > 110)	4	75	(4.1-99.5)	2	100	(-)	0			2	50	(0-100)
Eclampsia managed to standard	6	33.3	(4.2-85.1)	7	71.4	(21.5-95.8)	3	66.7	(0.3-99.9)	8	12.5	(0.9-68.1)

Table 4.16: Management of obstetric complications (I4080), eclampsia, intervention, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Blood pressure checked	3	100	(-)	2	100	(-)	3	100	(-)
Urine protein lab test	3	66.7	(0.3-99.9)	2	100	(-)	3	66.7	(0.3-99.9)
All appropriate medications administered	3	100	(-)	2	100	(-)	3	66.7	(0.3-99.9)
Magnesium sulfate	3	100	(-)	2	100	(-)	3	100	(-)
Ringer's lactate / Hartmann's / saline solution	3	100	(-)	2	100	(-)	3	66.7	(0.3-99.9)
Referred	3	33.3	(0.1-99.7)	2	100	(-)	3	100	(-)
Eclampsia managed to standard	3	0	(-)	2	100	(-)	3	66.7	(0.3-99.9)

4.4 Neonatal care

Data were collected to evaluate both a health facility's capacity to offer neonatal care (staff, facilities, equipment, medication), as well as a review of the actual neonatal care supplied in postpartum care and neonatal complication medical records.

4.4.1 Routine newborn care with quality

Interviewers reviewed immediate postpartum records from uncomplicated deliveries in the past two years at basic and complete facilities to evaluate immediate routine newborn care. Neonates must receive all appropriate checks and procedures according to the standards defined by the quality routine newborn care performance indicator 4103. For a detailed definition of routine newborn care standards required for indicator 4103, see appendix B.

The 4103 indicator was first measured at the baseline in which 21.7% of observations met the indicator. In the third operation evaluation period the proportion of observations that met the indicator increased from the baseline with 78.8% of observations meeting the indicator.

Table 4.17: Routine newborn care with quality (I4103), intervention, basic and complete facilities

Description	Baseline			1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vitamin K	120	90	(83.1-94.3)	119	90.8	(84-94.9)	150	98.7	(94.7-99.7)	78	97.4	(90-99.4)	146	97.9	(93.7-99.3)
Application of prophylaxis with oxytetracycline ophthalmic/chloramphenicol	120	89.2	(82.1-93.7)	119	90.8	(84-94.9)	150	98.7	(94.7-99.7)	78	91	(82.1-95.7)	146	95.9	(91.1-98.2)
Evaluation for the presence of malformations	120	82.5	(74.5-88.4)	119	86.6	(79-91.7)	150	90.7	(84.8-94.4)	78	87.2	(77.5-93.1)	146	89	(82.8-93.2)
APGAR score (at 1 and 5 minutes)	120	96.7	(91.3-98.8)	119	84	(76.2-89.6)	150	100	(-)	78	100	(-)	146	97.9	(93.7-99.3)
Weight	120	98.3	(93.5-99.6)	119	83.2	(75.2-89)	150	100	(-)	78	100	(-)	146	99.3	(95.2-99.9)
Height	120	97.5	(92.4-99.2)	119	81.5	(73.4-87.6)	150	99.3	(95.3-99.9)	78	100	(-)	146	99.3	(95.2-99.9)
Head circumference	120	95.8	(90.3-98.3)	119	75.6	(67-82.6)	150	98.7	(94.7-99.7)	78	98.7	(91.1-99.8)	146	99.3	(95.2-99.9)
Respiratory rate	120	43.3	(34.6-52.4)	119	67.2	(58.2-75.2)	150	87.3	(80.9-91.8)	78	83.3	(73.1-90.2)	146	95.2	(90.2-97.7)
Temperature*	0			0			150	88.7	(82.4-92.9)	78	92.3	(83.7-96.6)	146	93.8	(88.5-96.8)
BCG vaccine, if neonate weight >2500g	112	55.4	(45.9-64.4)	111	96.4	(90.7-98.7)	137	93.4	(87.8-96.6)	72	95.8	(87.6-98.7)	132	93.9	(88.3-97)
Routine newborn care with quality (I4103)	120	21.7	(15.1-30.1)	119	59.7	(50.5-68.2)	150	74.7	(67-81)	78	67.9	(56.6-77.5)	146	78.8	(71.3-84.7)

*Temperature check not captured at baseline or 1st operation.

4.4.2 Neonatal complications

Interviewers evaluated records of neonatal complications (prematurity, sepsis, and asphyxia) that were systematically sampled by IHME from electronic discharge registries provided by the Secretary of Health. These records were used to evaluate quality of care, as defined by the neonatal complications performance indicator 4070 (see appendix B for detailed definitions of the care requirements for indicator 4070). In the third operation measurement, only records from complete facilities were evaluated for the final performance indicator result. Results from basic facilities are displayed for monitoring purposes but do not contribute to the performance indicator result. Note that some records may have been evaluated for multiple neonatal complications.

The 4070 indicator was first measured at the baseline in which 10% of observations met the indicator. In the third operation evaluation period the proportion of observations that met the indicator increased from the baseline with 68.3% of observations meeting the indicator.

Table 4.18: Management of neonatal complications (I4070), intervention, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	47	2.1	(0.3-14.5)	60	28.3	(18.2-41.3)	16	37.5	(16.1-65.2)	47	63.8	(48.8-76.6)
Asphyxia managed to standard	13	30.8	(10.2-63.5)	15	73.3	(42.9-91)	11	72.7	(35.4-92.8)	30	93.3	(75.3-98.5)
Prematurity managed to standard	10	20	(3.7-62.2)	11	72.7	(35.4-92.8)	12	25	(6.7-60.7)	37	59.5	(42.4-74.5)
Management of neonatal complications (4070)	70	10	(4.8-19.8)	84	41.7	(31.4-52.7)	33	36.4	(21.3-54.7)	104	68.3	(58.6-76.6)

Table 4.19: Management of neonatal complications (I4070), intervention, basic facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	10	20	(3.7-62.2)	33	51.5	(34.1-68.6)	32	43.8	(27.1-61.9)	37	37.8	(23.3-55)
Asphyxia managed to standard	3	0	(-)	2	0	(-)	1	0	(-)	0		
Prematurity managed to standard	0			0			0			0		
Management of neonatal complications (4070)	13	15.4	(3.1-51)	35	48.6	(32-65.5)	32	40.6	(24.5-59.1)	37	37.8	(23.3-55)

Prematurity cases are evaluated as one component of the neonatal complications indicator 4070. Table 4.20 below displays prematurity management practices in each operation measurement. For a detailed definition of the standards required for appropriate prematurity management, see appendix B.

Table 4.20: Management of neonatal complications (I4070), prematurity, intervention, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	10	70	(31-92.4)	11	81.8	(42-96.5)	12	58.3	(26.7-84.3)	37	75.7	(58.6-87.2)

	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Weight	10	100	(-)	11	100	(-)	12	100	(-)	37	100	(-)
Pulse / heart rate	10	90	(42.2-99.1)	11	100	(-)	12	100	(-)	37	100	(-)
Respiratory rate	10	100	(-)	11	100	(-)	12	100	(-)	37	100	(-)
Silverman-Anderson / Downes test	10	80	(37.8-96.3)	11	81.8	(42-96.5)	12	58.3	(26.7-84.3)	37	75.7	(58.6-87.2)
Head circumference	10	100	(-)	11	100	(-)	12	100	(-)	37	100	(-)
APGAR score / skin test	10	100	(-)	11	100	(-)	12	91.7	(49.9-99.2)	37	97.3	(81.7-99.7)
Lab tests	10	20	(3.7-62.2)	11	90.9	(46.3-99.1)	12	66.7	(32.9-89.1)	37	86.5	(70.4-94.5)
Glycemia	10	50	(18.1-81.9)	11	90.9	(46.3-99.1)	12	66.7	(32.9-89.1)	37	94.6	(79.7-98.7)
Oxygen saturation	10	50	(18.1-81.9)	11	100	(-)	12	100	(-)	37	89.2	(73.5-96.1)
Gestational age calculated using Capurro/Ballard (if in-facility)	10	100	(-)	11	100	(-)	12	91.7	(49.9-99.2)	37	100	(-)
Weight classification (if in-facility)	10	100	(-)	11	90.9	(46.3-99.1)	12	91.7	(49.9-99.2)	37	91.9	(76.7-97.5)
Heat application	10	100	(-)	11	100	(-)	12	100	(-)	37	100	(-)
Breastfed / given glucose	10	100	(-)	11	100	(-)	12	91.7	(49.9-99.2)	37	91.9	(76.7-97.5)
Evaluated by specialist	10	100	(-)	11	100	(-)	12	100	(-)	37	100	(-)
Appropriate management of any associated complications:	1	0	(-)	3	100	(-)	2	100	(-)	5	80	(11.1-99.2)
Pneumonia: antibiotics	1	0	(-)	3	100	(-)	1	100	(-)	3	100	(-)
Diarrhea: liquids/ORS/antibiotics	0			0			0			0		
Seizures: anticonvulsants	0			0			0			1	100	(-)
Hypoglycemia: glucose IV	0			0			1	100	(-)	2	50	(0-100)
Prematurity managed to standard	10	20	(3.7-62.2)	11	72.7	(35.4-92.8)	12	25	(6.7-60.7)	37	59.5	(42.4-74.5)

No records were found to have prematurity at basic facilities in the random sample.

Sepsis cases are evaluated as one component of the neonatal complications indicator 4070. Table 4.21 below displays sepsis management practices in each operation measurement. For a detailed definition of the standards required for appropriate sepsis management, see appendix B.

Table 4.21: Management of neonatal complications (I4070), sepsis, intervention, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	47	97.9	(85.5-99.7)	60	100	(-)	16	100	(-)	47	95.7	(83.8-99)
Pulse / heart rate	47	100	(-)	60	100	(-)	16	100	(-)	47	100	(-)
Respiratory rate	47	97.9	(85.5-99.7)	60	100	(-)	16	100	(-)	47	95.7	(83.8-99)
Lab tests	47	2.1	(0.3-14.5)	60	30	(19.5-43.1)	16	37.5	(16.1-65.2)	47	63.8	(48.8-76.6)

	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Oxygen saturation	47	17	(8.5-31.1)	60	60	(46.8-71.9)	16	87.5	(57-97.4)	47	95.7	(83.8-99)
C-reactive protein	47	76.6	(61.9-86.8)	60	91.7	(81.1-96.6)	16	100	(-)	47	93.6	(81.3-98)
Platelets	47	76.6	(61.9-86.8)	60	96.7	(87.2-99.2)	16	93.7	(60.7-99.3)	47	97.9	(85.5-99.7)
Leukocytes	47	80.9	(66.5-90)	60	88.3	(77.1-94.5)	16	100	(-)	47	97.9	(85.5-99.7)
Hemoglobin	47	80.9	(66.5-90)	60	95	(85.2-98.4)	16	100	(-)	47	97.9	(85.5-99.7)
Hematocrit	47	83	(68.9-91.5)	60	95	(85.2-98.4)	16	100	(-)	47	97.9	(85.5-99.7)
Blood culture	47	4.3	(1-16.2)	60	46.7	(34.2-59.6)	16	68.7	(40.2-87.8)	47	83	(68.9-91.5)
Neutrophil band ratio / absolute ratio	47	2.1	(0.3-14.5)	60	41.7	(29.6-54.8)	16	75	(45.7-91.4)	47	78.7	(64.2-88.4)
Double antibiotic therapy	47	97.9	(85.5-99.7)	60	100	(-)	16	100	(-)	47	100	(-)
Evaluated by specialist	47	89.4	(76.2-95.7)	60	95	(85.2-98.4)	16	100	(-)	47	100	(-)
Sepsis managed to standard	47	2.1	(0.3-14.5)	60	28.3	(18.2-41.3)	16	37.5	(16.1-65.2)	47	63.8	(48.8-76.6)

Table 4.22: Management of neonatal complications (I4070), sepsis, intervention, basic facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	10	70	(31-92.4)	33	90.9	(74.1-97.2)	32	75	(56.3-87.5)	37	67.6	(50.3-81.1)
Pulse / heart rate	10	80	(37.8-96.3)	33	93.9	(77.4-98.6)	32	81.2	(62.9-91.7)	37	70.3	(53-83.2)
Respiratory rate	10	80	(37.8-96.3)	33	97	(79.7-99.6)	32	75	(56.3-87.5)	37	81.1	(64.4-91)
Antibiotics administered	10	80	(37.8-96.3)	33	90.9	(74.1-97.2)	32	71.9	(53.1-85.2)	37	81.1	(64.4-91)
Evaluated by doctor	10	40	(12.5-75.7)	33	78.8	(60.6-90)	32	62.5	(43.9-78)	37	45.9	(30.1-62.6)
Referred	10	70	(31-92.4)	33	63.6	(45.3-78.7)	32	93.7	(76.8-98.6)	37	100	(-)
Sepsis managed to standard	10	20	(3.7-62.2)	33	51.5	(34.1-68.6)	32	43.8	(27.1-61.9)	37	37.8	(23.3-55)

Asphyxia cases are evaluated as one component of the neonatal complications indicator 4070. Table Table 4.23 below displays asphyxia management practices in each operation measurement. For a detailed definition of the standards required for appropriate asphyxia management, see appendix B.

Table 4.23: Management of neonatal complications (I4070), asphyxia, intervention, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI

	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	13	92.3	(53.1-99.2)	15	93.3	(58.4-99.3)	11	100	(-)	30	96.7	(77.8-99.6)
Pulse / heart rate	13	92.3	(53.1-99.2)	15	100	(-)	11	100	(-)	30	100	(-)
Respiratory rate	13	100	(-)	15	100	(-)	11	100	(-)	30	100	(-)
APGAR score at one minute	13	100	(-)	15	93.3	(58.4-99.3)	11	100	(-)	30	96.7	(77.8-99.6)
APGAR score at five minutes	13	100	(-)	15	93.3	(58.4-99.3)	11	100	(-)	30	96.7	(77.8-99.6)
Oxygen saturation lab test	13	30.8	(10.2-63.5)	15	86.7	(54.6-97.2)	11	81.8	(42-96.5)	30	100	(-)
Heat application	13	100	(-)	15	100	(-)	11	100	(-)	30	100	(-)
Oxygen application (if APGAR <= 3 at five minutes)	0			3	66.7	(0.3-99.9)	3	66.7	(0.3-99.9)	7	100	(-)
AMBU / positive pressure ventilation / endotracheal intubation / chest compressions (if APGAR <= 3 at five minutes)	0			3	100	(-)	3	100	(-)	7	85.7	(25.7-99)
Evaluated by specialist	13	100	(-)	15	100	(-)	11	100	(-)	30	100	(-)
Asphyxia managed to standard	13	30.8	(10.2-63.5)	15	73.3	(42.9-91)	11	72.7	(35.4-92.8)	30	93.3	(75.3-98.5)

In the third operation evaluation period, no records with asphyxia were found in the random sample at the basic level.

Table 4.24: Management of neonatal complications (I4070), asphyxia, intervention, basic facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	3	66.7	(0.3-99.9)	2	100	(-)	1	100	(-)	0		
Pulse / heart rate	3	66.7	(0.3-99.9)	2	100	(-)	1	100	(-)	0		
Respiratory rate	3	100	(-)	2	100	(-)	1	100	(-)	0		
APGAR score at one minute	3	100	(-)	2	100	(-)	1	100	(-)	0		
APGAR score at five minutes	3	100	(-)	2	100	(-)	1	100	(-)	0		
Oxygen saturation lab test (if APGAR <= 3 at five minutes)	3	0	(-)	2	0	(-)	1	0	(-)	0		
Heat application	3	100	(-)	2	100	(-)	1	100	(-)	0		
Oxygen application (if APGAR <= 3 at five minutes)	3	100	(-)	2	50	(0-100)	1	100	(-)	0		
AMBU / positive pressure ventilation / endotracheal intubation / chest compressions (if APGAR <= 3 at five minutes)	3	100	(-)	2	100	(-)	1	100	(-)	0		
Evaluated by doctor	3	100	(-)	2	100	(-)	1	100	(-)	0		
Referred (if APGAR <= 3 at five minutes)	3	100	(-)	2	100	(-)	1	100	(-)	0		
Asphyxia managed to standard	3	0	(-)	2	0	(-)	1	0	(-)	0		

No applicable records reviewed in the third operation evaluation measurement.

Chapter 5: Challenges and conclusions

5.1 Challenges and limitations

5.1.1 Household data collection

In Honduras, high rates of household vacancy attributable to widespread migration were encountered during the household census. Additionally, three segments were replaced during the census due to safety concerns related to gang activity and severe flooding.

5.1.2 Health facility data collection

Flooding also contributed to challenges in accessing health facilities, resulting in scheduling delays. Two ambulatory facilities were replaced in the sample due to long term closures. A hospital in the comparison sample could not be surveyed due to a regional strike among health workers, despite repeated attempts to conduct interviews.

Beyond accessibility, challenges emerged in meeting quotas for medical record review. Water damage due to flooding was encountered in multiple medical record storage environments, in addition to general impediments to locating sampled medical records due to deficits in archiving practices.

5.2 COVID-19 pandemic considerations

The results of the third operation SMI measurement cannot be fully understood outside of the context of the COVID-19 pandemic, which requires consideration of both its burden on health systems and also its impact on the capacity to conduct rigorous data collection programs. This measurement, intended to evaluate interventions conducted between 2018-2020, was delayed two years due to travel advisories, facility closures, and public health recommendations. This resulted in a significant lag between the effective intervention period and the evaluation period and introduced the potential for recall bias to influence interview responses. Additionally, ongoing treatment of COVID-19 cases at health facilities and social distancing measures in communities posed health risks to data collectors and created logistical hurdles for meeting data collection quotas.

SMI interventions have likely contributed to a resilient infrastructure that facilitated the response to the COVID-19 pandemic, but the impacts to the health system are far-reaching. Demand for health services was lowered by delayed or diminished care-seeking. Global shortages impacted local availability of medical and pharmaceutical supplies. Management of the pandemic required a diversion of limited resources, which may have had adverse effects on routine care and diagnosis of new conditions. Longer-term, macroeconomic repercussions of the pandemic have also likely impacted access to healthcare and institutional capacity throughout the Mesoamerica region.

5.3 Key findings

5.3.1 Performance indicator results

In total, ten performance indicators were measured by IHME after the third operation interventions. Five indicators were measured through medical record review at health facilities and five indicators were measured through household surveys. Many indicators showed notable improvement since baseline. In particular, medical record review indicators measuring antenatal care, routine newborn care, and obstetric and neonatal complications improved manifold over baseline results in intervention areas, while increases in comparison areas were much more modest. Antenatal care performance in the third operation decreased compared to the second operation results in intervention areas. The decrease can be attributed primarily to a reduction in the number of antenatal care patients who received at least five visits during the course of their pregnancy and underwent all of the appropriate laboratory tests. Reduced routine care attendance is likely linked to pandemic response behavioral changes. The novel performance indicator at the third operation, designed to measure the outcomes of interventions related to cervical cancer screenings, also displayed promising results in intervention areas, but was likely also hampered by diminished care-seeking.

Household indicators measuring institutional delivery and use of modern family planning methods showed the most progress over baseline estimates. Smaller improvements were observed in indicators measuring anemia rates in children under 2 years of age and diarrhea treatment in children under five years of age, suggesting an area for potential further intervention. The only indicator for which performance decreased compared to baseline measured immediate postpartum care for neonates by skilled personnel, which may have been affected by reduced care-seeking behavior due to COVID-19.

For a summary of the results of each performance indicator across measurement rounds, see appendix A.

5.3.2 Monitoring indicator results

In addition to the ten performance indicators, 40 monitoring indicators defined by IDB and the Honduras Secretary of Health were measured through the household surveys. These track a range of topics related to household expenditure, childbirth, contraceptive use, skilled health care attendance, access to and quality of care at health facilities, as well as vaccination, feeding habits, and treatment of illnesses in young children. Broadly, the results of these monitoring indicators gesture at improved health outcomes and increased engagement with health systems in SMI intervention areas relative to changes in comparison areas.

The impacts of the COVID-19 pandemic are pronounced in several household monitoring indicators, yet SMI may have had a mitigating effect. For instance, substantial decreases were observed in measures of complete vaccination for age and dietary quality for children under 5 in comparison areas, but were less profound in intervention areas. Importantly, the indicators measuring average out-of-pocket household health expenditure and average household expenditure revealed a striking increase, reflecting a shifting economic landscape amid the pandemic.

5.4 Conclusions

Several SMI indicators saw meaningful increases since the baseline. The third operation included ambitious new indicators with impressive progress despite the COVID-19 pandemic. Though some indicator targets were not met, it is important to keep in mind that the indicator requirements are stringent and all subcomponents must be met in order to reach the target. Even for indicators where the target was not met for the third operation, there were notable improvements in key subcomponents. For indicators measured through the medical record review, low performance may be driven by poor record-keeping rather than by failures in care provision - medical record storage and data management has been identified as an area for continued focus, recognizing the distinct value of both care and documentation.

Appendix A: Indicator matrices

A.1 Performance indicator matrices

Table A.1: Household performance indicators

Indicator	Description	Time Period	N	%	CI
I1060	Children (6-23mo) with hemoglobin <110g/L	Baseline	437	35	(29.3 - 41.2)
		2nd Operation	458	62	(56 - 67.7)
		3rd Operation	260	37	(29 - 45.9)
I5060	Diarrhea treatment with ORS and zinc (0-59mo)	Baseline	77	0	(-)
		2nd Operation	49	8.3	(3 - 21)
		3rd Operation	75	9.6	(4.1 - 21)
I4010	Institutional delivery	Baseline	666	68.9	(60.8 - 75.9)
		2nd Operation	709	85.2	(79.1 - 89.8)
		3rd Operation	606	86.9	(83.1 - 90)
I4100	Postpartum care for neonates (72 hours)	Baseline	630	47.3	(40.7 - 54)
		2nd Operation	636	33.3	(25.8 - 41.7)
		3rd Operation	543	34	(28.8 - 39.6)
I2010	Use of modern contraceptive methods	Baseline	969	69.3	(62.6 - 75.3)
		2nd Operation	1198	75.4	(69.9 - 80.2)
		3rd Operation	934	79.8	(75 - 83.9)

Table A.2: Health facility performance indicators

Indicator	Description	Time Period	N	%	CI
I3050	Antenatal care with quality*	Baseline	125	12.8	(7.9 - 20)
		1st Operation	228	43	(36.7 - 49.5)
		2nd Operation	272	82	(76.9 - 86.1)
		3rd Op. Pre-evaluation	82	61	(49.8 - 71.1)
		3rd Op. Evaluation	177	63.8	(56.4 - 70.6)
I4103	Routine newborn care with quality**	Baseline	120	21.7	(15.1 - 30.1)
		1st Operation	119	59.7	(50.5 - 68.2)
		2nd Operation	150	74.7	(67 - 81)
		3rd Op. Pre-evaluation	78	67.9	(56.6 - 77.5)
		3rd Op. Evaluation	146	78.8	(71.3 - 84.7)
I4070	Management of neonatal complications	Baseline	70	10	(4.8 - 19.8)
		1st Operation	Not measured at 1st operation		
		2nd Operation	84	41.7	(31.4 - 52.7)
		3rd Op. Pre-evaluation	33	36.4	(21.3 - 54.7)
		3rd Op. Evaluation	104	68.3	(58.6 - 76.6)
I4080	Management of obstetric complications	Baseline	100	36	(27.1 - 46)
		1st Operation	Not measured at 1st operation		
		2nd Operation	105	62.9	(53.1 - 71.7)
		3rd Op. Pre-evaluation	36	61.1	(43.7 - 76.1)

Indicator	Description	Time Period	N	%	CI
		3rd Op. Evaluation	113	66.4	(57 - 74.6)
I6005	Cervical cancer screening with quality	Baseline	Not measured at baseline		
		1st Operation	Not measured at 1st operation		
		2nd Operation	Not measured at 2nd operation		
		3rd Op. Pre-evaluation	Not measured at 3rd operation pre-evaluation		
		3rd Op. Evaluation	251	57.4	(51.1 - 63.4)

* Notes on baseline and first operation results: Referral not captured, so the subsequent exception cannot be applied as it is at second and third operation. Uterine height and fetal checkups are only evaluated at first visit, if eligible based on gestational age. RPR not captured as VDRL alternative for syphilis test.

** Temperature check not captured at baseline or first operation.

A.2 Monitoring indicator matrices

Table A.3: Household proportion-based monitoring indicators

Indicator	Description	Time Period	N	%	CI
MI1070	Children (0-59mo) with height <-2SD of mean of reference population	Baseline	1480	23.6	(18.8 - 29.1)
		2nd Operation	1691	23.2	(18.9 - 28)
		3rd Operation	1003	14.5	(11.5 - 18)
MI1080	Women (15-49 years) with a live birth in the last year	Baseline	1847	10.2	(8.8 - 11.8)
		2nd Operation	2124	7	(5.9 - 8.3)
		3rd Operation	1617	6.1	(4.9 - 7.5)
MI1090	Women (15-19 years) with a live birth in the last year	Baseline	388	10.7	(8.1 - 14)
		2nd Operation	408	7.4	(5.4 - 10.2)
		3rd Operation	192	6.8	(4.3 - 10.8)
MI2020	Women in need of but not using contraception	Baseline	969	30.7	(24.7 - 37.4)
		2nd Operation	1198	24.6	(19.8 - 30.1)
		3rd Operation	934	20.2	(16.1 - 25)
MI2030	Interruption in contraception use	Baseline	762	2.1	(1.2 - 3.7)
		2nd Operation	941	2.3	(1.1 - 4.5)
		3rd Operation	634	7.4	(4 - 13.1)
MI3010	Skilled antenatal care (1 visit)	Baseline	666	93.9	(90.3 - 96.3)
		2nd Operation	710	97.9	(96.2 - 98.8)
		3rd Operation	610	97.6	(96.3 - 98.5)
MI3020	Skilled antenatal care (4 visits)	Baseline	660	80.7	(74.5 - 85.6)
		2nd Operation	696	90.7	(87.7 - 93)
		3rd Operation	608	93.1	(89.9 - 95.3)
MI4020	Skilled postpartum care (48 hours)	Baseline	662	45.3	(38.6 - 52.1)
		2nd Operation	710	40.6	(34.3 - 47.2)
		3rd Operation	589	27.5	(23.5 - 31.9)
MI4035	Skilled postpartum care (7-42 days)	Baseline	662	22.3	(18.2 - 27)
		2nd Operation	710	36.9	(29.4 - 45)
		3rd Operation	589	30.8	(25.5 - 36.6)

Indicator	Description	Time Period	N	%	CI
MI4040	Skilled postpartum care (3 visits)	Baseline	662	6.3	(4.3 - 9.1)
		2nd Operation	710	7.9	(5.4 - 11.3)
		3rd Operation	589	3.7	(2.1 - 6.3)
MI4101	Skilled neonatal care (24 hours)	Baseline	630	36.4	(31.1 - 42)
		2nd Operation	636	19.8	(13.4 - 28.3)
		3rd Operation	543	28.3	(23.8 - 33.2)
MI4100	Skilled neonatal care (48 hours)	Baseline	630	45.9	(39.4 - 52.5)
		2nd Operation	636	30	(22.5 - 38.7)
		3rd Operation	543	31.7	(27.1 - 36.7)
MI4110	Recognition of 5 danger signs in newborns	Baseline	584	20.5	(16.2 - 25.7)
		2nd Operation	600	33.6	(26.7 - 41.3)
		3rd Operation	306	32.5	(22.7 - 44.2)
MI4145	Antibiotic use for children with pneumonia symptoms	Baseline	138	54.8	(41.2 - 67.8)
		2nd Operation	126	51.5	(39.5 - 63.4)
		3rd Operation	79	67.5	(56.3 - 77)
MI5010	Children (12-59mo) with 2 doses of deworming	Baseline	1235	39.5	(34.9 - 44.4)
		2nd Operation	1379	26.8	(23.9 - 30)
		3rd Operation	910	28.2	(24.4 - 32.4)
MI5020	Complete vaccination for age	Baseline	1495	41.1	(37.4 - 44.8)
		2nd Operation	1655	68.5	(64 - 72.6)
		3rd Operation	1074	55.5	(49.5 - 61.3)
MI5040	Exclusive breastfeeding (0-5mo)	Baseline	152	54.8	(46 - 63.3)
		2nd Operation	145	51.8	(41 - 62.3)
		3rd Operation	105	56.1	(44.2 - 67.3)
MI5050	Early initiation of breastfeeding	Baseline	701	73.1	(68.1 - 77.7)
		2nd Operation	714	85	(81 - 88.4)
		3rd Operation	614	76.5	(72.1 - 80.4)
MI5075	Children (6-23mo) with complete dose of micronutrients (60 packets)	Baseline	478	0	(-)
		2nd Operation	496	25.8	(20.4 - 32.1)
		3rd Operation	310	0	(-)
MI5080	Continued breastfeeding (12-15mo)	Baseline	118	82.4	(74.3 - 88.4)
		2nd Operation	133	78.2	(69.6 - 84.9)
		3rd Operation	93	69.5	(58.6 - 78.5)
MI5090	Consumption of solid food (6-8mo)	Baseline	76	87	(76.1 - 93.4)
		2nd Operation	57	88.1	(74.4 - 94.9)
		3rd Operation	47	81.4	(68.3 - 89.8)
MI5100	Dietary diversity (6-23mo)	Baseline	481	39.4	(34 - 45.1)
		2nd Operation	507	56.6	(48.7 - 64.1)
		3rd Operation	337	62.2	(54.3 - 69.5)
MI5110	Minimum meal frequency (6-23mo)	Baseline	474	61.6	(55.3 - 67.6)
		2nd Operation	498	65.2	(59.1 - 70.9)

Indicator	Description	Time Period	N	%	CI
MI5120	Minimum acceptable diet (6-23mo)	3rd Operation	325	53.7	(44.9 - 62.4)
		Baseline	480	25.8	(20.7 - 31.5)
		2nd Operation	504	37	(30.5 - 43.9)
		3rd Operation	330	34.6	(27.1 - 43)
MI5130	Consumption of iron-rich foods (6-23mo)	Baseline	481	43.7	(36.9 - 50.8)
		2nd Operation	507	58.7	(51.6 - 65.5)
		3rd Operation	337	63.5	(57.3 - 69.4)
MI6010	Women with recent illness	Baseline	1847	24.3	(20.5 - 28.6)
		2nd Operation	2122	17.5	(14.7 - 20.7)
		3rd Operation	1609	16.7	(13.5 - 20.5)
MI6020	Women with recent illness who did not seek care	Baseline	403	68.5	(60.9 - 75.2)
		2nd Operation	324	61.9	(51.9 - 71)
		3rd Operation	250	55.8	(45.7 - 65.5)
MI6030	Children with recent illness	Baseline	1596	33.9	(30.5 - 37.5)
		2nd Operation	1720	28.8	(25.5 - 32.4)
		3rd Operation	1173	27.4	(22.6 - 32.9)
MI6040	Children with recent illness who did not seek care	Baseline	521	0.8	(0.2 - 2.6)
		2nd Operation	482	0.6	(0.2 - 1.9)
		3rd Operation	320	2	(0.9 - 4.4)
MI6050	Women with recent visit to a health facility	Baseline	-	-	(-)
		2nd Operation	2123	12.4	(10 - 15.2)
		3rd Operation	1613	13.9	(11.4 - 17)
MI6130	Satisfaction with health care, most recent visit	Baseline	995	96.5	(94.4 - 97.9)
		2nd Operation	1366	96.3	(94.6 - 97.5)
		3rd Operation	875	95.1	(92.1 - 97)
MI6140	Satisfaction with cleanliness of facility, most recent visit	Baseline	998	64.4	(58.6 - 69.8)
		2nd Operation	1364	75.2	(70.4 - 79.4)
		3rd Operation	870	72.4	(66.9 - 77.2)
MI6150	Satisfaction with competence of personnel, most recent visit	Baseline	984	98.2	(96.4 - 99.1)
		2nd Operation	1362	97.3	(95.9 - 98.2)
		3rd Operation	867	97.3	(95.1 - 98.5)
MI6160	Women reporting being treated with respect, most recent visit	Baseline	1002	71.3	(66.7 - 75.4)
		2nd Operation	1368	73.5	(67.7 - 78.5)
		3rd Operation	874	77.3	(72.5 - 81.5)

Table A.4: Household mean-based monitoring indicators

Indicator	Description	Time Period	N	Mean	CI
MI6080	Average travel time to nearest health facility (min)	Baseline	1772	55.8	(41.9 - 69.7)
		2nd Operation	2042	57.7	(41.3 - 74.1)
		3rd Operation	1586	54.6	(36.1 - 73.2)
MI6082	Average travel time to delivery location (min)	Baseline	479	148.6	(122.3 - 175)
		2nd Operation	615	145.1	(124.7 - 165.5)
		3rd Operation	568	138.1	(127.2 - 149)
MI6085	Average distance to nearest health facility (km)	Baseline	468	4.6	(2.8 - 6.4)
		2nd Operation	1319	6.3	(3.4 - 9.2)
		3rd Operation	462	12.8	(4.9 - 20.7)
MI6090	Average out-of-pocket itemized health expenditure (L)	Baseline	1496	185.4	(101 - 269.9)
		2nd Operation	1679	190.9	(108.7 - 273.1)
		3rd Operation	1307	482.8	(324.7 - 640.9)
MI6100	Average household itemized expenditure (L)	Baseline	1524	3367.4	(3035.5 - 3699.3)
		2nd Operation	1681	4393.7	(3899.4 - 4888)
		3rd Operation	1370	6494	(5766 - 7222.1)
MI6120	Average wait time at most recent visit to health facility (min)	Baseline	976	79.8	(66.6 - 92.9)
		2nd Operation	1298	94.9	(81.4 - 108.4)
		3rd Operation	871	87.1	(60.3 - 113.9)

Appendix B: Indicator Definitions

B.1 Household performance indicators

1060: Children 6-23mo with hemoglobin <110g/L

Source: Household survey

Denominator: Total number of children aged 6-23 months in household surveys with a capillary blood sample used to measure hemoglobin

Formula: Hemoglobin level is above the following minimums based on community altitude:

- 110g/L if altitude is <1000
- 112g/L if altitude is $\geq 1000\text{m}$ & $< 1250\text{m}$
- 115g/L if altitude is $\geq 1250\text{m}$ & $< 1750\text{m}$
- 118g/L if altitude is $\geq 1750\text{m}$ & $< 2250\text{m}$
- 123g/L if altitude is $\geq 2250\text{m}$ & $< 2750\text{m}$
- 129g/L if altitude is $\geq 2750\text{m}$ & $< 3250\text{m}$
- 137g/L if altitude is $\geq 3250\text{m}$ & $< 3750\text{m}$
- 145g/L if altitude is $\geq 3750\text{m}$ & $< 4250\text{m}$
- 155g/L if altitude is $\geq 4250\text{m}$ & $< 4750\text{m}$
- 165g/L if altitude is $\geq 4750\text{m}$ & $< 5250\text{m}$
- 177g/L if altitude is $\geq 5250\text{m}$

4100: Infants receiving neonatal care by skilled personnel within 72 hours of birth in the last two years

Source: Household survey

Denominator: Number of live births by women 15-49 years of age in the last two years

Formula: Number of children born in the last two years who received neonatal care by skilled personnel (doctor, nurse, or auxiliary nurse) within 72 hours of delivery

5060: Diarrhea treatment with ORS and zinc at home

Source: Household survey

Denominator: Total number of children aged 0-59 months with reported diarrhea in the past two weeks in household surveys

Formula: Caregiver reports giving the child the following: (a fluid made from oral rehydration salts / a pre-packaged ORS liquid (bottled oral serum) / homemade liquid recommended by health authorities) + (zinc pills / zinc syrup)

4010: Women who had a in-facility delivery attended by doctor, nurse, or auxiliary nurse for most recent delivery in the last 2 years

Source: Household survey

Denominator: Total number of women 15-49 years of age with a live birth in the last two years

Formula: Woman reports having delivered in an SMI or hospital, with delivery attended by a doctor, nurse, or auxiliary nurse for her most recent birth in the last 2 years

2010: Women (age 15-49) and their partner who use modern contraceptives

Source: Household survey

Denominator: Total number of women aged 15-49 years who are married or partnered and do not report the following characteristics: does not have sexual relations, virgin, menopausal, infertile, pregnant, or wants to become pregnant (these women are considered in need of contraception)

Formula: Total number of women aged 15-49 years in need of contraception who are using a modern form of contraception, including injectables, female sterilization, male sterilization, oral contraceptives, intrauterine device (IUD), contraceptive implant, condoms (male or female), diaphragm, sponge and spermicide, or other modern method

B.2 Health facility performance indicators

3050: Women of reproductive age who received five prenatal care visits according to the best practices in the last two years

Source: Medical record review

Denominator: Total number of antenatal care records from ambulatory facilities

Formula: Observe the following in the record: woman had at least 5 ANC visits in total* + first ANC visit was at < 12 weeks gestation + physical checkups performed at each visit (weight + blood pressure + fundal height (if gestational age ≥ 22 weeks) + fetal heart rate (if gestational age > 20 weeks) + fetal movement (if gestational age > 20 weeks)) + lab tests performed at least once: (blood group + Rh factor + blood glucose level + HIV test + RPR / VDRL test + Hb level + urinalysis)

*Fewer than 5 ANC visits are permitted if the patient was referred to another facility for further antenatal care

4103: Routine care for neonates following delivery in the last two years

Source: Medical record review

Denominator: Total number of postpartum records for uncomplicated live births at basic and complete facilities in the sample

Formula: Observe the following in the record: Vitamin K + prophylaxis application with (ophthalmic oxytetracycline / chloramphenicol) + evaluation of the presence of malformations + BCG vaccine (if the weight at birth >2500g) + APGAR score (at 1 and 5 minutes) + respiratory rate + weight + height + head circumference + temperature

4070: Neonatal complications (prematurity, asphyxia, and sepsis) managed according to the norm in the last two years

Source: Medical record review

Denominator: Total number of records of neonates with birth complications (prematurity, birth asphyxia, or sepsis) at complete facilities in the sample (records from basic facilities not included in the denominator)

Formula:

Prematurity (excluding neonates with gestational age ≥ 37 weeks)

Observe the following in the record: gestational age calculation using Capurro or Ballard (if neonate was not referred from another facility) + classification of neonate by gestational age recorded (if neonate was not referred from another facility) + (heart rate / pulse) + respiratory rate + weight + Silverman-Anderson/Downes score + head circumference + (Apgar score (1 or 5 minutes) / skin evaluation) + glycemia lab test + oxygen saturation lab test + heat application + neonate was fed glucose (breastfed / oral serum / IV) + evaluated by a specialist + appropriate care:

- *if neonate has pneumonia:* antibiotics
- *if neonate has diarrhea:* antibiotics / breastmilk / oral rehydration salts
- *if neonate has seizures:* anticonvulsants
- *if neonate has hypoglycemia:* IV glucose serum

Asphyxia (excluding cases referred to the facility)

Observe the following in the record: (heart rate / pulse) + respiratory rate + Apgar score at 1 minutes + Apgar score at 5 minutes + heat application + oxygen saturation level + oxygen application (if severe asphyxia) + (AMBU / positive pressure ventilation / cardiac massage / endotracheal intubation (if severe asphyxia)) + evaluated by a specialist

*severe asphyxia is defined as 5-minute Apgar score ≤ 3

Sepsis

Observe the following in the record: (heart rate / pulse) + temperature + respiratory rate + oxygen saturation level + blood biometry: (platelet count + leukocyte count + hemoglobin + hematocrit) + hemoculture + c-reactive protein + neutrophil band ratio/neutrophil absolute ratio + double antibiotic therapy + evaluated by a specialist

4080: Women with obstetric complications (sepsis, hemorrhage, severe pre-eclampsia, and eclampsia) managed according to the norm in the last 2 years

Source: Medical record review

Denominator: Total number of records of women with maternal complications (hemorrhage, severe pre-eclampsia, eclampsia, or sepsis) at complete facilities in the sample (records from basic facilities not included in the denominator)

Formula:

Hemorrhage

Observe the following in the record: (heart rate / pulse) + blood pressure + hematocrit + hemoglobin + platelet count + (ringer's lactate / hartmann's / saline solution) + appropriate care:

- *if incomplete/complicated abortion with hemorrhage:* AMEU / curettage
- *if ectopic/broken ectopic pregnancy:* laparotomy / salpingectomy / surgical repair
- *if placenta previa with hemorrhage:* caesarean section
- *if placental abruption:* vaginal birth / caesarean section
- *if uterine rupture:* laparotomy / hysterectomy / surgical repair
- *if uterine atony:* uterotonic (oxytocin / misoprostol / methlergonovine) + (uterine massage / bimanual compression / aortal compression / uterine tamponade / compressive sutures / hysterectomy)
- *if uterine inversion:* uterotonic (oxytocin / misoprostol / methlergonovine) + reposition/restoration of the uterus under sedation or anesthesia with surgical or non-surgical techniques
- *if total or partial placental retention / placental remnants / accretion:* uterotonic (oxytocin / misoprostol / methlergonovine) + (manual extraction / curettage / hysterectomy)

Severe Pre-eclampsia & Eclampsia

Observe the following in the record: (heart rate / pulse) + blood pressure + respiratory rate + patellar reflex + urine protein + platelet count + creatinine + uric acid + (aspartate aminotransferase / glutamic-oxalacetic transaminase) + (alanine aminotransferase / glutamic-pyruvic transaminase) + lactate dehydrogenase + magnesium sulfate + hydralazine/labetalol/nifedipine (if diastolic blood pressure is ever > 110)

Sepsis

Observe the following in the record: (heart rate / pulse) + blood pressure + temperature + blood biometry: (hemoglobin + hematocrit + platelet count + leukocyte count) + antibiotic + appropriate care:

- *if postpartum or post-caesarean endometritis:* double therapy antibiotics
- *if puerperal fever:* antibiotics
- *if pelvic abscess:* antibiotics + (drainage / laparotomy / hysterectomy / surgical repair)
- *if retention of placental remains:* antibiotics + (curettage / laparotomy / hysterectomy)

6005: Cervical cancer screening

Source: Medical record review

Denominator: Total number of regular attention records in the past year among women aged 25 – 64 years at ambulatory facilities in the sample

Formula: Observe the following in the record:

1. A positive or negative HPV, IVAA, or PAP screening result in the past year
 - *if positive HPV or PAP:* evidence of notification within 8 weeks + evidence woman received notification
 - *if positive IVAA:* evidence of notification on the same day + evidence woman received notification (in cases where the screening was conducted at another facility, a note/copy of the result signed by a doctor is included)

OR: 2. A negative HPV screening result in the past 5 years

OR: 3. A negative IVAA screening result in the past 3 years

OR: 4. Two negative PAP screening results in the past 3 years

B.3 Household monitoring indicators

1070: Children 0-59 months with height <-2 SD of the mean of the reference population for age

Source: Household survey

Denominator: Total number of children aged 0-59 months in the household surveys whose height was measured

Formula: Total number of children aged 0-59 months whose measured height is less than -2 SD with respect to the median height-for-age in the reference population

1080: Women aged 15-49 with a live birth in the last year

Source: Household survey

Denominator: Total number of women 15-49 years of age in the household surveys

Formula: Total number of women 15-49 years with at least one live birth in the last year

1090: Women aged 15-19 with a live birth in the last year

Source: Household survey

Denominator: Total number of women 15-19 years of age in the household surveys

Formula: Total number of women 15-19 years with at least one live birth in the last year

2020: Women aged 15-49 who did not wish to become pregnant and who were not using or did not have access to contraceptive methods

Source: Household survey

Denominator: Total number of women aged 15-49 years who are married or partnered and do not report the following characteristics: does not have sexual relations, virgin, menopausal, infertile, pregnant, or wants to become pregnant (these women are considered in need of contraception)

Formula: Total number of women aged 15-49 years in need of contraception who are not using a modern form of contraception (injectables, female sterilization, male sterilization, oral contraceptives, intrauterine device (IUD), contraceptive implant, condoms (male or female), diaphragm, sponge and spermicide, or other modern method)

2030: Women aged 15-49 who report having stopped using a method of contraception during the previous year

Source: Household survey

Denominator: Total number of women 15-49 years of age who used a method of contraception in the last year and who are considered in need of contraception

Formula: Total number of women 15-49 years of age who are considered in need of contraception and who report having stopped using a method of contraception in the past year

3010: Women aged 15-49 who received at least one antenatal care visit by skilled personnel before their most recent birth in the last two years

Source: Household survey

Denominator: Total number of women 15-49 years of age with a live birth in the last two years

Formula: Woman reports having at least one antenatal care visit with skilled personnel (doctor, nurse, or auxiliary nurse) before her most recent birth in the last two years

3020: Women aged 15-49 who received at least four antenatal care visits by skilled personnel before their most recent birth in the last two years

Source: Household survey

Denominator: Total number of women 15-49 years of age with a live birth in the last two years

Formula: Woman reports having at least four antenatal care visits with skilled personnel (doctor, nurse, or auxiliary nurse) before her most recent birth in the last two years

4020: Women aged 15-49 who received postpartum care by skilled personnel within the first 48 hours after their most recent birth in the last two years

Source: Household survey

Denominator: Total number of women 15-49 years of age with a live birth in the last two years

Formula: Woman reports having received postpartum care by skilled personnel (doctor, nurse, or auxiliary nurse) in the first 48 hours after her most recent birth in the last two years

4035: Women aged 15-49 who received postpartum care by skilled personnel between 7 and 42 days after their most recent birth in the last two years

Source: Household survey

Denominator: Total number of women 15-49 years of age with a live birth in the last two years

Formula: Woman reports having received postpartum care by skilled personnel (doctor, nurse, or auxiliary nurse) between 7 and 42 days after her most recent birth in the last two years

4040: Women aged 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 their most recent birth in the last two years

Source: Household survey

Denominator: Total number of women 15-49 years of age with a live birth in the last two years

Formula: Woman reports having received postpartum care by skilled personnel (doctor, nurse, or auxiliary nurse) in a health facility within 24 hours of the birth, a second exam in the first 7 days, and a third exam in the first 42 days after her most recent birth in the last two years

4100: Infants receiving neonatal care by skilled personnel in a health facility within 48 hours of birth in the last two years

Source: Household survey

Denominator: Number of live births by women 15-49 years of age in the last two years

Formula: Number of children born in the last two years who received neonatal care by skilled personnel (doctor, nurse, or auxiliary nurse) in a health facility within 48 hours of delivery

4101: Infants receiving neonatal care by skilled personnel in a health facility within 24 hours of birth in the last two years

Source: Household survey

Denominator: Number of live births by women 15-49 years of age in the last two years

Formula: Number of children born in the last two years that received neonatal care by skilled personnel (doctor, nurse, or auxiliary nurse) in a health facility within 24 hours of delivery

4110: Women aged 15-49 with a birth in the last two years who can recognize at least 5 danger signs in newborns

Source: Household survey

Denominator: Total number of women 15-49 years of age with a live birth in the past two years in the household surveys

Formula: Number of women 15 to 49 years of age with a live birth in the last two years and who can recognize at least 5 danger signs in newborns. Danger signs include: fever, seizure, convulsions, cyanosis, difficulty breathing, paleness, flaccidity, lethargy, cold to touch, bleeding, jaundice, loss of appetite, diarrhea, vomiting, or distended abdomen, pus or redness of the bellybutton, eyes, or skin, swelling of the joints and extremities

4145: Children (0-59 months) with pneumonia symptoms who received antibiotics

Source: Household survey

Denominator: Number of children 0-59 months of age with pneumonia symptoms in the last two weeks. Child is considered symptomatic if:

- child was sick with cough in the last two weeks, AND
- reported breathing more rapid than usual OR reported having trouble breathing, AND
- reported that the difficulty breathing was due to a chest problem OR a chest problem together with congestion or runny nose

Formula: Number of children 0-59 months of age with pneumonia symptoms that received antibiotics (injection, pill, or liquid)

NO NUMBER: Complete vaccination for age

Source: Household survey

Denominator: Total number of children 0-59 months of age in the household surveys

Formula: Child received the following vaccinations according to their vaccine card OR caregiver recall, depending on the child's age at the time of the survey:

- BCG
 - Birth dose
- Hepatitis B
 - Birth dose
- Polio (OPV)
 - 2 months
 - 4 months
 - 6 months

- 18 months
- Pentavalent (DPT, HepB, Hib)
 - 2 months
 - 4 months
 - 6 months
- Rotavirus
 - 2 months
 - 4 months
- Pneumococcal conjugate
 - 2 months
 - 4 months
 - 6 months
- MMR
 - 1 year
 - Additional dose before 5 years
- DPT
 - 18 months
 - 4 years (after 3 doses of Pentavalent at 2, 4, and 6 months)

5010: Children 12-59 months who received 2 doses of deworming in the last year

Source: Household survey

Denominator: Total number of children aged 12-59 months in the household surveys

Formula: Caregiver reports child receiving at least 2 doses of deworming in the last year

5040: Children 0-5 months who were exclusively breastfed on the previous day

Source: Household survey

Denominator: Total number of children aged 0-5 months in the household surveys

Formula: Caregiver reports that child consumed only breast milk (breastfed or from a bottle) on the previous day

5050: Children born in the last two years who were breastfed within one hour after birth

Source: Household survey

Denominator: Number of live births by women 15-49 years of age in the last two years

Formula: Mother reports having breastfed the child during the first hour after the birth

5075: Children 6-23 months who consumed at least 60 packets of micronutrients (complete dose) in the last 6 months

Source: Household survey

Denominator: Total number of children aged 6-23 months in the household surveys

Formula: Caregiver reports that the child has consumed adequate doses of micronutrients (at least 60 packets consumed on consecutive days) in the last 60 months

5080: Children 12-15 months who were breastfed on the previous day

Source: Household survey

Denominator: Total number of children aged 12-15 months in the household surveys

Formula: Caregiver reports that child was breastfed on the previous day

5090: Children 6-8 months who received solid or semi-solid food on the previous day

Source: Household survey

Denominator: Total number of children aged 6-8 months in the household surveys

Formula: Caregiver reports that child consumed solid foods on the previous day. Solid foods include:

- Breakfast cereals
- Grains (e.g., bread, rice, pastas, or other grain-based foods)
- Starches (e.g., potatoes, yuca, sweet potatoes, or other tubers)
- Orange fruits and vegetables (e.g., carrots, tomatoes, melon, or other fruits whose center is orange or yellow)
- Green leafy vegetables
- Ripe mango or papaya
- Any other fruits or vegetables
- Liver, kidney, heart, or other organ meat
- Any meat, including beef, pork, goat, chicken, or duck
- Eggs
- Seafood (fresh or dried fish and shellfish)
- Beans or lentils

- Peanuts, cashews, almonds, or other nuts
- Cheese or other milk-derived products
- Sweets (e.g., chocolates, caramels, cakes)
- Condiments added to food (e.g., herbs, pepper, chiles)
- Foods prepared with oil, fat, or butter (e.g., french fries, fried fish)
- Snails or insects
- Any other solid, semi-solid, or soft food

5100: Children 6-23 months who received foods from 4 or more food groups during the previous day

Source: Household survey

Denominator: Total number of children aged 6-23 months in the household surveys

Formula: Caregiver reports child having consumed food from 4 or more different food groups on the previous day.

Food groups include:

- Cereals, grains and starches
- Beans and legumes
- Dairy products (e.g., milk, formula, cheese, yogurt)
- Meat, poultry, organ meat, or fish
- Eggs
- Green or orange fruits and vegetables, mango and papaya
- Other fruits and vegetables

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

Source: Household survey

Denominator: Total number of children aged 6-23 months in the household surveys

Formula: Caregiver reports child consumed solid, semisolid, or soft foods the minimum number of times in the previous day based on age. The minimum number of times for each age group are:

- Twice for children aged 6-8 months who are also breastfeeding
- Three times for children aged 9-23 months who are also breastfeeding
- Four times for children aged 6-23 months who are NOT breastfeeding

5120: Children 6-23 months who received the minimum acceptable diet (apart from breastmilk) during the previous day

Source: Household survey

Denominator: Total number of children aged 6-23 months in the household surveys

Formula: Caregiver reports that child consumed the minimum acceptable diet for age group (apart from breastmilk) during the previous day. The minimal acceptable diet is defined as follows:

- Children aged 6-8 months who are breastfeeding consumed food from at least four different food groups AND consumed solid or semisolid foods at least twice during the previous day
- Children aged 9-23 months who are breastfeeding consumed food from at least four different food groups AND consumed solid or semisolid foods at least three times during the previous day
- Children aged 6-23 months who are not breastfeeding consumed food from at least four different food groups (excluding milk products) AND at least 4 milk products, including milk, baby formula, yogurt, or other solid or semisolid foods

5130: Children 6-23 months who received iron-rich or iron-fortified foods during the previous day

Source: Household survey

Denominator: Total number of children aged 6-23 months in the household surveys

Formula: Caregiver reports child consumed iron-rich or iron-fortified foods during the previous day. Iron-rich or iron-fortified foods include:

- Iron supplements (pills, powder, or liquid)
- Fortified baby foods
- Organ meat, other meat, or fish
- Iron-fortified milk product (e.g., Liconsa, Incaparina)

6010: Women 15-49 years of age who report having any illness in the past two weeks

Source: Household survey

Denominator: Total number of women aged 15-49 in the household surveys

Formula: Woman reports having any illness in the last two weeks

6020: Women 15-49 years of age who report having any illness in the past two weeks but did not seek health care

Source: Household survey

Denominator: Total number of women aged 15-49 in the household surveys

Formula: Woman reports having been ill in the last two weeks and not seeking health care

6030: Children (0-59 months) who had any illness in the past two weeks, according to report of caregiver

Source: Household survey

Denominator: Total number of children 0-59 months of age in the household surveys

Formula: Caregiver reports child having been sick in the last two weeks

6040: Children (0-59 months) who had any illness in the past two weeks but did not seek health care, according to report of caregiver

Source: Household survey

Denominator: Total number of children 0-59 months of age in the household surveys

Formula: Caregiver reports child having been sick in the last two weeks and not seeking health care

6050: Women (15-49 years) who visited a health facility in the last two weeks

Source: Household survey

Denominator: Total number of women aged 15-49 in the household surveys

Formula: Woman reports visiting a health facility in the last two weeks

6080: Average travel time to nearest health facility

Source: Household survey

Denominator: N/A

Formula: Average travel time in minutes to nearest health facility, among women who report knowing of the nearest health facility

6082: Average travel time to delivery location for most recent birth in the last two years

Source: Household survey

Denominator: N/A

Formula: Average travel time in minutes to delivery location for most recent birth in the last two years, among women with a live birth in a health facility in the past two years

6085: Average distance to nearest health facility

Source: Household survey

Denominator: N/A

Formula: Average distance in kilometers to nearest health facility, among women who report knowing of the nearest health facility

6090: Average out-of-pocket household itemized health expenditure for the last month

Source: Household survey

Denominator: N/A

Formula: Average total itemized household out-of-pocket health expenditure for the last month (Lempira). Health expenditures include:

- Medical attention that required overnight stay in a hospital or health facility
- Other costs associated with an overnight stay in a hospital or health facility (e.g., transportation, lodging, childcare)
- Medical attention from doctors, nurses, or other health care workers that did not require an overnight stay
- Medical attention from traditional or alternative healers, or traditional birth attendants
- Dental care
- Medicines prescribed by health care personnel
- Consultation with a pharmacist, or medicines purchased without a prescription directly from the pharmacy
- Medical devices such as prescription glasses, hearing aids, or prosthetic devices, etc.
- Diagnostic and laboratory tests (e.g., X-rays, blood tests)
- Any other health care expense

6100: Average household itemized expenditure for the last month

Source: Household survey

Denominator: N/A

Formula: Average total itemized household expenditure for the last month (Lempira). Household expenditures include:

- Food
- Alcohol, drugs, and tobacco

- Educational expenses
- Rent and utilities (e.g., water, gas, electricity)
- Clothing and shoes
- Household furnishings, appliances, and maintenance
- Recreation, culture, restaurants, and hotels
- Transportation
- Communication (e.g., telephone service, postage)
- Out-of-pocket health care expenses
- Health insurance premiums (Social Security and private insurance)
- Other health care expenses (e.g., transportation, lodging, childcare)

6120: Average wait time at most recent visit to a health facility

Source: Household survey

Denominator: N/A

Formula: Average wait time in minutes at most recent visit to a health facility

6130: Women who report satisfaction with health care services at their most recent visit to a health facility

Source: Household survey

Denominator: Total number of women 15-49 years of age with a recent visit to a health facility (public or private) for themselves or their child

Formula: Woman reports satisfaction with health care services at her most recent visit to a health facility (public or private)

6140: Women who report satisfaction with cleanliness of the facility at their most recent visit to a health facility

Source: Household survey

Denominator: Total number of women 15-49 years of age with a recent visit to a health facility (public or private) for themselves or their child

Formula: Woman reports satisfaction with cleanliness of the facility at her most recent visit to a health facility

6150: Women who report satisfaction with competence of the medical personnel at their most recent visit to a health facility

Source: Household survey

Denominator: Total number of women 15-49 years of age with a recent visit to a health facility (public or private) for themselves or their child

Formula: Woman reports satisfaction with competence of the medical personnel at her most recent visit to a health facility

6160: Women who report they were treated with respect at their most recent visit to a health facility

Source: Household survey

Denominator: Total number of women 15-49 years of age with a recent visit to a health facility (public or private) for themselves or their child

Formula: Woman reports being treated with respect at her most recent visit to a health facility

Appendix C: Census and household sample design and methods

C.1 Sample size

Sample sizes were determined based on IDB's pre-specified plan for the third operation measurement to complete a full census of sampled segments (described in section A.2 "Sampling Procedures," below), followed by a survey of 1,410 selected eligible households in intervention areas, and 598 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 1,410 households, we sought to complete interviews with residents of 30 randomly selected households in each of the 47 randomly selected segments in intervention areas (20 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-Honduras 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. Data from partially complete households are used wherever individual modules are sufficiently complete. Because multiple interviewers worked the sample simultaneously, in a handful of instances more than 30 surveys were completed.

C.2 Sampling procedures

IDB identified 34 municipalities in which to conduct the baseline SMI survey for the Initiative on the basis of their high concentration of residents in the country's lowest wealth quintile, then randomized the receipt of the intervention package by health system manager ("*gestor*"). The study includes 18 intervention and 16 comparison municipalities (Figure C.1). From these 34 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.

C.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 third operation primary sample of 47 intervention and 20 comparison clusters (segments) was randomly selected from a total of 281 intervention segments in 18 municipalities and 190 comparison segments in 16 municipalities which, based on data from the 2013 Honduras

Population Census, contained 52,312 and 57,490 occupied households, respectively. 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 2013 Honduras Population 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 67 total segments to be surveyed, a set of 30 alternate segments in intervention areas and 25 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 Honduras in the third operation survey, two segments in the departments of Choluteca and one segment in the department of Intibuca were replaced due to safety concerns as well as inaccessibility resulting from inclement weather.

C.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.

C.3 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. The weights were calculated as follows for households:

Weight =

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



where

$p(\text{selecting Segment } X)$

$$= \frac{\# \text{ occupied households in Segment } X \text{ in 2013 Population Census}}{\text{Total } \# \text{ occupied households in target municipalities in 2013 Population Census}} * \# \text{ draws}$$

and the number of draws corresponds to the number of segments in the corresponding study arm (47 for intervention areas and 20 for comparison areas at the third operation), and the total number of occupied households in target municipalities in the 2013 Honduras Population Census corresponds to 52,312 in intervention areas and 57,490 in comparison areas, and

if the household includes children under 5 according to the SMI-Honduras 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-Honduras 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 0.92 in intervention areas and 0.99 in comparison areas (according to the SMI-Honduras Household Census), and

if the household includes children under 5 according to the SMI-Honduras 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-Honduras 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 0.31 in intervention areas and 0.36 in comparison areas (according to the SMI-Honduras Household Census), and

$p(\text{selecting Household } Y \text{ in Segment } X)$

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

and

$p(\text{selecting Child } W \text{ in Household } Y)$

$$= \frac{\# \text{ children in Household } Y \text{ completing the survey}}{\# \text{ children 0-59 months residing in Household } Y \text{ from SMI census}},$$

The weights yielded results which were similar to the unweighted results.

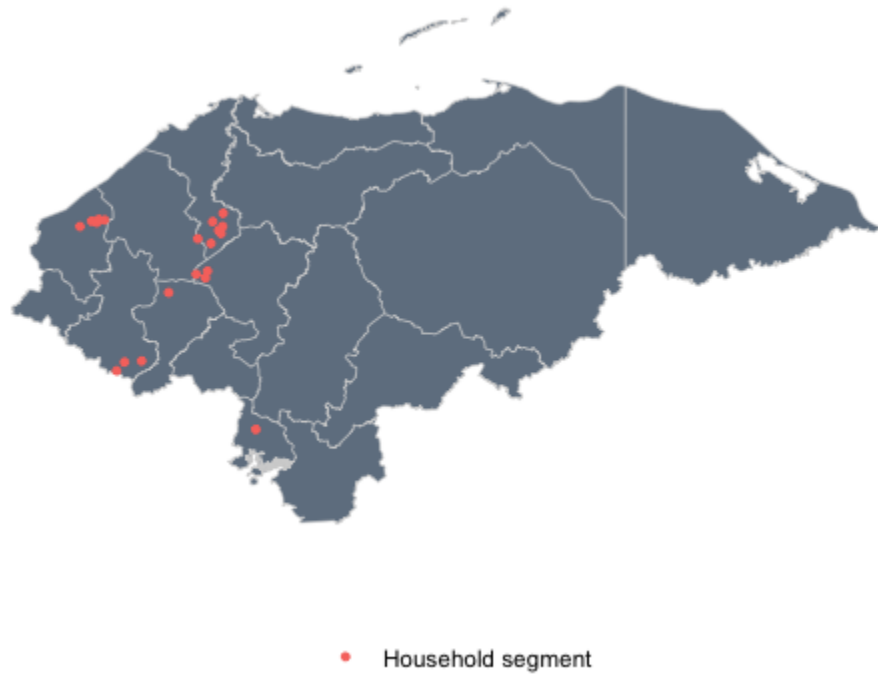
C.4 Sampling errors

As described above, a random sample of eligible households was selected from each of 47 clusters (segments) in intervention areas and 20 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 confidence intervals presented throughout this report account for this intra-class correlation, using Taylor-linearized variance estimation.

Appendix D: Comparison area results

D.1 Comparison area household survey results

Figure D.1: Map of household comparison segments in the Honduras third operation



D.1.1 Household characteristics

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

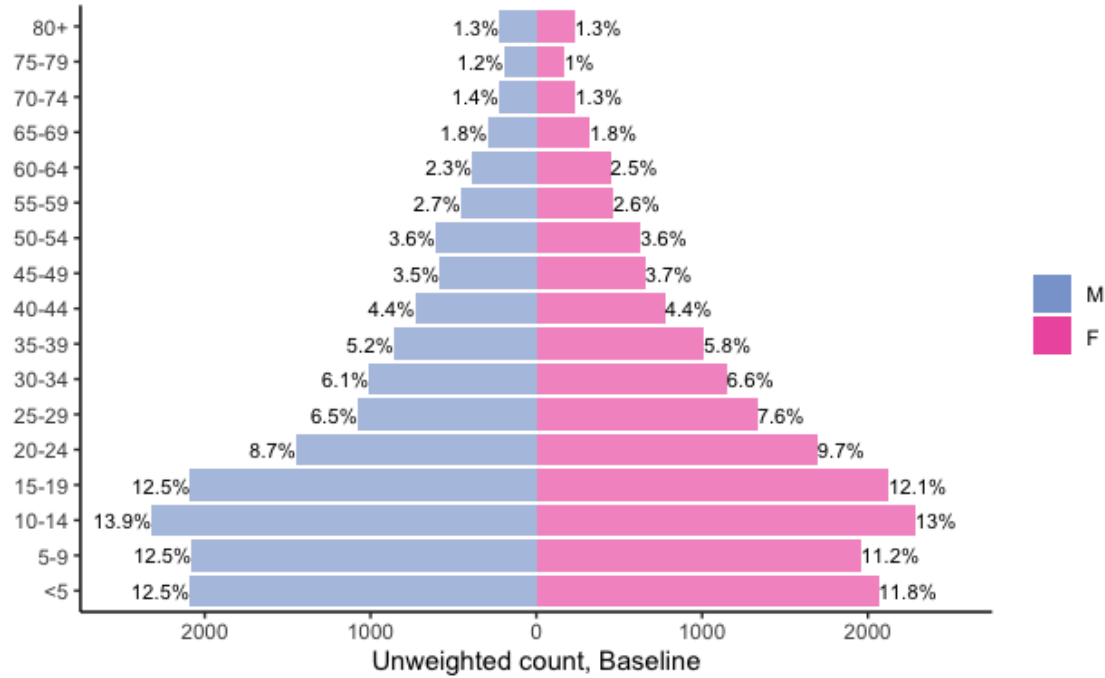


Figure D.3: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, third operation survey

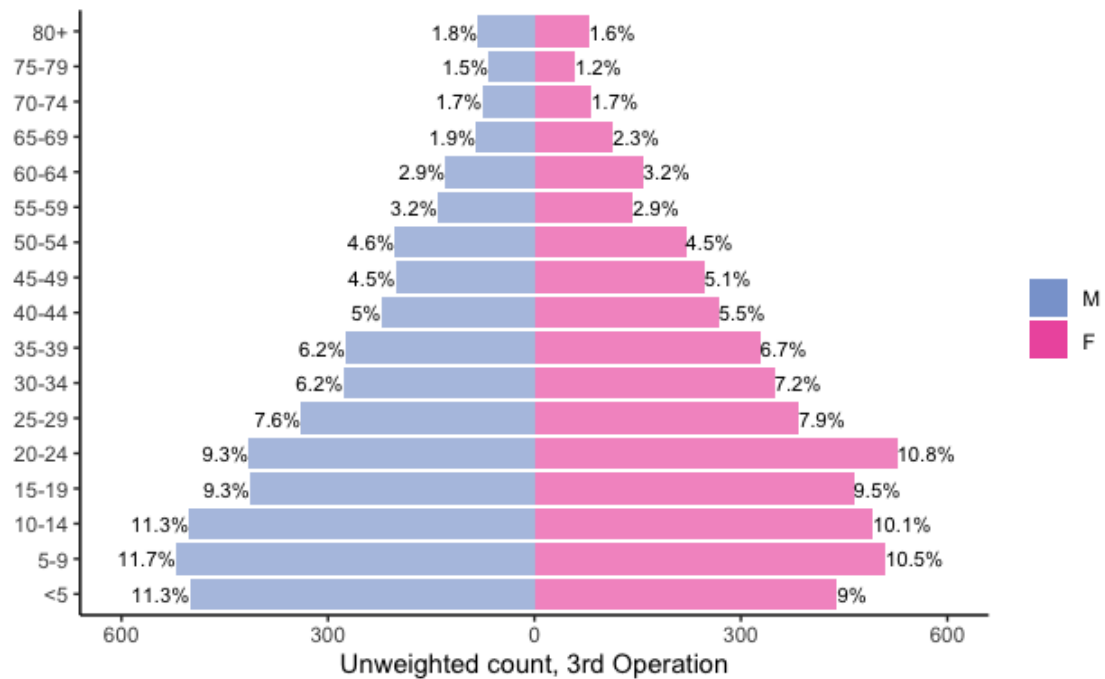


Table D.1: SMI household survey sample sizes: number of total households, women 15-49 years of age, and children 0-59 months

	Baseline	2nd Operation	3rd Operation
Households	1445	756	598
Women	1712	975	715
Children	1559	770	556

Table D.2: Household characteristics, SMI household sample

	Baseline			2nd Operation			3rd Operation		
	n	%	CI	n	%	CI	n	%	CI
Dual-headed household	1,101	75.8	(72.1 - 79.4)	559	71.2	(65.7 - 76.7)	412	68.5	(63 - 74)
Single head, female	293	21.3	(17.6 - 24.9)	167	23.7	(18 - 29.4)	134	22.8	(18.9 - 26.6)
Single head, male	51	3.0	(1.8 - 4.1)	30	5.1	(1.7 - 8.5)	52	8.8	(4.6 - 12.9)

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

Table D.3: Number of usual household members, SMI household sample (percentiles)

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum
Baseline	1,445	0	1	4	5	6	16
2nd Operation	756	0	1	3	4	6	15
3rd Operation	598	0	1	3	4	5	13

DK/DTR = Number of 'Don't know' and 'Decline to Respond' responses

Table D.4: Total itemized per-capita expenditure quintiles, current Honduras Lempira*

Operation	N	DK/DTR	p20	p40	p60	p80
Baseline	1,324	3	378	594	860	1,344
2nd Operation	713	0	598	942	1,360	2,034
3rd Operation	500	19	673	1,097	1,769	3,155

*Not adjusted for inflation

Table D.5: Average household expenditures for the last month in current Honduras Lempira (L) (MI6090/MI6100), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	mean	CI	N	mean	CI	N	mean	CI
Average out-of-pocket household health expenditure for the last month (MI6090)*	1425	281.7	(-21.8-585.1)	753	413.1	(202.5-623.8)	564	586.4	(185.8-987)
Average household itemized expenditure for the last month (L) (MI6100)**	1439	4204.2	(3846.5-4561.9)	755	6182.4	(5137-7227.9)	576	7765.1	(6490-9040.3)

*1 outlier observation above 50,000 L excluded from each operation

**7 outlier observations above 60,000 L excluded across 3 operations

D.1.2 Women's health

Figure D.4: Age of respondents, unweighted

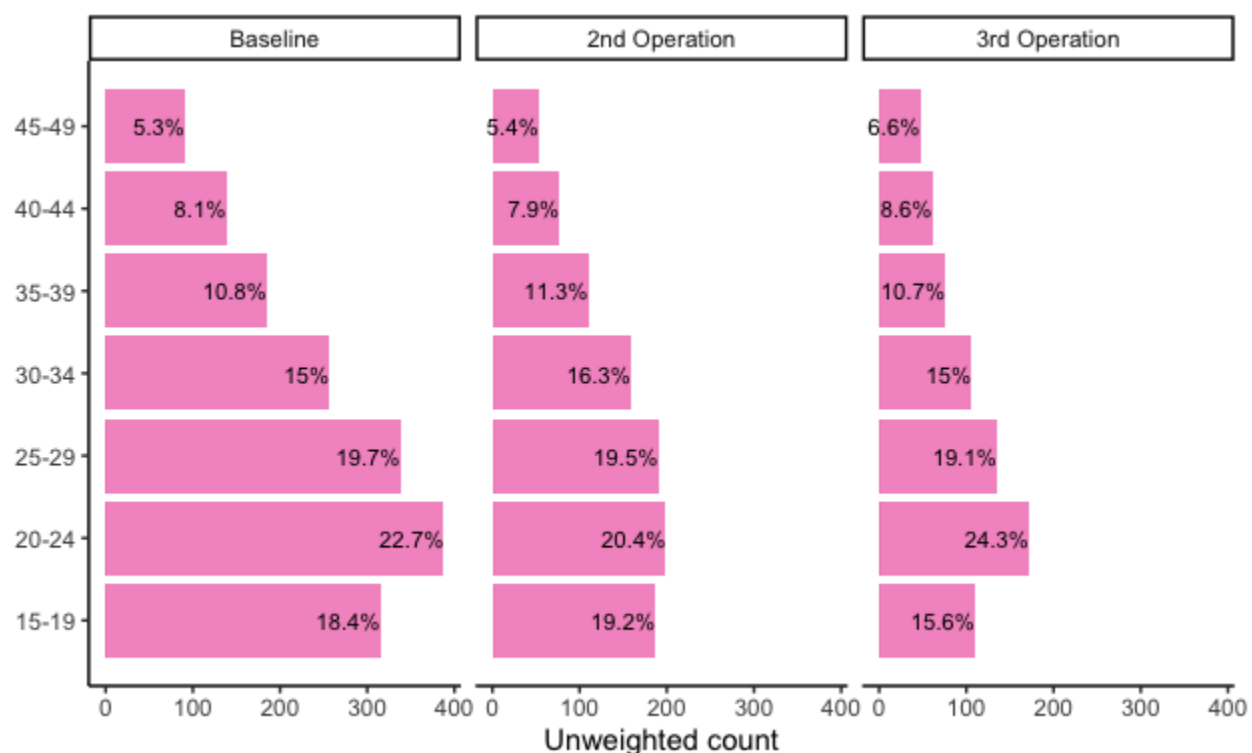


Table D.6: Demographic characteristics of respondents, unweighted

	Baseline		2nd Operation		3rd Operation	
	n	%	n	%	n	%
Marital status						
Single	557	32.5	305	31.3	239	33.8
Married	444	25.9	213	21.8	114	16.1
Civil union/partnered	659	38.5	432	44.3	318	45
Divorced	4	0.2	0	0	0	0
Separated	31	1.8	20	2.1	26	3.7
Widowed	17	1	5	0.5	9	1.3
Other	0	0	0	0	1	0.1
Don't know	0	0	0	0	0	0
Decline to respond	0	0	0	0	0	0
Respondent's relationship to head of household						
Head of household	183	10.7	227	23.3	136	19.2
Spouse	421	24.6	273	28	186	26.3
Partner	448	26.2	102	10.5	139	19.7
Biological child	449	26.2	246	25.2	171	24.2

	Baseline		2nd Operation		3rd Operation	
	n	%	n	%	n	%
Adopted or stepchild	9	0.5	11	1.1	10	1.4
Grandchild	42	2.5	24	2.5	12	1.7
Niece/nephew	10	0.6	7	0.7	5	0.7
Parent	2	0.1	0	0	0	0
Sibling	19	1.1	14	1.4	10	1.4
Daughter-in-law	88	5.1	48	4.9	24	3.4
Sister-in-law	10	0.6	3	0.3	2	0.3
Mother-in-law	3	0.2	0	0	3	0.4
Other relative	7	0.4	6	0.6	4	0.6
Unrelated person	17	1	10	1	4	0.6
Not registered**	1	0.1	3	0.3	0	0
Other	3	0.2	1	0.1	1	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 and third operations, marital status is reported by the woman at the start of the Maternal Health Questionnaire

** Relationship to the head of household was not collected for women who were not registered in the SMI census and added at the time of the household survey.

Table D.7: Education attainment and literacy

	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Ever attended school	1690	92.3	(89.6 - 94.3)	975	94.5	(90.4 - 96.9)	713	94.2	(91.4 - 96.2)
Attended literacy course	1690	12.5	(8.9 - 17.4)	970	9.4	(5.5 - 15.6)	713	21.2	(13.6 - 31.3)

Table D.8: Educational attainment and literacy, detailed

	Baseline			2nd Operation			3rd Operation		
	n	%	CI	n	%	CI	n	%	CI
Educational attainment and literacy									
Primary	1078	69.8	(64.7 - 74.9)	524	60.3	(52.7 - 67.8)	380	53.3	(45.8 - 60.9)
Secondary	231	14.6	(11.8 - 17.5)	200	20.8	(16 - 25.5)	146	20.2	(16.2 - 24.2)
High School	233	13.1	(10.1 - 16.1)	156	14.5	(10.1 - 18.9)	118	19.3	(13.6 - 25.1)
University	31	2.5	(1.1 - 3.8)	37	4.5	(1.2 - 7.7)	34	7.1	(3.3 - 10.8)
Don't know	0	0	-	0	0	-	0	0	-
Decline to respond	0	0	-	0	0	-	0	0	-
Literacy									
Cannot read at all	181	13.9	(10.1 - 17.7)	68	5.9	(3.3 - 8.5)	34	6	(3.5 - 8.6)

	Baseline			2nd Operation			3rd Operation		
	n	%	CI	n	%	CI	n	%	CI
Can read parts	390	24	(19.8 - 28.2)	86	9.2	(5.6 - 12.7)	49	7	(2.9 - 11.1)
Can read entire sentence	1103	61.9	(57.3 - 66.5)	820	84.9	(79.5 - 90.3)	628	87	(82.2 - 91.7)
Visually impaired	4	0.2	(0 - 0.5)	1	0.1	(0 - 0.2)	0	0	-
Don't know	9	0	-	0	0	-	3	0	-
Decline to respond	3	0	-	0	0	-	0	0	-

Table D.9: Employment

	Baseline			2nd Operation			3rd Operation		
	n	%	CI	n	%	CI	n	%	CI
Employment status									
Homemaker	1344	77.6	(72.8 - 82.4)	687	68.7	(60.6 - 76.9)	518	69.4	(62.7 - 76.1)
Employed/paid for work	186	11.5	(8.2 - 14.8)	145	13.2	(8.6 - 17.8)	84	16	(10.9 - 21.1)
Student	112	7.9	(5.5 - 10.2)	81	10.5	(7.5 - 13.4)	46	6.9	(4.6 - 9.1)
Self-employed*	-	-	-	47	5.3	(2.7 - 7.9)	38	5.6	(2.4 - 8.9)
Retired	2	0.3	(0 - 0.8)	1	0	-	1	0.5	(0 - 1.4)
Unable to work due to disability	5	0.7	(0 - 1.5)	1	0.1	(0 - 0.2)	2	0.4	(0 - 1.1)
Employed by a family member without pay	29	1.8	(0.6 - 3)	7	1.7	(0.2 - 3.1)	3	0.3	(0 - 0.6)
Employed, but did not work in last week	6	0.2	(0 - 0.5)	2	0.5	(0 - 1.5)	0	0	-
Other	0	0	-	0	0	-	10	1	(0 - 2.1)
Don't know	0	0	-	0	0	-	0	0	-
Decline to respond	0	0	-	1	0	-	2	0	-
Occupational role, among women employed and being paid for work									
Employee	151	78.7	(68.1 - 89.3)	136	91.8	(84.5 - 99.1)	82	97.7	(93.9 - 100)
Proprietor	10	5.9	(1.4 - 10.3)	4	3.6	(0 - 8.6)	2	2.3	(0 - 6.1)
Employer	3	3.8	(0 - 10.3)	1	0.5	(0 - 1.6)	0	0	-
Independent contractor	22	11.6	(4.4 - 18.8)	4	4.2	(0 - 11.1)	0	0	-
Don't know	0	0	-	0	0	-	0	0	-
Decline to respond	0	0	-	0	0	-	0	0	-

*Self-employed was not a response option at baseline

Table D.10: Current use of modern contraceptive methods, women 15-49 years of age who are married or partnered and in need of contraception (I2010/MI2030), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women currently in need of contraception	1087	79	(74.9-82.6)	645	83.3	(77.6-87.8)	432	80.3	(74.6-85)
Women using any contraception, among all women	1087	56.2	(50.5-61.8)	645	66	(58.2-73)	432	65.8	(59.3-71.8)
Women using any method, among those in need	892	68.3	(60.5-75.3)	540	76.9	(69.4-83)	366	80.1	(69.7-87.6)
Women (age 15-49) currently using a modern method of contraception (I2010)	892	63.6	(55.4-71.1)	540	74.7	(66.5-81.4)	366	73.4	(64.7-80.6)
Women (age 15-49) who report having stopped using a method of contraception during the previous year (MI2030)	709	4.9	(2.7-8.7)	456	4.7	(2.1-10.1)	250	2.6	(0.7-8.8)

Table D.11: Proximity to nearest health facility (percentiles) (MI6080/MI6085), comparison

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum	Mean	CI
Distance, km									
Baseline	442	1,248	0	1	1	3	30	3.1	(2.1 - 4.1)
2nd Operation	684	291	0	1	1	4	100	3.1	(2.2 - 4)
3rd Operation	181	533	0	1	3	15	600	12.4	(7.7 - 17.2)
Travel time, min									
Baseline	1,629	34	1	10	20	30	1,800	46.3	(37.2 - 55.3)
2nd Operation	941	3	1	10	15	30	1,800	32.7	(23.8 - 41.7)
3rd Operation	688	25	1	10	20	35	1,800	65.1	(29 - 101.2)

Table D.12: Recent illness, last two weeks (MI6010/MI6020), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women 15-49 who report having any illness in the past two weeks (MI6010)	1688	24.4	(21-28.1)	973	27.5	(22.5-33.2)	713	15.4	(11.2-20.8)
Women (age 15-49) who report having any illness in the past two weeks but did not seek health care (MI6020)	413	55.7	(49.5-61.8)	257	64.3	(54.8-72.8)	98	55.5	(42.3-68)

Table D.13: Use of health services, last two weeks (MI6050), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women (age 15-49) who used health care services in the last two weeks (MI6050)	-	-	(-)	974	15.8	(12-20.3)	714	11.4	(8.5-15.1)

*Not asked at baseline

Table D.14: Satisfaction with health care services during most recent visit to a health care facility (MI6130, MI6140, MI6150, MI6160), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women who reported satisfaction with health care services at their most recent visit to a health facility (MI6130)	870	93.5	(90.9-95.3)	609	95.6	(93.4-97.1)	288	97	(92.4-98.8)
Women who reported satisfaction with cleanliness of the facility at their most recent visit to a health facility (MI6140)	873	59.4	(53.4-65.3)	611	77.4	(70.5-83.1)	284	67.1	(57.1-75.8)
Women who reported satisfaction with competence of the medical personnel at their most recent visit to a health facility (MI6150)	852	96.6	(94.5-97.9)	606	98	(95.8-99.1)	287	99.6	(98.4-99.9)
Women who reported they were treated with respect at their most recent visit to a health facility (MI6160)	872	61.1	(55.1-66.7)	611	79.2	(72.3-84.7)	287	69.4	(57.6-79.1)

Table D.15: Average wait time at most recent visit to a health facility (min) (MI6120), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	mean	CI	N	mean	CI	N	mean	CI
Average wait time at most recent visit to a health facility (MI6120)	852	93.3	(78.7-108)	592	96.2	(77.5-114.9)	286	138.7	(76.8-200.6)

Table D.16: Women in the household surveys with a live birth in the past year (MI1080/MI1090), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women aged 15-49 with a live birth in the last year (MI1080)	1690	10.9	(9.5-12.5)	975	7.7	(5.6-10.4)	714	8	(6.4-10)
Women aged 15-19 with a live birth in the last year (MI1090)	311	13.6	(9.3-19.3)	187	7.3	(3.7-13.7)	113	11.9	(6-22.1)

Table D.17: Proportion of women who can recognize at least 5 danger signs in newborns (MI4110), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women (age 15-49) with a birth in the last two years who can recognize at least 5 danger signs in newborns (MI4110)	548	22.8	(16.9-29.9)	252	33.3	(22.7-45.9)	158	47.8	(30.2-66)

D.1.3 Obstetric care

Table D.18: Antenatal care coverage for most recent birth in the last two years, women 15-49 years of age (MI3010/MI3020), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
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 (MI3010)	647	95.3	(92.6-97)	310	94.9	(90.8-97.2)	262	91.2	(87.6-93.8)
Women (age 15-49) who received at least four antenatal care visits by skilled personnel in their most recent pregnancy in the last two years (MI3020)	641	84.2	(80.7-87.2)	309	88	(83.1-91.7)	258	87.6	(83.5-90.8)

Table D.19: Travel time in minutes to health facility for delivery, most recent birth in the last two years (MI6082), comparison

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum	Mean	CI
Baseline	536	24	1	50	90	120	2,700	138.4	(115.7 - 161)
2nd Operation	276	7	5	40	60	180	2,700	145.7	(101.1 - 190.3)
3rd Operation	230	5	1	60	120	120	2,880	139.1	(90.9 - 187.2)

Table D.20: In-facility delivery with skilled birth attendant: most recent birth in the last two years, women 15-49 years of age (I4010), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women who delivered in any facility	647	85.5	(79.5-90)	310	91.8	(84.6-95.8)	260	89.1	(83.9-92.7)

	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women who delivered in SMI or hospital	647	69.9	(63.6-75.5)	310	78	(69.7-84.4)	260	80	(71.8-86.3)
Women who delivered with skilled birth attendant	647	86.1	(79.9-90.6)	310	93.1	(85.1-96.9)	260	95.1	(91-97.3)
Women who delivered in SMI or hospital with skilled birth attendant (I4010)	647	69.7	(63.4-75.3)	310	78	(69.7-84.4)	260	80	(71.8-86.3)

Table D.21: Early initiation of breastfeeding for most recent birth in the past two years, women 15-49 years of age (MI5050), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children born in the last two years who were breastfed within one hour after birth (MI5050)	691	78.2	(72.4-83.1)	316	71.4	(64.1-77.7)	270	76.6	(70.3-81.9)

Table D.22: Postpartum checkup for mother for most recent birth in the past two years, women 15-49 years of age (MI4020, MI4035, MI4040), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Women (age 15-49) who received postpartum care by skilled personnel within the first 48 hours after delivery in their most recent pregnancy in the last two years (MI4020)	643	47.8	(42.4-53.2)	310	64.8	(53.6-74.6)	256	22.2	(14.4-32.5)
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 (MI4035)	643	25.1	(19.2-32.2)	310	42.2	(31.7-53.4)	256	29.5	(24.7-34.7)
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 (MI4040)	643	7	(4.3-11.2)	310	10.5	(5.7-18.5)	256	0	(-)

Table D.23: Postnatal checkup for neonate for woman's most recent birth in the past two years, women 15-49 years of age (I4100, MI4100, MI4101), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Infant was ever checked	629	72.6	(66.1-78.3)	270	81.7	(70.3-89.3)	235	84	(75.7-89.8)
Infant was checked within 3 days	629	44.5	(39.6-49.5)	270	52.7	(36.7-68.2)	235	32.1	(24.3-41.1)
Infant was ever checked by skilled personnel	629	71.8	(65.5-77.3)	270	81.7	(70.3-89.3)	235	84	(75.7-89.8)
Infant received postnatal care by skilled personnel within 72 hours (I4100)	629	44.1	(39.2-49.2)	270	52.7	(36.7-68.2)	235	32.1	(24.3-41.1)
Infant received postnatal care by skilled personnel in a health facility within 48 hours (MI4100)	629	42.7	(37.8-47.7)	270	51.8	(35.8-67.4)	235	29	(21.5-37.9)
Infant received postnatal care by skilled personnel in a health facility within 24 hours (MI4101)	629	33.9	(29-39.2)	270	37.2	(25.5-50.6)	235	27.2	(20.3-35.3)

D.1.4 Child health

Figure D.5: 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

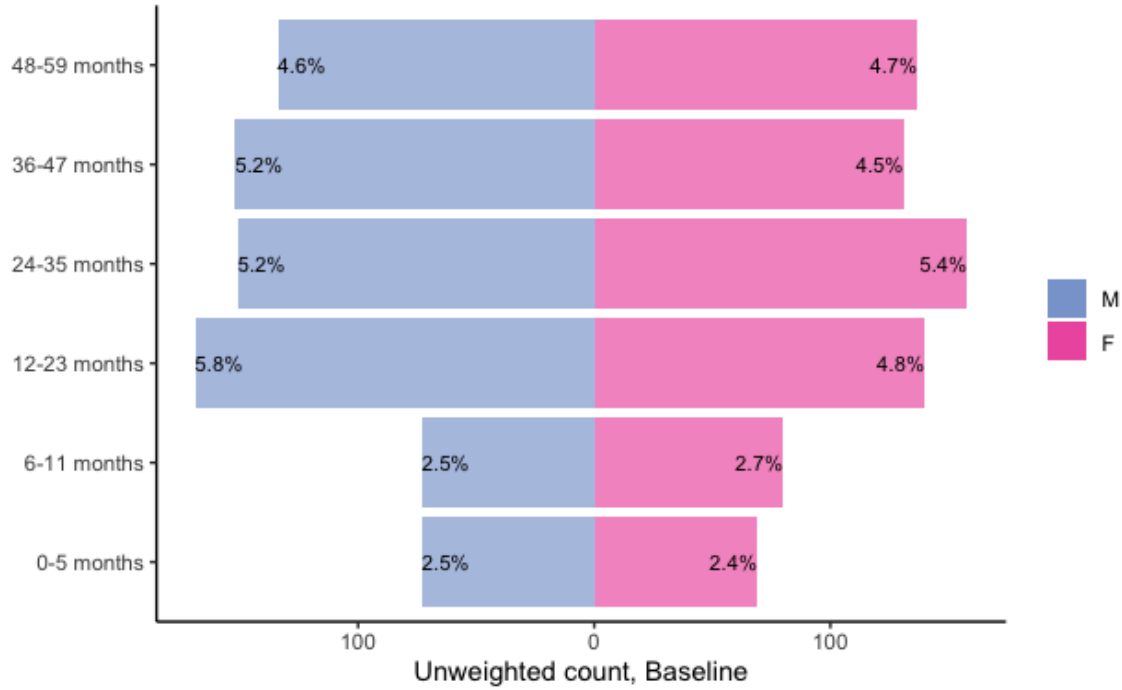


Figure D.6: Age and sex of children aged 0-59 months in child health survey or anthropometric measures of the de facto population by six- to twelve-month age groups, third operation survey unweighted

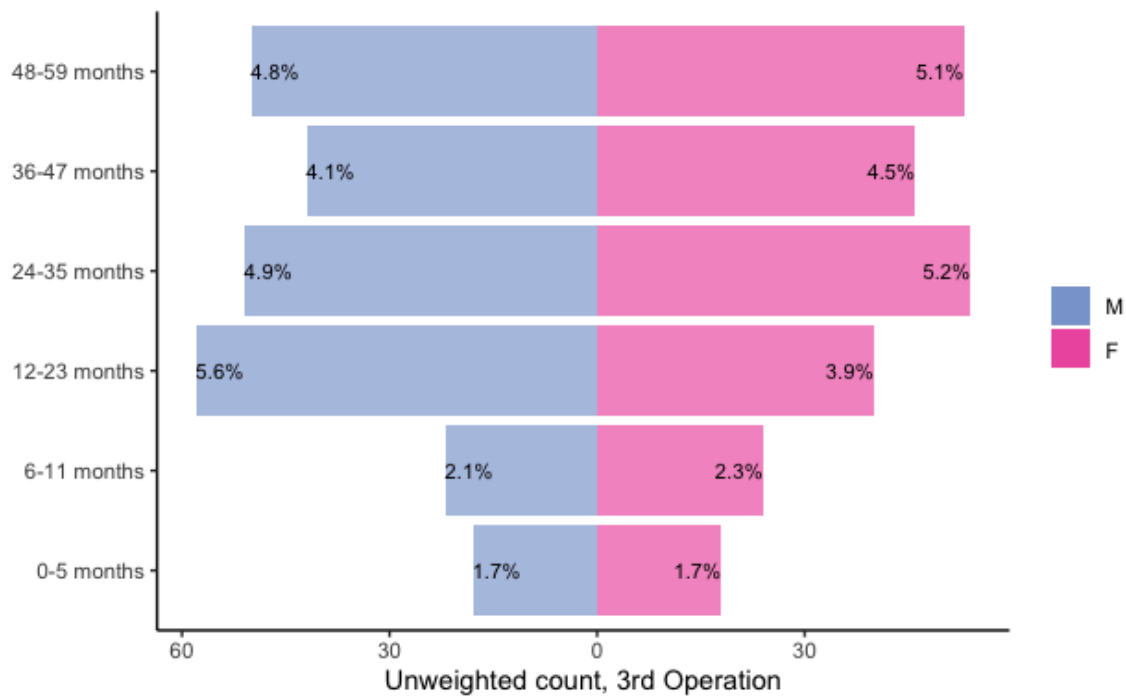


Table D.24: Recent illness, among children aged 0-59 months (MI6030/MI6040), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children (0-59 months) who had any illness in the past two weeks, according to report of mother or caregiver (MI6030)	1449	40.6	(37.2-44.1)	770	36.9	(30.3-44)	555	21.4	(17.4-26)
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 (MI6040)	568	0.9	(0.4-2.2)	287	0.4	(0.1-2.9)	115	6	(2.9-12.1)

Table D.25: Utilization of antibiotics for suspected acute respiratory infection (MI4145), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children (0-59 months) with pneumonia symptoms who received antibiotics (MI4145)	138	80.5	(73-86.3)	69	68.5	(48.1-83.6)	25	89.5	(71.8-96.6)

Table D.26: Diarrhea treatment with ORS and zinc (I5050), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
ORS administered	70	57	(43-69.9)	41	62.5	(42.4-79)	46	60.3	(47.3-72)
Zinc administered	72	7.2	(3.1-15.8)	41	12.8	(3.6-36.7)	46	14.8	(6.6-29.8)
ORS and zinc administered to standard (I5060)	72	6.1	(2.4-14.7)	41	0	(-)	46	11.3	(4.6-25.1)

Table D.27: Immunization against common childhood illnesses, children aged 0-59 months, according to caretaker recall and vaccination card (MI5020), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children (0-59 months) fully vaccinated for age, according to vaccine card and recall (MI5020)	1317	38.5	(34.4-42.9)	703	62.1	(53.8-69.8)	484	38.6	(29.2-49)

Table D.28: Deworming treatment among children aged 12-59 months (MI5010), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 12-59 months who received 2 doses of deworming in the last year (MI5010)	1129	40	(36.7-43.5)	614	34.5	(29.2-40.2)	431	25	(19.3-31.7)

Table D.29: Breastfeeding among children (MI5040/MI5080), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 0-5 months who were exclusively breastfed on the previous day (MI5040)	133	39.3	(28.5-51.3)	55	23.6	(11.6-42.2)	45	41.6	(23.9-61.7)
Children 12-15 months who were breastfed on the previous day (MI5080)	94	78.8	(68.6-86.3)	41	59.8	(39.8-77)	48	70.5	(47.3-86.3)

Table D.30: Acceptable diet among children 6-23 months (MI5090, MI5100, MI5110, MI5120, MI5130), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 6-8 months who received solid or semi-solid food on the previous day (MI5090)	79	85.6	(75.7-91.9)	35	93.2	(77.5-98.2)	32	74.4	(57.8-86)
Children 6-23 months who received foods from 4 or more food groups during the previous day (MI5100)	455	51.7	(46-57.4)	228	79.8	(71.6-86.1)	166	58.6	(50.5-66.1)
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 (MI5110)	426	62.8	(56.4-68.7)	227	74.3	(65.4-81.5)	162	42	(33.8-50.7)
Children 6-23 months who received the minimum acceptable diet (apart from breastmilk) during the previous day (MI5120)	442	32.4	(27-38.4)	227	55.9	(47.4-64.1)	165	22.3	(16.4-29.7)
Children 6-23 months who received iron-rich or iron-fortified foods during the previous day (MI5130)	455	52.6	(47.1-58.1)	228	66.8	(56.2-75.9)	166	63.6	(52.7-73.3)

Table D.31: Micronutrient powders among children 6-23 months (MI5075), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 6 to 23 months who consumed any micronutrients in the last six months	449	20.2	(14.5-27.3)	224	3.3	(1.3-7.9)	162	3.9	(1.5-10)
Children 6 to 23 months who consumed at least 60 packets of micronutrients (complete dose) in the last six months (MI5075)	449	0	(-)	224	2.4	(0.7-7.3)	162	0	(-)

Table D.32: Prevalence of stunting in children aged 0-59 months (MI1070), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 0-59 months with height <-2 SD of the mean of the reference population for age (MI1070)	1401	21.1	(17.6-25)	747	17.3	(12.3-23.8)	476	12	(8.4-16.9)

Table D.33: Prevalence of anemia, children aged 0-59 months (I1060), comparison

Description	Baseline			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Children 6-59mo with hemoglobin <110g/L	1180	28.4	(23.8-33.6)	657	57.8	(53.3-62.1)	412	34.7	(28.8-41)
Children 42-59mo with hemoglobin <110g/L	329	17.7	(13-23.6)	203	46	(37.1-55.1)	127	25.5	(19.3-32.9)
Children 24-41mo with hemoglobin <110g/L	413	24.2	(18.9-30.3)	249	54.6	(47-61.9)	148	27.9	(20.3-37.1)
Children 6-23mo with hemoglobin <110g/L (I1060)	438	40.5	(33.8-47.6)	205	74.1	(67.6-79.7)	137	50.2	(42.8-57.6)

D.1.6 Indicator matrices

Table D.34: Household performance indicators, comparison

Indicator	Description	Time Period	N	%	CI
I1060	Children (6-23mo) with hemoglobin <110g/L	Baseline	438	40.5	(33.8 - 47.6)
		2nd Operation	205	74.1	(67.6 - 79.7)
		3rd Operation	137	50.2	(42.8 - 57.6)
I5060	Diarrhea treatment with ORS and zinc (0-59mo)	Baseline	72	6.1	(2.4 - 14.7)
		2nd Operation	41	0	(-)
		3rd Operation	46	11.3	(4.6 - 25.1)
I4010	Institutional delivery	Baseline	647	69.7	(63.4 - 75.3)
		2nd Operation	310	78	(69.7 - 84.4)
		3rd Operation	260	80	(71.8 - 86.3)
I4100	Postpartum care for neonates (72 hours)	Baseline	629	44.1	(39.2 - 49.2)
		2nd Operation	270	52.7	(36.7 - 68.2)
		3rd Operation	235	32.1	(24.3 - 41.1)
I2010	Use of modern contraceptive methods	Baseline	892	63.6	(55.4 - 71.1)
		2nd Operation	540	74.7	(66.5 - 81.4)
		3rd Operation	366	73.4	(64.7 - 80.6)

Table D.35: Household proportion-based monitoring indicators, comparison

Indicator	Description	Time Period	N	%	CI
MI1070	Children (0-59mo) with height <-2SD of mean of reference population	Baseline	1401	21.1	(17.6 - 25)
		2nd Operation	747	17.3	(12.3 - 23.8)
		3rd Operation	476	12	(8.4 - 16.9)
MI1080	Women (15-49 years) with a live birth in the last year	Baseline	1690	10.9	(9.5 - 12.5)
		2nd Operation	975	7.7	(5.6 - 10.4)
		3rd Operation	714	8	(6.4 - 10)
MI1090	Women (15-19 years) with a live birth in the last year	Baseline	311	13.6	(9.3 - 19.3)
		2nd Operation	187	7.3	(3.7 - 13.7)
		3rd Operation	113	11.9	(6 - 22.1)
MI2020	Women in need of but not using contraception	Baseline	892	36.4	(28.9 - 44.6)
		2nd Operation	540	25.3	(18.6 - 33.5)
		3rd Operation	366	26.6	(19.4 - 35.3)
MI2030	Interruption in contraception use	Baseline	709	4.9	(2.7 - 8.7)
		2nd Operation	456	4.7	(2.1 - 10.1)
		3rd Operation	250	2.6	(0.7 - 8.8)
MI3010	Skilled antenatal care (1 visit)	Baseline	647	95.3	(92.6 - 97)
		2nd Operation	310	94.9	(90.8 - 97.2)
		3rd Operation	262	91.2	(87.6 - 93.8)
MI3020	Skilled antenatal care (4 visits)	Baseline	641	84.2	(80.7 - 87.2)
		2nd Operation	309	88	(83.1 - 91.7)
		3rd Operation	258	87.6	(83.5 - 90.8)

Indicator	Description	Time Period	N	%	CI
MI4020	Skilled postpartum care (48 hours)	Baseline	643	47.8	(42.4 - 53.2)
		2nd Operation	310	64.8	(53.6 - 74.6)
		3rd Operation	256	22.2	(14.4 - 32.5)
MI4035	Skilled postpartum care (7-42 days)	Baseline	643	25.1	(19.2 - 32.2)
		2nd Operation	310	42.2	(31.7 - 53.4)
		3rd Operation	256	29.5	(24.7 - 34.7)
MI4040	Skilled postpartum care (3 visits)	Baseline	643	7	(4.3 - 11.2)
		2nd Operation	310	10.5	(5.7 - 18.5)
		3rd Operation	256	0	(-)
MI4100	Skilled neonatal care (48 hours)	Baseline	629	42.7	(37.8 - 47.7)
		2nd Operation	270	51.8	(35.8 - 67.4)
		3rd Operation	235	29	(21.5 - 37.9)
MI4101	Skilled neonatal care (24 hours)	Baseline	629	33.9	(29 - 39.2)
		2nd Operation	270	37.2	(25.5 - 50.6)
		3rd Operation	235	27.2	(20.3 - 35.3)
MI4110	Recognition of 5 danger signs in newborns	Baseline	548	22.8	(16.9 - 29.9)
		2nd Operation	252	33.3	(22.7 - 45.9)
		3rd Operation	158	47.8	(30.2 - 66)
MI4145	Antibiotic use for children with pneumonia symptoms	Baseline	138	80.5	(73 - 86.3)
		2nd Operation	69	68.5	(48.1 - 83.6)
		3rd Operation	25	89.5	(71.8 - 96.6)
MI5010	Children (12-59mo) with 2 doses of deworming	Baseline	1129	40	(36.7 - 43.5)
		2nd Operation	614	34.5	(29.2 - 40.2)
		3rd Operation	431	25	(19.3 - 31.7)
MI5020	Complete vaccination for age	Baseline	1317	38.5	(34.4 - 42.9)
		2nd Operation	703	62.1	(53.8 - 69.8)
		3rd Operation	484	38.6	(29.2 - 49)
MI5040	Exclusive breastfeeding (0-5mo)	Baseline	133	39.3	(28.5 - 51.3)
		2nd Operation	55	23.6	(11.6 - 42.2)
		3rd Operation	45	41.6	(23.9 - 61.7)
MI5050	Early initiation of breastfeeding	Baseline	691	78.2	(72.4 - 83.1)
		2nd Operation	316	71.4	(64.1 - 77.7)
		3rd Operation	270	76.6	(70.3 - 81.9)
MI5075	Children (6-23mo) with complete dose of micronutrients (60 packets)	Baseline	449	0	(-)
		2nd Operation	224	2.4	(0.7 - 7.3)
		3rd Operation	162	0	(-)
MI5080	Continued breastfeeding (12-15mo)	Baseline	94	78.8	(68.6 - 86.3)
		2nd Operation	41	59.8	(39.8 - 77)
		3rd Operation	48	70.5	(47.3 - 86.3)
MI5090	Consumption of solid food (6-8mo)	Baseline	79	85.6	(75.7 - 91.9)
		2nd Operation	35	93.2	(77.5 - 98.2)

Indicator	Description	Time Period	N	%	CI
MI5100	Dietary diversity (6-23mo)	3rd Operation	32	74.4	(57.8 - 86)
		Baseline	455	51.7	(46 - 57.4)
		2nd Operation	228	79.8	(71.6 - 86.1)
		3rd Operation	166	58.6	(50.5 - 66.1)
MI5110	Minimum meal frequency (6-23mo)	Baseline	426	62.8	(56.4 - 68.7)
		2nd Operation	227	74.3	(65.4 - 81.5)
		3rd Operation	162	42	(33.8 - 50.7)
MI5120	Minimum acceptable diet (6-23mo)	Baseline	442	32.4	(27 - 38.4)
		2nd Operation	227	55.9	(47.4 - 64.1)
		3rd Operation	165	22.3	(16.4 - 29.7)
MI5130	Consumption of iron-rich foods (6-23mo)	Baseline	455	52.6	(47.1 - 58.1)
		2nd Operation	228	66.8	(56.2 - 75.9)
		3rd Operation	166	63.6	(52.7 - 73.3)
MI6010	Women with recent illness	Baseline	1688	24.4	(21 - 28.1)
		2nd Operation	973	27.5	(22.5 - 33.2)
		3rd Operation	713	15.4	(11.2 - 20.8)
MI6020	Women with recent illness who did not seek care	Baseline	413	55.7	(49.5 - 61.8)
		2nd Operation	257	64.3	(54.8 - 72.8)
		3rd Operation	98	55.5	(42.3 - 68)
MI6030	Children with recent illness	Baseline	1449	40.6	(37.2 - 44.1)
		2nd Operation	770	36.9	(30.3 - 44)
		3rd Operation	555	21.4	(17.4 - 26)
MI6040	Children with recent illness who did not seek care	Baseline	568	0.9	(0.4 - 2.2)
		2nd Operation	287	0.4	(0.1 - 2.9)
		3rd Operation	115	6	(2.9 - 12.1)
MI6050	Women with recent visit to a health facility	Baseline	-	-	(-)
		2nd Operation	974	15.8	(12 - 20.3)
		3rd Operation	714	11.4	(8.5 - 15.1)
MI6130	Satisfaction with health care, most recent visit	Baseline	870	93.5	(90.9 - 95.3)
		2nd Operation	609	95.6	(93.4 - 97.1)
		3rd Operation	288	97	(92.4 - 98.8)
MI6140	Satisfaction with cleanliness of facility, most recent visit	Baseline	873	59.4	(53.4 - 65.3)
		2nd Operation	611	77.4	(70.5 - 83.1)
		3rd Operation	284	67.1	(57.1 - 75.8)
MI6150	Satisfaction with competence of personnel, most recent visit	Baseline	852	96.6	(94.5 - 97.9)
		2nd Operation	606	98	(95.8 - 99.1)
		3rd Operation	287	99.6	(98.4 - 99.9)
MI6160	Women reporting being treated with respect, most recent visit	Baseline	872	61.1	(55.1 - 66.7)
		2nd Operation	611	79.2	(72.3 - 84.7)
		3rd Operation	287	69.4	(57.6 - 79.1)

Table D.36: Household mean-based monitoring indicators, comparison

Indicator	Description	Time Period	N	Mean	CI
MI6080	Average travel time to nearest health facility (min)	Baseline	1629	46.3	(37.2 - 55.3)
		2nd Operation	941	32.7	(23.8 - 41.7)
		3rd Operation	688	65.1	(29 - 101.2)
MI6082	Average travel time to delivery location (min)	Baseline	536	138.4	(115.7 - 161)
		2nd Operation	276	145.7	(101.1 - 190.3)
		3rd Operation	230	139.1	(90.9 - 187.2)
MI6085	Average distance to nearest health facility (km)	Baseline	442	3.1	(2.1 - 4.1)
		2nd Operation	684	3.1	(2.2 - 4)
		3rd Operation	181	12.4	(7.7 - 17.2)
MI6090	Average out-of-pocket itemized health expenditure (L)	Baseline	1425	281.7	(-21.8 - 585.1)
		2nd Operation	753	413.1	(202.5 - 623.8)
		3rd Operation	564	586.4	(185.8 - 987)
MI6100	Average household itemized expenditure (L)	Baseline	1439	4204.2	(3846.5 - 4561.9)
		2nd Operation	755	6182.4	(5137 - 7227.9)
		3rd Operation	576	7765.1	(6490 - 9040.3)
MI6120	Average wait time at most recent visit to health facility (min)	Baseline	852	93.3	(78.7 - 108)
		2nd Operation	592	96.2	(77.5 - 114.9)
		3rd Operation	286	138.7	(76.8 - 200.6)

D.2 Comparison area health facility survey results

D.2.1 Summary of health facilities and medical record extraction

Table D.37: Health facility classification, comparison areas

Facility Type	Baseline	2nd Operation	3rd Operation
UAPS/ZPP Tipo I (CESAR)	7	6	4
CIS Tipo II (CESAMO)	13	10	5
SMI Policlínico Tipo III (CMI)	7	8	8
Hospital	4	6	5
Total	31	30	22

Figure D.11: Map of health facilities in third operation comparison areas



Table D.38: Facilities by department and municipality, comparison areas

Department	Municipality	Baseline	2nd Operation	3rd Operation
Comayagua	Comayagua	1	1	1
Comayagua	San José de Comayagua	2	2	1
Comayagua	Taulabé	2	3	1
Copán	Copan Ruinas	1	0	0
Copán	La Jigua	2	0	1
Copán	Nueva Arcadia	4	1	2
Copán	San Nicolas	2	1	0
Cortés	San Pedro Sula	1	0	0
Cortés	Santa Cruz de Yojoa	2	5	4
El Paraíso	Danlí	0	1	1
Intibucá	San Francisco de Opalaca	2	2	1
Intibucá	San Miguelito	2	2	1
La Paz	Aguanqueterique	0	2	1
Lempira	Candelaria	2	1	1
Lempira	Gracias	1	1	1
Lempira	La Virtud	1	1	1
Lempira	Piraera	2	1	0
Olancho	Catacamas	0	1	0
Santa Bárbara	Santa Bárbara	0	1	1
Valle	Langue	3	2	3
Valle	San Lorenzo	1	1	0
Yoro	El Progreso	0	1	1
Total		31	30	22

Table D.39: Medical Record Review sample size, comparison areas

MRR Type	Baseline	2nd Operation	3rd Operation, Pre-Evaluation	3rd Operation, Evaluation
Antenatal care	72	84	31	61
Cervical cancer screening	0	0	0	108
Diarrhea	80	101	33	55
Immediate postpartum care	90	175	68	132
Neonatal complications	224	131	67	135
Obstetric complications	220	138	58	119
Pneumonia	71	92	0	0
Uncomplicated delivery	183	175	69	132
Total	940	896	326	742

D.2.2 Women's health

Table D.40: Antenatal care with quality (13050), comparison, ambulatory facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
At least five ANC visits	58	65.5	(52.1-76.9)	79	79.7	(69.2-87.3)	31	67.7	(48.6-82.3)	61	67.2	(54.2-78)
First visit before 12 weeks gestation	58	60.3	(46.9-72.4)	76	67.1	(55.6-76.9)	31	71	(51.8-84.8)	61	67.2	(54.2-78)
All appropriate checks performed, at least five ANC visits*	58	100	(-)	79	65.8	(54.5-75.6)	31	58.1	(39.4-74.7)	61	62.3	(49.2-73.8)
All lab tests performed at least once during pregnancy:	58	48.3	(35.4-61.3)	79	68.4	(57.1-77.8)	31	71	(51.8-84.8)	61	82	(69.9-89.9)
Blood group	58	84.5	(72.4-91.9)	79	93.7	(85.4-97.4)	31	83.9	(65.4-93.5)	61	95.1	(85.4-98.5)
Rh factor	58	84.5	(72.4-91.9)	79	93.7	(85.4-97.4)	31	83.9	(65.4-93.5)	61	95.1	(85.4-98.5)
Blood glucose	58	48.3	(35.4-61.3)	79	92.4	(83.9-96.6)	31	87.1	(68.9-95.4)	61	93.4	(83.4-97.6)
HIV test	58	87.9	(76.3-94.3)	79	93.7	(85.4-97.4)	31	74.2	(55.1-87.1)	61	83.6	(71.7-91.1)
Syphilis test (VDRL / RPR)**	58	89.7	(78.4-95.4)	79	91.1	(82.3-95.8)	31	80.6	(61.9-91.5)	61	95.1	(85.4-98.5)
Hemoglobin	58	82.8	(70.4-90.6)	79	68.4	(57.1-77.8)	31	77.4	(58.4-89.3)	61	93.4	(83.4-97.6)
Urinalysis	58	87.9	(76.3-94.3)	79	91.1	(82.3-95.8)	31	80.6	(61.9-91.5)	61	95.1	(85.4-98.5)
If patient referred during pregnancy, all visits were to standard (even if less than 5 visits)***	0			4	100	(-)	1	100	(-)	2	100	(-)
At least 5 antenatal care visits to standard (13050)	58	32.8	(21.7-46.2)	76	40.8	(30.1-52.4)	31	41.9	(25.3-60.6)	61	44.3	(32.1-57.2)

* Baseline and first operation: uterine height and fetal checkups are only evaluated at first visit, if eligible based on gestational age.

** RPR not captured as VDRL alternative at baseline and 1st operation.

*** Referral not captured at baseline and 1st operation.

Table D.41: Cervical cancer screening with quality (I6005), comparison, ambulatory facilities

Description	3rd Operation: Evaluation		
	N	%	CI
Evidence of any HPV screening?	104	0	(-)
Evidence of any IVAA screening?	104	0	(-)
IVAA screening date recorded	0		
Evidence of any PAP screening?	104	29.8	(21.7-39.4)
At least one positive/negative PAP result in past year	31	51.6	(33.6-69.2)
Negative PAP result in past year	31	51.6	(33.6-69.2)
Positive PAP result in past year	31	0	(-)
Notification of positive PAP result within 8 weeks	0		
Evidence notification was received	0		
All requirements for positive PAP result in past year met	0		
Two negative PAP screenings within past 3 years (if most recent result > 1 year ago)	15	6.7	(0.7-41.6)
PAP screening to standard (positive or negative)	31	54.8	(36.5-72)
No evidence of screening in record	104	70.2	(60.6-78.3)
Cervical cancer screening with quality (I6005)	104	16.3	(10.3-24.9)

D.2.3 Obstetric care

Table D.42: Management of obstetric complications (I4080), comparison, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	10	70	(31-92.4)	12	75	(39.3-93.3)	0			4	100	(-)
Hemorrhage managed to standard	32	43.8	(27.1-61.9)	33	63.6	(45.3-78.7)	11	72.7	(35.4-92.8)	29	79.3	(59.6-90.9)
Pre-eclampsia managed to standard	52	1.9	(0.3-13.2)	56	25	(15.2-38.4)	13	0	(-)	36	8.3	(2.6-23.9)
Eclampsia managed to standard	6	0	(-)	7	28.6	(4.2-78.5)	0			7	0	(-)
Management of obstetric complications (I4080)	100	22	(14.8-31.3)	108	42.6	(33.5-52.2)	24	33.3	(16.7-55.5)	76	39.5	(28.9-51.1)

Table D.43: Management of obstetric complications (I4080), comparison, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	1	100	(-)	0			1	100	(-)
Hemorrhage managed to standard	21	90.5	(66-97.9)	9	66.7	(26.2-91.9)	7	85.7	(25.7-99)
Pre-eclampsia managed to standard	4	75	(4.1-99.5)	23	17.4	(6.2-40.3)	35	20	(9.5-37.4)
Eclampsia managed to standard	1	0	(-)	2	50	(0-100)	0		
Management of obstetric complications	27	85.2	(64.9-94.7)	34	32.4	(18.3-50.5)	43	32.6	(19.9-48.4)

Table D.44: Management of obstetric complications (I4080), hemorrhage, comparison, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	32	93.7	(76.8-98.6)	33	100	(-)	11	100	(-)	29	100	(-)
Pulse / heart rate	32	93.7	(76.8-98.6)	33	100	(-)	11	100	(-)	29	100	(-)
Blood pressure	32	100	(-)	33	100	(-)	11	100	(-)	29	100	(-)
Ringer's lactate / Hartmann's / saline solution administered	32	68.7	(50-82.9)	33	93.9	(77.4-98.6)	11	90.9	(46.3-99.1)	29	100	(-)
Lab tests:	32	78.1	(59.6-89.7)	33	87.9	(70.6-95.6)	11	100	(-)	29	96.6	(77-99.6)
Hematocrit	32	78.1	(59.6-89.7)	33	93.9	(77.4-98.6)	11	100	(-)	29	96.6	(77-99.6)
Hemoglobin	32	78.1	(59.6-89.7)	33	97	(79.7-99.6)	11	100	(-)	29	96.6	(77-99.6)
Platelet count	32	78.1	(59.6-89.7)	33	90.9	(74.1-97.2)	11	100	(-)	29	96.6	(77-99.6)
Causes treated appropriately:	19	73.7	(47.6-89.6)	21	71.4	(47.1-87.5)	5	60	(8.1-96.2)	19	73.7	(47.6-89.6)
Abortion	0			0			0			1	100	(-)
Ectopic pregnancy	0			0			0			0		
Placenta previa	0			1	0	(-)	1	100	(-)	1	100	(-)
Placental abruption	1	100	(-)	1	100	(-)	0			0		
Uterine rupture	0			0			0			0		
Uterine atony	3	100	(-)	4	50	(2.5-97.5)	0			7	85.7	(25.7-99)
Uterine inversion	0			0			0			0		
Retained product	15	66.7	(37.2-87.1)	15	80	(48.8-94.4)	4	50	(2.5-97.5)	11	63.6	(28.8-88.3)
Hemorrhage managed to standard	32	43.8	(27.1-61.9)	33	63.6	(45.3-78.7)	11	72.7	(35.4-92.8)	29	79.3	(59.6-90.9)

Table D.45: Management of obstetric complications (I4080), hemorrhage, comparison, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	21	95.2	(69.1-99.4)	9	100	(-)	7	100	(-)
Pulse / heart rate	21	95.2	(69.1-99.4)	9	100	(-)	7	100	(-)
Blood pressure	21	95.2	(69.1-99.4)	9	100	(-)	7	100	(-)
Ringer's lactate / Hartmann's / saline solution administered	21	100	(-)	9	100	(-)	7	85.7	(25.7-99)
Causes treated appropriately:	10	90	(42.2-99.1)	6	50	(9.1-90.9)	3	100	(-)
Abortion	1	100	(-)	0			0		
Ectopic pregnancy	0			0			0		
Placenta previa	0			0			0		

	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Placental abruption	0			0			0		
Uterine rupture	0			0			0		
Uterine atony	2	50	(0-100)	3	66.7	(0.3-99.9)	1	100	(-)
Uterine inversion	1	100	(-)	0			0		
Retained product	7	100	(-)	3	33.3	(0.1-99.7)	2	100	(-)
Hemorrhage managed to standard	21	90.5	(66-97.9)	9	66.7	(26.2-91.9)	7	85.7	(25.7-99)

Table D.46: Management of obstetric complications (I4080), sepsis, comparison, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	10	100	(-)	12	100	(-)	0			4	100	(-)
Pulse / heart rate	10	100	(-)	12	100	(-)	0			4	100	(-)
Blood pressure	10	100	(-)	12	100	(-)	0			4	100	(-)
Temperature	10	100	(-)	12	100	(-)	0			4	100	(-)
Lab tests (blood biometry):	10	70	(31-92.4)	12	75	(39.3-93.3)	0			4	100	(-)
Leukocyte count	10	70	(31-92.4)	12	100	(-)	0			4	100	(-)
Platelet count	10	80	(37.8-96.3)	12	83.3	(45.7-96.7)	0			4	100	(-)
Hemoglobin	10	80	(37.8-96.3)	12	100	(-)	0			4	100	(-)
Hematocrit	10	80	(37.8-96.3)	12	91.7	(49.9-99.2)	0			4	100	(-)
Antibiotics administered	10	100	(-)	12	100	(-)	0			4	100	(-)
Causes treated appropriately:	6	100	(-)	10	100	(-)	0			4	100	(-)
Pelvic abscess	0			0			0			0		
Retained product	0			2	100	(-)	0			0		
Postpartum endometritis	5	100	(-)	7	100	(-)	0			4	100	(-)
Puerperal fever	2	100	(-)	4	100	(-)	0			1	100	(-)
Obstetric sepsis managed to standard	10	70	(31-92.4)	12	75	(39.3-93.3)	0			4	100	(-)

No applicable records reviewed in the third operation pre-evaluation measurement.

Table D.47: Management of obstetric complications (I4080), sepsis, comparison, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	1	100	(-)	0			1	100	(-)
Pulse / heart rate	1	100	(-)	0			1	100	(-)
Blood pressure	1	100	(-)	0			1	100	(-)
Temperature	1	100	(-)	0			1	100	(-)
Antibiotics administered	1	100	(-)	0			1	100	(-)

	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Causes treated appropriately:	0			0			1	100	(-)
Pelvic abscess	0			0			0		
Retained product	0			0			0		
Postpartum endometritis	0			0			1	100	(-)
Puerperal fever	0			0			1	100	(-)
Obstetric sepsis managed to standard	1	100	(-)	0			1	100	(-)

No applicable records reviewed in the third operation pre-evaluation measurement.

Table D.48: Management of obstetric complications (I4080), pre-eclampsia, comparison, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	52	92.3	(80.7-97.2)	56	92.9	(82-97.4)	13	38.5	(14.6-69.5)	36	52.8	(36-69)
Pulse / heart rate	52	96.2	(85.3-99.1)	56	100	(-)	13	100	(-)	36	94.4	(79.2-98.7)
Blood pressure	52	98.1	(86.8-99.7)	56	100	(-)	13	100	(-)	36	100	(-)
Respiratory rate	52	98.1	(86.8-99.7)	56	98.2	(87.7-99.8)	13	100	(-)	36	88.9	(72.9-96)
Patellar reflex	52	94.2	(83-98.2)	56	94.6	(84.2-98.3)	13	38.5	(14.6-69.5)	36	58.3	(41.1-73.7)
Lab tests	52	1.9	(0.3-13.2)	56	28.6	(18-42.1)	13	0	(-)	36	22.2	(11.1-39.5)
Urine protein	52	75	(61-85.2)	56	78.6	(65.5-87.6)	13	92.3	(53.1-99.2)	36	80.6	(63.5-90.8)
Platelet count	52	65.4	(51.1-77.3)	56	91.1	(79.8-96.3)	13	100	(-)	36	94.4	(79.2-98.7)
Creatine	52	55.8	(41.7-69)	56	94.6	(84.2-98.3)	13	76.9	(42.8-93.7)	36	91.7	(76.1-97.4)
Uric acid	52	44.2	(31-58.3)	56	83.9	(71.4-91.6)	13	46.2	(19.5-75.2)	36	72.2	(54.7-84.8)
Aspartate aminotransferase / glutamic-oxalacetic transaminase	52	38.5	(26-52.7)	56	85.7	(73.5-92.9)	13	76.9	(42.8-93.7)	36	86.1	(69.7-94.4)
Alanine transaminase / glutamic-pyruvic transaminase	52	38.5	(26-52.7)	56	82.1	(69.4-90.3)	13	69.2	(36.5-89.8)	36	86.1	(69.7-94.4)
Lactate dehydrogenase	52	3.8	(0.9-14.7)	56	37.5	(25.6-51.2)	13	23.1	(6.3-57.2)	36	30.6	(17.3-48.1)
All appropriate medications administered	52	73.1	(59-83.6)	56	98.2	(87.7-99.8)	13	84.6	(49-96.9)	36	86.1	(69.7-94.4)
Magnesium sulfate	52	76.9	(63.1-86.7)	56	100	(-)	13	84.6	(49-96.9)	36	86.1	(69.7-94.4)
Hydralazine / labetalol / nifedipine (if diastolic blood pressure > 110)	14	57.1	(28.4-81.7)	16	93.7	(60.7-99.3)	4	100	(-)	4	100	(-)
Pre-eclampsia managed to standard	52	1.9	(0.3-13.2)	56	25	(15.2-38.4)	13	0	(-)	36	8.3	(2.6-23.9)

Table D.49: Management of obstetric complications (I4080), pre-eclampsia, comparison, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Blood pressure checked	4	100	(-)	23	100	(-)	35	100	(-)
Urine protein lab test	4	100	(-)	23	60.9	(38.6-79.4)	35	65.7	(47.9-80)
All appropriate medications administered	4	75	(4.1-99.5)	23	30.4	(14.3-53.4)	35	48.6	(32-65.5)
Magnesium sulfate	4	100	(-)	23	43.5	(24-65.2)	35	60	(42.4-75.3)
Ringer's lactate / Hartmann's / saline solution	4	75	(4.1-99.5)	23	34.8	(17.4-57.4)	35	51.4	(34.5-68)
Referred	4	100	(-)	23	65.2	(42.6-82.6)	35	68.6	(50.7-82.2)
Pre-eclampsia managed to standard	4	75	(4.1-99.5)	23	17.4	(6.2-40.3)	35	20	(9.5-37.4)

Table D.50: Management of obstetric complications (I4080), eclampsia, comparison, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	6	33.3	(4.2-85.1)	7	100	(-)	0			7	0	(-)
Pulse / heart rate	6	100	(-)	7	100	(-)	0			7	100	(-)
Blood pressure	6	100	(-)	7	100	(-)	0			7	100	(-)
Respiratory rate	6	100	(-)	7	100	(-)	0			7	85.7	(25.7-99)
Patellar reflex	6	33.3	(4.2-85.1)	7	100	(-)	0			7	0	(-)
Lab tests	6	0	(-)	7	28.6	(4.2-78.5)	0			7	28.6	(4.2-78.5)
Urine protein	6	33.3	(4.2-85.1)	7	85.7	(25.7-99)	0			7	71.4	(21.5-95.8)
Platelet count	6	50	(9.1-90.9)	7	100	(-)	0			7	85.7	(25.7-99)
Creatine	6	33.3	(4.2-85.1)	7	100	(-)	0			7	71.4	(21.5-95.8)
Uric acid	6	16.7	(0.9-81.4)	7	71.4	(21.5-95.8)	0			7	57.1	(15-90.9)
Aspartate aminotransferase / glutamic-oxalacetic transaminase	6	16.7	(0.9-81.4)	7	100	(-)	0			7	71.4	(21.5-95.8)
Alanine transaminase / glutamic-pyruvic transaminase	6	16.7	(0.9-81.4)	7	100	(-)	0			7	71.4	(21.5-95.8)
Lactate dehydrogenase	6	0	(-)	7	42.9	(9.1-85)	0			7	71.4	(21.5-95.8)
All appropriate medications administered	6	83.3	(18.6-99.1)	7	100	(-)	0			7	85.7	(25.7-99)
Magnesium sulfate	6	100	(-)	7	100	(-)	0			7	100	(-)
Hydralazine / labetalol / nifedipine (if diastolic blood pressure > 110)	1	0	(-)	2	100	(-)	0			2	50	(0-100)
Eclampsia managed to standard	6	0	(-)	7	28.6	(4.2-78.5)	0			7	0	(-)

No applicable records reviewed in the third operation pre-evaluation measurement.

Table D.51: Management of obstetric complications (I4080), eclampsia, comparison, basic facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Blood pressure checked	1	100	(-)	2	100	(-)	0		
Urine protein lab test	1	0	(-)	2	100	(-)	0		
All appropriate medications administered	1	100	(-)	2	100	(-)	0		
Magnesium sulfate	1	100	(-)	2	100	(-)	0		
Ringer's lactate / Hartmann's / saline solution	1	100	(-)	2	100	(-)	0		
Referred	1	0	(-)	2	50	(0-100)	0		
Eclampsia managed to standard	1	0	(-)	2	50	(0-100)	0		

No applicable records reviewed in the third operation evaluation measurement.

D.2.4 Neonatal care

Table D.52: Routine newborn care with quality (I4103), comparison, basic and complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vitamin K	88	86.4	(77.3-92.2)	168	96.4	(92.2-98.4)	66	98.5	(89.5-99.8)	131	91.6	(85.4-95.3)
Application of prophylaxis with oxytetracycline ophthalmic/chloramphenicol	88	84.1	(74.7-90.4)	168	94.6	(90-97.2)	66	97	(88.3-99.3)	131	91.6	(85.4-95.3)
Evaluation for the presence of malformations	88	92	(84-96.2)	168	94.6	(90-97.2)	66	81.8	(70.3-89.5)	131	77.1	(69-83.6)
APGAR score (at 1 and 5 minutes)	88	100	(-)	168	99.4	(95.8-99.9)	66	98.5	(89.5-99.8)	131	98.5	(94-99.6)
Weight	88	100	(-)	168	98.8	(95.3-99.7)	66	100	(-)	131	98.5	(94-99.6)
Height	88	100	(-)	168	98.8	(95.3-99.7)	66	100	(-)	131	98.5	(94-99.6)
Head circumference	88	100	(-)	168	98.8	(95.3-99.7)	66	100	(-)	131	98.5	(94-99.6)
Respiratory rate	88	54.5	(43.9-64.8)	168	85.1	(78.8-89.8)	66	86.4	(75.5-92.9)	131	74.8	(66.6-81.6)
Temperature*	0			168	85.7	(79.5-90.3)	66	84.8	(73.7-91.8)	131	74.8	(66.6-81.6)
BCG vaccine, if neonate weight >2500g	78	55.1	(43.8-66)	144	91	(85-94.7)	55	96.4	(86.1-99.1)	116	88.8	(81.5-93.4)
Routine newborn care with quality (I4103)	88	35.2	(25.8-45.9)	168	74.4	(67.2-80.5)	66	69.7	(57.3-79.8)	131	55	(46.3-63.4)

*Temperature check not captured at baseline or 1st operation.

Table D.53: Management of neonatal complications (I4070), comparison, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	63	1.6	(0.2-10.9)	72	1.4	(0.2-9.6)	15	6.7	(0.7-41.6)	53	5.7	(1.8-16.7)
Asphyxia managed to standard	6	33.3	(4.2-85.1)	8	50	(14.3-85.7)	5	20	(0.8-88.9)	16	56.2	(29.8-79.6)
Prematurity managed to standard	8	37.5	(8.7-79.2)	1	0	(-)	8	25	(4.1-72.4)	5	20	(0.8-88.9)
Management of neonatal complications (4070)	77	7.8	(3.5-16.5)	80	6.3	(2.6-14.4)	26	11.5	(3.5-32.1)	69	18.8	(11.1-30.1)

Table D.54: Management of neonatal complications (I4070), comparison, basic facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	3	33.3	(0.1-99.7)	5	80	(11.1-99.2)	8	25	(4.1-72.4)	16	25	(8.6-54.3)
Asphyxia managed to standard	0			1	0	(-)	0			3	0	(-)
Prematurity managed to standard	0			0			0			0		
Management of neonatal complications (4070)	3	33.3	(0.1-99.7)	6	66.7	(14.9-95.8)	8	25	(4.1-72.4)	19	21.1	(7.3-47.3)

Table D.55: Management of neonatal complications (I4070), prematurity, comparison, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	8	50	(14.3-85.7)	1	0	(-)	8	50	(14.3-85.7)	5	20	(0.8-88.9)
Weight	8	100	(-)	1	0	(-)	8	100	(-)	5	100	(-)
Pulse / heart rate	8	100	(-)	1	100	(-)	8	100	(-)	5	100	(-)
Respiratory rate	8	100	(-)	1	100	(-)	8	100	(-)	5	100	(-)
Silverman-Anderson / Downes test	8	50	(14.3-85.7)	1	0	(-)	8	50	(14.3-85.7)	5	20	(0.8-88.9)
Head circumference	8	100	(-)	1	0	(-)	8	100	(-)	5	100	(-)
APGAR score / skin test	8	100	(-)	1	0	(-)	8	87.5	(31.9-99.1)	5	80	(11.1-99.2)
Lab tests	8	87.5	(31.9-99.1)	1	0	(-)	8	62.5	(20.8-91.3)	5	80	(11.1-99.2)
Glycemia	8	100	(-)	1	0	(-)	8	62.5	(20.8-91.3)	5	80	(11.1-99.2)
Oxygen saturation	8	87.5	(31.9-99.1)	1	100	(-)	8	75	(27.6-95.9)	5	80	(11.1-99.2)
Gestational age calculated using Capurro/Ballard (if in-facility)	8	100	(-)	0			7	85.7	(25.7-99)	5	100	(-)
Weight classification (if in-facility)	8	100	(-)	0			7	85.7	(25.7-99)	5	100	(-)
Heat application	8	100	(-)	1	100	(-)	8	100	(-)	5	100	(-)
Breastfed / given glucose	8	100	(-)	1	100	(-)	8	87.5	(31.9-99.1)	5	100	(-)

	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Evaluated by specialist	8	87.5	(31.9-99.1)	1	100	(-)	8	100	(-)	5	100	(-)
Appropriate management of any associated complications:	3	66.7	(0.3-99.9)	0			0			1	100	(-)
Pneumonia: antibiotics	0			0			0			1	100	(-)
Diarrhea: liquids/ORS/antibiotics	0			0			0			0		
Seizures: anticonvulsants	0			0			0			0		
Hypoglycemia: glucose IV	3	66.7	(0.3-99.9)	0			0			0		
Prematurity managed to standard	8	37.5	(8.7-79.2)	1	0	(-)	8	25	(4.1-72.4)	5	20	(0.8-88.9)

No records were found to have prematurity at basic facilities in the random sample.

Table D.56: Management of neonatal complications (I4070), sepsis, comparison, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	63	84.1	(72.6-91.4)	72	97.2	(89.2-99.3)	15	100	(-)	53	100	(-)
Pulse / heart rate	63	90.5	(80-95.8)	72	98.6	(90.4-99.8)	15	100	(-)	53	100	(-)
Respiratory rate	63	92.1	(81.9-96.7)	72	98.6	(90.4-99.8)	15	100	(-)	53	100	(-)
Lab tests	63	1.6	(0.2-10.9)	72	1.4	(0.2-9.6)	15	6.7	(0.7-41.6)	53	5.7	(1.8-16.7)
Oxygen saturation	63	23.8	(14.7-36.2)	72	43.1	(31.9-54.9)	15	86.7	(54.6-97.2)	53	69.8	(55.8-80.9)
C-reactive protein	63	58.7	(45.9-70.4)	72	83.3	(72.6-90.4)	15	100	(-)	53	96.2	(85.5-99.1)
Platelets	63	73	(60.4-82.7)	72	93.1	(84.1-97.1)	15	100	(-)	53	96.2	(85.5-99.1)
Leukocytes	63	71.4	(58.8-81.4)	72	87.5	(77.4-93.5)	15	100	(-)	53	98.1	(87.1-99.8)
Hemoglobin	63	74.6	(62.1-84)	72	97.2	(89.2-99.3)	15	100	(-)	53	98.1	(87.1-99.8)
Hematocrit	63	71.4	(58.8-81.4)	72	97.2	(89.2-99.3)	15	100	(-)	53	98.1	(87.1-99.8)
Blood culture	63	9.5	(4.2-20)	72	38.9	(28.1-50.8)	15	40	(17.1-68.2)	53	18.9	(10.2-32.1)
Neutrophil band ratio / absolute ratio	63	3.2	(0.8-12.2)	72	5.6	(2.1-14.2)	15	53.3	(26.6-78.3)	53	18.9	(10.2-32.1)
Double antibiotic therapy	63	98.4	(89.1-99.8)	72	97.2	(89.2-99.3)	15	100	(-)	53	98.1	(87.1-99.8)
Evaluated by specialist	63	96.8	(87.8-99.2)	72	76.4	(65-85)	15	100	(-)	53	100	(-)
Sepsis managed to standard	63	1.6	(0.2-10.9)	72	1.4	(0.2-9.6)	15	6.7	(0.7-41.6)	53	5.7	(1.8-16.7)

Table D.57: Management of neonatal complications (I4070), sepsis, comparison, basic facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	3	66.7	(0.3-99.9)	5	80	(11.1-99.2)	8	100	(-)	16	93.7	(60.7-99.3)
Pulse / heart rate	3	66.7	(0.3-99.9)	5	80	(11.1-99.2)	8	100	(-)	16	100	(-)
Respiratory rate	3	100	(-)	5	80	(11.1-99.2)	8	100	(-)	16	93.7	(60.7-99.3)
Antibiotics administered	3	66.7	(0.3-99.9)	5	100	(-)	8	62.5	(20.8-91.3)	16	75	(45.7-91.4)
Evaluated by doctor	3	100	(-)	5	100	(-)	8	50	(14.3-85.7)	16	43.8	(20.4-70.2)
Referred	3	100	(-)	5	100	(-)	8	50	(14.3-85.7)	16	68.7	(40.2-87.8)
Sepsis managed to standard	3	33.3	(0.1-99.7)	5	80	(11.1-99.2)	8	25	(4.1-72.4)	16	25	(8.6-54.3)

Table D.58: Management of neonatal complications (I4070), asphyxia, comparison, complete facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	6	100	(-)	8	87.5	(31.9-99.1)	5	60	(8.1-96.2)	16	93.7	(60.7-99.3)
Pulse / heart rate	6	100	(-)	8	100	(-)	5	100	(-)	16	100	(-)
Respiratory rate	6	100	(-)	8	100	(-)	5	60	(8.1-96.2)	16	100	(-)
APGAR score at one minute	6	100	(-)	8	87.5	(31.9-99.1)	5	100	(-)	16	93.7	(60.7-99.3)
APGAR score at five minutes	6	100	(-)	8	87.5	(31.9-99.1)	5	100	(-)	16	93.7	(60.7-99.3)
Oxygen saturation lab test	6	50	(9.1-90.9)	8	50	(14.3-85.7)	5	60	(8.1-96.2)	16	75	(45.7-91.4)
Heat application	6	66.7	(14.9-95.8)	8	100	(-)	5	100	(-)	16	87.5	(57-97.4)
Oxygen application (if APGAR <= 3 at five minutes)	0			1	100	(-)	2	50	(0-100)	1	100	(-)
AMBU / positive pressure ventilation / endotracheal intubation / chest compressions (if APGAR <= 3 at five minutes)	0			1	100	(-)	2	50	(0-100)	1	0	(-)
Evaluated by specialist	6	100	(-)	8	100	(-)	5	100	(-)	16	100	(-)
Asphyxia managed to standard	6	33.3	(4.2-85.1)	8	50	(14.3-85.7)	5	20	(0.8-88.9)	16	56.2	(29.8-79.6)

Table D.59: Management of neonatal complications (I4070), asphyxia, comparison, basic facilities

Description	Baseline			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	0			1	100	(-)	0			3	66.7	(0.3-99.9)
Pulse / heart rate	0			1	100	(-)	0			3	66.7	(0.3-99.9)
Respiratory rate	0			1	100	(-)	0			3	66.7	(0.3-99.9)
APGAR score at one minute	0			1	100	(-)	0			3	100	(-)
APGAR score at five minutes	0			1	100	(-)	0			3	100	(-)
Oxygen saturation lab test (if APGAR <= 3 at five minutes)	0			1	0	(-)	0			3	66.7	(0.3-99.9)
Heat application	0			1	100	(-)	0			3	66.7	(0.3-99.9)
Oxygen application (if APGAR <= 3 at five minutes)	0			1	100	(-)	0			3	33.3	(0.1-99.7)
AMBU / positive pressure ventilation / endotracheal intubation / chest compressions (if APGAR <= 3 at five minutes)	0			1	100	(-)	0			3	100	(-)
Evaluated by doctor	0			1	100	(-)	0			3	66.7	(0.3-99.9)
Referred (if APGAR <= 3 at five minutes)	0			1	100	(-)	0			2	100	(-)
Asphyxia managed to standard	0			1	0	(-)	0			3	0	(-)

No applicable records reviewed in the baseline and third operation pre-evaluation measurement.

Table D.60: Health facility performance indicators

Indicator	Description	Time Period	N	%	CI
I3050	Antenatal care with quality*	Baseline	58	32.8	(21.7 - 46.2)
		1st Operation	Not measured at 1st operation		
		2nd Operation	76	40.8	(30.1 - 52.4)
		3rd Op. Pre-evaluation	31	41.9	(25.3 - 60.6)
		3rd Op. Evaluation	61	44.3	(32.1 - 57.2)
I4103	Routine newborn care with quality**	Baseline	88	35.2	(25.8 - 45.9)
		1st Operation	Not measured at 1st operation		
		2nd Operation	168	74.4	(67.2 - 80.5)
		3rd Op. Pre-evaluation	66	69.7	(57.3 - 79.8)
		3rd Op. Evaluation	131	55	(46.3 - 63.4)
I4070	Management of neonatal complications	Baseline	77	7.8	(3.5 - 16.5)
		1st Operation	Not measured at 1st operation		
		2nd Operation	80	6.3	(2.6 - 14.4)
		3rd Op. Pre-evaluation	26	11.5	(3.5 - 32.1)
		3rd Op. Evaluation	69	18.8	(11.1 - 30.1)
I4080	Management of obstetric complications	Baseline	100	22	(14.8 - 31.3)
		1st Operation	Not measured at 1st operation		
		2nd Operation	108	42.6	(33.5 - 52.2)
		3rd Op. Pre-evaluation	24	33.3	(16.7 - 55.5)
		3rd Op. Evaluation	76	39.5	(28.9 - 51.1)
I6005	Cervical cancer screening with quality	Baseline	Not measured at baseline		
		1st Operation	Not measured at 1st operation		
		2nd Operation	Not measured at 2nd operation		
		3rd Op. Pre-evaluation	Not measured at 3rd operation pre-evaluation		
		3rd Op. Evaluation	104	16.3	(10.3 - 24.9)

* Notes on baseline and first operation results: Referral not captured, so the subsequent exception cannot be applied as it is at second and third operation. Uterine height and fetal checkups are only evaluated at first visit, if eligible based on gestational age. RPR not captured as VDRL alternative for syphilis test.

** Temperature check not captured at baseline or first operation.

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About IHME

The Institute for Health Metrics and Evaluation (IHME) is an independent population health research center at UW Medicine, part of the University of Washington, that provides rigorous and comparable measurement of the world's most important health problems and evaluates the strategies used to address them. IHME makes this information freely available so that policymakers have the evidence they need to make informed decisions about how to allocate resources to best improve population health.

IHME aspires to make available to the world high-quality information on population health, its determinants, and the performance of health systems. We seek to achieve this directly, by catalyzing the work of others, and by training researchers as well as policymakers.

Our mission is to improve the health of the world's populations by providing the best information on population health.

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