

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

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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 El Salvador, baseline (2011) and second operation measurement (2017) data were collected at households and health facilities in intervention areas, while first operation measurement (2014) data were collected at health facilities in intervention areas only. Baseline records were collected using pen and paper surveys and therefore are not presented in this report. 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 El Salvador from the first operation onwards is summarized in Table E.1 and Table E.2.

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

	1st Operation	2nd Operation	3rd Operation	
	Int.	Int.	Int.	Comp.
Health facilities	60	60	36	22
Medical records	1,591	2,232	Pre-Eval: 672; Eval: 1,625	Pre-Eval: 490; Eval: 1,124

*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 El Salvador

	2nd Operation		3rd Operation	
	Int.	Comp.	Int.	Comp.
Census	3839	-	4442	2802
Household	1024	-	1144	600
Women	1432	-	1358	688
Children	870	-	796	433

Summary of results

In El Salvador, a total of 10 performance indicators were measured at the third operation, two from the household survey and eight through health facility surveys or systematic medical record review at health facilities. In total, four indicators were met (one measured in the household survey and three measured in health facility surveys or systematic 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 El Salvador

Source	Indicator #	Indicator	Indicator Value (%)	CI	Target (%)	Status
Household	I1060	Children (6-23mo) with hemoglobin <110g/L	15.5	(10.1 - 22.9)	42.3	Met
Household	I5060	Diarrhea treatment with ORS and zinc (6-59mo)	15.7	(5.4 - 38)	45.3	Not met
Health facility	I2500	Postpartum contraception	30.5	(21.3 - 41.5)	29.7	Met
Health facility	I3000	Preconception care with quality	0.0	(-)	10.0	Not met
Health facility	I3030	Antenatal care with quality	30.2	(23.5 - 37.8)	49.0	Not met
Health facility	I4050	Postpartum care with quality	8.0	(4.8 - 13.2)	64.5	Not met
Health facility	I4070	Management of neonatal complications	39.8	(32.4 - 47.6)	49.1	Not met
Health facility	I4080	Management of obstetric complications	13.6	(9.2 - 19.7)	37.2	Not met
Health facility	I6005	Cervical cancer screening with quality	85.7	(81.1 - 89.3)	70.0	Met
Health facility	I7500	Use of data for decision-making	70.4	(49.6 - 85.2)	50.0	Met

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

				Intervention			Comparison		
Source	Indicator	Description	Time Period	N	%	CI	N	%	CI
Household	I1060	Children (6-23mo) with hemoglobin <110g/L	2nd Operation	227	47.3	(35.9 - 59)	Not measured at 2nd operation		
			3rd Operation	188	15.5	(10.1 - 22.9)	81	8.8	(3.7 - 19.2)
Household	I5060	Diarrhea treatment with ORS and zinc (6-59mo)	2nd Operation	40	35.3	(23 - 49.9)	Not measured at 2nd operation		
			3rd Operation	29	15.7	(5.4 - 38)	4	58.2	(15.2 - 91.5)
Health Facility	I2500	Postpartum contraception*	1st Operation	84	1.2	(0.2 - 8.3)	Not measured at 1st operation		
			2nd Operation	102	14.7	(9 - 23.1)	Not measured at 2nd operation		
			3rd Op. Pre-evaluation	53	20.8	(11.7 - 34.2)	47	34	(21.6 - 49.1)
			3rd Op. Evaluation	82	30.5	(21.3 - 41.5)	79	48.1	(37.1 - 59.3)
Health Facility	I3000	Preconception care with quality	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	35	0	(-)	29	0	(-)
Health Facility	I3030	Antenatal care with quality**	1st Operation	166	28.9	(22.5 - 36.3)	Not measured at 1st operation		
			2nd Operation	241	29	(23.6 - 35.1)	Not measured at 2nd operation		
			3rd Op. Pre-evaluation	75	22.7	(14.4 - 33.8)	34	38.2	(23 - 56.2)
			3rd Op. Evaluation	159	30.2	(23.5 - 37.8)	80	12.5	(6.8 - 21.9)
Health Facility	I4050	Postpartum care with quality***	1st Operation	86	0	(-)	Not measured at 1st operation		
			2nd Operation	210	49.5	(42.8 - 56.3)	Not measured at 2nd operation		
			3rd Op. Pre-evaluation	81	25.9	(17.4 - 36.8)	80	13.8	(7.7 - 23.4)
			3rd Op. Evaluation	174	8	(4.8 - 13.2)	160	8.8	(5.2 - 14.3)
Health Facility	I4070	Management of neonatal complications	1st Operation	Not measured at 1st operation			Not measured at 1st operation		
			2nd Operation	237	24.1	(19 - 29.9)	Not measured at 2nd operation		
			3rd Op. Pre-evaluation	93	36.6	(27.3 - 47)	81	38.3	(28.2 - 49.5)
			3rd Op. Evaluation	161	39.8	(32.4 - 47.6)	149	45.6	(37.7 - 53.8)
Health Facility	I4080		1st Operation	Not measured at 1st operation			Not measured at 1st operation		

				Intervention			Comparison		
Source	Indicator	Description	Time Period	N	%	CI	N	%	CI
		Management of obstetric complications	2nd Operation	237	12.2	(8.6 - 17.1)	Not measured at 2nd operation		
			3rd Op. Pre-evaluation	90	5.6	(2.3 - 12.9)	79	13.9	(7.8 - 23.7)
			3rd Op. Evaluation	169	13.6	(9.2 - 19.7)	148	12.2	(7.8 - 18.6)
Health Facility	I6005	Cervical cancer screening with quality	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	287	85.7	(81.1 - 89.3)	132	86.4	(79.3 - 91.3)
Health Facility	I7500	Use of data for decision-making	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 Operation	27	70.4	(49.6 - 85.2)	14	85.7	(52 - 97.1)

* Injection and implant postpartum contraceptives not captured at first operation; 'progestin-only' not specified for OCP at first operation.

** Referral not captured at first operation so the subsequent exclusion cannot be applied as it is at second and third operation. At first operation, uterine height and fetal checkups are only evaluated at first visit, if eligible based on gestational age. Risk factor management not captured at first operation. RPR not captured as VDRL alternative at first operation.

*** Blood abnormalities postpartum check not captured at first operation.

Key findings

Several indicators showed improvement over time. Health facility indicators measuring postpartum contraception, postpartum care with quality, and management of neonatal complications all showed notable progress in the third operation evaluation round. The household indicator measuring anemia prevalence showed a large improvement from the second operation, while the household indicator measuring diarrhea treatment with ORS and zinc decreased since the second operation measurement. Two novel performance indicators were introduced at the third operation, the first designed to measure the outcomes of interventions related to cervical cancer screening via medical record review and the second related to decision-making practices using data at health facilities. Both displayed positive results in their first measurement, suggesting that despite limited time for implementation, a robust system for the adoption of interventions was established in El Salvador.

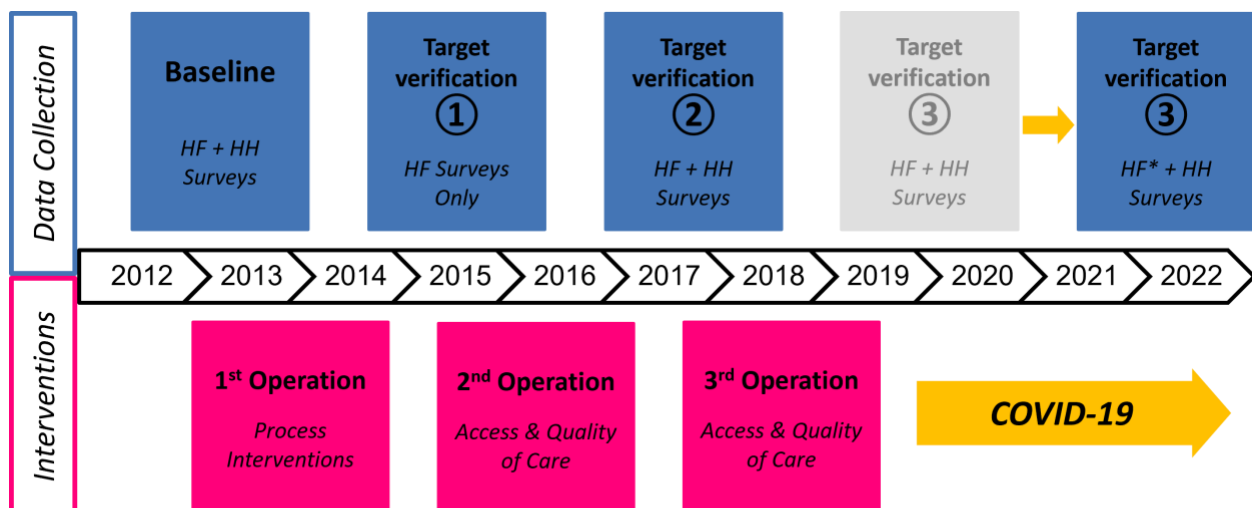
Chapter 1: Introduction

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 El Salvador, baseline (2011) and second operation (2017) data were collected at households and health facilities, while the first operation data collection took place at health facilities only (2014). Baseline results are not presented in this report. 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 El Salvador 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, child growth and development follow-up, and diarrhea treatment among children 0-5 years of age.

1.3 Indicators

The SMI-El Salvador third operation survey measures indicators defined by IDB and the El Salvador Ministry of Health (*Ministerio 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 El Salvador Ministry 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 at the second and third operations in SMI-El Salvador 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).

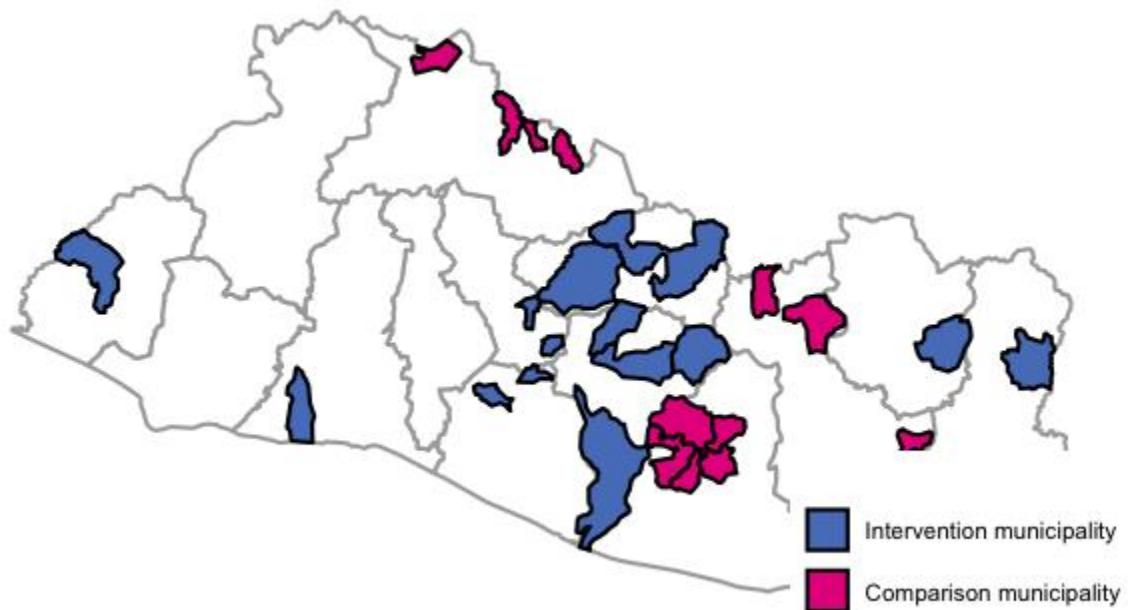
Chapter 2: Survey methodology

2.1 Study area

The study design for the SMI-El Salvador 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 El Salvador.

The primary administrative unit in El Salvador is the department. El Salvador has 14 departments, of which eight were purposefully selected for the SMI baseline in El Salvador: Ahuachapán, La Libertad, La Paz, Cuscatlán, Cabañas, San Vicente, Morazán, and La Unión. From those eight departments, IDB identified 14 intervention 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. At the third operation 12 municipalities with similar socioeconomic characteristics and ethnic composition were selected in three departments (Chalatenango, Usulután, and San Miguel) to serve as a comparison area (Figure 2.1).

Figure 2.1: Map of Salud Mesoamérica Initiative study area



2.2 Household sample selection and description

From the 26 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-El Salvador household census, the primary sampling unit (PSU) is the segmento censal (census segment) from the 2007 El Salvador 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 baseline and follow-up measurements and, at the third operation, for intervention and comparison strata, 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 El Salvador during the third operation measurement no replacement segments were needed. 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	2017	2022	Department	Municipality	2022
Ahuachapán	Tacuba	4	5	Chalatenango	Dulce Nombre de María	1
Cabañas	Ilobasco	8	10		La Laguna	0
	Sensuntepeque	5	6		Ojos de Agua	1
Cuscatlán	Monte San Juan	1	2		San Ignacio	2
	San Cristóbal	1	1	San Miguel	Ciudad Barrios	4
La Libertad	Chiltiupán	1	1		San Gerardo	1
La Paz	San Antonio Masahuat	1	0		Uluazapa	1
	Santa María Ostuma	1	1	Usulután	Alegría	2
La Unión	El Sauce	1	1		Berlín	3
Morazán	Sociedad	2	2		San Agustín	2
San Vicente	Apastepeque	3	3		San Francisco Javier	1
	San Esteban Catarina	1	1	Tecapán	2	
	San Ildefonso	1	1			
	Tecoluca	4	4			

2.2.2 Second-stage sample selection: households

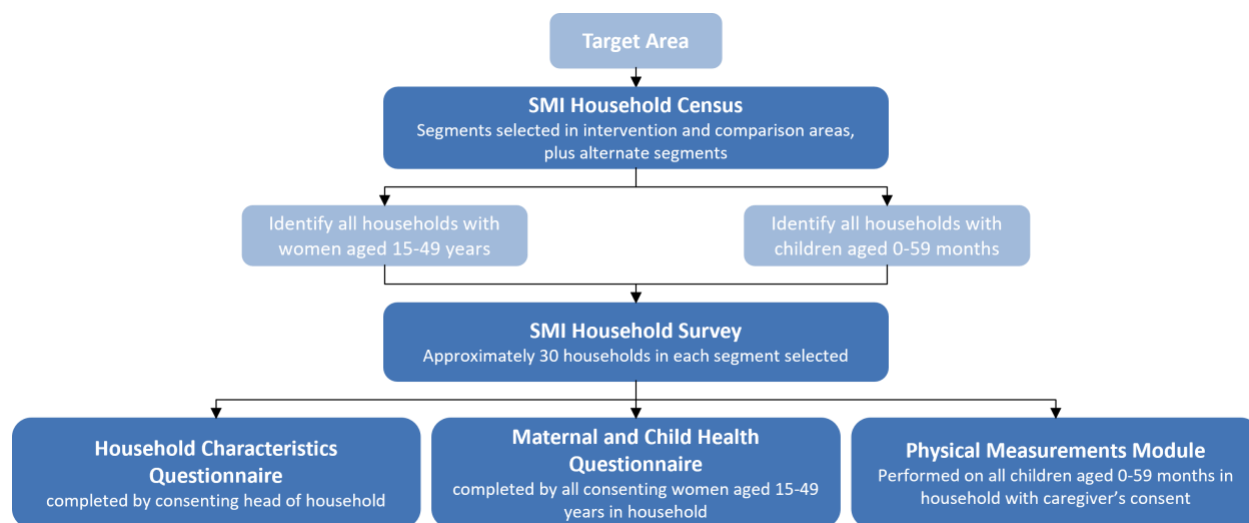
The SMI-El Salvador third operation household census is conducted in each of the randomly selected segments prior to the household survey in order to identify all eligible women and children for second-stage sampling. Interviewers visit every household in the segment and create a household roster capturing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

Eligible households are systematically selected from the complete census listing for participation in the SMI-El Salvador 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 El Salvador 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, %	
	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.
Ahuachapán	4	5	567	738	472	693	428	666	90.7	96.1
Cabañas	13	16	1,897	2,523	1,508	2,004	1,301	1,787	86.3	89.2
Chalatenango	0	4	0	700	0	618	0	587	-	95.0
Cuscatlán	2	3	276	457	247	423	241	396	97.6	93.6
La Libertad	1	1	130	120	106	115	105	102	99.1	88.7
La Paz	2	1	354	140	286	121	271	116	94.8	95.9
La Unión	1	1	149	120	141	102	139	94	98.6	92.2
Morazán	2	2	241	285	207	258	202	241	97.6	93.4
San Miguel	0	6	0	978	0	893	0	854	-	95.6
San Vicente	9	9	1,419	1,286	1,200	1,121	1,152	1,040	96	92.8
Usulután	0	10	0	1,576	0	1,418	0	1,361	-	96.0
Intervention	34	38	5,033	5,669	4,167	4,837	3,839	4,442	92.1	91.8
Comparison	0	20	0	3,254	0	2,929	0	2,802	-	95.7

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, %	
	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.
Ahuachapán	122	162	120	150	98.4	92.6	89.2	89.0
Cabañas	403	584	395	485	98	83	84.6	74.1
Chalatenango	0	137	0	121	0	88.3	-	83.9
Cuscatlán	63	100	61	90	96.8	90	94.5	84.3
La Libertad	30	36	30	30	100	83.3	99.1	73.9
La Paz	62	33	60	30	96.8	90.9	91.7	87.2
La Unión	30	31	30	30	100	96.8	98.6	89.2
Morazán	62	70	60	60	96.8	85.7	94.4	80.1
San Miguel	0	200	0	180	0	90	-	86.1

	No. households selected		No. households interviewed		Household response rate, %		Overall response rate, %	
	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.
San Vicente	279	308	273	270	97.8	87.7	93.9	81.3
Usulután	0	339	0	301	0	88.8	-	85.2
Intervention	1,051	1,324	1,029	1,145	97.9	86.5	90.2	79.4
Comparison	0	676	0	602	0	89.1	-	85.2

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, %	
	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.
Ahuachapán	167	165	166	163	99.4	98.8	88.7	87.9
Cabañas	571	635	564	611	98.8	96.2	83.5	71.3
Chalatenango	0	140	0	138	0	98.6	-	82.7
Cuscatlán	93	102	93	102	100	100	94.5	84.3
La Libertad	53	34	52	34	98.1	100	97.2	73.9
La Paz	85	40	85	40	100	100	91.7	87.2
La Unión	38	36	38	36	100	100	98.6	89.2
Morazán	83	67	83	67	100	100	94.4	80.1
San Miguel	0	204	0	204	0	100	-	86.1
San Vicente	357	307	355	306	99.4	99.7	93.4	81.1
Usulután	0	347	0	344	0	99.1	-	84.5
Intervention	1,447	1,386	1,436	1,359	99.2	98.1	89.5	77.9
Comparison	0	691	0	686	0	99.3	-	84.6

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, %	
	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.
Ahuachapán	89	135	89	134	100	99.3	89.2	88.3
Cabañas	326	342	320	338	98.2	98.8	83	73.2
Chalatenango	0	72	0	72	0	100	-	83.9
Cuscatlán	63	71	62	71	98.4	100	93	84.3

	No. children eligible		No. children participated		Child response rate, %		Overall response rate, %	
	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.	2nd Op.	3rd Op.
La Libertad	28	16	28	16	100	100	99.1	73.9
La Paz	54	19	54	19	100	100	91.7	87.2
La Unión	30	12	30	12	100	100	98.6	89.2
Morazán	52	35	52	35	100	100	94.4	80.1
San Miguel	0	137	0	136	0	99.3	-	85.4
San Vicente	238	175	235	175	98.7	100	92.8	81.3
Usulután	0	221	0	220	0	99.5	-	84.8
Intervention	880	805	870	800	98.9	99.4	89.2	78.9
Comparison	0	430	0	428	0	99.5	-	84.8

2.3 Health facility sample selection and description

2.3.1 Health facility sample

For the third operation survey, a sample of 36 intervention-area health facilities was selected from a list of all facilities serving the 14 SMI intervention municipalities. In addition, 22 comparison-area health facilities were selected from the corresponding 12 comparison area municipalities. The list of facilities was constructed according to a referral network outlined by the El Salvador Ministry 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. In El Salvador, only ambulatory and complete level facilities were included in the SMI measurements.

All 17 complete facilities (9 intervention and 8 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 41 ambulatory facilities (27 intervention and 14 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 El Salvador during the third operation survey, no backup facilities were utilized.

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 were evaluated for the presence and quality of cervical cancer screenings. Diarrhea care and child follow-up records for children were also collected at ambulatory facilities. Records of delivery, postpartum care, maternal complications and neonatal complications were evaluated at the 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 Ministry 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

	1st Operation	2nd Operation	3rd Operation	
	Int.	Int.	Int.	Comp.
Health facilities	60	60	36	22
Medical records	1,591	2,232	Pre-Eval: 672; Eval: 1,625	Pre-Eval: 490; Eval: 1,124

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

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 El Salvador in August 2022. Six doctors and nurses were trained to conduct the health facility surveys. For household and census data collection, 15 surveyors, six supervisors, and three 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 El Salvador Ministry 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 El Salvador, the SMI health facility survey, including the Interview Questionnaire, the Observation Checklist, and Medical Record Review, was conducted between August 25, 2022 and November 23, 2022.

The third operation household census, which captures basic demographic characteristics of all usual household occupants, was carried out between August 8, 2022 and November 2, 2022.

Data collection for the third operation household survey began on September 12, 2022, and was completed on December 6, 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.

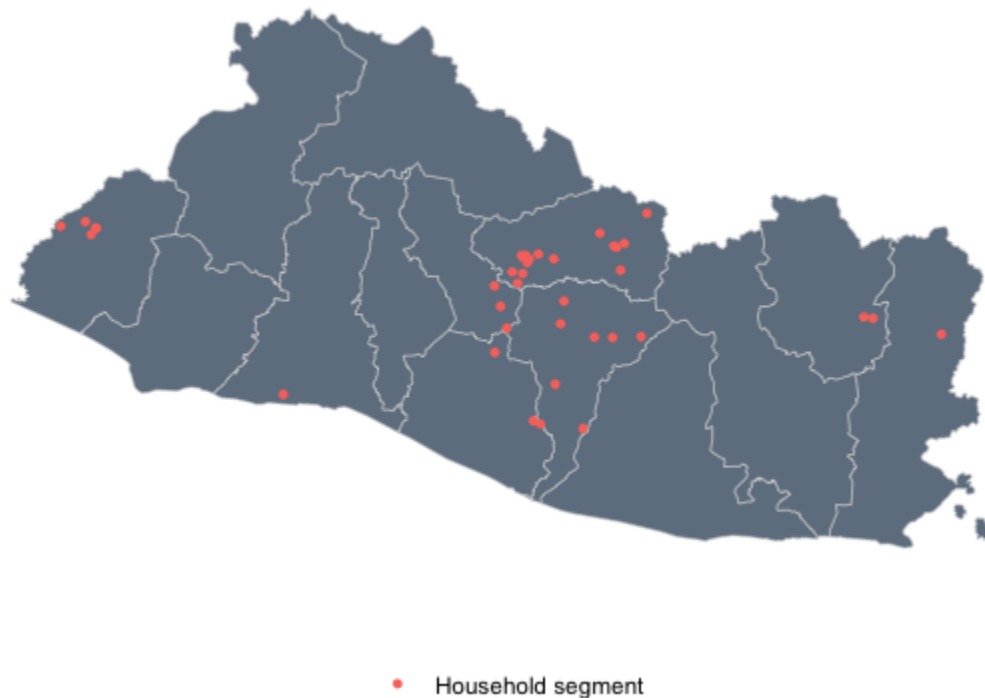
IHME conducted real-time monitoring of incoming data throughout the duration of the survey, providing feedback and guidance to data collectors in the field. Any discrepancies and errors were identified at IHME using bespoke quality assurance programs and subsequently resolved through continuous correspondence 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-El Salvador second and third operation household surveys. At the third operation household interviews were conducted in 38 segments across 13 municipalities in intervention areas, shown here in Figure 3.1.

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



3.1 Household characteristics

3.1.1 Characteristics of participating households

A total of 1,144 households in the El Salvador third operation completed the household characteristics questionnaire. In the second operation 1,024 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-El Salvador household census by five-year age groups and by sex is shown for second (Figure 3.2) and third operations (Figure 3.3). El Salvador 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 27% of the population is under age 15, more than half (63%) of the population is in the economically productive age range (15-64), and the remaining 10% 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, second operation survey, intervention

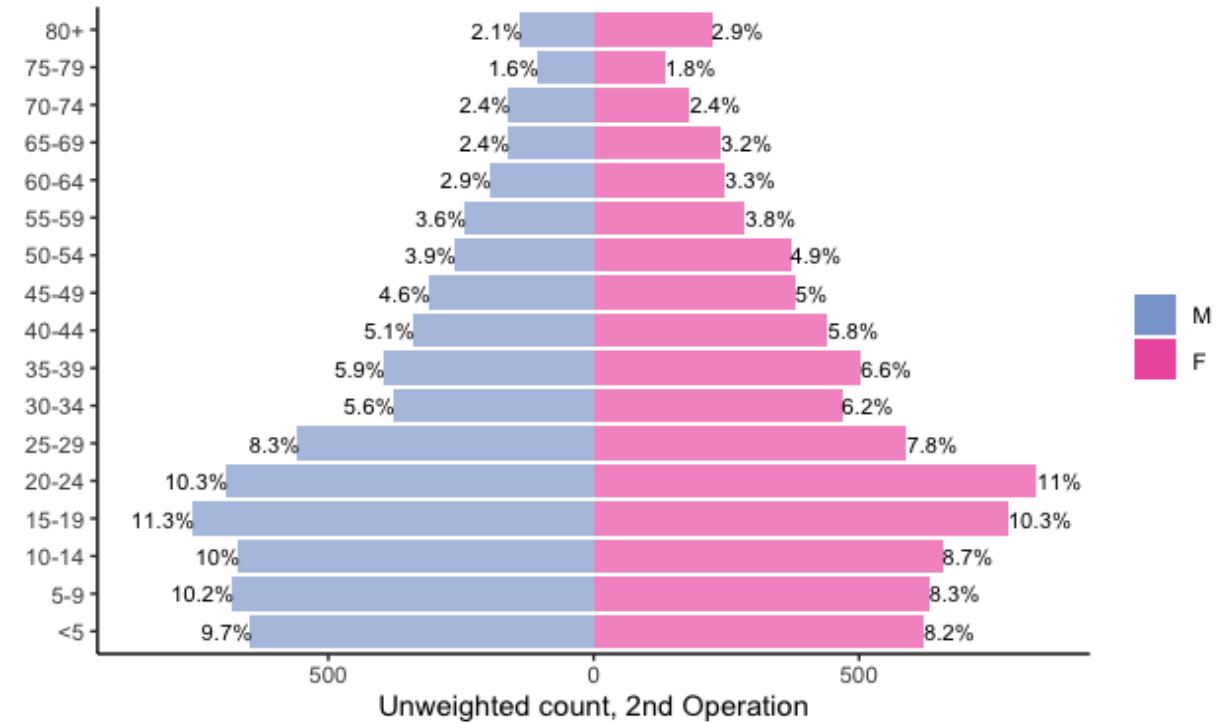
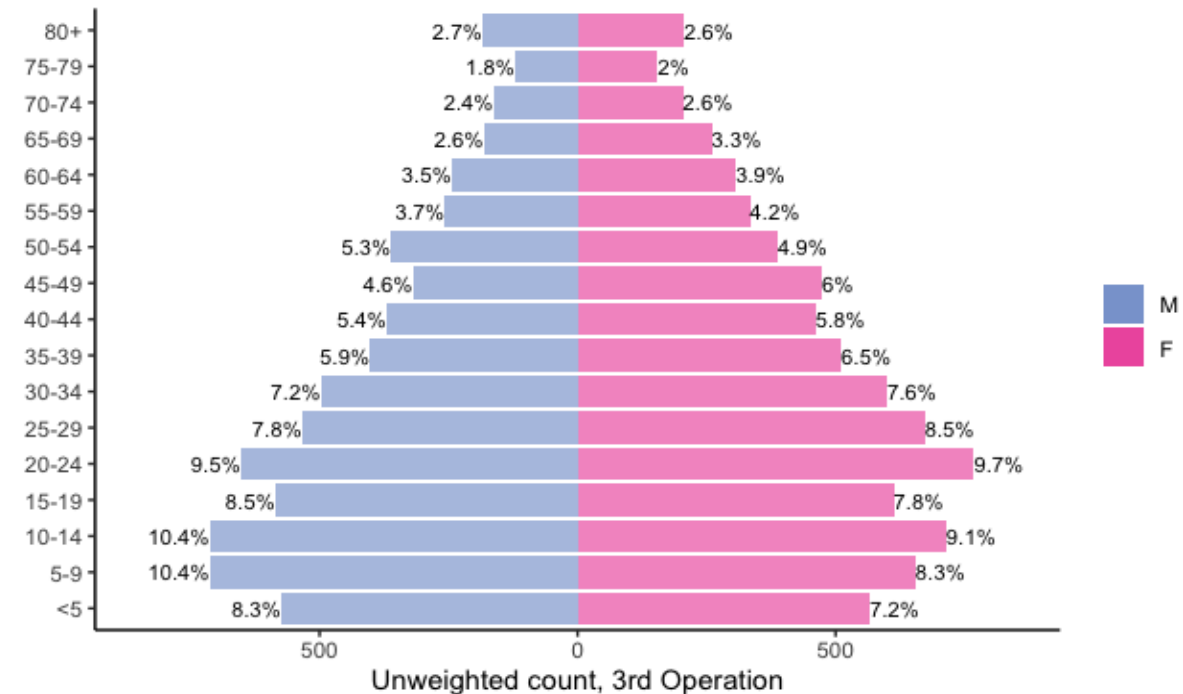


Figure 3.3: Age and sex of census sample, unweighted percent distribution of de facto household population by five-year age groups, third operation survey, intervention



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-six percent of households in El Salvador identify as dual-headed in the third operation. Males are the head of the household in 3.5% of surveyed households in El Salvador, with females as the head of household in the remaining 30.4% (Table 3.2). The median household size in El Salvador 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, intervention

	2nd Operation	3rd Operation
Households	1024	1144
Women	1432	1358
Children	870	796

Table 3.2: Household characteristics, SMI household sample, intervention

	2nd Operation			3rd Operation		
	n	%	CI	n	%	CI
Dual-headed household	637	59.5	(55.3 - 63.6)	786	66.1	(62.8 - 69.5)
Single head, female	267	28.7	(24 - 33.5)	326	30.4	(27 - 33.8)
Single head, male	120	11.8	(8.6 - 15.1)	32	3.5	(2.1 - 4.9)

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

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum
2nd Operation	1,024	0	1	3	4	5	15
3rd Operation	1,144	0	1	3	4	5	11

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 United States Dollars (USD), with no adjustment for inflation. Itemized expenditure information was sufficiently complete to report for 904 households at the third operation. The lowest quintile in the study area spent less than 44 USD 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 El Salvador at the third operation households spent 13.2 USD on average, compared to 6.5 USD at the second operation.

Table 3.4: Total itemized per-capita expenditure quintiles, nominal United States Dollars*, intervention

Operation	N	DK/DTR	20th Percentile	40th Percentile	60th Percentile	80th Percentile
2nd Operation	885	6	24	40	62	101
3rd Operation	904	19	44	66	93	134

*Not adjusted for inflation.

Table 3.5: Average household expenditures for the last month in current United States Dollars (USD) (MI6090/6100), intervention

Description	2nd Operation			3rd Operation		
	N	mean	CI	N	mean	CI
Average out-of-pocket household health expenditure for the last month (MI6090)*	1012	6.5	(3.9-9.1)	1056	13.2	(8.2-18.1)
Average household itemized expenditure for the last month (MI6100)	1017	255.8	(212-299.6)	1125	339.2	(295.8-382.6)

*5 outlier observations above 700 USD excluded.

3.1.5 Catastrophic health expenditures

Table 3.6 shows the percentage of households whose out-of-pocket health expenditures represented 10%, 25%, and 40% of their total itemized household expenditures. In El Salvador at the third operation, 8.2% of households spend 10% or more of their household expenditures on out-of-pocket health expenses, 3.8% spent 25% on health expenses, and 1.9% spent 40%.

Table 3.6: Catastrophic health expenditure as percentage of itemized household expenditure (MI6110), intervention

Description	2nd Operation			3rd Operation*		
	N	%	CI	N	%	CI
Catastrophic health expenditure - 10% of itemized household expenditure (MI6110)	1012	6.4	(4.1-9.9)	1056	8.2	(6-11.2)
Catastrophic health expenditure - 25% of itemized household expenditure (MI6110)	1012	2.1	(1.2-3.7)	1056	3.8	(2.4-6.1)
Catastrophic health expenditure - 40% of itemized household expenditure (MI6110)	1012	1.1	(0.5-2.5)	1056	1.9	(1-3.4)

*5 outlier observations above 700 USD excluded.

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-El Salvador 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 El Salvador is shown in Figure 3.4 by five-year age groups. About 52% of all women

participating in the third operation SMI-El Salvador household survey were younger than 30 years of age, 29% were between the ages of 30 and 39, and 18% were between the ages of 40 and 49.

Table 3.7 shows the marital status of women in the sample and their relationship to the head of the household. While 22.9% of women reported being married and 36.5% being partnered, 29.5% indicated they had never married. Twenty-seven percent of women were reported at the SMI-El Salvador census to be the head of the household, 19.2% to be the spouse of the head of the household, and 19.9% to be the partner of the head of the household.

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

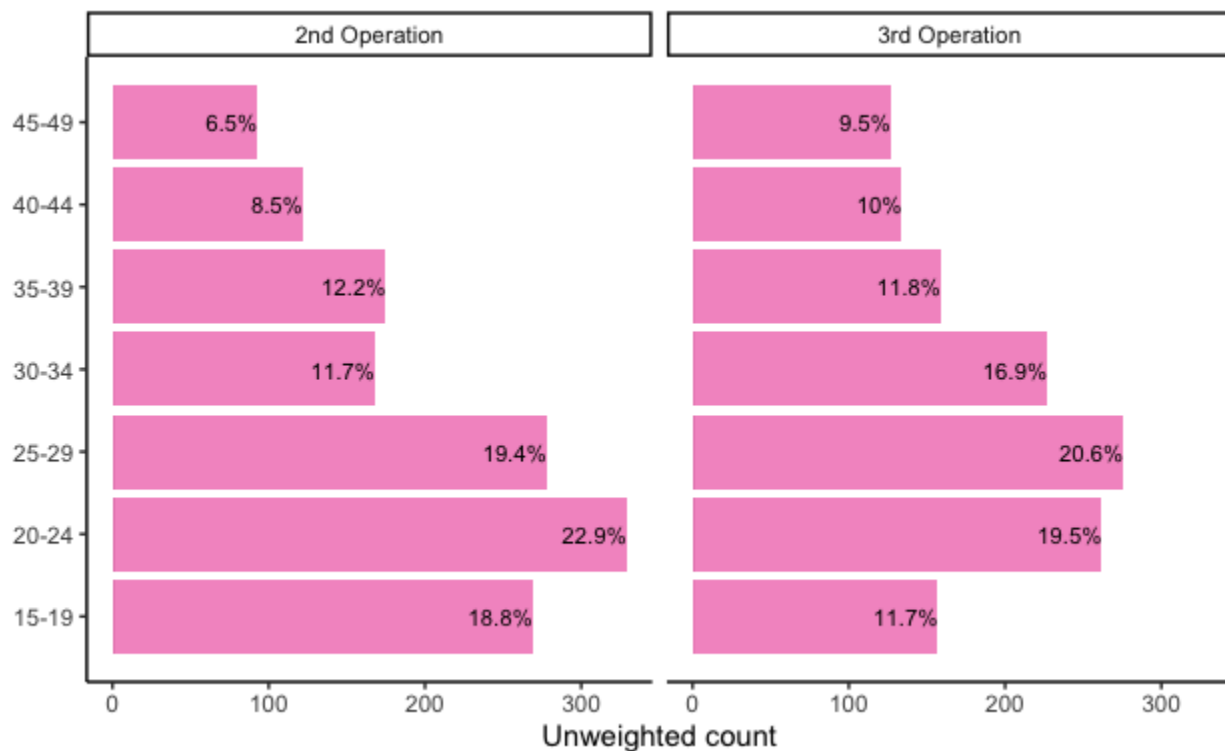


Table 3.7: Demographic characteristics of respondents, unweighted, intervention

	2nd Operation		3rd Operation	
	n	%	n	%
Marital status				
Never married	502	35	396	29.5
Married	303	21.1	308	22.9
Civil union/partnered	469	32.7	490	36.5
Divorced	6	0.4	5	0.4
Separated	78	5.4	69	5.1
Widowed	13	0.9	9	0.7
Other	63	4.4	65	4.8
Don't know	0	0	0	0

	2nd Operation		3rd Operation	
	n	%	n	%
Decline to respond	0	0	2	0.1
Respondent's relationship to head of household				
Head of household	256	17.9	368	27.4
Spouse	337	23.5	258	19.2
Partner	171	11.9	267	19.9
Biological child	465	32.4	313	23.3
Adopted or stepchild	15	1	10	0.7
Grandchild	64	4.5	43	3.2
Niece	9	0.6	6	0.4
Mother	6	0.4	7	0.5
Sister	27	1.9	12	0.9
Daughter-in-law	59	4.1	40	3
Sister-in-law	7	0.5	2	0.1
Mother-in-law	0	0	3	0.2
Other relative	3	0.2	5	0.4
Unrelated person	8	0.6	8	0.6
Not registered*	3	0.2	0	0
Other	4	0.3	2	0.1
Don't know	0	0	0	0
Decline to respond	0	0	0	0

* 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 percent of third operation survey participants had some formal education (Table 3.8). For 30.7% of these women, the highest level of education completed was primary schooling (Table 3.9). 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.” Eighty-five percent of women surveyed were able to read the whole sentence. Eight percent of women could not read the sentence at all.

Table 3.8: Education attainment and literacy, intervention

	2nd Operation			3rd Operation		
	n	%	CI	n	%	CI
Never attended school	87	7.3	(4.9 - 9.7)	97	8.9	(6.1 - 11.7)
Attended school	1340	92.5	(90 - 94.9)	1251	90.5	(87.4 - 93.5)
Attended literacy course	4	0.2	(0 - 0.5)	5	0.6	(0 - 1.3)
Don't know	0	0	-	0	0	-
Decline to respond	0	0	-	0	0	-

Table 3.9: Educational attainment and literacy, detailed, intervention

	2nd Operation			3rd Operation		
	n	%	CI	n	%	CI
Educational attainment and literacy						
Primary	442	32.1	(26.7 - 37.5)	376	30.7	(25.5 - 35.9)
Secondary or baccalaureate	776	58.7	(54.1 - 63.3)	791	62.6	(57.5 - 67.7)
University	118	9.2	(5.6 - 12.8)	79	6.2	(3.4 - 9)
Literacy course	1	0	-	2	0.5	(0 - 1.4)
Don't know	3	0	-	2	0	-
Decline to respond	0	0	-	0	0	-
Literacy						
Cannot read at all	79	7.3	(4.3 - 10.3)	81	7.6	(4.9 - 10.2)
Can read parts	141	10.2	(6.4 - 13.9)	80	7.4	(5.2 - 9.6)
Can read entire sentence	1199	82.4	(77.3 - 87.5)	1190	84.9	(81.3 - 88.5)
Visually impaired	3	0.1	(0 - 0.2)	1	0.1	(0 - 0.2)
Don't know	5	0	-	1	0	-
Decline to respond	4	0	-	0	0	-

3.2.3 Employment

As summarized in Table 3.10, the vast majority of respondents in the third operation were homemakers (66.1%). Of the 250 women who reported being employed and working at the time of the interview, most (82.4%) identified “Employee” as their occupational role.

Table 3.10: Employment, intervention

	2nd Operation			3rd Operation		
	n	%	CI	n	%	CI
Employment status						
Homemaker	946	63.5	(56.4 - 70.5)	977	66.1	(61.1 - 71.1)
Employed/paid for work	282	20	(15 - 24.9)	250	22.2	(18.2 - 26.1)
Student	172	15.5	(12.4 - 18.5)	114	10.9	(8.2 - 13.6)
Employed, but did not work in last week	7	0.4	(0 - 0.9)	4	0.6	(0 - 1.5)
Retired	0	0	-	1	0.1	(0 - 0.3)
Unable to work due to disability	10	0.7	(0.1 - 1.4)	2	0.1	(0 - 0.3)
Don't know	0	0	-	0	0	-
Decline to respond	3	0	-	1	0	-
Occupational role, among women employed and being paid for work						
Employee	212	74.9	(69.3 - 80.5)	192	82.4	(76.3 - 88.6)
Independent contractor	26	9.7	(4.8 - 14.7)	30	10.5	(5.8 - 15.2)
Proprietor	39	13.1	(8.7 - 17.5)	25	6.9	(2.1 - 11.8)
Employer	4	2.1	(0 - 4.9)	1	0.2	(0 - 0.5)
Apprentice/worker without pay	1	0.2	(0 - 0.7)	0	0	-
Don't know	0	0	-	2	0	-
Decline to respond	0	0	-	0	0	-

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 3.11 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). Sixty-seven percent of all survey respondents in the third operation reported current use of at least one contraceptive method. Among women in need, 74.4% reported using at least one method of contraception, and 72.4% report using a modern method. Finally, Table 3.11 shows the prevalence of interruption of contraceptive methods, which poses major concerns for contraception program managers. At the third operation, 4.2% of women who reported any use of contraception in the previous year reported any interruption in the use of contraceptive methods.

Table 3.11: Current use of modern contraceptive methods, women 15-49 years of age who are married or partnered and in need of contraception (MI2010/MI2030), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Women currently in need of contraception	769	80.7	(76.4-84.4)	797	86.8	(83.6-89.4)
Women using any contraception, among all women	769	64.6	(59.8-69.2)	797	67.1	(61-72.7)

	2nd Operation			3rd Operation		
Women using any contraception, among those in need	665	77.2	(71.8-81.8)	707	74.4	(67.5-80.3)
Women (age 15-49) who are using a method of modern contraception (MI2010)	665	75.4	(69.9-80.2)	707	72.4	(64.9-78.8)
Women (age 15-49) who report having stopped using a method of contraception during the previous year (MI2030)	504	5.1	(2.6-9.7)	387	4.2	(2.4-7.1)

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 3.12, “Don’t know” responses to the distance questions were exceedingly common.

Table 3.12 shows the percentile responses and mean for distance and time across the three operations. Excluding the 851 women who were unable to estimate the distance to the closest health facility in the third operation, 75% of women reported living 5 kilometers or less from a health facility. Three-quarters of the sample indicated that it took less than 30 minutes to reach this facility by the usual means of transportation. One-quarter estimated the travel time from their household to the closest health facility to be 30 minutes or more.

Table 3.12: Proximity to nearest health facility (percentiles) (MI6080/MI6085), intervention

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum	Mean	CI
Distance, km									
2nd Operation	797	634	0.1	1	1	3	42	2.6	(1.6 - 3.6)
3rd Operation	502	851	0.0	1	2	5	30	3.3	(2.4 - 4.1)
Travel time, min									
2nd Operation	1,377	51	1.0	10	15	20	2,700	20.7	(15.7 - 25.8)
3rd Operation	1,146	140	1.0	10	20	30	240	26.9	(20.4 - 33.3)

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, 9% reported being sick during that time (Table 3.13). Of the 134 women who reported an illness in the two weeks preceding the interview, 49.5% of these women did not seek care at a health care facility.

Table 3.13: Recent illness, last two weeks (MI6010/6020), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Women 15-49 who report having any illness in the past two weeks (MI6010)	1428	11.8	(8.7-15.9)	1352	9	(6.5-12.5)
Women (age 15-49) who report having any illness in the past two weeks but did not seek health care (MI6020)	164	39.8	(27.8-53.2)	134	49.5	(38.2-60.8)

Table 3.14 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, 8.2% of women in the household surveys had utilized health care services in the previous two weeks.

Table 3.14: Use of health services, last two weeks (MI6050), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Women (age 15-49) who used health care services in the last two weeks (MI6050)	1430	14.7	(11.4-18.6)	1349	8.2	(6.6-10.3)

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 3.15 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, 85.3% of women were satisfied with the care they received overall, 47.9% were satisfied with the cleanliness of the facility, 90.4% were satisfied with the competence of the health care personnel, and 59.4% reported being treated with respect.

Table 3.15: Satisfaction with health care services during most recent visit to a health care facility (MI6130, MI6140, MI6150, MI6160), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Women who reported satisfaction with health care services at their most recent visit to a health facility (MI6130)	640	91.5	(86.3-94.9)	506	85.3	(79.4-89.8)
Women who reported satisfaction with cleanliness of the facility at their most recent visit to a health facility (MI6140)	630	68.6	(61.1-75.2)	491	47.9	(41.8-54.1)
Women who reported satisfaction with competence of the medical personnel at their most recent visit to a health facility (MI6150)	637	98.3	(96.8-99.1)	498	90.4	(85.9-93.6)
Women who reported they were treated with respect at their most recent visit to a health facility (MI6160)	640	70.6	(64.4-76.1)	506	59.4	(52.9-65.7)

Table 3.16 shows the average wait time during the most recent visit to a health facility across the three operations. At the third operation women waited 116 minutes on average.

Table 3.16: Average wait time in minutes at most recent visit to a health facility (MI6120), intervention

Description	2nd Operation			3rd Operation		
	N	mean	CI	N	mean	CI
Average wait time at most recent visit to a health facility (MI6120)	621	107.1	(92.6-121.6)	501	116.5	(99.9-133)

3.2.8 Fertility

Table 3.17 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 5.8% of all women had a live birth in the last year, compared to 4.8% of adolescents aged 15-19.

Table 3.17: Women in the household surveys with a live birth in the past year (MI1080/MI1090), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Women aged 15-49 with a live birth in the last year (MI1080)	1431	6.3	(5.4-7.3)	1354	5.8	(4.9-6.9)
Women aged 15-19 with a live birth in the last year (MI1090)	269	4.9	(3.3-7.3)	164	4.8	(2.9-7.7)

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 3.18 displays the proportion of women who can recognize at least five danger signs in newborns. In El Salvador at the third operation 3.8% of women with a birth in the last two years were able to recognize at least five danger signs in newborns.

Table 3.18: Proportion of women who can recognize at least 5 danger signs in newborns (MI4110), intervention

Description	2nd Operation			3rd Operation		
	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)	324	26.1	(19-34.7)	252	3.8	(1.9-7.6)

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 second operation, 404 women were interviewed about births in the last two years, and at the third operation, 417 women with at least one birth in the last two years were interviewed.

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 El Salvador, it is recommended that women receive a minimum of four antenatal care visits. Table 3.19 shows the percentage of women who received at least one and at least four antenatal care visits with skilled professionals (i.e., doctor or professional nurse), as well as at least one visit during the first trimester. At the third operation 97.2% received at least one antenatal care visits with skilled professionals, and 82.5% attended at least four visits. Additionally, 62.4% of women had an antenatal care visit during the first trimester (first 12 weeks) with a doctor or professional nurse.

Table 3.19: Antenatal care coverage for most recent birth in the last two years, women 15-49 years of age (MI3010, MI3020, MI3040), intervention

Description	2nd Operation			3rd Operation		
	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)	404	98.1	(96.4-99)	415	97.2	(94.7-98.5)
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 according to best practices (MI3020)	391	79.7	(73.1-85)	377	82.5	(76.7-87)
Women (age 15-49) who received their first prenatal check with skilled personnel by 12 weeks gestation for their most recent birth in the last two years (MI3040)	393	58.9	(52.6-65)	400	62.4	(56.6-67.8)

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 344 women from the third operation who delivered in a facility, 286 were able to estimate the travel time to the facility (Table 3.20). Fifty percent of women traveled more than one hour to the facility to deliver.

Table 3.20: 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
2nd Operation	344	55	1	30	45	60	1,200	56.4	(48.3 - 64.5)
3rd Operation	344	58	1	30	45	60	300	58.1	(48.4 - 67.9)

The assistance a woman receives during childbirth has important health consequences for both mother and child. Table 3.21 shows that 96.9% of women delivered in a health facility, and that 96.1% of women delivered in a health facility with a skilled birth attendant, compared to 98.2% at second operation.

Table 3.21: In-facility delivery with skilled birth attendant: most recent birth in the last two years, women 15-49 years of age (MI4010/MI4015), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Women (age 15-49) delivered in a facility with skilled attendant in their most recent pregnancy in the last two years (MI4010)	404	98.2	(95.8-99.3)	414	96.1	(92.5-98)
Women (age 15-49) who delivered in a facility for their most recent birth in the last two years (MI4015)	404	98.8	(97.2-99.5)	414	96.9	(93.7-98.5)

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 3.22 shows that 73.5% of women initiated breastfeeding within one hour of birth.

Table 3.22: Early initiation of breastfeeding for most recent birth in the past two years, women 15-49 years of age (MI5050), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Children born in the last two years who were breastfed within one hour after birth (MI5050)	344	81.3	(75.6-85.9)	367	73.5	(67.8-78.6)

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 3.23 shows the percentage of women with a birth in the last two years who received postpartum care within 48 hours of delivery, within one week of delivery, within 7 and 42 days of delivery, and those who received three visits within 42 days of delivery. Three percent of women reported being checked within 48 hours of delivery by skilled personnel in a health facility, 7.2% reported a postpartum care visit within 7 days, and 26.2% reported a postpartum care visit within 7 and 42 days of delivery. Additionally, 0.2% of women reported receiving three postpartum care visits: one within 24 hours of birth, a second within one week, and a third between 7 and 42 days.

Table 3.23: Postpartum checkup for mother for most recent birth in the past two years, women 15-49 years of age (MI4020, MI4030, MI4031, MI4035, MI4040), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Women (age 15-49) who received postpartum care by skilled personnel within the first 48 hours in their most recent pregnancy in the last two years (MI4020)	401	22.6	(15.4-31.9)	397	3	(1.5-5.8)
Women (age 15-49) who received postpartum care by skilled personnel within the first 7 days in their most recent pregnancy in the last two years (MI4030)	401	31.7	(23.5-41.2)	397	7.2	(4.8-10.7)
Women (age 15-49) who received postpartum care one week (up to 8 days) after delivery in their most recent pregnancy in the last two years (MI4031)*	404	62.6	(52.7-71.5)	411	53.7	(47.3-60.1)
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)	401	25.7	(19.8-32.7)	398	26.2	(20.1-33.5)
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)	401	0.3	(0-2.1)	398	0.2	(0-1.6)

*At baseline, women were asked one question regarding postpartum checkup one week after delivery; at the second follow-up, women were asked to report on every postpartum checkup they received in the first six weeks after delivery. The indicator calculation at second follow-up incorporated responses from these additional questions for compliance of postpartum check.

3.3.5 Postnatal care for baby

The results regarding postnatal care for the neonate are shown in Table 3.24. The table shows the percentage of all infants born in the last two years who were checked by skilled personnel (doctor or professional nurse) within 24 hours, within 48 hours, and within 7 days after delivery.

At the third operation 17.6% of neonates received postnatal care within 24 hours, 21.3% received postnatal care by skilled personnel within 48 hours of delivery, and 34.1% received care by skilled personnel within 7 days, compared to 41.7% at second operation.

Table 3.24: Postnatal checkup for neonate for woman's most recent birth in the past two years, women 15-49 years of age (MI4100, MI4101, MI4102), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Infant received postnatal care by skilled personnel in a health facility within 24 hours (MI4101)	340	19	(10.8-31)	362	17.6	(12.8-23.8)
Infant received postnatal care by skilled personnel in a health facility within 48 hours (MI4100)	340	26.9	(17.6-38.8)	362	21.3	(15.6-28.4)
Infant received postnatal care by skilled personnel in a health facility within 7 days (MI4102)	340	41.7	(32.2-51.9)	362	34.1	(26.5-42.5)

3.4 Child health

The age and sex distribution of the de facto population of children in El Salvador aged 0-59 months participating in the Child Health Interview or the anthropometric measures at the second and third operations are shown by six- or 12-month age groups in Figure 3.5 and Figure 3.6 respectively. Twenty percent of children surveyed at second operation and 19% 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, second operation survey unweighted, intervention

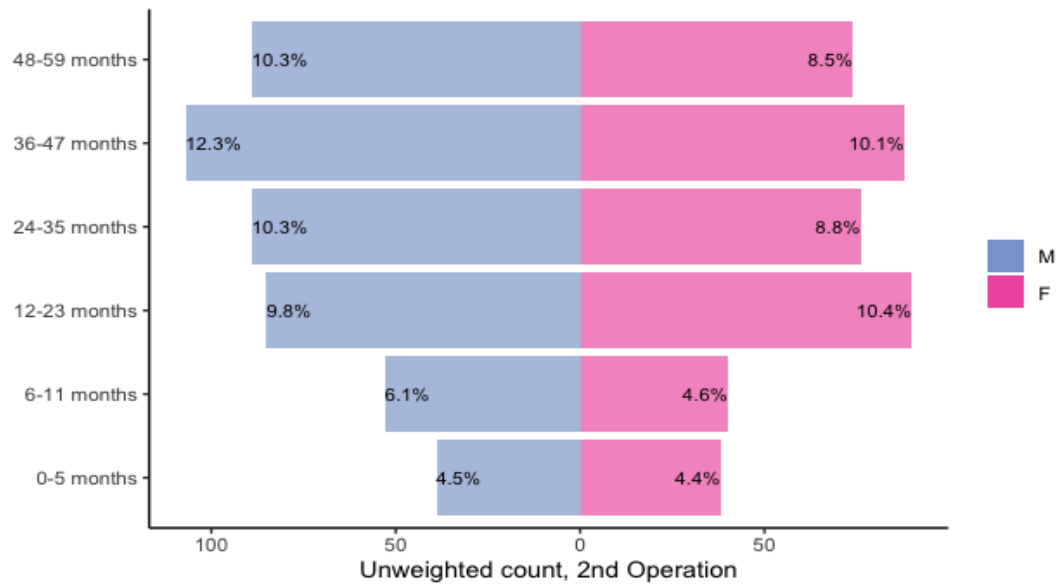
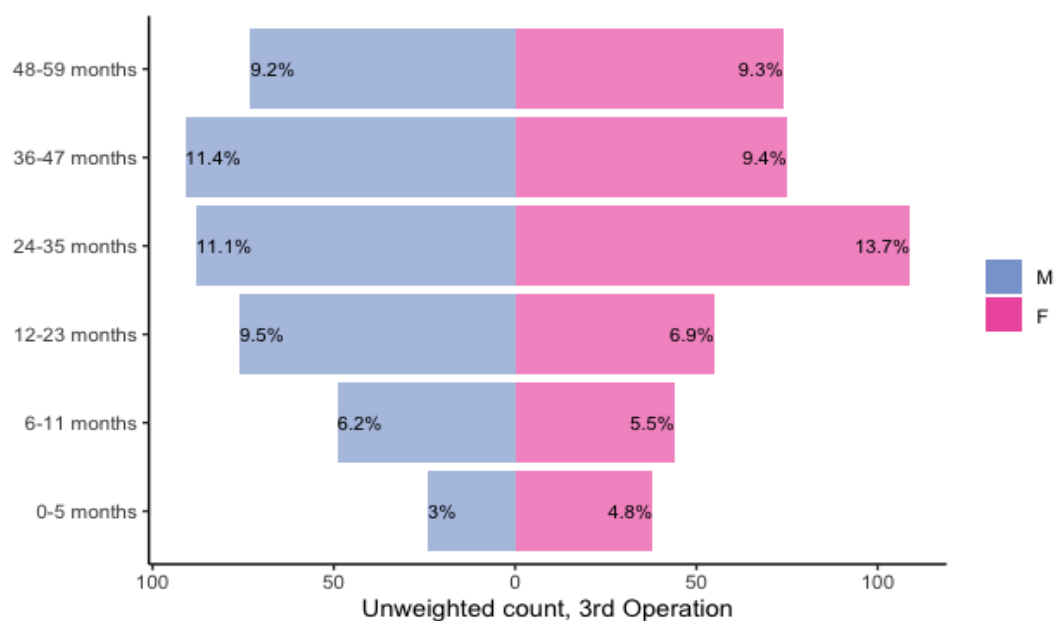


Figure 3.6: Age and sex of children aged 0-59 months in child health survey or anthropometric measures of the de facto population by six- to twelve-month age groups, third operation survey unweighted, intervention



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 14.2% of children were reported as sick during that time, as shown in Table 3.25. Of these children with reported illness, 43.9% did not seek care according to the report of the mother or caregiver. Table 3.25 also shows the percentage of children who used health care services in the last two weeks regardless of recent illness. In El Salvador at the third operation caregivers reported 11.1% of children used health care services in the last two weeks.

Table 3.25: Recent illness, among children aged 0-59 months (MI6030, MI6040, MI6070), intervention

Description	2nd Operation			3rd Operation		
	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)	869	20.6	(16.1-26)	794	14.2	(10.6-18.8)
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)	170	31.9	(24.5-40.4)	98	43.9	(33.6-54.8)
Children (0-59 months) who used health care services in the last two weeks (MI6070)	868	19.6	(15.4-24.7)	794	11.1	(8.4-14.5)

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 3.26 shows that the third operation caregivers reported that 65.1% of children with pneumonia symptoms received antibiotics, compared to 73.6% at the second operation.

Table 3.26: Utilization of antibiotics for suspected acute respiratory infection (MI4145), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Children (0-59 months) with pneumonia symptoms who received antibiotics (MI4145)	64	73.6	(62.2-82.6)	20	65.1	(42.7-82.3)

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 62.9% of children received ORS, while 23.5% received zinc. Sixteen percent of children received both ORS and zinc at the third operation.

Table 3.27: Diarrhea treatment with ORS and zinc (I5060), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
ORS administered	40	82.6	(71.1-90.1)	29	62.9	(41.1-80.5)
Zinc administered	40	38	(23.7-54.8)	29	23.5	(10.8-43.9)
ORS and zinc administered to standard (I5060)	40	35.3	(23-49.9)	29	15.7	(5.4-38)

3.4.4 Immunization

Information on immunization coverage was collected for all children aged 0-59 months whose caregivers participated in the survey. A review of the child's vaccination card (if available) and caregiver recall was used to determine coverage. In Table 3.28, 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 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) or caregiver recall. 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 63.3% of children were considered fully vaccinated for their age, compared to 59.8% at the second operation.

Table 3.28: Immunization against common childhood illnesses, children aged 0-59 months, according to vaccination card or caregiver recall (MI5020), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
BCG	783	98.8	(97.6-99.4)	738	99.2	(98.1-99.6)
Hepatitis B	783	85.8	(78.6-90.8)	738	96.1	(93.5-97.7)
Pentavalent	783	80.9	(74.2-86.2)	738	82.9	(79.4-85.9)
Rotavirus	783	83.8	(77-88.9)	738	89.3	(86.1-91.9)
Pneumococcal	783	82.7	(75.4-88.1)	738	83.3	(76.4-88.6)
MMR	783	93.9	(91.8-95.4)	738	91.8	(89-93.9)
Children (0-59 months) fully vaccinated for age, according to vaccine card and recall (MI5020)	783	59.8	(52-67.2)	738	63.3	(56.8-69.4)

Table 3.29 shows the proportion of children aged 12-23 months who received the measles, mumps, and rubella (MMR) vaccine according to their vaccine card. At the third operation, 83.7% of children aged 12-23 had received the MMR vaccine, compared to 91.1% at second operation.

Table 3.29: Children 12-23 months of age who received MMR vaccine according to vaccine card (MI5025), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Children (12-23 months) who were vaccinated against measles, mumps, and rubella (MMR), according to card (MI5025)	131	91.1	(83.2-95.5)	111	83.7	(73.5-90.5)

3.4.5 Deworming

Administration of deworming treatment every six months has been shown to reduce the prevalence of anemia in children. Twenty-two percent of children aged 12-59 months received at least two doses of deworming treatment in the year preceding the third operation interview (Table 3.30).

Table 3.30: Deworming treatment among children aged 12-59 months (MI5030), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Children (12-59 months) who received two doses of deworming medication in the last year	693	40.5	(34.9-46.4)	633	21.6	(17.2-26.7)

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 3.31 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 El Salvador during the third operation, the sample includes 61 children who are under 6 months of age and who have sufficiently complete dietary recall information to determine whether they are exclusively breastfed. Forty-five percent of children under 6 months of age are exclusively breastfed. Additionally, of the 54 children between 12-15 months of age with sufficient dietary recall information, 70.7% received breast milk on the day prior to the interview.

Table 3.31: Exclusive and continued breastfeeding (MI5040/MI5080), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Children 0-5 months who were exclusively breastfed on the previous day (MI5040)	76	49.6	(37.5-61.7)	61	45.1	(31.9-59)
Children 12-15 months who were breastfed on the previous day (MI5080)	62	72	(55.5-84.1)	54	70.7	(58-80.8)

3.4.7 Acceptable diet

Table 3.32 displays the dietary information for children in the El Salvador 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 El Salvador during the third operation, the sample includes 44 children who are 6-8 months of age, and of those with sufficiently complete dietary recall information 69.5% 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 El Salvador during the third operation, the sample includes 224 children who are 6-23 months of age, and of those with sufficiently complete dietary recall information 63.4% 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 El Salvador during the third operation, the sample includes 216 children who are 6-23 months of age, and of those children with sufficiently complete dietary recall information 62.2% 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 El Salvador during the third operation, the sample includes 221 children who are 6-23 months of age, and of those children with sufficiently complete dietary recall information to determine minimum acceptable diet, 44.9% 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 third operation during the third operation, the sample includes 224 children who are 6-23 months of age, and of those children with sufficiently complete dietary recall information to determine iron consumption, 71.2% of children consumed an iron-rich food during the previous day.

Table 3.32: Acceptable diet among children 6-23 months (MI5090, MI5100, MI5110, MI5120, MI5130), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Children 6-8 months who received solid or semi-solid food on the previous day (MI5090)	49	84.3	(71.9-91.9)	44	69.5	(47.5-85.1)
Children 6-23 months who received foods from 4 or more food groups during the previous day (MI5100)	268	60.1	(53.5-66.3)	224	63.4	(55.5-70.7)
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)	243	54.9	(47.5-62.1)	216	62.2	(50.3-72.8)
Children 6-23 months who received the minimum acceptable diet (apart from breastmilk) during the previous day (MI5120)	266	32.4	(26.6-38.8)	221	44.9	(35.2-55.1)
Children 6-23 months who received iron-rich or iron-fortified foods during the previous day (MI5130)	268	58.1	(50.7-65.1)	224	71.2	(62.6-78.5)

3.4.8 Nutritional status in children

The nutritional status of children aged 0-59 months is an important outcome measure of children's health. The SMI-El Salvador 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) 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 796 children aged 0-59 months participated in the SMI-El Salvador third operation. In practice, 700 of these children underwent the physical measurement module. Height and weight data are presented for 700 of these children (100%, unweighted). Seven-hundred children 0-59 months of age were eligible for the anemia test. Hemoglobin was measured in 665 children (95%, unweighted, of children 0-59 months of age). Parental consent was refused for 34 children, zero were not measured because anthropometrists could not obtain a sufficient capillary blood sample or any sample at all, and one case was not tested for other reasons (for example, because the child did not cooperate).

3.4.9 Height-for-Age

Height-for-age is an indicator of linear growth retardation and cumulative growth deficits in children. Children whose height-for-age z-score is below minus two standard deviations (-2 SD) from the median of the WHO reference population are considered short for their age (stunted) or chronically malnourished. 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 3.34 shows the prevalence of stunting in children aged 0-59 months. At the third operation 11% are stunted.

Table 3.34: Prevalence of stunting in children aged 0-59 months (MI1070), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Children 0-5 months with height <-2 SD of the mean of the reference population	75	2.6	(0.6-10.1)	39	1.9	(0.3-13.1)
Children 6-23 months with height <-2 SD of the mean of the reference population	250	4.8	(2.9-7.9)	201	17.1	(10.8-25.9)
Children 24-59 months with height <-2 SD of the mean of the reference population	483	8.4	(6.1-11.5)	460	9.2	(7.2-11.8)
Children 0-59 months with height <-2 SD of the mean of the reference population for age (MI1070)	808	6.8	(5.2-8.9)	700	11	(8.7-13.9)

3.4.10 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. Table 3.35 indicates that 13.9% of children under age 5 in El Salvador are anemic. In El Salvador at the third operation 15.5% of children aged 6-23 months, the targeted population for anemia intervention, were found to be anemic.

Table 3.35: Prevalance of anemia, children aged 0-59 months (I1060/MI1050), intervention

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
Children 0-5mo with hemoglobin <110g/L	4	100	(-)	30	13.2	(5-30.6)
Children 6-23mo with hemoglobin <110g/L (I1060)	227	47.3	(35.9-59)	188	15.5	(10.1-22.9)
Children 24-41mo with hemoglobin <110g/L	239	37.5	(28.9-47)	252	13.3	(8.7-19.8)
Children 42-59mo with hemoglobin <110g/L	230	26.3	(19.2-35)	195	13	(8.2-20.1)
Children 0-59mo with hemoglobin <110g/L (MI1050)	699	37.1	(29.2-45.8)	662	13.9	(10.2-18.6)
Children 6-59mo with hemoglobin <110g/L	696	36.9	(29-45.5)	635	13.9	(10.2-18.5)

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 36 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-seven ambulatory EONC health units and 9 complete EONC units were included in the intervention area sample. Ambulatory level units include *Unidad de Salud Básica*, *Unidad de Salud Intermedia*, and *Unidad de Salud Especializada* health facilities, while *Hospitals* make up complete level units. Health facilities are broken down by EONC in Table 4.1.

Table 4.1: Health facility classification, intervention areas

EONC	1st Operation	2nd Operation	3rd Operation
Ambulatory	51	51	27
Complete	9	9	9
Total	60	60	36

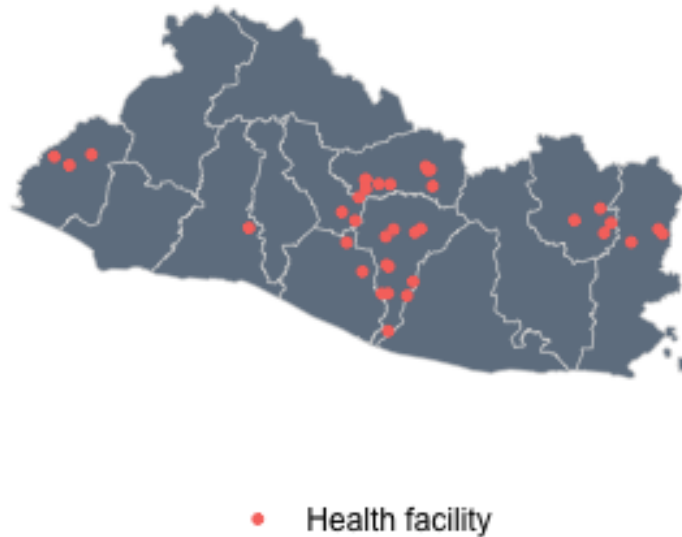
Table 4.2: Count of facilities by department and municipality, intervention areas

Department	Municipality	1st Operation	2nd Operation	3rd Operation
Ahuachapán	Ahuachapán	1	1	1
Ahuachapán	Tacuba	6	6	2
Cabañas	Ilobasco	9	10	6
Cabañas	Sensuntepeque	5	5	4
Cuscatlán	Cojutepeque	1	1	1
Cuscatlán	Monte San Juan	3	2	0
Cuscatlán	San Cristóbal	3	2	1
La Libertad	Chiltiupán	1	1	0
La Libertad	Santa Tecla (Nueva San Salvador)	1	1	1
La Paz	San Antonio Masahuat	2	2	0
La Paz	Santa María Ostuma	3	1	1
La Paz	Zacatecoluca	1	1	1
La Unión	El Sauce	3	3	2
La Unión	La Unión	1	0	0
La Unión	Santa Rosa de Lima	0	1	1
Morazán	San Francisco Gotera	1	1	1
Morazán	Sociedad	3	4	3
San Vicente	Apastepeque	3	5	3
San Vicente	San Esteban Catarina	2	1	0

Department	Municipality	1st Operation	2nd Operation	3rd Operation
San Vicente	San Ildefonso	2	2	0
San Vicente	San Vicente	1	1	1
San Vicente	Tecoluca	8	9	7
Total		60	60	36

Figure 4.1 is a map of all intervention health facilities visited at the third operation measurement. Table 4.2 displays the locations of health facilities by department and municipality in intervention areas from the first to third operation. Third operation health facilities were surveyed in 16 municipalities in 8 departments.

Figure 4.1: Map of health facilities in third operation intervention areas



4.1.2 Medical record extraction

The medical record review component of the study included a review of 2,297 medical records at the third operation, 672 from the pre-evaluation period and 1,625 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, uncomplicated delivery, immediate postpartum care, child follow-up, and obstetric and neonatal complications were collected from ambulatory and complete facilities at the first, second, and third operations. 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. At all three operations, child follow-up, and diarrhea records were collected at ambulatory facilities, and uncomplicated delivery, immediate postpartum care, obstetric complications, and neonatal complications were collected at complete facilities. Antenatal care records were collected from both ambulatory and complete facilities. Additionally, cervical cancer screening records were collected from ambulatory facilities for the first time at the third 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	1st Operation	2nd Operation	3rd Operation, Pre-Evaluation	3rd Operation, Evaluation
Antenatal care	283	426	113	214
Cervical cancer screening	0	0	0	324
Child follow-up	372	387	106	187
Diarrhea	212	430	97	206
Immediate postpartum care	112	242	81	174
Neonatal complications	209	252	94	167
Obstetric complications	213	252	91	172
Uncomplicated delivery	190	243	90	181
Total	1,591	2,232	672	1,625

4.2 Child health and vaccination

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

4.2.1 Cold chain and child care services

During the Health Facility Observation, interviewers systematically observed vaccine storage and refrigeration capacities to evaluate successful cold chain logistics as defined by the monitoring indicator 7000. For a detailed definition of requirements for indicator 7000, see appendix B.

Table 4.4: Cold chain (MI7000), intervention, ambulatory and complete facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Temperature monitoring chart for each functional refrigerator	47	95.7	(83.8-99)	56	96.4	(86.3-99.1)	35	82.9	(65.7-92.4)
Temperature recorded twice daily during past 30 days	47	91.5	(78.8-96.9)	56	94.6	(84.2-98.3)	35	82.9	(65.7-92.4)
Temperature within appropriate range (2-8°C) at each recording*	47	83	(68.9-91.5)	56	92.9	(82-97.4)	35	80	(62.6-90.5)
Cold chain according to standard (MI7000)	47	76.6	(61.9-86.8)	56	91.1	(79.8-96.3)	35	80	(62.6-90.5)

*If temperature is outside 2-8 degree range, the record passes the indicator if a record of action is recorded on the chart.

Ambulatory and complete facilities were also evaluated for their capacity to conduct child health care practices according to the standards defined in the monitoring indicator 7010. Interviewers systematically observed health

facility equipment, medication, and vaccines. Documentation was also reviewed to evaluate continuous availability of medication and vaccines over the previous three months. For a detailed definition of requirements for indicator 7010, see appendix B.

Table 4.5: Child care services (MI7010), intervention, ambulatory facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
All equipment observed and functional	51	62.7	(48.3-75.2)	51	88.2	(75.6-94.8)	27	48.1	(29.3-67.5)
Pediatric scale	51	96.1	(85-99.1)	51	90.2	(78-96)	27	59.3	(39-76.8)
Child scale	51	100	(-)	51	100	(-)	27	74.1	(53.2-87.8)
Height rod	51	64.7	(50.3-76.9)	51	100	(-)	27	92.6	(72.8-98.3)
Stethoscope	51	100	(-)	51	98	(86.6-99.7)	27	88.9	(68.9-96.7)
Thermometer	51	100	(-)	51	100	(-)	27	100	(-)
All vaccines observed day of survey (among facilities that store vaccines)	38	15.8	(7-31.9)	50	52	(37.9-65.8)	25	24	(10.5-45.9)
Pentavalent (DPT + HepB + Hib)	38	100	(-)	47	100	(-)	25	100	(-)
Polio	37	100	(-)	47	68.1	(53-80.1)	25	92	(70.9-98.2)
Measles, mumps, rubella	38	97.4	(82.2-99.7)	47	100	(-)	25	92	(70.9-98.2)
Rotavirus	38	97.4	(82.2-99.7)	47	100	(-)	25	96	(73.7-99.5)
Pneumococcal conjugate	38	94.7	(80.2-98.8)	47	100	(-)	25	100	(-)
BCG	38	92.1	(77.2-97.6)	47	87.2	(73.7-94.3)	25	28	(13.2-49.8)
Influenza	38	18.4	(8.7-34.8)	47	93.6	(81.3-98)	25	92	(70.9-98.2)
All vaccines continuously available in past 3 months	38	15.8	(7-31.9)	47	21.3	(11.6-35.8)	25	20	(8-41.7)
Child health care provision according to standard (MI7010)	51	21.6	(12.1-35.4)	51	25.5	(15.1-39.6)	27	14.8	(5.3-35.1)

Drug requirements omitted from ambulatory facility calculation due to recategorization of facility types.

Three-month vaccine stock only evaluated for MMR and BCG at first operation.

Polio data missing for one facility at first operation.

Table 4.6: Child care services (MI7010), intervention, complete facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
All equipment observed and functional	9	55.6	(19.5-86.6)	9	66.7	(26.2-91.9)	9	44.4	(13.4-80.5)
Pediatric scale	9	77.8	(33-96.1)	9	77.8	(33-96.1)	9	55.6	(19.5-86.6)
Child scale	9	100	(-)	9	100	(-)	9	100	(-)
Height rod	9	88.9	(37.4-99.1)	9	100	(-)	9	100	(-)
Pediatric stethoscope	9	77.8	(33-96.1)	9	77.8	(33-96.1)	9	66.7	(26.2-91.9)

	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Pediatric blood pressure device	9	88.9	(37.4-99.1)	9	88.9	(37.4-99.1)	9	77.8	(33-96.1)
All drugs observed day of survey	9	88.9	(37.4-99.1)	9	77.8	(33-96.1)	9	55.6	(19.5-86.6)
Oral rehydration medication	9	88.9	(37.4-99.1)	9	100	(-)	9	66.7	(26.2-91.9)
Ferrous sulfate / micronutrients	9	100	(-)	9	77.8	(33-96.1)	9	88.9	(37.4-99.1)
Penicillin crystals / ampicillin IV / amoxicillin	9	100	(-)	9	100	(-)	9	100	(-)
Ringers lactate / Hartman's / saline solution	0			9	100	(-)	9	100	(-)
All drugs continuously available in past 3 months	0			9	66.7	(26.2-91.9)	9	44.4	(13.4-80.5)
All vaccines observed day of survey (among facilities that store vaccines)	9	22.2	(3.9-67)	9	44.4	(13.4-80.5)	9	44.4	(13.4-80.5)
Pentavalent (DPT + HepB + Hib)	9	100	(-)	9	100	(-)	9	77.8	(33-96.1)
Polio	9	100	(-)	9	77.8	(33-96.1)	9	66.7	(26.2-91.9)
Measles, mumps, rubella	9	100	(-)	9	100	(-)	9	77.8	(33-96.1)
Rotavirus	9	100	(-)	9	88.9	(37.4-99.1)	9	66.7	(26.2-91.9)
Pneumococcal conjugate	9	100	(-)	9	88.9	(37.4-99.1)	9	88.9	(37.4-99.1)
BCG	9	100	(-)	9	100	(-)	9	100	(-)
Influenza	9	22.2	(3.9-67)	9	66.7	(26.2-91.9)	9	55.6	(19.5-86.6)
All vaccines continuously available in past 3 months	9	11.1	(0.9-62.6)	9	33.3	(8.1-73.8)	9	33.3	(8.1-73.8)
Child health care provision according to standard, evaluating drug availability only on the day of the survey (MI7010)	9	11.1	(0.9-62.6)	9	22.2	(3.9-67)	9	22.2	(3.9-67)
Child health care provision according to standard, including three month drug availability	0			9	11.1	(0.9-62.6)	9	11.1	(0.9-62.6)

Ringers lactate / Hartman's / saline solution not captured at first operation.

Three-month drug stock data not captured at first operation.

Three-month vaccine stock only evaluated for MMR and BCG at first operation.

Albendazol / mebendazol requirement omitted due to lack of available data across rounds.

4.2.2 Diarrhea treatment

At ambulatory facilities, diarrhea records of children aged 0-59 months were reviewed for symptom evaluation, vital checks, and proper treatment. The standards for appropriate diarrhea treatment are defined in monitoring indicator 4130 (see appendix B for a detailed definition of diarrhea treatment standards).

Table 4.7: Children 0-5 diagnosed with diarrhea treated (MI4130), intervention, ambulatory facilities

Description	1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
All of the following symptoms evaluated	212	46.7	(40-53.5)	428	54.9	(50.1-59.6)	97	30.9	(22.4-41)	206	35	(28.7-41.8)
General condition	212	64.2	(57.4-70.4)	428	81.5	(77.6-85)	97	79.4	(70-86.4)	206	78.6	(72.5-83.7)

	1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
Eyes	212	57.1	(50.3-63.6)	428	68	(63.4-72.3)	97	75.3	(65.5-82.9)	206	73.8	(67.3-79.4)
Thirst	212	58.5	(51.7-65)	428	60.5	(55.8-65.1)	97	48.5	(38.5-58.5)	206	56.8	(49.9-63.4)
Skin	212	48.6	(41.9-55.4)	428	63.6	(58.9-68)	97	36.1	(27-46.3)	206	40.3	(33.8-47.2)
All of the following checks performed	212	16.5	(12.1-22.2)	428	65.4	(60.8-69.8)	97	29.9	(21.5-39.9)	206	29.1	(23.3-35.8)
Pulse / heart rate	212	30.2	(24.3-36.8)	428	92.3	(89.3-94.5)	97	92.8	(85.5-96.6)	206	85	(79.3-89.2)
Capillary fill	212	20.3	(15.4-26.3)	428	68.2	(63.6-72.5)	97	32	(23.3-42)	206	30.1	(24.2-36.8)
Treated appropriately (ORS / IV)	212	96.7	(93.2-98.4)	428	99.1	(97.5-99.7)	97	92.8	(85.5-96.6)	206	97.6	(94.3-99)
Diarrhea treated according to SMI standard (MI4130)	212	13.7	(9.6-19)	428	42.8	(38.1-47.5)	97	10.3	(5.6-18.3)	206	15.5	(11.2-21.2)

4.3 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 preconception care, antenatal care, and cervical cancer screening medical records.

4.3.1 Preconception care

A novel performance indicator (3000) at the third operation measurement was designed to capture information related to preconception care interventions implemented by SMI in El Salvador. Antenatal care records at ambulatory facilities were evaluated for the presence of at least one preconception care visit, wherein various vital checks, lab tests, and risk factor management practices were to occur prior to the onset of the patient's pregnancy. Among reviewed records, only a single preconception care visit was recorded, and none of the required criteria were included in the documentation of the visit. This might suggest that though the implementation of the intervention was underway, record keeping practices was not yet adapted to inclusion of information regarding preconception care visits. For more information about the requirements for preconception care as defined by indicator 3000, see appendix B.

Table 4.8: Preconception care (I3000), intervention, ambulatory facilities

Description	3rd Operation		
	N	%	CI
At least one preconception care visit	35	2.9	(0.4-19.2)
Height checked at least once	1	0	(-)
Weight checked at least once	1	0	(-)
Blood pressure checked at least once	1	0	(-)
Folic acid at least once	1	0	(-)
Blood group	1	0	(-)
Rh factor	1	0	(-)
HIV test	1	0	(-)

	3rd Operation		
Management of HIV, if applicable	0		
Syphilis test	1	0	(-)
Management of syphilis, if applicable	0		
Management of biological risk factors, if applicable	0		
Management of social risk factors, if applicable	0		
At least one preconception care visit to standard (I3000)	35	0	(-)

4.3.2 Antenatal care

Interviewers systematically selected antenatal care (ANC) records from *Unidad de Salud Básica* and *Unidad de Salud Intermedia* ambulatory facilities for women who delivered in the last two years. ANC visits with quality are defined by the performance indicator 3030, which requires four ANC visits minimum, with physical checkups performed at each ANC visit. The first visit should occur before 13 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 I3030 indicator was measured at the first operation in which 28.9% of observations met the indicator. In the third operation evaluation period the proportion of observations that met the indicator increased from the first operation with 30.2% of observations meeting the indicator.

Table 4.9: At least four antenatal care (ANC) visits to standard (I3030), intervention, *Unidad de Salud Básica* and *Unidad de Salud Intermedia* ambulatory facilities

Description	1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
First ANC visit before 13 weeks gestation	166	65.1	(57.4-72)	241	72.6	(66.6-77.9)	75	82.7	(72.1-89.8)	159	78.6	(71.5-84.4)
At least four ANC visits	166	78.9	(72-84.5)	241	74.3	(68.3-79.4)	75	73.3	(62-82.3)	159	69.8	(62.2-76.5)
All appropriate checks performed, at least four ANC visits	166	71.1	(63.7-77.5)	241	66.8	(60.6-72.5)	75	64	(52.3-74.2)	159	55.3	(47.5-63)
All lab tests performed at least once during pregnancy:	166	76.5	(69.4-82.4)	241	82.2	(76.8-86.5)	75	45.3	(34.2-56.9)	159	55.3	(47.5-63)
Blood group	166	92.2	(86.9-95.4)	241	91.7	(87.5-94.6)	75	94.7	(86.4-98)	159	90.6	(84.9-94.3)
Rh factor	166	91.6	(86.2-95)	241	91.3	(87-94.3)	75	90.7	(81.4-95.6)	159	90.6	(84.9-94.3)
Blood glucose	166	92.8	(87.6-95.9)	241	90.5	(86-93.6)	75	93.3	(84.7-97.3)	159	86.8	(80.5-91.3)
HIV test	166	94	(89.1-96.7)	241	88	(83.2-91.5)	75	93.3	(84.7-97.3)	159	86.2	(79.8-90.8)
Syphilis test (VDRL / RPR*)	166	83.7	(77.2-88.6)	241	87.1	(82.2-90.8)	75	85.3	(75.1-91.8)	159	83.6	(77-88.7)
Hemoglobin	166	83.1	(76.6-88.1)	241	84.2	(79-88.3)	75	50.7	(39.3-62)	159	57.9	(50-65.4)
Urinalysis	166	97	(92.9-98.8)	241	86.3	(81.3-90.1)	75	90.7	(81.4-95.6)	159	84.9	(78.4-89.7)

	1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Tetanus vaccine	166	71.1	(63.7-77.5)	241	62.2	(55.9-68.2)	75	84	(73.6-90.8)	159	87.4	(81.2-91.8)
Appropriate management of risk factors:	0			55	47.3	(34.2-60.8)	16	56.2	(29.8-79.6)	51	76.5	(62.5-86.4)
HIV: specialist consultation	0			1	0	(-)	0			0		
Syphilis: specialist consultation	0			2	0	(-)	0			0		
RH factor negative: specialist consultation	0			20	5	(0.6-32.3)	3	0	(-)	7	14.3	(1-74.3)
Hypertension: specialist consultation	0			5	40	(3.8-91.9)	2	0	(-)	3	33.3	(0.1-99.7)
Gestational diabetes: specialist consultation	0			4	25	(0.5-95.9)	0			4	75	(4.1-99.5)
Urinary infection: antibiotics	0			29	89.7	(70.9-96.9)	13	76.9	(42.8-93.7)	40	92.5	(78.3-97.7)
Antenatal care performed according to standard (I3030)	166	28.9	(22.5-36.3)	241	29	(23.6-35.1)	75	22.7	(14.4-33.8)	159	30.2	(23.5-37.8)

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

** Management of risk factors not captured at 1st operation.

Notes on 1st operation: Uterine height and fetal checkups are only evaluated at first visit, if eligible based on gestational age. Referrals not captured at 1st operation and can not be excluded.

As part of the Health Facility Observation, interviewers systematically observed equipment and medication necessary to provide antenatal and postnatal care services, as defined by the monitoring indicator 7020. The indicator is measured at ambulatory and complete facilities that provide the relevant services. For a detailed definition of requirements for indicator 7020, see appendix B.

Table 4.10: Pre/postnatal care services (MI7020), intervention, ambulatory facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
All equipment observed and functional	51	80.4	(66.7-89.3)	51	90.2	(78-96)	27	0	(-)
Scale	51	100	(-)	51	96.1	(85-99.1)	27	63	(42.5-79.7)
Height rod	51	100	(-)	51	100	(-)	27	77.8	(57-90.2)
Gynecological table	51	94.1	(82.7-98.2)	51	100	(-)	27	29.6	(14.8-50.4)
Obstetric tape	51	98	(86.6-99.7)	51	100	(-)	27	55.6	(35.7-73.8)
Lamp	51	100	(-)	51	100	(-)	27	33.3	(17.5-54)
Blood pressure apparatus	51	100	(-)	51	100	(-)	27	29.6	(14.8-50.4)
Stethoscope	51	100	(-)	51	100	(-)	27	44.4	(26.2-64.3)
Perinatal history card	51	100	(-)	51	100	(-)	27	88.9	(68.9-96.7)
Perinatal license	51	100	(-)	51	100	(-)	27	85.2	(64.9-94.7)
IUD insertion kit (if doctor on staff)	51	86.3	(73.4-93.5)	50	94	(82.4-98.1)	26	50	(30.5-69.5)

	1st Operation			2nd Operation			3rd Operation		
All drugs observed day of survey	51	74.5	(60.4-84.9)	51	96.1	(85-99.1)	27	81.5	(60.9-92.5)
Multivitamins / (folic acid + iron)	51	98	(86.6-99.7)	51	100	(-)	27	88.9	(68.9-96.7)
Ayre palettes	51	98	(86.6-99.7)	51	98	(86.6-99.7)	27	96.3	(75.5-99.5)
Microscope slides	51	98	(86.6-99.7)	51	100	(-)	27	96.3	(75.5-99.5)
Nitrofurantoin	51	78.4	(64.6-87.9)	51	98	(86.6-99.7)	27	100	(-)
Tetanus vaccine (among facilities that store vaccines)	0			47	97.9	(85.5-99.7)	25	96	(73.7-99.5)
All drugs in continuous supply in past three months	49	67.3	(52.6-79.3)	51	86.3	(73.4-93.5)	27	59.3	(39-76.8)
ANC/PPC provision according to standard, evaluating drug availability only on the day of the survey	51	64.7	(50.3-76.9)	51	88.2	(75.6-94.8)	27	0	(-)
ANC/PPC provision according to standard, including three month drug availability (MI7020)	51	60.8	(46.4-73.5)	51	78.4	(64.6-87.9)	27	0	(-)

Tetanus vaccine data not captured at first operation.

Erythromicin / Ampicillin / Penicillin benzathaine drug requirement omitted due to facility-type recategorization.

Table 4.11: Pre/postnatal care services (MI7020), intervention, complete facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
All equipment observed and functional	9	77.8	(33-96.1)	9	77.8	(33-96.1)	9	0	(-)
Scale	9	100	(-)	9	100	(-)	9	77.8	(33-96.1)
Height rod	9	100	(-)	9	100	(-)	9	88.9	(37.4-99.1)
Gynecological table	9	100	(-)	9	100	(-)	9	0	(-)
Obstetric tape	9	100	(-)	9	100	(-)	9	66.7	(26.2-91.9)
Lamp	9	100	(-)	9	100	(-)	9	55.6	(19.5-86.6)
Blood pressure apparatus	9	100	(-)	9	77.8	(33-96.1)	9	33.3	(8.1-73.8)
Stethoscope	9	77.8	(33-96.1)	9	100	(-)	9	55.6	(19.5-86.6)
Perinatal history card	9	100	(-)	9	100	(-)	9	100	(-)
Perinatal license	9	100	(-)	9	100	(-)	9	100	(-)
IUD insertion kit	9	88.9	(37.4-99.1)	9	100	(-)	9	55.6	(19.5-86.6)
All drugs observed day of survey	9	0	(-)	9	11.1	(0.9-62.6)	9	0	(-)
Multivitamins / (folic acid + iron)	9	100	(-)	9	88.9	(37.4-99.1)	9	77.8	(33-96.1)
Ayre palettes	9	66.7	(26.2-91.9)	9	88.9	(37.4-99.1)	9	44.4	(13.4-80.5)
Microscope slides	9	66.7	(26.2-91.9)	9	88.9	(37.4-99.1)	9	44.4	(13.4-80.5)
Nitrofurantoin	9	66.7	(26.2-91.9)	9	100	(-)	9	100	(-)
Tetanus vaccine	0			9	100	(-)	9	77.8	(33-96.1)
Cefalexin	9	0	(-)	9	22.2	(3.9-67)	9	22.2	(3.9-67)

	1st Operation			2nd Operation			3rd Operation		
All drugs in continuous supply in past three months	9	0	(-)	9	11.1	(0.9-62.6)	9	0	(-)
All lab inputs observed	9	0	(-)	9	11.1	(0.9-62.6)	9	0	(-)
Dark field microscope	9	22.2	(3.9-67)	9	22.2	(3.9-67)	9	0	(-)
Enzyme immunoassay	9	33.3	(8.1-73.8)	9	44.4	(13.4-80.5)	9	22.2	(3.9-67)
Fluorescent microscope	9	11.1	(0.9-62.6)	9	33.3	(8.1-73.8)	9	11.1	(0.9-62.6)
Urinalysis equipment	9	77.8	(33-96.1)	9	100	(-)	9	44.4	(13.4-80.5)
Glocometer	9	55.6	(19.5-86.6)	9	100	(-)	9	0	(-)
Automated blood cell counter	9	88.9	(37.4-99.1)	9	88.9	(37.4-99.1)	9	33.3	(8.1-73.8)
Blood type antibody	9	100	(-)	9	100	(-)	9	88.9	(37.4-99.1)
Rh factor	9	100	(-)	9	100	(-)	9	77.8	(33-96.1)
Syphilis & HIV reactives (if immunoassay observed)	3	100	(-)	4	100	(-)	2	100	(-)
ANC/PPC provision according to standard, evaluating drug availability only on the day of the survey	9	0	(-)	9	0	(-)	9	0	(-)
ANC/PPC provision according to standard, including three month drug availability (MI7020)	9	0	(-)	9	0	(-)	9	0	(-)

Tetanus vaccine data not captured at first operation.

4.3.3 Cervical cancer screening

Interviewers systematically selected routine care records of women aged 25-49 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 through 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 (VIAA). 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 4.12: Cervical cancer screening with quality (I6005), intervention, ambulatory facilities

Description	3rd Operation: Evaluation		
	N	%	CI
Negative HPV result in past 5 years	287	10.1	(7.1-14.2)
Evidence of any CACX screening in past 2 years?	287	87.1	(82.7-90.5)
Positive CACX screening result in past 2 years	250	5.6	(3.3-9.3)
Evidence of result delivery within 8 weeks	14	71.4	(39.9-90.4)
Referral	14	71.4	(39.9-90.4)
Doctor's signature included if tests conducted elsewhere	6	100	(-)
Cervical cancer screening to standard (I6005)	287	85.7	(81.1-89.3)

4.3.4 Contraception

Monitoring indicator 7050 measures the stock of contraceptive supplies at ambulatory and complete facilities that store contraceptives using data from the Health Facility Observation. Availability on the day of the survey as well as

continuous three month supply of various contraceptives was evaluated. For a detailed definition of items required for indicator 7050, see appendix B.

Table 4.13: Contraceptive services (MI7050), intervention, ambulatory facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Male condom	51	100	(-)	51	100	(-)	27	96.3	(75.5-99.5)
Any oral pill	51	100	(-)	51	100	(-)	27	74.1	(53.2-87.8)
Any injectable	51	98	(86.6-99.7)	51	100	(-)	27	100	(-)
All methods continuously in stock in past three months	51	100	(-)	51	94.1	(82.7-98.2)	27	85.2	(64.9-94.7)
Contraceptive services according to SMI standard (MI7050)	51	98	(86.6-99.7)	51	94.1	(82.7-98.2)	27	59.3	(39-76.8)

Table 4.14: Contraceptive services (MI7050), intervention, complete facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Male condom	9	100	(-)	9	100	(-)	9	100	(-)
Any oral pill	9	100	(-)	9	100	(-)	9	77.8	(33-96.1)
Any injectable	9	100	(-)	9	100	(-)	9	100	(-)
Intrauterine device	9	100	(-)	9	100	(-)	9	88.9	(37.4-99.1)
IUD insertion kit	9	100	(-)	9	100	(-)	9	100	(-)
All methods continuously in stock in past three months	9	100	(-)	9	100	(-)	9	100	(-)
Doctor trained in tubal ligation and vasectomy	9	66.7	(26.2-91.9)	9	77.8	(33-96.1)	9	66.7	(26.2-91.9)
Contraceptive services according to SMI standard (MI7050)	9	66.7	(26.2-91.9)	9	77.8	(33-96.1)	9	44.4	(13.4-80.5)

4.4 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.

4.4.1 Routine delivery

At complete facilities, delivery records from the past two years were reviewed to evaluate the active management of the third stage of labor (AMTSL), as specified by the monitoring indicator 4090. AMTSL requires that oxytocin or another uterotonic be administered within one minute of delivery. For a detailed definition of indicator 4090, see appendix B.

Table 4.15: Active management of the third stage of labor (MI4090), intervention, complete facilities

Description	1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Oxytocin / other uterotonic administered	164	88.4	(82.5-92.5)	177	94.9	(90.5-97.4)	83	100	(-)	170	100	(-)
Oxytocin / other uterotonic administered within 1 minute (MI4090)	164	26.8	(20.5-34.2)	177	59.3	(51.9-66.4)	83	57.8	(46.8-68.2)	170	66.5	(59-73.2)

During the Health Facility Observation, surveyors observed and evaluated the functionality of equipment and medications related to delivery care at complete facilities (hospitals). Standards for delivery care services are determined by the monitoring indicator 7040. For a detailed definition of indicator 7040, see appendix B.

Table 4.16: Delivery services (MI7040), intervention, complete facilities

Description	2nd Operation			3rd Operation		
	N	%	CI	N	%	CI
All equipment observed and functional	9	22.2	(3.9-67)	9	55.6	(19.5-86.6)
Macro/microgotera serum	9	100	(-)	9	88.9	(37.4-99.1)
Sterile sheets/blankets for neonate	9	100	(-)	9	88.9	(37.4-99.1)
Nasogastric probe K33	9	22.2	(3.9-67)	9	77.8	(33-96.1)
Metal clamp / umbilical tape	9	88.9	(37.4-99.1)	9	77.8	(33-96.1)
Intravenous sterile catheter N.18	9	100	(-)	9	100	(-)
All drugs observed day of survey	9	33.3	(8.1-73.8)	9	0	(-)
Ergonovine maleate / Ergometrine	9	100	(-)	9	100	(-)
Povidone-iodine	9	33.3	(8.1-73.8)	9	11.1	(0.9-62.6)
Insulin syringe	9	88.9	(37.4-99.1)	9	33.3	(8.1-73.8)
Lidocaine	9	100	(-)	9	100	(-)
Butylscopolamine / Hyoscine bromide	9	100	(-)	9	100	(-)
Oxytocin	9	100	(-)	9	100	(-)
Ringer's / Hartmann's / saline solution	9	100	(-)	9	100	(-)
Ophthalmic chloramphenicol drops	9	100	(-)	9	77.8	(33-96.1)
Vitamin K	9	100	(-)	9	100	(-)
All drugs continuously available in past three months	9	33.3	(8.1-73.8)	9	100	(-)
Delivery care provision according to standard (MI7040)	9	11.1	(0.9-62.6)	9	0	(-)

In addition to the delivery services indicator, monitoring indicator 7190 evaluates the 24-hour-a-day, 7-day-a-week on-call availability of doctors of internal medicine, obstetricians/gynecologists, and anesthesiologists in complete level facilities.

Table 4.17: 24/7 on-call availability of obstetric care staff (MI7190), intervention, complete facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Internist	9	55.6	(19.5-86.6)	9	22.2	(3.9-67)	9	33.3	(8.1-73.8)
Obstetrician / gynecologist	9	88.9	(37.4-99.1)	9	44.4	(13.4-80.5)	9	33.3	(8.1-73.8)
Anesthesiologist	9	55.6	(19.5-86.6)	9	11.1	(0.9-62.6)	9	44.4	(13.4-80.5)
All of the above available on-call 24/7	9	44.4	(13.4-80.5)	9	0	(-)	9	22.2	(3.9-67)

4.4.2 Postpartum care

The performance indicator 4050 specifies the standards for appropriate postpartum care within two hours after birth, as measured from postpartum care medical records for deliveries in the past two years. The indicator requires that certain checks be performed at least four times in the first hour after delivery, twice in the second hour after delivery, and once at discharge. For a detailed definition of indicator 4050, see appendix B.

The I4050 indicator was measured at the first operation in which 0% of observations met the indicator. In the third operation evaluation period the proportion of observations that met the indicator increased from the first operation with 8% of observations meeting the indicator.

Table 4.18: Maternal postpartum care within two hours after birth (I4050), intervention, complete facilities

Description	1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Blood pressure	86	0	(-)	210	57.1	(50.3-63.7)	81	39.5	(29.3-50.7)	174	46	(38.6-53.5)
Four times in first hour	86	26.7	(18.3-37.3)	210	58.1	(51.3-64.6)	81	43.2	(32.7-54.4)	174	50	(42.6-57.4)
Two times in second hour	86	26.7	(18.3-37.3)	210	91	(86.2-94.2)	81	66.7	(55.5-76.2)	174	73.6	(66.4-79.6)
Once at discharge	86	0	(-)	210	99	(96.2-99.8)	81	76.5	(65.9-84.7)	174	87.4	(81.5-91.6)
Respiratory rate	86	12.8	(7.1-21.9)	210	54.8	(47.9-61.4)	81	37	(27.1-48.3)	174	29.9	(23.5-37.2)
Four times in first hour	86	25.6	(17.3-36)	210	56.2	(49.4-62.8)	81	43.2	(32.7-54.4)	174	44.3	(37-51.8)
Two times in second hour	86	23.3	(15.4-33.5)	210	91.4	(86.8-94.6)	81	64.2	(53-74)	174	62.6	(55.2-69.6)
Once at discharge	86	22.1	(14.4-32.3)	210	98.6	(95.6-99.5)	81	63	(51.7-72.9)	174	68.4	(61-74.9)
Heart rate / pulse	86	4.7	(1.7-12)	210	90.5	(85.7-93.8)	81	48.1	(37.3-59.2)	174	55.7	(48.2-63)
Four times in first hour	86	23.3	(15.4-33.5)	210	91.9	(87.3-94.9)	81	64.2	(53-74)	174	69	(61.6-75.5)
Two times in second hour	86	20.9	(13.5-31)	210	98.1	(95-99.3)	81	66.7	(55.5-76.2)	174	73.6	(66.4-79.6)
Once at discharge	86	12.8	(7.1-21.9)	210	99	(96.2-99.8)	81	71.6	(60.6-80.5)	174	84.5	(78.2-89.2)

	1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Blood abnormalities	0			210	51	(44.2-57.7)	81	29.6	(20.6-40.7)	174	19	(13.8-25.6)
Four times in first hour	0			210	55.2	(48.4-61.9)	81	42	(31.5-53.2)	174	49.4	(42-56.9)
Two times in second hour	0			210	84.3	(78.7-88.6)	81	66.7	(55.5-76.2)	174	72.4	(65.2-78.6)
Once at discharge	0			210	91.4	(86.8-94.6)	81	34.6	(24.9-45.8)	174	35.1	(28.3-42.5)
Temperature, once at discharge	86	22.1	(14.4-32.3)	210	99	(96.2-99.8)	81	69.1	(58-78.4)	174	78.2	(71.3-83.7)
Immediate maternal postpartum care with quality (I4050)	86	0	(-)	210	49.5	(42.8-56.3)	81	25.9	(17.4-36.8)	174	8	(4.8-13.2)

* Heart rate not captured as alternative to pulse at first operation.

** Blood abnormalities checks not captured at first operation.

In addition to postpartum care, performance indicator 2500 evaluates the administration of contraception after delivery among uncomplicated delivery records in the past year. Only certain contraceptive methods meet the criteria for postpartum administration according to the indicator. For a detailed definition of indicator 2500, see appendix B.

The I2500 indicator was measured at the first operation in which 1.2% of observations met the indicator. In the third operation evaluation period the proportion of observations that met the indicator increased from the first operation with 30.5% of observations meeting the indicator.

Table 4.19: Postpartum contraception following an uncomplicated delivery (I2500), intervention, complete facilities

Description	1st Operation			2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI	N	%	CI
Progestin-only injectable*	0			102	0	(-)	53	1.9	(0.2-12.9)	82	6.1	(2.5-14.1)
Progestin-only oral contraceptive pill**	84	0	(-)	102	0	(-)	53	0	(-)	82	0	(-)
Implant***	0			102	0	(-)	53	3.8	(0.9-14.5)	82	9.8	(4.9-18.5)
IUD	84	0	(-)	102	3.9	(1.5-10.1)	53	3.8	(0.9-14.5)	82	3.7	(1.2-11)
Tubal ligation	84	1.2	(0.2-8.3)	102	10.8	(6-18.6)	53	11.3	(5-23.5)	82	12.2	(6.6-21.4)
Postpartum contraception administered (I2500)	84	1.2	(0.2-8.3)	102	14.7	(9-23.1)	53	20.8	(11.7-34.2)	82	30.5	(21.3-41.5)

* Injectable not captured at first operation

** 'Progestin-only' not specified for oral contraceptive pill at first operation

*** Implant not captured at first operation

4.4.3 Cesarean section prevalence

During the questionnaire component of the survey, representatives of complete facilities were asked to enumerate the total number of deliveries and the total number of cesarean sections attended each year since interventions began. The SMI monitoring indicator (4120) evaluates the prevalence of cesarean sections in

complete facilities in the two years prior to each measurement where data is available. For a detailed definition of indicator 4120 see appendix B.

Table 4.20: Cesarean section prevalence (MI4120), intervention, complete facilities

Description	1st Operation		2nd Operation		3rd Operation	
	N	%	N	%	N	%
Cesarean section prevalence (MI4120)	47768	24.7	29549	25.9	31995	27.6

4.4.4 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 Ministry of Health at basic and complete facilities. These records were used to evaluate quality of care, as defined by the obstetric complications performance indicator 4080 (see appendix B for detailed definitions of the care requirements for indicator 4080). Note that some records may have been evaluated for multiple obstetric complications.

The 4080 indicator was measured at the second operation in which 12.2% of observations met the indicator. In the third operation evaluation period the proportion of observations that met the indicator increased from the second operation with 13.6% of observations meeting the indicator.

Table 4.21: Management of obstetric complications (I4080), intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	128	17.2	(11.5-24.8)	5	40	(3.8-91.9)	2	100	(-)
Hemorrhage managed to standard	36	19.4	(9.2-36.5)	27	11.1	(3.3-31.1)	51	29.4	(18.3-43.7)
Pre-eclampsia managed to standard	73	0	(-)	49	0	(-)	109	5.5	(2.5-11.9)
Eclampsia managed to standard	1	0	(-)	9	0	(-)	8	0	(-)
Management of obstetric complications	237	12.2	(8.6-17.1)	90	5.6	(2.3-12.9)	169	13.6	(9.2-19.7)

Sepsis cases are evaluated as one component of the obstetric complications indicator 4080. Table 4.22 below display sepsis management practices in each operation measurement. For a detailed definition of the standards required for appropriate sepsis management, see appendix B.

Table 4.22: Management of obstetric complications (I4080), sepsis, intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	128	99.2	(94.5-99.9)	5	100	(-)	2	100	(-)
Pulse / heart rate	128	100	(-)	5	100	(-)	2	100	(-)
Blood pressure	128	99.2	(94.5-99.9)	5	100	(-)	2	100	(-)
Temperature	128	100	(-)	5	100	(-)	2	100	(-)
Lab tests (blood biometry):	128	76.6	(68.3-83.2)	5	80	(11.1-99.2)	2	100	(-)

	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Leukocyte count	128	77.3	(69.2-83.9)	5	80	(11.1-99.2)	2	100	(-)
Platelet count	128	95.3	(89.9-97.9)	5	100	(-)	2	100	(-)
Hemoglobin	128	95.3	(89.9-97.9)	5	100	(-)	2	100	(-)
Hematocrit	128	93.7	(87.9-96.9)	5	100	(-)	2	100	(-)
Antibiotics administered (double therapy)	128	24.2	(17.5-32.5)	5	100	(-)	2	100	(-)
Causes treated appropriately:	12	66.7	(32.9-89.1)	4	25	(0.5-95.9)	1	100	(-)
Septic abortion	1	0	(-)	0			0		
Uterine perforation	0			0			0		
Pelvic abscess	0			0			0		
Retained product	0			1	100	(-)	0		
Postpartum endometritis	2	0	(-)	4	25	(0.5-95.9)	0		
Puerperal fever	11	90.9	(46.3-99.1)	2	100	(-)	1	100	(-)
Neonatal sepsis managed to standard	128	17.2	(11.5-24.8)	5	40	(3.8-91.9)	2	100	(-)

Hemorrhage cases are evaluated as one component of the obstetric complications indicator 4080. Table 4.23 below display hemorrhage management practices in each operation measurement. For a detailed definition of the standards required for appropriate hemorrhage management, see appendix B.

Table 4.23: Management of obstetric complications (I4080), hemorrhage, intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked:	36	100	(-)	27	96.3	(75.5-99.5)	51	98	(86.6-99.7)
Pulse / heart rate	36	100	(-)	27	96.3	(75.5-99.5)	51	98	(86.6-99.7)
Blood pressure	36	100	(-)	27	96.3	(75.5-99.5)	51	100	(-)
Ringer's lactate / Hartmann's / saline solution administered	36	77.8	(60.5-88.9)	27	81.5	(60.9-92.5)	51	86.3	(73.4-93.5)
Lab tests:	36	47.2	(31-64)	27	25.9	(12.2-46.8)	51	47.1	(33.5-61.1)
Hematocrit	36	91.7	(76.1-97.4)	27	88.9	(68.9-96.7)	51	90.2	(78-96)
Hemoglobin	36	91.7	(76.1-97.4)	27	88.9	(68.9-96.7)	51	90.2	(78-96)
Platelet count	36	91.7	(76.1-97.4)	27	77.8	(57-90.2)	51	88.2	(75.6-94.8)
Prothrombin time	36	58.3	(41.1-73.7)	27	40.7	(23.2-61)	51	58.8	(44.5-71.8)
Partial thromboplastin time	36	52.8	(36-69)	27	33.3	(17.5-54)	51	51	(37.1-64.7)

	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Causes treated appropriately:	30	53.3	(34.8-71)	25	76	(54.1-89.5)	43	74.4	(58.8-85.6)
Abortion	3	100	(-)	0			4	100	(-)
Ectopic pregnancy	1	0	(-)	0			0		
Placenta previa	3	100	(-)	9	88.9	(37.4-99.1)	21	76.2	(51.7-90.5)
Placental abruption	0			0			0		
Uterine rupture	0			1	100	(-)	0		
Uterine atony	17	70.6	(42.9-88.5)	4	100	(-)	9	88.9	(37.4-99.1)
Uterine inversion	0			0			0		
Retained placenta	5	0	(-)	3	100	(-)	4	50	(2.5-97.5)
Retained product	5	40	(3.8-91.9)	10	50	(18.1-81.9)	7	57.1	(15-90.9)
Hemorrhage managed to standard	36	19.4	(9.2-36.5)	27	11.1	(3.3-31.1)	51	29.4	(18.3-43.7)

Pre-eclampsia cases are evaluated as one component of the obstetric complications indicator 4080. Table 4.24 below display 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 4.24: Management of obstetric complications (I4080), pre-eclampsia, intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	73	56.2	(44.4-67.3)	49	26.5	(15.8-41.1)	109	40.4	(31.5-50)
Pulse / heart rate	73	100	(-)	49	100	(-)	109	98.2	(92.8-99.6)
Blood pressure	73	100	(-)	49	100	(-)	109	99.1	(93.6-99.9)
Respiratory rate	73	100	(-)	49	91.8	(79.6-97)	109	98.2	(92.8-99.6)
Patellar reflex	73	56.2	(44.4-67.3)	49	26.5	(15.8-41.1)	109	40.4	(31.5-50)
Lab tests	73	0	(-)	49	2	(0.3-14)	109	10.1	(5.6-17.5)
Urine protein	73	35.6	(25.3-47.5)	49	10.2	(4.2-22.9)	109	26.6	(19.1-35.8)
Platelet count	73	95.9	(87.7-98.7)	49	69.4	(54.7-81)	109	90.8	(83.6-95)
Aspartate aminotransferase	73	2.7	(0.7-10.6)	49	6.1	(1.9-18)	109	11	(6.3-18.5)
Alanine transaminase	73	1.4	(0.2-9.5)	49	6.1	(1.9-18)	109	11	(6.3-18.5)
All appropriate medications administered	73	41.1	(30.2-52.9)	49	61.2	(46.5-74.1)	109	43.1	(34-52.7)
Ringer's lactate / Hartmann's / saline solution	73	53.4	(41.7-64.8)	49	79.6	(65.5-88.9)	109	72.5	(63.2-80.1)
Magnesium sulfate	73	91.8	(82.6-96.3)	49	93.9	(82-98.1)	109	90.8	(83.6-95)
Hydralazine / labetalol / nifedipine (if systolic BP >= 160 or diastolic BP >= 110)	22	72.7	(49-88.1)	28	71.4	(51.1-85.7)	71	52.1	(40.3-63.7)

	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Dexamethasone / betamethasone (if gestational age 24-35 weeks)	8	25	(4.1-72.4)	9	11.1	(0.9-62.6)	16	6.3	(0.7-39.3)
Pre-eclampsia managed to standard	73	0	(-)	49	0	(-)	109	5.5	(2.5-11.9)

Eclampsia cases are evaluated as one component of the obstetric complications indicator 4080. Table 4.25 below display eclampsia management practices in each operation measurement. For a detailed definition of the standards required for appropriate eclampsia management, see appendix B.

Table 4.25: Management of obstetric complications (I4080), eclampsia, intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	1	0	(-)	9	11.1	(0.9-62.6)	8	25	(4.1-72.4)
Pulse / heart rate	1	100	(-)	9	100	(-)	8	87.5	(31.9-99.1)
Blood pressure	1	100	(-)	9	100	(-)	8	100	(-)
Respiratory rate	1	100	(-)	9	100	(-)	8	100	(-)
Patellar reflex	1	0	(-)	9	11.1	(0.9-62.6)	8	25	(4.1-72.4)
Lab tests	1	0	(-)	9	0	(-)	8	0	(-)
Urine protein	1	0	(-)	9	33.3	(8.1-73.8)	8	12.5	(0.9-68.1)
Platelet count	1	100	(-)	9	77.8	(33-96.1)	8	87.5	(31.9-99.1)
Aspartate aminotransferase	1	0	(-)	9	11.1	(0.9-62.6)	8	0	(-)
Alanine transaminase	1	0	(-)	9	11.1	(0.9-62.6)	8	0	(-)
All appropriate medications administered	1	0	(-)	9	55.6	(19.5-86.6)	8	37.5	(8.7-79.2)
Ringer's lactate / Hartmann's / saline solution	1	0	(-)	9	55.6	(19.5-86.6)	8	37.5	(8.7-79.2)
Magnesium sulfate	1	100	(-)	9	88.9	(37.4-99.1)	8	87.5	(31.9-99.1)
Hydralazine / labetalol / nifedipine (if systolic BP >= 160 or diastolic BP >= 110)	1	0	(-)	7	100	(-)	4	50	(2.5-97.5)
Dexamethasone / betamethasone (if gestational age 24-35 weeks)	0			0			0		
Eclampsia managed according to SMI standard	1	0	(-)	9	0	(-)	8	0	(-)

4.5 Emergency care services

As part of the Health Facility Observation, interviewers evaluated the capacity of basic level facilities to provide emergency obstetric services according to the monitoring indicator 7030. The indicator measures the continuous three-month availability of various medications required for emergency obstetric services. For a detailed definition of indicator 7030, see appendix B.

Table 4.26: Emergency care services (MI7030), intervention, complete facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
All emergency equipment observed and functional	6	16.7	(0.9-81.4)	9	77.8	(33-96.1)	9	0	(-)
Blood pressure apparatus	6	83.3	(18.6-99.1)	9	100	(-)	9	88.9	(37.4-99.1)
Neonatal / pediatric stethoscope	6	66.7	(14.9-95.8)	9	88.9	(37.4-99.1)	9	66.7	(26.2-91.9)
Pinard / doppler	6	83.3	(18.6-99.1)	9	100	(-)	9	66.7	(26.2-91.9)
Autoclave / heat sterilizer	6	100	(-)	9	100	(-)	9	100	(-)
Oxygen tank	6	66.7	(14.9-95.8)	9	100	(-)	9	88.9	(37.4-99.1)
Adult reanimation bag	6	66.7	(14.9-95.8)	9	100	(-)	9	100	(-)
Neonatal reanimation bag	6	83.3	(18.6-99.1)	9	100	(-)	9	100	(-)
Laryngoscope	6	83.3	(18.6-99.1)	9	100	(-)	9	77.8	(33-96.1)
Manual vacuum aspiration	6	83.3	(18.6-99.1)	9	88.9	(37.4-99.1)	9	33.3	(8.1-73.8)
Anesthesia equipment	6	50	(9.1-90.9)	9	100	(-)	9	66.7	(26.2-91.9)
Cesarean kit	6	33.3	(4.2-85.1)	9	88.9	(37.4-99.1)	9	44.4	(13.4-80.5)
All drugs observed day of survey	6	83.3	(18.6-99.1)	9	55.6	(19.5-86.6)	9	44.4	(13.4-80.5)
Ergonovine maleate / ergometrine	6	100	(-)	9	100	(-)	9	100	(-)
Oxytocin	0			9	100	(-)	9	100	(-)
Dexamethasone / betamethasone	6	100	(-)	9	100	(-)	9	88.9	(37.4-99.1)
Crystal penicillin / ampicillin / amoxicillin	6	100	(-)	9	100	(-)	9	100	(-)
Magnesium sulfate	6	100	(-)	9	100	(-)	9	100	(-)
Amikacin	0			9	100	(-)	9	100	(-)
Ceftraxione	0			9	100	(-)	9	100	(-)
Chloramphenicol / metronidazole	0			9	100	(-)	9	100	(-)
Hydralazine / Hydrochloride	6	100	(-)	9	100	(-)	9	100	(-)
Nifedipine	0			9	77.8	(33-96.1)	9	100	(-)
Furosemide	6	100	(-)	9	100	(-)	9	100	(-)
Diazepam / Midazolam hydrochloride	6	100	(-)	9	100	(-)	9	100	(-)
Sevoflurane	6	83.3	(18.6-99.1)	9	100	(-)	9	88.9	(37.4-99.1)
Succinylcholine	6	100	(-)	9	66.7	(26.2-91.9)	9	55.6	(19.5-86.6)
All drugs continuously available in past three months	0			9	55.6	(19.5-86.6)	9	33.3	(8.1-73.8)
Emergency care provision according to standard, evaluating drug availability only on the day of the survey	6	16.7	(0.9-81.4)	9	44.4	(13.4-80.5)	9	0	(-)
Emergency care provision according to standard, including three month drug availability (MI7030)	0			9	44.4	(13.4-80.5)	9	0	(-)

4.6 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 neonatal complication medical records.

4.6.1 Neonatal complications

Interviewers evaluated records of neonatal complications (prematurity, sepsis, low birth weight, and asphyxia) that were systematically sampled by IHME from electronic discharge registries provided by the Ministry of Health at complete facilities. 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). Note that some records may have been evaluated for multiple neonatal complications.

The I4070 indicator was measured at the second operation in which 24.1% of observations met the indicator. In the third operation evaluation period the proportion of observations that met the indicator increased from the second operation with 39.8% of observations meeting the indicator.

Table 4.27: Management of neonatal complications (I4070), intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Sepsis managed to standard	132	3	(1.1-7.9)	39	10.3	(3.7-25.2)	58	12.1	(5.7-23.7)
Asphyxia managed to standard	15	53.3	(26.6-78.3)	7	57.1	(15-90.9)	18	77.8	(50.5-92.3)
Low birth weight managed to standard	65	61.5	(48.9-72.8)	43	69.8	(53.9-82)	72	70.8	(59.1-80.3)
Prematurity managed to standard	39	33.3	(19.9-50.1)	16	18.8	(5.3-48.6)	43	34.9	(21.8-50.7)
Management of neonatal complications (I4070)	237	24.1	(19-29.9)	93	36.6	(27.3-47)	161	39.8	(32.4-47.6)

Sepsis cases are evaluated as one component of the neonatal complications indicator 4070. Table 4.28 below display sepsis management practices in each operation measurement. For a detailed definition of the standards required for appropriate sepsis management, see appendix B.

Table 4.28: Management of neonatal complications (I4070), sepsis, intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	132	96.2	(91.1-98.4)	39	97.4	(82.6-99.7)	58	100	(-)
Pulse / heart rate	132	99.2	(94.7-99.9)	39	97.4	(82.6-99.7)	58	100	(-)
Respiratory rate	132	99.2	(94.7-99.9)	39	97.4	(82.6-99.7)	58	100	(-)
Temperature	132	97	(92.1-98.9)	39	100	(-)	58	100	(-)
Lab tests	132	3	(1.1-7.9)	39	10.3	(3.7-25.2)	58	13.8	(6.9-25.7)
Oxygen saturation	132	59.8	(51.2-68)	39	41	(26.3-57.6)	58	46.6	(33.9-59.7)

	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
C-reactive protein	132	79.5	(71.7-85.7)	39	76.9	(60.5-87.9)	58	77.6	(64.7-86.7)
Platelets	132	96.2	(91.1-98.4)	39	87.2	(71.8-94.8)	58	100	(-)
Leukocytes	132	86.4	(79.3-91.3)	39	71.8	(55.1-84.1)	58	96.6	(86.7-99.2)
Hemoglobin	132	95.5	(90.2-98)	39	87.2	(71.8-94.8)	58	100	(-)
Hematocrit	132	90.9	(84.6-94.8)	39	87.2	(71.8-94.8)	58	98.3	(88.1-99.8)
Blood culture	132	24.2	(17.6-32.4)	39	35.9	(22-52.6)	58	36.2	(24.6-49.6)
Neutrophil band ratio / absolute ratio	132	32.6	(25-41.1)	39	35.9	(22-52.6)	58	39.7	(27.6-53.1)
Antibiotics administered (double therapy)	132	95.5	(90.2-98)	39	97.4	(82.6-99.7)	58	94.8	(84.7-98.4)
Sepsis managed to standard	132	3	(1.1-7.9)	39	10.3	(3.7-25.2)	58	12.1	(5.7-23.7)

Asphyxia cases are evaluated as one component of the neonatal complications indicator 4070. Table 4.29 below display asphyxia management practices in each operation measurement. For a detailed definition of the standards required for appropriate asphyxia management, see appendix B.

Table 4.30: Management of neonatal complications (I4070), asphyxia, intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	15	86.7	(54.6-97.2)	7	57.1	(15-90.9)	18	83.3	(55.9-95.2)
Pulse / heart rate	15	100	(-)	7	100	(-)	18	94.4	(64.5-99.4)
Respiratory rate	15	100	(-)	7	85.7	(25.7-99)	18	83.3	(55.9-95.2)
APGAR score at one minute	15	93.3	(58.4-99.3)	7	71.4	(21.5-95.8)	18	94.4	(64.5-99.4)
APGAR score at five minutes	15	86.7	(54.6-97.2)	7	57.1	(15-90.9)	18	94.4	(64.5-99.4)
Oxygen saturation lab test (if APGAR <= 3 at five minutes)	15	100	(-)	7	85.7	(25.7-99)	18	83.3	(55.9-95.2)
Heat application	15	66.7	(37.2-87.1)	7	100	(-)	18	94.4	(64.5-99.4)
Oxygen application (if APGAR <= 3 at five minutes)	2	50	(0-100)	0			2	100	(-)
AMBU / positive pressure ventilation / endotracheal intubation / chest compressions (if APGAR <= 3 at five minutes)	2	100	(-)	0			2	100	(-)
Asphyxia managed to standard	15	53.3	(26.6-78.3)	7	57.1	(15-90.9)	18	77.8	(50.5-92.3)

Low birth weight cases are evaluated as one component of the neonatal complications indicator 4070. Table 4.31 below display low birth weight management practices in each operation measurement. For a detailed definition of the standards required for appropriate low birth weight management, see appendix B.

Table 4.31: Management of neonatal complications (I4070), low birth weight, intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	65	92.3	(82.5-96.8)	43	76.7	(61.2-87.3)	72	84.7	(74.2-91.5)
Weight	65	100	(-)	43	97.7	(84.2-99.7)	72	98.6	(90.4-99.8)
Height / length	65	98.5	(89.4-99.8)	43	90.7	(76.9-96.6)	72	98.6	(90.4-99.8)
Pulse / heart rate	65	98.5	(89.4-99.8)	43	100	(-)	72	100	(-)
Respiratory rate	65	96.9	(88.1-99.3)	43	100	(-)	72	100	(-)
Head circumference	65	96.9	(88.1-99.3)	43	81.4	(66.3-90.7)	72	84.7	(74.2-91.5)
APGAR score (if in-facility)	65	96.9	(88.1-99.3)	42	92.9	(79.3-97.8)	62	95.2	(85.6-98.5)
Gestational age calculated using Capurro/Ballard	65	81.5	(69.9-89.4)	43	93	(79.7-97.8)	72	94.4	(85.8-97.9)
Weight classification (if in-facility)	65	98.5	(89.4-99.8)	42	95.2	(82-98.9)	62	96.8	(87.6-99.2)
Breastfed / given glucose	65	84.6	(73.4-91.7)	43	90.7	(76.9-96.6)	72	93.1	(84.1-97.1)
Appropriate management of any associated complications	9	100	(-)	17	100	(-)	26	100	(-)
Pneumonia: antibiotics	1	100	(-)	1	100	(-)	2	100	(-)
Diarrhea: liquids/ORS	0			0			0		
Seizures: anticonvulsants	0			0			1	100	(-)
Hypoglycemia: glucose IV	8	100	(-)	16	100	(-)	23	100	(-)
Low birth weight managed to standard	65	61.5	(48.9-72.8)	43	69.8	(53.9-82)	72	70.8	(59.1-80.3)

Prematurity cases are evaluated as one component of the neonatal complications indicator 4070. Table 4.32 below display prematurity management practices in each operation measurement. For a detailed definition of the standards required for appropriate prematurity management, see appendix B.

Table 4.32: Management of neonatal complications (I4070), prematurity, intervention, complete facilities

Description	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI	N	%	CI
Vital signs checked	39	94.9	(80.7-98.8)	16	75	(45.7-91.4)	43	88.4	(74.2-95.3)
Weight	39	94.9	(80.7-98.8)	16	100	(-)	43	95.3	(82.4-98.9)
Pulse / heart rate	39	94.9	(80.7-98.8)	16	100	(-)	43	100	(-)
Respiratory rate	39	94.9	(80.7-98.8)	16	100	(-)	43	97.7	(84.2-99.7)
Head circumference	39	94.9	(80.7-98.8)	16	75	(45.7-91.4)	43	90.7	(76.9-96.6)
APGAR score (if in-facility)	36	83.3	(66.6-92.6)	15	80	(48.8-94.4)	37	91.9	(76.7-97.5)
Lab tests	39	41	(26.3-57.6)	16	37.5	(16.1-65.2)	43	65.1	(49.3-78.2)

	2nd Operation			3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
Oxygen saturation	39	66.7	(49.9-80.1)	16	68.7	(40.2-87.8)	43	79.1	(63.7-89)
Glycemia	39	56.4	(40-71.5)	16	43.8	(20.4-70.2)	43	69.8	(53.9-82)
Gestational age calculated using Capurro/Ballard	39	87.2	(71.8-94.8)	16	87.5	(57-97.4)	43	95.3	(82.4-98.9)
Weight classification (if in-facility)	36	91.7	(76.1-97.4)	15	86.7	(54.6-97.2)	37	78.4	(61.5-89.2)
Heat application	39	84.6	(68.9-93.2)	16	93.7	(60.7-99.3)	43	88.4	(74.2-95.3)
Breastfed / given glucose	39	82.1	(66-91.5)	16	81.2	(51.4-94.7)	43	88.4	(74.2-95.3)
Appropriate management of any associated complications	5	100	(-)	4	100	(-)	15	86.7	(54.6-97.2)
Pneumonia: antibiotics	1	100	(-)	1	100	(-)	5	60	(8.1-96.2)
Diarrhea: liquids/ORS	0			0			0		
Seizures: anticonvulsants	0			0			1	100	(-)
Hypoglycemia: glucose IV	4	100	(-)	3	100	(-)	10	100	(-)
Prematurity managed to standard	39	33.3	(19.9-50.1)	16	18.8	(5.3-48.6)	43	34.9	(21.8-50.7)

4.7 Data for decision-making

As part of a new performance indicator (7500) implemented to measure interventions conducted during the SMI third operation, hospitals in El Salvador were evaluated on their capacity to use data for decision-making related to management of obstetric or neonatal complications. Specifically, administrative records and staff meeting notes for the past six months were reviewed for the identification of gaps related to complications management such as lack of supplies, training of personnel, information system registration, or other management aspects. For one randomly selected month, the indicator requires that evidence of follow-up action taken in relation to the identified gaps be observed. For a detailed definition of the standards required for indicator 7500, see appendix B.

Table 4.33: Use of data for decision-making (I7500), intervention, ambulatory facilities

Description	3rd Operation		
	N	%	CI
Minutes of monthly meetings observed for past three months	27	74.1	(53.2-87.8)
Appropriate actions observed for one randomly selected month:	20	100	(-)
Summary of data analysis	20	100	(-)
Summary of the follow-up plan	20	100	(-)
Written evidence of at least one agreement made	20	100	(-)
Evidence of follow-up action taken based on agreements made	20	95	(67.7-99.4)
Use of data for decision making to standard (I7500)	27	70.4	(49.6-85.2)

4.8 Access to safe blood

During the Health Facility Questionnaire, representatives at complete-level hospitals were asked about access to a supply of safe blood. The monitoring indicator 7120 evaluates this reported access to a safe blood supply. All hospitals in the third evaluation measurement reported access to safe blood.

Table 4.34: Access to safe blood (M17210), intervention, complete facilities

Description	1st Operation			2nd Operation			3rd Operation		
	N	%	CI	N	%	CI	N	%	CI
Access to safe blood	9	100	(-)	9	88.9	(37.4-99.1)	9	100	(-)

Chapter 5: Challenges and conclusions

5.1 Challenges and limitations

5.1.1 Household data collection

In El Salvador, high rates of household vacancy attributable to widespread migration were encountered during the household census. At the subsequent household survey, many household members who were registered were absent at the time of the interview due to the state of exception, long distance commuting for work, or short term changes in residence. Additionally, inclement weather made it difficult to access certain communities. Despite challenges, no segment replacements were necessary in El Salvador during the third operation measurement.

5.1.2 Health facility data collection

Inclement weather also contributed to challenges in accessing health facilities, resulting in scheduling delays. No facility replacements were necessary during the third operation measurement in El Salvador.

Beyond accessibility, challenges emerged in meeting quotas for medical record review. Deficits in archiving practices impeded the location of sampled medical records. In other cases, medical records that were found contained insufficient information to effectively evaluate treatment protocols.

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, 10 performance indicators were measured by IHME after the third operation interventions. Seven indicators were measured through medical record review at health facilities, one indicator was measured via the health facility observation, and two indicators were measured through household surveys.

Although some indicators improved over the course of the SMI operations, others displayed only marginal progress and some decreased since the second operation, suggesting challenges existed in the implementation and adoption of intervention practices. Indicators showing the most marked improvements were anemia rates as measured from the household survey, and postpartum contraception administration measured from uncomplicated delivery medical records. Management of neonatal complications also improved, although a majority of third operation records did not meet treatment standards. Performance on antenatal care and maternal complications management was stagnant between operations; improvement in both indicators was hampered primarily by a lack of required lab tests registered in the medical record, suggesting an area for continued focus. Performance on the maternal postpartum care indicator failed to sustain the promising improvement observed at the second operation measurement and regressed to levels observed at the first operation. A lack of required respiratory and blood abnormality tests observed in the record contributed to this decline. The other indicator measured from the household survey regarding appropriate treatment of diarrhea also regressed; many responses did not include evidence of the administration of zinc.

Three novel performance indicators were introduced at the third operation. Two of these, the first designed to measure the outcomes of interventions related to cervical cancer screening via medical record review, and the second related to decision making practices using data at health facilities, both displayed positive results in their first measurement. This suggests that despite limited time for implementation, the successful adoption of some interventions was achieved in El Salvador. The third novel performance indicator measured quality preconception care consultation among antenatal care records in the sample, but there was minimal evidence of such consultation among records observed. This may reflect an insufficient amount of time between intervention and evaluation, and evidence of improved preconception care may increase in the future.

Comparison area data were collected for the first time at the third operation measurement in El Salvador. Health facility performance indicator estimates were similar in intervention and comparison areas, though postpartum contraception was notably higher in comparison areas, and antenatal care higher in intervention areas. Estimates of anemia prevalence were lower, and diarrhea treatment higher, in comparison areas.

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 10 performance indicators, 43 monitoring indicators defined by IDB and the El Salvador Ministry of Health were measured, 32 through household surveys and 11 through health facility observations and medical record review.

Household survey monitoring indicators track a range of topics related to childbirth, contraceptive use, skilled health care attendance, access to and quality of care at health facilities, household health expenditure, as well as vaccination, feeding habits, and treatment of illnesses in young children. Broadly, the results of the household monitoring indicators did not show marked improvement over the course of SMI evaluations, suggesting that SMI outcomes in El Salvador were focused more narrowly on interventions measured by performance indicators, and more pronounced among health facility indicators.

The impacts of the COVID-19 pandemic are pronounced in several household monitoring indicators. For instance, substantial decreases were observed in measures of care-seeking for recent illness, postpartum care, and deworming treatment. 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.

Two monitoring indicators measured from medical record review evaluated active management of the third stage of labor in delivery records, which improved gradually from operation to operation, and diarrhea treatment at ambulatory facilities, which was unable to sustain the improvement observed at the second operation measurement.

The remaining nine monitoring indicators were measured from the Health Facility Observation and Questionnaire, and evaluated the capacity of facilities to conduct vaccination, child health care, pre- and postnatal care, emergency obstetric care, and contraceptive administration. These indicators required physical observation of supplies and continuous stocks of vaccines, contraceptive methods, and medications. Additional health facility monitoring indicators measured cesarean section prevalence, 24/7 availability of obstetric care medical professionals, and reported access to safe blood. While some facility indicators sustained positive performance from the second operation, the general performance was regressive, reflecting a strain on the health system related to supply of equipment and medications that was possibly exacerbated by the COVID-19 pandemic.

5.4 Conclusions

Some SMI indicators saw meaningful increases over the course of SMI operations. The third operation included ambitious new indicators, some of which demonstrated 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. There were cases of notable improvement in key subcomponents even for some indicators that did not meet the third operation targets. 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, intervention

Indicator	Description	Time Period	N	%	CI
I1060	Children (6-23mo) with hemoglobin <110g/L	2nd Operation	227	47.3	(35.9 - 59)
		3rd Operation	188	15.5	(10.1 - 22.9)
I5060	Diarrhea treatment with ORS and zinc (6-59mo)	2nd Operation	40	35.3	(23 - 49.9)
		3rd Operation	29	15.7	(5.4 - 38)

Table A.2: Health facility MRR-based performance indicators

Indicator	Description	Time Period	N	%	CI
I2500	Postpartum contraception*	1st Operation	84	1.2	(0.2 - 8.3)
		2nd Operation	102	14.7	(9 - 23.1)
		3rd Op. Pre-evaluation	53	20.8	(11.7 - 34.2)
		3rd Op. Evaluation	82	30.5	(21.3 - 41.5)
I3000	Preconception care with quality	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	35	0	(-)
I3030	Antenatal care with quality**	1st Operation	166	28.9	(22.5 - 36.3)
		2nd Operation	241	29	(23.6 - 35.1)
		3rd Op. Pre-evaluation	75	22.7	(14.4 - 33.8)
		3rd Op. Evaluation	159	30.2	(23.5 - 37.8)
I4050	Postpartum care with quality***	1st Operation	86	0	(-)
		2nd Operation	210	49.5	(42.8 - 56.3)
		3rd Op. Pre-evaluation	81	25.9	(17.4 - 36.8)
		3rd Op. Evaluation	174	8	(4.8 - 13.2)
I4070	Management of neonatal complications	1st Operation	Not measured at 1st operation		
		2nd Operation	237	24.1	(19 - 29.9)
		3rd Op. Pre-evaluation	93	36.6	(27.3 - 47)
		3rd Op. Evaluation	161	39.8	(32.4 - 47.6)
I4080	Management of obstetric complications	1st Operation	Not measured at 1st operation		
		2nd Operation	237	12.2	(8.6 - 17.1)
		3rd Op. Pre-evaluation	90	5.6	(2.3 - 12.9)
		3rd Op. Evaluation	169	13.6	(9.2 - 19.7)
I6005	Cervical cancer screening with quality	1st Operation	Not measured at 1st operation		
		2nd Operation	Not measured at 2nd operation		

Indicator	Description	Time Period	N	%	CI
		3rd Op. Pre-evaluation	Not measured at 3rd operation pre-evaluation		
		3rd Op. Evaluation	287	85.7	(81.1 - 89.3)

* Injection and implant postpartum contraceptives not captured at first operation; 'progestin-only' not specified for OCP at first operation.

** Referral not captured at first operation so the subsequent exclusion cannot be applied as it is at second and third operation. At first operation, uterine height and fetal checkups are only evaluated at first visit, if eligible based on gestational age. Risk factor management not captured at first operation. RPR not captured as VDRL alternative at first operation.

*** Blood abnormalities postpartum check not captured at first operation.

Table A.3: Health facility observation-based performance indicators

Indicator	Description	Time Period	N	%	CI
I7500	Use of data for decision-making	1st Operation	Not measured at 1st operation		
		2nd Operation	Not measured at 2nd operation		
		3rd Operation	27	70.4	(49.6 - 85.2)

A.2 Monitoring indicator matrices

Table A.4: Household proportion-based monitoring indicators, intervention

Indicator	Description	Time Period	N	%	CI
MI1050	Children (0-59mo) with hemoglobin <110g/L	2nd Operation	699	37.1	(29.2 - 45.8)
		3rd Operation	662	13.9	(10.2 - 18.6)
MI1070	Children (0-59mo) with height <-2SD of mean of reference population	2nd Operation	808	6.8	(5.2 - 8.9)
		3rd Operation	700	11	(8.7 - 13.9)
MI1080	Women (15-49 years) with a live birth in the last year	2nd Operation	1431	6.3	(5.4 - 7.3)
		3rd Operation	1354	5.8	(4.9 - 6.9)
MI1090	Women (15-19 years) with a live birth in the last year	2nd Operation	269	4.9	(3.3 - 7.3)
		3rd Operation	164	4.8	(2.9 - 7.7)
MI2010	Women using modern methods of contraception	2nd Operation	665	75.4	(69.9 - 80.2)
		3rd Operation	707	72.4	(64.9 - 78.8)
MI2020	Women in need of but not using contraception	2nd Operation	665	24.6	(19.8 - 30.1)
		3rd Operation	707	27.6	(21.2 - 35.1)
MI2030	Interruption in contraception use	2nd Operation	504	5.1	(2.6 - 9.7)
		3rd Operation	387	4.2	(2.4 - 7.1)
MI3010	Skilled antenatal care (1 visit)	2nd Operation	404	98.1	(96.4 - 99)
		3rd Operation	415	97.2	(94.7 - 98.5)
MI3020	Skilled antenatal care (4 visits)	2nd Operation	391	79.7	(73.1 - 85)
		3rd Operation	377	82.5	(76.7 - 87)
MI3040	Skilled antenatal care before 12 weeks gestation	2nd Operation	393	58.9	(52.6 - 65)
		3rd Operation	400	62.4	(56.6 - 67.8)

Indicator	Description	Time Period	N	%	CI
MI4015	Institutional delivery	2nd Operation	404	98.8	(97.2 - 99.5)
		3rd Operation	414	96.9	(93.7 - 98.5)
MI4010	Institutional delivery with skilled attendant	2nd Operation	404	98.2	(95.8 - 99.3)
		3rd Operation	414	96.1	(92.5 - 98)
MI4020	Skilled postpartum care (48 hours)	2nd Operation	401	22.6	(15.4 - 31.9)
		3rd Operation	397	3	(1.5 - 5.8)
MI4030	Skilled postpartum care (7 days)	2nd Operation	401	31.7	(23.5 - 41.2)
		3rd Operation	397	7.2	(4.8 - 10.7)
MI4031	Postpartum care (7 days)	2nd Operation	404	62.6	(52.7 - 71.5)
		3rd Operation	411	53.7	(47.3 - 60.1)
MI4035	Skilled postpartum care (7-42 days)	2nd Operation	401	25.7	(19.8 - 32.7)
		3rd Operation	398	26.2	(20.1 - 33.5)
MI4040	Skilled postpartum care (3 visits)	2nd Operation	401	0.3	(0 - 2.1)
		3rd Operation	398	0.2	(0 - 1.6)
MI4101	Skilled neonatal care (24 hours)	2nd Operation	340	19	(10.8 - 31)
		3rd Operation	362	17.6	(12.8 - 23.8)
MI4100	Skilled neonatal care (48 hours)	2nd Operation	340	26.9	(17.6 - 38.8)
		3rd Operation	362	21.3	(15.6 - 28.4)
MI4102	Skilled neonatal care (7 days)	2nd Operation	340	41.7	(32.2 - 51.9)
		3rd Operation	362	34.1	(26.5 - 42.5)
MI4110	Recognition of 5 danger signs in newborns	2nd Operation	324	26.1	(19 - 34.7)
		3rd Operation	252	3.8	(1.9 - 7.6)
MI4145	Antibiotic use for children with pneumonia symptoms	2nd Operation	64	73.6	(62.2 - 82.6)
		3rd Operation	20	65.1	(42.7 - 82.3)
MI5020	Complete vaccination for age	2nd Operation	783	59.8	(52 - 67.2)
		3rd Operation	738	63.3	(56.8 - 69.4)
MI5025	Children (12-24mo) with MMR vaccine	2nd Operation	131	91.1	(83.2 - 95.5)
		3rd Operation	111	83.7	(73.5 - 90.5)
MI5030	Children (0-59mo) with 2 doses of deworming	2nd Operation	693	40.5	(34.9 - 46.4)
		3rd Operation	633	21.6	(17.2 - 26.7)
MI5040	Exclusive breastfeeding (0-5mo)	2nd Operation	76	49.6	(37.5 - 61.7)
		3rd Operation	61	45.1	(31.9 - 59)
MI5050	Early initiation of breastfeeding	2nd Operation	344	81.3	(75.6 - 85.9)
		3rd Operation	367	73.5	(67.8 - 78.6)
MI5080	Continued breastfeeding (12-15mo)	2nd Operation	62	72	(55.5 - 84.1)
		3rd Operation	54	70.7	(58 - 80.8)
MI5090	Consumption of solid food (6-8mo)	2nd Operation	49	84.3	(71.9 - 91.9)
		3rd Operation	44	69.5	(47.5 - 85.1)
MI5100	Dietary diversity (6-23mo)	2nd Operation	268	60.1	(53.5 - 66.3)
		3rd Operation	224	63.4	(55.5 - 70.7)
MI5110		2nd Operation	243	54.9	(47.5 - 62.1)

Indicator	Description	Time Period	N	%	CI
	Minimum meal frequency (6-23mo)	3rd Operation	216	62.2	(50.3 - 72.8)
MI5120	Minimum acceptable diet (6-23mo)	2nd Operation	266	32.4	(26.6 - 38.8)
		3rd Operation	221	44.9	(35.2 - 55.1)
MI5130	Consumption of iron-rich foods (6-23mo)	2nd Operation	268	58.1	(50.7 - 65.1)
		3rd Operation	224	71.2	(62.6 - 78.5)
MI6010	Women with recent illness	2nd Operation	1428	11.8	(8.7 - 15.9)
		3rd Operation	1352	9	(6.5 - 12.5)
MI6020	Women with recent illness who did not seek care	2nd Operation	164	39.8	(27.8 - 53.2)
		3rd Operation	134	49.5	(38.2 - 60.8)
MI6030	Children with recent illness	2nd Operation	869	20.6	(16.1 - 26)
		3rd Operation	794	14.2	(10.6 - 18.8)
MI6040	Children with recent illness who did not seek care	2nd Operation	170	31.9	(24.5 - 40.4)
		3rd Operation	98	43.9	(33.6 - 54.8)
MI6050	Women with recent visit to a health facility	2nd Operation	1430	14.7	(11.4 - 18.6)
		3rd Operation	1349	8.2	(6.6 - 10.3)
MI6070	Children with recent visit to a health facility	2nd Operation	868	19.6	(15.4 - 24.7)
		3rd Operation	794	11.1	(8.4 - 14.5)
MI6110	Catastrophic health expenditure (10%)	2nd Operation	1012	6.4	(4.1 - 9.9)
		3rd Operation	1056	8.2	(6 - 11.2)
MI6110	Catastrophic health expenditure (25%)	2nd Operation	1012	2.1	(1.2 - 3.7)
		3rd Operation	1056	3.8	(2.4 - 6.1)
MI6110	Catastrophic health expenditure (40%)	2nd Operation	1012	1.1	(0.5 - 2.5)
		3rd Operation	1056	1.9	(1 - 3.4)
MI6130	Satisfaction with health care, most recent visit	2nd Operation	640	91.5	(86.3 - 94.9)
		3rd Operation	506	85.3	(79.4 - 89.8)
MI6140	Satisfaction with cleanliness of facility, most recent visit	2nd Operation	630	68.6	(61.1 - 75.2)
		3rd Operation	491	47.9	(41.8 - 54.1)
MI6150	Satisfaction with competence of personnel, most recent visit	2nd Operation	637	98.3	(96.8 - 99.1)
		3rd Operation	498	90.4	(85.9 - 93.6)
MI6160	Women reporting being treated with respect, most recent visit	2nd Operation	640	70.6	(64.4 - 76.1)
		3rd Operation	506	59.4	(52.9 - 65.7)

Table A.5: Household mean-based monitoring indicators, intervention

Indicator	Description	Time Period	N	Mean	CI
MI6080	Average travel time to nearest health facility (min)	2nd Operation	1377	20.7	(15.7 - 25.8)
		3rd Operation	1146	26.9	(20.4 - 33.3)
MI6082	Average travel time to delivery location (min)	2nd Operation	344	56.4	(48.3 - 64.5)
		3rd Operation	344	58.1	(48.4 - 67.9)
MI6085	Average distance to nearest health facility (km)	2nd Operation	797	2.6	(1.6 - 3.6)
		3rd Operation	502	3.3	(2.4 - 4.1)
MI6090	Average out-of-pocket itemized health expenditure (USD)	2nd Operation	1012	6.5	(3.9 - 9.1)
		3rd Operation	1056	13.2	(8.2 - 18.1)
MI6100	Average household itemized expenditure (USD)	2nd Operation	1017	255.8	(212 - 299.6)
		3rd Operation	1125	339.2	(295.8 - 382.6)
MI6120	Average wait time at most recent visit to health facility (min)	2nd Operation	621	107.1	(92.6 - 121.6)
		3rd Operation	501	116.5	(99.9 - 133)

Table A.6: Health facility MRR-based monitoring indicators

Indicator	Description	Time Period	N	%	CI
MI4090	Active management of the third stage of labor	1st Operation	164	26.8	(20.5 - 34.2)
		2nd Operation	177	59.3	(51.9 - 66.4)
		3rd Op. Pre-evaluation	83	57.8	(46.8 - 68.2)
		3rd Op. Evaluation	170	66.5	(59 - 73.2)
MI4130	Children 0-5 diagnosed with diarrhea treated	1st Operation	212	13.7	(9.6 - 19)
		2nd Operation	428	42.8	(38.1 - 47.5)
		3rd Op. Pre-evaluation	97	10.3	(5.6 - 18.3)
		3rd Op. Evaluation	206	15.5	(11.2 - 21.2)

Table A.7: Health facility observation-based monitoring indicators

Indicator	Description	Time Period	N	%	CI
MI7000	Cold chain	1st Operation	47	76.6	(61.9 - 86.8)
		2nd Operation	56	91.1	(79.8 - 96.3)
		3rd Operation	35	80	(62.6 - 90.5)
MI7010	Child care services	1st Operation	0		
		2nd Operation	60	8.3	(3.4 - 18.9)
		3rd Operation	9	11.1	(0.9 - 62.6)
MI7020	Pre/postnatal care services	1st Operation	60	51.7	(38.8 - 64.3)
		2nd Operation	60	66.7	(53.5 - 77.7)
		3rd Operation	36	0	(-)
MI7030	Emergency care services	1st Operation	0		

Indicator	Description	Time Period	N	%	CI
		2nd Operation	9	44.4	(13.4 - 80.5)
		3rd Operation	9	0	(-)
MI7040	Delivery services	1st Operation	Not measured at 1st operation		
		2nd Operation	9	11.1	(0.9 - 62.6)
		3rd Operation	9	0	(-)
MI7050	Contraceptive services	1st Operation	60	93.3	(83.1 - 97.5)
		2nd Operation	60	91.7	(81.1 - 96.6)
		3rd Operation	36	55.6	(38.5 - 71.4)
MI7190	24/7 on-call availability of obstetric care staff	1st Operation	9	44.4	(13.4 - 80.5)
		2nd Operation	9	0	(-)
		3rd Operation	9	22.2	(3.9 - 67)
MI7210	Access to safe blood	1st Operation	9	100	(-)
		2nd Operation	9	88.9	(37.4 - 99.1)
		3rd Operation	9	100	(-)

Table A.8: Health facility prevalence-based monitoring indicators

Description	1st Operation		2nd Operation		3rd Operation	
	N	%	N	%	N	%
Cesarean section prevalence (MI4120)	47768	24.7	29549	25.9	31995	27.6

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 110g/L

5060: Diarrhea treatment with ORS and zinc at home

Source: Household survey

Denominator: Total number of children aged 6-59 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)

B.2 Health facility performance indicators

2500: Women who received postpartum contraception following an uncomplicated delivery in the last year

Source: Medical record review

Denominator: Total number of postpartum care records of live-birth deliveries from complete facilities in the past year in the sample, excluding cases of women referred for contraceptive methods

Formula: Observe the following in the record: woman received one of the following methods: sterilization or IUD or implant or progesterone-only oral pill or progesterone-only injection

3000: Women who received preconception care according to the best practices in the past 20 weeks

Source: Medical record review

Denominator: Observe the following in the record: at least 1 preconception care visit (or health consultation) + height + weight + blood pressure + folic acid + blood group + rh factor + HIV test + syphilis test + *Hoja Filtro Preconcepcional* (preconception filter sheet) + management of below risk factors:

- HIV: referral
- Syphilis: referral
- Biological risk factors: referral

- Social risk factors: referral

3030: Women of reproductive age who received four 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 *ECOS Familiar*, excluding referred cases

Formula: Observe the following in the record: woman had at least 4 ANC visits in total* + first ANC visit was at < 13 weeks gestation + physical checkups performed at each visit (weight + blood pressure + fundal height (if gestational age ≥ 14 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) + tetanus vaccine (any dose) + management of below risk factors:

- HIV: evaluation by specialist
- Syphilis: evaluation by specialist
- Negative Rh factor: evaluation by specialist
- Hypertension: evaluation by specialist
- Gestational diabetes: evaluation by specialist
- Urinary infection: antibiotics

4050: Women of reproductive age who received immediate postpartum care according to the best practices during her latest pregnancy in the past two years

Source: Medical record review

Denominator: Total number of postpartum care records in the sample, excluding women referred for postpartum care

Formula: Observe the following in the record: Woman received all of the following checks: - Four times in the first hour, twice in the second hour, and once at discharge: blood pressure + respiratory rate + pulse / heart rate + abnormal bleeding - Once at discharge: temperature

4070: Management of neonatal complications (sepsis, asphyxia, low birth weight, prematurity) in the last two years

Source: Medical record review

Denominator: Total number of records of neonates with birth complications (sepsis, asphyxia, low birth weight, prematurity) in the sample

Formula:

Sepsis:

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

Asphyxia (excluding births that did not occur in the facility):

Observe the following in the record: pulse / heart rate + respiratory rate + Apgar score at 1 minute + Apgar score at 5 minutes + oxygen saturation level (if Apgar score at 5 minutes ≤ 3) + heat application + oxygen application (if Apgar score at 5 minutes ≤ 3) + (AMBU / positive pressure ventilation / endotracheal intubation (if Apgar score at 5 minutes ≤ 3))

Low birth weight (excluding neonates ≥ 2500 grams):

Observe the following in the record: gestational age calculation using Capurro or Ballard + classification based on weight recorded (if birth occurred in the facility) + pulse / heart rate + respiratory rate + weight + height / length + head circumference + Apgar score (if birth occurred in the facility) + neonate was fed glucose (breastfed / oral serum / IV) + appropriate care:

- *if neonate has pneumonia:* antibiotics
- *if neonate has diarrhea:* antibiotics + IV treatment
- *if neonate has seizures:* anticonvulsants
- *if neonate has hypoglycemia:* breastfed / oral serum / glucose IV

Prematurity (excluding neonates with a gestational age of ≥ 37 weeks):

Observe the following in the record: gestational age calculation using Capurro or Ballard + classification based on gestational age recorded (if birth occurred in the facility) + pulse / heart rate + respiratory rate + weight + head circumference + Apgar score (if birth occurred in the facility) + oxygen saturation level + glycemia test + heat application + neonate was fed glucose (breastfed / oral serum / IV) + appropriate care:

- *if neonate has pneumonia:* antibiotics
- *if neonate has diarrhea:* antibiotics + IV treatment
- *if neonate has seizures:* anticonvulsants
- *if neonate has hypoglycemia:* breastfed / oral serum / glucose IV

4080: Management of obstetric complications (sepsis, hemorrhage, pre-eclampsia, eclampsia) in the last two years

Source: Medical record review

Denominator: Total number of records of women with birth complications (sepsis, hemorrhage, pre-eclampsia, eclampsia) in the sample

Formula:

Sepsis:

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

- *if abortion:* AMEU / curettage / hysterectomy / referral
- *if uterine perforation:* laparotomy / hysterectomy / surgical repair / referral
- *if abscess:* laparotomy / hysterectomy / drainage / referral
- *if postpartum or post-cesarean endometritis:* curettage / hysterectomy / referral
- *if fever:* antibiotics / referral
- *if retention of placental remains:* curettage / laparotomy / hysterectomy / referral

Hemorrhage:

Observe the following in the record: pulse / heart rate + blood pressure + hematocrit + hemoglobin + platelet count + prothrombin time + partial thromboplastin time + Ringer's lactate / Hartmann's solution / saline solution + appropriate care:

- *if incomplete complicated abortion with hemorrhage or hemorrhage after abortion:* AMEU / curettage / referral
- *if ectopic pregnancy / broken ectopic pregnancy:* laparotomy / salpingectomy / surgical repair / hysterectomy / referral
- *if placenta previa with hemorrhage:* laparotomy / hysterectomy / caesarean section / uterine artery ligation / referral
- *if uterine rupture:* laparotomy / hysterectomy / surgical repair / caesarean section / uterine artery ligation / referral
- *if uterine atony:* uterotonic + (uterine massage / bimanual compression / compressive sutures / hydrostatic balloon / uterine tamponade / hysterectomy / referral)
- *if uterine inversion:* uterotonic + (reposition / restoration of the uterus under sedation or anesthesia with surgical or non-surgical techniques / referral)
- *if placental retention:* manual extraction / hysterectomy / referral
- *if placental or chorio-placental remains:* uterotonics + (manual extraction / curettage / referral)

Pre-eclampsia:

Observe the following in the record: blood pressure + pulse / heart rate + respiratory rate + patellar reflex + urine protein + platelet count + aspartate aminotransferase / glutamic-oxaloacetic transaminase (TGO or GOT) + alanine aminotransferase / glutamic-pyruvic transaminase (TGP or GPT) + Ringer's lactate / Hartmann's solution / saline solution + magnesium sulfate + ringer's lactate / hartmann's solution / saline solution + hydralazine / labetalol / nifedipine (if diastolic blood pressure is ≥ 110 OR systolic blood pressure ≥ 160) + dexamethasone / betamethasone (if gestational age ≥ 24 and ≤ 35 weeks)

Eclampsia:

Observe the following in the record: blood pressure + pulse / heart rate + respiratory rate + patellar reflex + urine protein + platelet count + aspartate aminotransferase / glutamic-oxaloacetic transaminase (TGO or GOT) + alanine

aminotransferase / glutamic-pyruvic transaminase (TGP or GPT) + Ringer's lactate / Hartmann's solution / saline solution + magnesium sulfate + ringer's lactate / hartmann's solution / saline solution + hydralazine / labetalol / nifedipine (if diastolic blood pressure is ≥ 110 OR systolic blood pressure ≥ 160) + dexamethasone / betamethasone (if gestational age ≥ 24 and ≤ 35 weeks)

6005: Women who received a screening for cervical cancer according to the best practices in the past year

Source: Medical record review

Denominator: Total number of regular attention records in the past year among women aged 20-59 years at ECOS Familiar in the sample, excluding records for which the woman rejected screening and the reason is documented, and excluding records for which there is written evidence that the woman has not initiated sexual intercourse

Formula: Observe the following in the record:

1. At least one cervical cancer screening in the past two years

If positive: evidence of delivery of results to the woman within 8 weeks + referral

If test performed in another facility: a copy of the result or a note of the result signed by a doctor

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

7500: Use of data for decision-making

Source: Health facility observation

Denominator: Total number of ambulatory facilities in the sample

Formula: Observe the following in the facility: Monthly meeting minutes for the previous three months (May, June, July 2022) + for one randomly selected month:

- Summary of the analysis of information
- Summary of the discussion conducted
- Summary of at least one agreement reached
- Evidence of follow-up for the agreement reached observed in the following month's meeting minutes

B.3 Household monitoring indicators

1050: Children 0-59mo with hemoglobin $< 110\text{g/L}$

Source: Household survey

Denominator: Total number of children aged 0-59 months in household surveys with a capillary blood sample used to measure hemoglobin

Formula: Hemoglobin level is above 110g/L

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

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 (injectables, female sterilization, male sterilization, oral contraceptives, intrauterine device (IUD), contraceptive implant, condoms (male or female), diaphragm, sponge and spermicide, emergency contraception or other modern method)

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, emergency contraception 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

3040: Women aged 15-49 who received first antenatal care visit with skilled personnel by 12 weeks gestation 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 an antenatal care visit with skilled personnel (doctor or professional nurse) by 12 weeks gestation before her most recent birth in the last two years

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 or professional nurse) before her most recent birth in the last two years

3020: Women aged 15-49 who received at least four antenatal care visits with quality 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 or professional nurse), and that each of the following were checked at least once: weight, blood pressure, fundal height, fetal heartbeat, urine sample, and blood sample

4010: Women aged 15-49 who delivered in a facility with skilled personnel for 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 delivered in a health facility, with delivery attended by a doctor or professional nurse for her most recent birth in the last two years

4015: Women aged 15-49 who delivered in a facility for 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 delivered in a health facility for 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 or professional nurse) in the first 48 hours after her most recent birth in the last two years

4030: Women aged 15-49 who received postpartum care by skilled personnel within 7 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 or professional nurse) within 7 days after her most recent birth in the last two years

4031: Women aged 15-49 who received postpartum care one week 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 any medical provider in a health facility or at home one week 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 or professional 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 or professional 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 or professional 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 who received neonatal care by skilled personnel (doctor or professional nurse) in a health facility within 24 hours of delivery

4102: Infants receiving neonatal care by skilled personnel in a health facility within 7 days 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 or professional nurse) in a health facility within 7 days 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)

5020: 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 OR caregiver recall, depending on the child's age at the time of the survey:

- BCG
 - Birth dose
- Hepatitis B
 - Birth dose
 - *As part of pentavalent vaccine:*
 - 2 months
 - 4 months
 - 6 months

- Pentavalent
 - 2 months
 - 4 months
 - 6 months
 - 18 months
- Rotavirus
 - 2 months
 - 4 months
- Pneumococcal conjugate
 - 2 months
 - 4 months
 - 12 months
- MMR
 - 1 year

5025: Children (12-23 months) with MMR vaccine, among children with vaccine card observed

Source: Household survey

Denominator: Total number of children aged 12-23 months in household surveys with vaccine card observed

Formula: Child received the MMR vaccine according to their vaccine card

5030: 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

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:

- Fortified baby foods
- Breakfast cereals
- Grains (e.g., bread, rice, pastas, or other grain-based foods)
- Starches (e.g., potatoes, yucca, 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

6070: Children (0-59 months) who visited a health facility in the last two weeks

Source: Household survey

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

Formula: Caregiver reports child having visited 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 (Dollars). 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 (Dollars). 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)

6110: Catastrophic health expenditure, 10%, 25%, and 40%

Source: Household survey

Denominator: Total number of households with recorded household expenditure in the last month and with out-of-pocket health care expenditure in the past month

Formula: Number of households whose out-of-pocket health care expenditure represented at least 10%, 25%, and 40% of total household expenditure

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 her 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

B.4 Health facility monitoring indicators

4090: Active management of the third stage of labor in hospitals in the last two years

Source: Medical record review

Denominator: Total number of delivery records in the sample

Formula: Complete: Observe the following in the record: administration of oxytocin / other uterotonic within one minute of birth

4120: Cesarean section prevalence in hospitals in the last two years

Source: Health facility observation

Denominator: Total number of deliveries as indicated by hospital statistics in past two years

Formula: Complete: Number of cesarean section births in hospitals in the past two years

4130: Children 0-5 diagnosed with diarrhea treated according to the SMI standard in the last two years

Source: Medical record review

Denominator: Total number of diarrhea records in the sample

Formula: Ambulatory: Observe the following in the record: general state check + eyes + thirst + skin fold + capillary fill + pulse/heart rate + (administered oral rehydration salts / intravenous rehydration / prescribed oral rehydration medication)

7000: Health facilities with cold chain according to standard

Source: Health facility observation

Denominator: Total number of facilities that store vaccines in the sample

Formula: Observe the following in the facility: For each functional refrigerator: temperature recording chart + temperature recorded twice daily for past thirty days + temperature within range of 2-8 degrees celsius for past thirty days (if temperature outside of 2-8 degree range, an action was taken and recorded)

7010: Health facilities with child care services according to standard

Source: Health facility observation

Denominator: Total number of facilities that provide child care services in the sample

Formula: Observe the following in the facility: Ambulatory: pediatric scale + scale + height rod + pediatric stethoscope + negatoscope + pediatric sphygmomanometer + Vaccine/growth and development card + continuous three month supply of vaccines: Pentavalent (DPT + Hib + HepB) + polio + MMR + influenza + rotavirus + pneumococcal conjugate + BCG + continuous three month supply of drugs: oral rehydration salts/packets + ferrous sulfate drops/micronutrients + albenazole/mebendazole + crystal penicillin/ampicillin/amoxicillin + Ringer's lactate/Hartman's solution/saline solution. Note: Drug requirements are omitted from the indicator calculation at ambulatory facilities because of a recategorization of ambulatory facilities.

Complete: pediatric scale + scale + height rod + stethoscope + oral/axillary thermometer + Vaccine / growth and development card + continuous three month supply of vaccines: Pentavalent (DPT + Hib + HepB) + polio + MMR + influenza + rotavirus + pneumococcal conjugate + BCG + continuous three month supply of drugs: oral rehydration

salts/packets + ferrous sulfate drops/micronutrients + albenazole/mebendazole + crystal penicillin/ampicillin/amoxicillin + Ringer's lactate/Hartman's solution/saline solution. Note: Albendazol / mebendazol requirement omitted from the indicator calculation at complete facilities due to a lack of available data across rounds.

7020: Health facilities with pre/postnatal care services according to standard

Source Health facility observation

Denominator: Total number of facilities that provide pre/postnatal care services in the sample

Formula:

Observe the following in the facility: Ambulatory without doctor: scale + height rod + gynecological exam table + obstetric tape + lamp + sphygmomanometer + stethoscope + maternal clinical history card + maternal perinatal card + continuous three month supply of drugs: (multivitamin/ iron + folic acid) + tetanus vaccine

Ambulatory with doctor: scale + height rod + gynecological exam table + obstetric tape + lamp + sphygmomanometer + stethoscope + maternal clinical history card + maternal perinatal card + IUD insertion kit + continuous three month supply of drugs: (multivitamin/ iron + folic acid) + tetanus vaccine + ayre palettes + microscope slides + nitrofurantoin + erythromycin/ampicillin/benzatinic penicillin

Complete: scale + height rod + gynecological exam table + obstetric tape + lamp + sphygmomanometer + stethoscope + maternal clinical history card + maternal perinatal card + IUD insertion kit + continuous three month supply of drugs: (multivitamin/ iron + folic acid) + tetanus vaccine + ayre palettes + microscope slides + nitrofurantoin + cephalixin + lab supplies: dark field microscope + enzyme immunoassay + fluorescent microscope + urinalysis equipment + glucometer + automated cell counter + blood type antibody + Rh factor + if immunoassay observed: syphilis reactive + HIV reactive

7030: Health facilities with emergency care services according to standard

Source: Health facility observation

Denominator: Total number of complete facilities that provide emergency obstetric and neonatal care services in the sample

Formula: Observe the following in the facility: Complete: blood pressure apparatus + neonatal/pediatric stethoscope + pinard/doppler + autoclave/dry heat sterilizer + oxygen tank + adult resuscitation bag + neonatal resuscitation bag + laryngoscope + manual vacuum aspiration + anesthesia equipment + continuous three month supply of drugs: ergonovine maleate/ergometrine + oxytocin + dexamethasone/betamethasone + amikacin sulfate + crystal penicillin/ampicillin/amoxicillin + magnesium sulfate + hydralazine / hydralazine hydrochloride + nifedipine + furosemide + diazepam/midolezam + sevofluran + succinylcholine chloride

7040: Health facilities with delivery services according to standard

Source: Health facility observation

Denominator: Total number of complete facilities that provide (uncomplicated) delivery care services in the sample

Formula: Observe the following in the facility: Complete: macro/microgotero serum equipment + sterile sheets/blankets for neonate + nasogastric probe K33 + intravenous catheter no.18 + metal clamp/umbilical tape + continuous three month supply of drugs: ergonovine maleate/ergometrine + iodopovidone + insulin syringe + lidocaine/epinephrine + hyoscine bromide/butilioscin + oxytocin + Ringer's lactate/Hartman's solution/saline solution + ophthalmic chloramphenicol drops + vitamin K

7050: Health facilities with contraceptive services according to standard

Source: Health facility observation

Denominator: Total number of facilities that provide contraceptive services in the sample

Formula: Observe the following in the facility:

Ambulatory: continuous three month supply of contraceptives: male condom + oral contraceptive pill + injectable

Complete: continuous three month supply of contraceptives: male condom + oral contraceptive pill + injectable + IUD + doctor capable of tubal ligation + doctor capable of vasectomy

7190: Health facilities with 24/7 on-call availability of obstetric care staff

Source: Health facility observation

Denominator: Total number of complete facilities in the sample

Formula: Complete: reported staff services available on-call 24/7: gynecologist + internist + anesthesiologist

7210: Health facilities with access to safe blood supply

Source: Health facility observation

Denominator: Total number of complete facilities in the sample

Formula: Complete: reported access to safe blood

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 1,144 selected eligible households in intervention areas, and 600 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 1,740 households, we sought to complete interviews with residents of 30 randomly selected households in each of the 38 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-El Salvador 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 14 intervention municipalities in which to conduct the SMI household survey for the Initiative on the basis of their high concentration of residents in the country's lowest wealth quintile, and, at the third operation, 12 comparison municipalities with similar socioeconomic characteristics and ethnic composition. From these 26 municipalities, a two-stage clustered random sample of eligible households was selected.

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

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 38 intervention and 20 comparison clusters (segments) was randomly selected from a total of 523 intervention segments in 14 municipalities and 235 comparison segments in 12 municipalities which, based on data from the 2007 El Salvador Population Census, contained 51,466 and 23,537 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 2007 El Salvador 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 58 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 El Salvador in the third operation survey, no alternate segments were utilized.

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 =

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



where

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

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

and the number of draws corresponds to the number of segments in the corresponding study arm (38 for intervention areas and 20 for comparison areas at the third operation), and the total number of occupied households in target municipalities in the 2007 El Salvador Population Census corresponds to 51,466 in intervention areas and 23,537 in comparison areas, and

if the household includes children under 5 according to the SMI-El Salvador 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-El Salvador 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 0.81 in comparison areas (according to the SMI-El Salvador Household Census), and

if the household includes children under 5 according to the SMI-El Salvador 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-El Salvador 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 0.26 in intervention areas and 0.23 in comparison areas (according to the SMI-El Salvador 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.

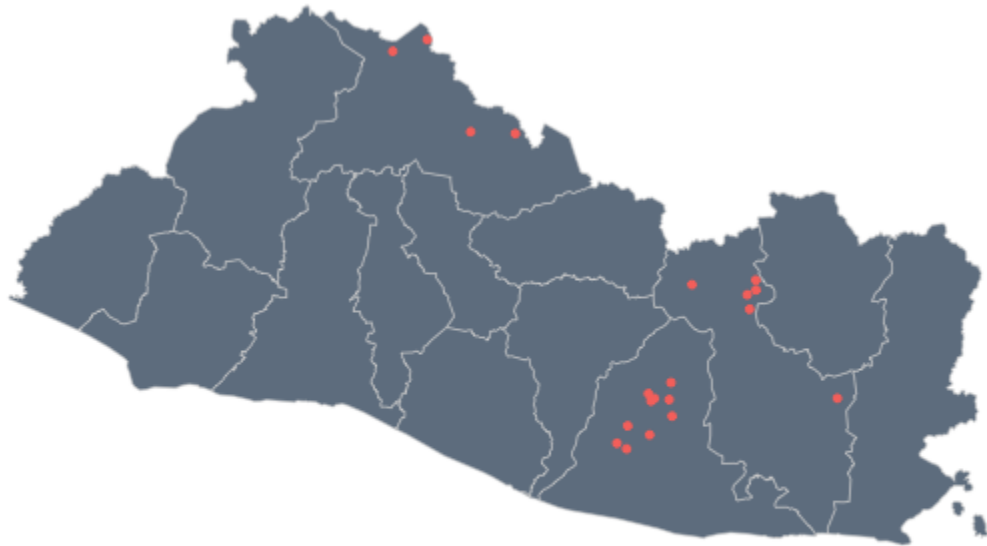
C.4 Sampling errors

As described above, a random sample of eligible households was selected from each of 38 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 El Salvador third operation



• Household segment

D.1.1 Household characteristics

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, comparison

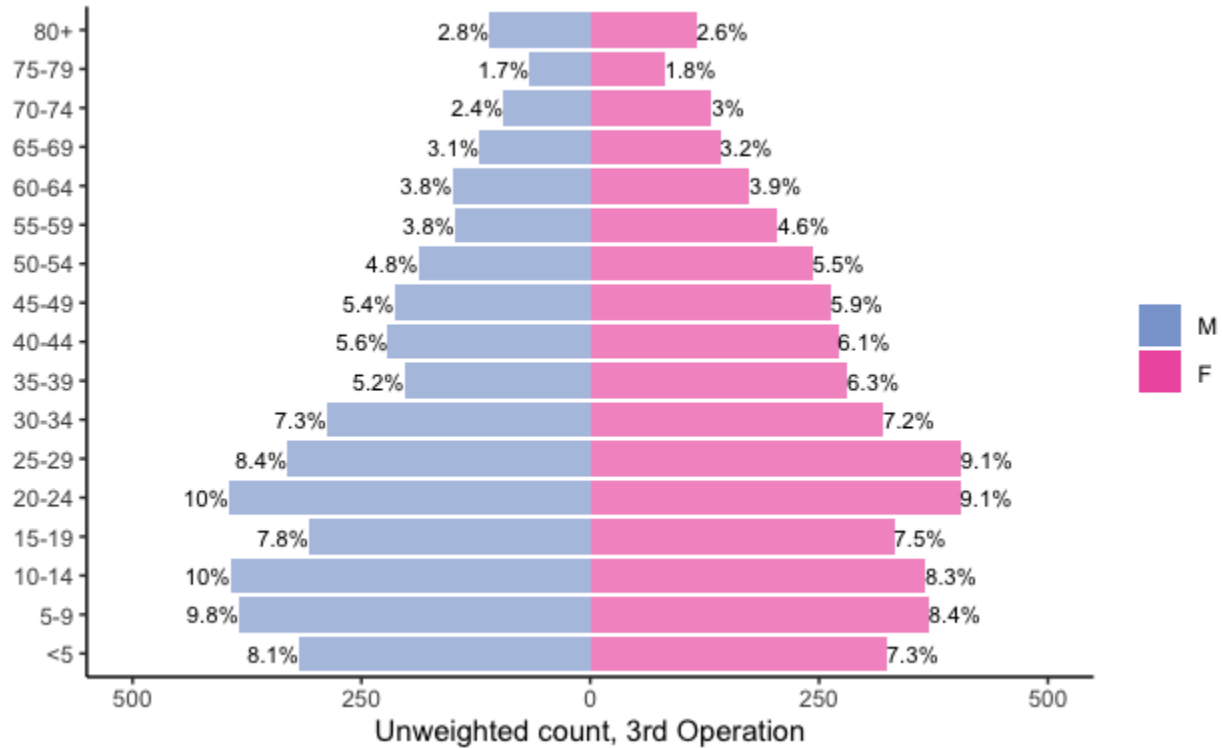


Table D.1: SMI household survey sample sizes: number of total households, women 15-49 years of age, and children 0-59 months, comparison

	3rd Operation
Households	600
Women	688
Children	433

Table D.2: Household characteristics, SMI household sample, comparison

	3rd Operation		
	n	%	CI
Dual-headed household	412	66.7	(60.4 - 72.9)
Single head, female	180	31.7	(25.9 - 37.4)
Single head, male	8	1.7	(0.4 - 3)

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), comparison

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum
3rd Operation	600	0	1	3	3	4	10

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

Table D.4: Total itemized per-capita expenditure quintiles, nominal United States Dollars*, comparison

Operation	N	DK/DTR	20th Percentile	40th Percentile	60th Percentile	80th Percentile
3rd Operation	535	14	52	68	86	118

*Not adjusted for inflation.

Table D.5: Average household expenditures for the last month in current United States Dollars (USD) (MI6090/6100), comparison

Description	3rd Operation		
	N	mean	CI
Average out-of-pocket household health expenditure for the last month (MI6090)	584	1.2	(0.4-2)
Average household itemized expenditure for the last month (MI6100)	586	295.2	(271.9-318.5)

Table D.6: Catastrophic health expenditure as percentage of itemized household expenditure (MI6110), comparison

Description	3rd Operation		
	N	%	CI
Catastrophic health expenditure - 10% of itemized household expenditure (MI6110)	586	1.7	(0.9-3.3)
Catastrophic health expenditure - 25% of itemized household expenditure (MI6110)	586	0.7	(0.2-1.9)
Catastrophic health expenditure - 40% of itemized household expenditure (MI6110)	586	0.5	(0.1-1.9)

D.1.2 Women's health

Figure D.4: Age of respondents among women of reproductive age, unweighted, comparison

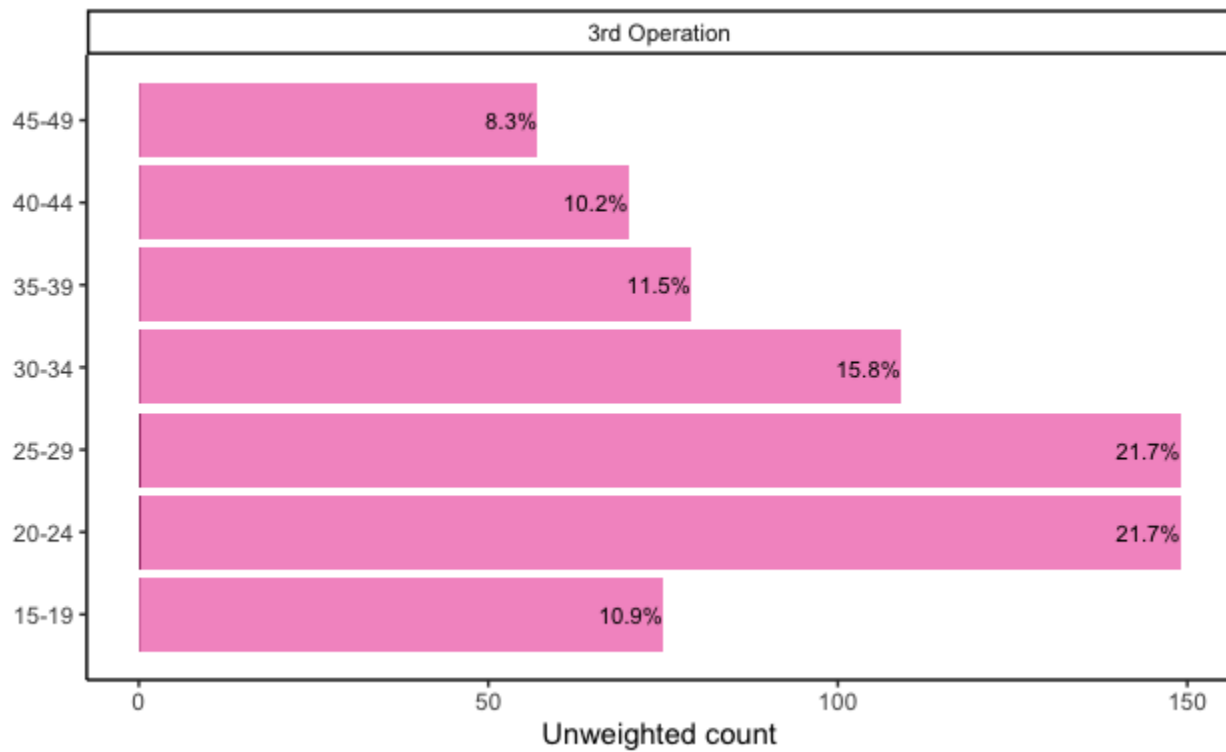


Table D.7: Demographic characteristics of respondents, unweighted, comparison

	3rd Operation	
	n	%
Marital status		
Never married	204	29.7
Married	164	23.8
Civil union/partnered	245	35.6
Divorced	4	0.6
Separated	36	5.2
Widowed	4	0.6
Other	29	4.2
Don't know	0	0
Decline to respond	2	0.3
Respondent's relationship to head of household		
Head of household	199	28.9
Spouse	125	18.2
Partner	192	27.9
Biological child	136	19.8

	3rd Operation	
	n	%
Adopted or stepchild	1	0.1
Grandchild	12	1.7
Niece	1	0.1
Mother	2	0.3
Sister	4	0.6
Daughter-in-law	7	1
Sister-in-law	1	0.1
Grandmother	1	0.1
Mother-in-law	0	0
Other relative	1	0.1
Unrelated person	4	0.6
Not registered*	2	0.3
Other	0	0
Don't know	0	0
Decline to respond	0	0

*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.8: Education attainment and literacy, comparison

	3rd Operation		
	n	%	CI
Never attended school	52	6.8	(3.3 - 10.2)
Attended school	636	93.2	(89.8 - 96.7)
Attended literacy course	0	0	-
Don't know	0	0	-
Decline to respond	0	0	-

Table D.9: Educational attainment and literacy, detailed, comparison

	3rd Operation		
	n	%	CI
Educational attainment and literacy			
Primary	153	26	(19.6 - 32.4)
Secondary or baccalaureate	452	68.2	(61.9 - 74.5)
University	31	5.8	(2.7 - 8.9)
Literacy course	0	0	-
Don't know	0	0	-
Decline to respond	0	0	-
Literacy			
Cannot read at all	15	2.3	(1 - 3.6)

		3rd Operation		
		n	%	CI
Can read parts		40	5.9	(4 - 7.9)
Can read entire sentence		633	91.8	(89.5 - 94.1)
Visually impaired		0	0	-
Don't know		0	0	-
Decline to respond		0	0	-

Table D.10: Employment, comparison

		3rd Operation		
		n	%	CI
Employment status				
Homemaker		459	58.4	(52.1 - 64.8)
Employed/paid for work		171	29.3	(23.4 - 35.2)
Student		55	11.7	(8.2 - 15.2)
Employed, but did not work in last week		2	0.5	(0 - 1.1)
Retired		0	0	-
Unable to work due to disability		1	0.1	(0 - 0.2)
Don't know		0	0	-
Decline to respond		0	0	-
Occupational role, among women employed and being paid for work				
Employee		132	77.3	(69 - 85.7)
Employer		0	0	-
Proprietor		8	3.9	(1.1 - 6.7)
Independent contractor		31	18.8	(10.4 - 27.1)
Apprentice/worker without pay		0	0	-
Don't know		0	0	-
Decline to respond		0	0	-

Table D.11: Current use of modern contraceptive methods, women 15-49 years of age who are married or partnered and in need of contraception (MI2010/MI2030), comparison

		3rd Operation		
Description	N	%	CI	
Women currently in need of contraception	409	88.1	(82.1-92.3)	
Women using any contraception, among all women	409	79	(73.4-83.7)	
Women using any contraception, among those in need	377	88.5	(83.9-91.9)	
Women (age 15-49) who are using a method of modern contraception (MI2010)	377	86.2	(80-90.7)	
Women (age 15-49) who report having stopped using a method of contraception during the previous year (MI2030)	186	0.5	(0.1-3.1)	

Table D.12: Proximity to nearest health facility (percentiles) (MI6080/MI6085), comparison

Operation	N	DK/DTR	Minimum	25th Percentile	Median	75th Percentile	Maximum	Mean	CI
Distance, km									
3rd Operation	291	397	0	0.1	1	2	30	2.8	(1.4 - 4.2)
Travel time, min									
3rd Operation	641	2	1	10	20	45	1,500	35.1	(21.9 - 48.3)

Table D.13: Recent illness, last two weeks (MI6010/6020), comparison

Description	3rd Operation		
	N	%	CI
Women 15-49 who report having any illness in the past two weeks (MI6010)	687	5.1	(2.4-10.2)
Women (age 15-49) who report having any illness in the past two weeks but did not seek health care (MI6020)	28	70	(39.2-89.5)

Table D.14: Use of health services, last two weeks (MI6050), comparison

Description	3rd Operation		
	N	%	CI
Women (age 15-49) who used health care services in the last two weeks (MI6050)	685	3.5	(2.2-5.7)

Table D.15: Satisfaction with health care services during most recent visit to a health care facility (MI6130, MI6140, MI6150, MI6160), comparison

Description	3rd Operation		
	N	%	CI
Women who reported satisfaction with health care services at their most recent visit to a health facility (MI6130)	178	86.2	(74.8-92.9)
Women who reported satisfaction with cleanliness of the facility at their most recent visit to a health facility (MI6140)	177	50.7	(40.4-61)
Women who reported satisfaction with competence of the medical personnel at their most recent visit to a health facility (MI6150)	178	95.3	(86.1-98.5)
Women who reported they were treated with respect at their most recent visit to a health facility (MI6160)	178	64	(53.4-73.4)

Table D.16: Average wait time in minutes at most recent visit to a health facility (MI6120), comparison

Description	3rd Operation		
	N	mean	CI
Average wait time at most recent visit to a health facility (MI6120)	177	110.4	(89-131.9)

Table D.17: Women in the household surveys with a live birth in the past year (MI1080/MI1090), comparison

Description	3rd Operation		
	N	%	CI
Women aged 15-49 with a live birth in the last year (MI1080)	688	5.8	(4.8-6.9)
Women aged 15-19 with a live birth in the last year (MI1090)	75	3.8	(1.8-7.9)

Table D.18: Proportion of women who can recognize at least 5 danger signs in newborns (MI4110), comparison

Description	3rd Operation		
	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)	138	0.6	(0.1-4.7)

D.1.3 Obstetric care

Table D.19: Antenatal care coverage for most recent birth in the last two years, women 15-49 years of age (MI3010, MI3020, MI3040), comparison

Description	3rd Operation		
	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)	226	90.4	(81.9-95.2)
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 according to best practices (MI3020)	226	80.2	(71.6-86.7)
Women (age 15-49) who received their first prenatal check with skilled personnel by 12 weeks gestation for their most recent birth in the last two years (MI3040)	225	61.7	(53.5-69.3)

Table D.20: 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
3rd Operation	217	4	1	40	60	87	240	66.4	(54 - 78.9)

Table D.21: In-facility delivery with skilled birth attendant: most recent birth in the last two years, women 15-49 years of age (MI4010/MI4015), comparison

Description	3rd Operation		
	N	%	CI
Women (age 15-49) delivered in a facility with skilled attendant in their most recent pregnancy in the last two years (MI4010)	226	95.8	(92-97.8)
Women (age 15-49) who delivered in a facility for their most recent birth in the last two years (MI4015)	226	97.8	(94.5-99.2)

Table D.22: Early initiation of breastfeeding for most recent birth in the past two years, women 15-49 years of age (MI5050), comparison

Description	3rd Operation		
	N	%	CI
Children born in the last two years who were breastfed within one hour after birth (MI5050)	220	87.2	(81-91.6)

Table D.23: Postpartum checkup for mother for most recent birth in the past two years, women 15-49 years of age (MI4020, MI4030, MI4031, MI4035, MI4040), comparison

Description	3rd Operation		
	N	%	CI
Women (age 15-49) who received postpartum care by skilled personnel within the first 48 hours in their most recent pregnancy in the last two years (MI4020)	226	0.3	(0-2.5)
Women (age 15-49) who received postpartum care by skilled personnel within the first 7 days in their most recent pregnancy in the last two years (MI4030)	226	3.8	(1.2-11.1)
Women (age 15-49) who received postpartum care one week (up to 8 days) after delivery in their most recent pregnancy in the last two years (MI4031)*	226	52.5	(42.8-62)
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)	226	16.7	(10.2-26.2)
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)	226	0	(-)

*At baseline, women were asked one question regarding postpartum checkup one week after delivery; at the second follow-up, women were asked to report on every postpartum checkup they received in the first six weeks after delivery. The indicator calculation at second follow-up incorporated responses from these additional questions for compliance of postpartum check.

Table D.24: Postnatal checkup for neonate for woman's most recent birth in the past two years, women 15-49 years of age (MI4100, MI4101, MI4102), comparison

Description	3rd Operation		
	N	%	CI
Infant received postnatal care by skilled personnel in a health facility within 24 hours (MI4101)	209	9	(4.2-18.3)
Infant received postnatal care by skilled personnel in a health facility within 48 hours (MI4100)	209	15.2	(8.7-25.2)
Infant received postnatal care by skilled personnel in a health facility within 7 days (MI4102)	209	26.1	(16-39.6)

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, third operation survey unweighted, comparison

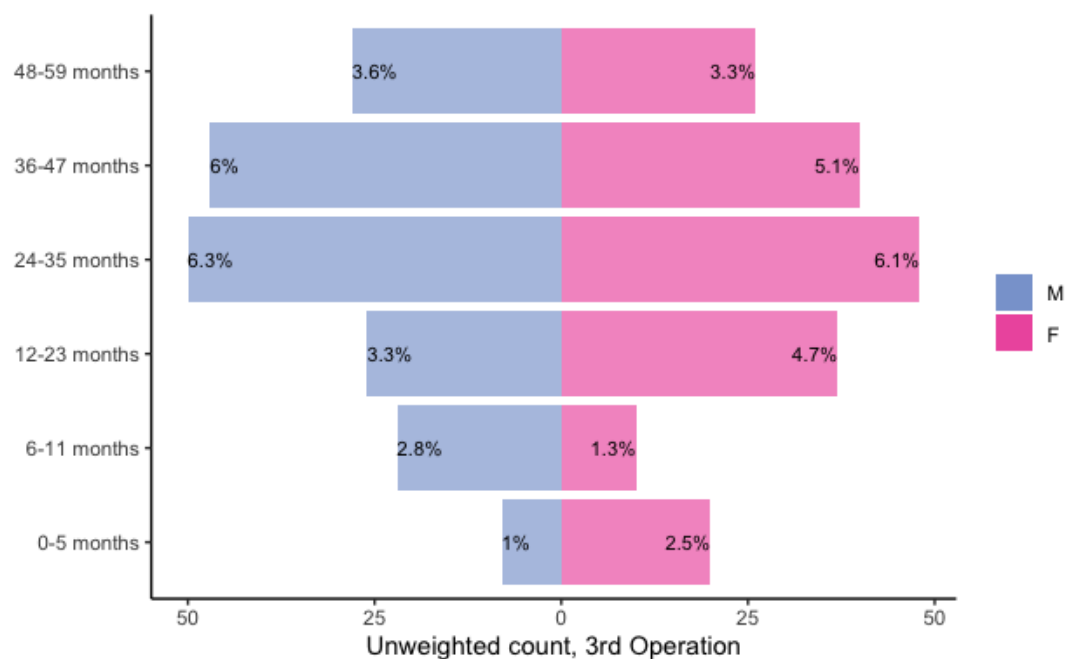


Table D.25: Recent illness, among children aged 0-59 months (MI6030, MI6040, MI6070), comparison

Description	3rd Operation		
	N	%	CI
Children (0-59 months) who had any illness in the past two weeks, according to report of mother or caregiver (MI6030)	428	8.4	(4.3-15.8)
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)	26	43.9	(29.8-59)
Children (0-59 months) who used health care services in the last two weeks (MI6070)	426	7	(3.4-14)

Table D.26: Utilization of antibiotics for suspected acute respiratory infection (MI4145), comparison

Description	3rd Operation		
	N	%	CI
Children (0-59 months) with pneumonia symptoms who received antibiotics (MI4145)	3	0	(-)

Table D.27: Diarrhea treatment with ORS and zinc (I5060), comparison

Description	3rd Operation		
	N	%	CI
ORS administered	4	100	(-)
Zinc administered	4	58.2	(15.2-91.5)
ORS and zinc administered to standard (I5060)	4	58.2	(15.2-91.5)

Table D.28: Immunization against common childhood illnesses, children aged 0-59 months, according to vaccination card or caregiver recall (MI5020), comparison

Description	3rd Operation		
	N	%	CI
BCG	415	96.1	(92.1-98.1)
Hepatitis B	415	90.8	(85.8-94.2)
Pentavalent	415	73.1	(66.5-78.9)
Rotavirus	415	80.6	(74.3-85.6)
Pneumococcal	415	75.6	(68.3-81.7)
MMR	415	89	(83.9-92.6)
Children (0-59 months) fully vaccinated for age, according to vaccine card and recall (MI5020)	415	58.1	(47.6-68)

Table D.29: Children 12-23 months of age who received MMR vaccine according to vaccine card (MI5025), comparison

Description	3rd Operation		
	N	%	CI
Children (12-23 months) who were vaccinated against measles, mumps, and rubella (MMR), according to card (MI5025)	58	90.7	(79.1-96.2)

Table D.30: Deworming treatment among children aged 12-59 months (MI5030), comparison

Description	3rd Operation		
	N	%	CI
Children (12-59 months) who received two doses of deworming medication in the last year	340	13.3	(8.4-20.3)

Table D.31: Exclusive and continued breastfeeding (MI5040/MI5080), comparison

Description	3rd Operation		
	N	%	CI
Children 0-5 months who were exclusively breastfed on the previous day (MI5040)	44	67.2	(50-80.8)
Children 12-15 months who were breastfed on the previous day (MI5080)	27	67.9	(46.8-83.6)

Table D.32: Acceptable diet among children 6-23 months (MI5090, MI5100, MI5110, MI5120, MI5130), comparison

Description	3rd Operation		
	N	%	CI
Children 6-8 months who received solid or semi-solid food on the previous day (MI5090)	17	64.8	(38.9-84.1)
Children 6-23 months who received foods from 4 or more food groups during the previous day (MI5100)	108	52.7	(39.2-65.9)
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)	107	56.7	(38.9-72.9)
Children 6-23 months who received the minimum acceptable diet (apart from breastmilk) during the previous day (MI5120)	108	42.3	(28-58.1)
Children 6-23 months who received iron-rich or iron-fortified foods during the previous day (MI5130)	108	52.8	(43.3-62.1)

Table D.33: Prevalence of stunting in children aged 0-59 months (MI1070), comparison

Description	3rd Operation		
	N	%	CI
Children 0-5 months with height <-2 SD of the mean of the reference population	28	2.9	(0.4-18.3)
Children 6-23 months with height <-2 SD of the mean of the reference population	95	19.1	(10.8-31.8)
Children 24-59 months with height <-2 SD of the mean of the reference population	239	10.5	(6.9-15.8)
Children 0-59 months with height <-2 SD of the mean of the reference population for age (MI1070)	363	12.3	(9.2-16.3)

Table D.34: Prevalence of anemia, children aged 0-59 months (I1060/MI1050), comparison

Description	3rd Operation		
	N	%	CI
Children 0-5mo with hemoglobin <110g/L	17	6.6	(0.9-35.1)
Children 6-23mo with hemoglobin <110g/L (I1060)	81	8.8	(3.7-19.2)
Children 24-41mo with hemoglobin <110g/L	138	13.7	(7.6-23.4)
Children 42-59mo with hemoglobin <110g/L	97	9.3	(3.7-21.4)
Children 0-59mo with hemoglobin <110g/L (MI1050)	331	10.9	(6.2-18.4)
Children 6-59mo with hemoglobin <110g/L	316	11.1	(6.4-18.5)

D.1.5 Indicator matrices

Table D.35: Household performance indicators, comparison

Indicator	Description	Time Period	N	%	CI
I1060	Children (6-23mo) with hemoglobin <110g/L	3rd Operation	81	8.8	(3.7 - 19.2)
I5060	Diarrhea treatment with ORS and zinc (6-59mo)	3rd Operation	4	58.2	(15.2 - 91.5)

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

Indicator	Description	Time Period	N	%	CI
MI1050	Children (0-59mo) with hemoglobin <110g/L	3rd Operation	331	10.9	(6.2 - 18.4)
MI1070	Children (0-59mo) with height <-2SD of mean of reference population	3rd Operation	363	12.3	(9.2 - 16.3)
MI1080	Women (15-49 years) with a live birth in the last year	3rd Operation	688	5.8	(4.8 - 6.9)
MI1090	Women (15-19 years) with a live birth in the last year	3rd Operation	75	3.8	(1.8 - 7.9)

Indicator	Description	Time Period	N	%	CI
MI2010	Women using modern methods of contraception	3rd Operation	377	86.2	(80 - 90.7)
MI2020	Women in need of but not using contraception	3rd Operation	377	13.8	(9.3 - 20)
MI2030	Interruption in contraception use	3rd Operation	186	0.5	(0.1 - 3.1)
MI3010	Skilled antenatal care (1 visit)	3rd Operation	226	90.4	(81.9 - 95.2)
MI3020	Skilled antenatal care (4 visits)	3rd Operation	226	80.2	(71.6 - 86.7)
MI3040	Skilled antenatal care before 12 weeks gestation	3rd Operation	225	61.7	(53.5 - 69.3)
MI4015	Institutional delivery	3rd Operation	226	97.8	(94.5 - 99.2)
MI4010	Institutional delivery with skilled attendant	3rd Operation	226	95.8	(92 - 97.8)
MI4020	Skilled postpartum care (48 hours)	3rd Operation	226	0.3	(0 - 2.5)
MI4030	Skilled postpartum care (7 days)	3rd Operation	226	3.8	(1.2 - 11.1)
MI4031	Postpartum care (7 days)	3rd Operation	226	52.5	(42.8 - 62)
MI4035	Skilled postpartum care (7-42 days)	3rd Operation	226	16.7	(10.2 - 26.2)
MI4040	Skilled postpartum care (3 visits)	3rd Operation	226	0	(-)
MI4101	Skilled neonatal care (24 hours)	3rd Operation	209	9	(4.2 - 18.3)
MI4100	Skilled neonatal care (48 hours)	3rd Operation	209	15.2	(8.7 - 25.2)
MI4102	Skilled neonatal care (7 days)	3rd Operation	209	26.1	(16 - 39.6)
MI4110	Recognition of 5 danger signs in newborns	3rd Operation	138	0.6	(0.1 - 4.7)
MI4145	Antibiotic use for children with pneumonia symptoms	3rd Operation	3	0	(-)
MI5020	Complete vaccination for age	3rd Operation	415	58.1	(47.6 - 68)
MI5025	Children (12-24mo) with MMR vaccine	3rd Operation	58	90.7	(79.1 - 96.2)
MI5030	Children (0-59mo) with 2 doses of deworming	3rd Operation	340	13.3	(8.4 - 20.3)

Indicator	Description	Time Period	N	%	CI
MI5040	Exclusive breastfeeding (0-5mo)	3rd Operation	44	67.2	(50 - 80.8)
MI5050	Early initiation of breastfeeding	3rd Operation	220	87.2	(81 - 91.6)
MI5080	Continued breastfeeding (12-15mo)	3rd Operation	27	67.9	(46.8 - 83.6)
MI5090	Consumption of solid food (6-8mo)	3rd Operation	17	64.8	(38.9 - 84.1)
MI5100	Dietary diversity (6-23mo)	3rd Operation	108	52.7	(39.2 - 65.9)
MI5110	Minimum meal frequency (6-23mo)	3rd Operation	107	56.7	(38.9 - 72.9)
MI5120	Minimum acceptable diet (6-23mo)	3rd Operation	108	42.3	(28 - 58.1)
MI5130	Consumption of iron-rich foods (6-23mo)	3rd Operation	108	52.8	(43.3 - 62.1)
MI6010	Women with recent illness	3rd Operation	687	5.1	(2.4 - 10.2)
MI6020	Women with recent illness who did not seek care	3rd Operation	28	70	(39.2 - 89.5)
MI6030	Children with recent illness	3rd Operation	428	8.4	(4.3 - 15.8)
MI6040	Children with recent illness who did not seek care	3rd Operation	26	43.9	(29.8 - 59)
MI6050	Women with recent visit to a health facility	3rd Operation	685	3.5	(2.2 - 5.7)
MI6070	Children with recent visit to a health facility	3rd Operation	426	7	(3.4 - 14)
MI6110	Catastrophic health expenditure (10%)	3rd Operation	586	1.7	(0.9 - 3.3)
MI6110	Catastrophic health expenditure (25%)	3rd Operation	586	0.7	(0.2 - 1.9)
MI6110	Catastrophic health expenditure (40%)	3rd Operation	586	0.5	(0.1 - 1.9)
MI6130	Satisfaction with health care, most recent visit	3rd Operation	178	86.2	(74.8 - 92.9)
MI6140	Satisfaction with cleanliness of facility, most recent visit	3rd Operation	177	50.7	(40.4 - 61)
MI6150	Satisfaction with competence of	3rd Operation	178	95.3	(86.1 - 98.5)

Indicator	Description	Time Period	N	%	CI
	personnel, most recent visit				
MI6160	Women reporting being treated with respect, most recent visit	3rd Operation	178	64	(53.4 - 73.4)

Table D.37: Household mean-based monitoring indicators, comparison

Indicator	Description	Time Period	N	Mean	CI
MI6080	Average travel time to nearest health facility (min)	3rd Operation	641	35.1	(21.9 - 48.3)
MI6082	Average travel time to delivery location (min)	3rd Operation	217	66.4	(54 - 78.9)
MI6085	Average distance to nearest health facility (km)	3rd Operation	291	2.8	(1.4 - 4.2)
MI6090	Average out-of-pocket itemized health expenditure (USD)	3rd Operation	584	1.2	(0.4 - 2)
MI6100	Average household itemized expenditure (USD)	3rd Operation	586	295.2	(271.9 - 318.5)
MI6120	Average wait time at most recent visit to health facility (min)	3rd Operation	177	110.4	(89 - 131.9)

D.2 Comparison area health facility survey results

D.2.1 Summary of health facilities and medical record extraction

Table D.38: Health facility classification, comparison areas

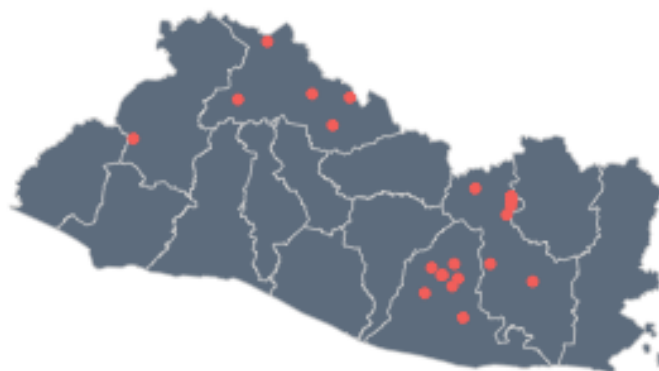
EONC	3rd Operation
Ambulatory	14
Complete	8
Total	22

Table D.39: Count of facilities by department and municipality, comparison areas

Department	Municipality	3rd Operation
Chalatenango	Chalatenango	1
Chalatenango	Dulce Nombre De María	1
Chalatenango	Nueva Concepción	1
Chalatenango	Ojos De Agua	1
Chalatenango	San Ignacio	1

Department	Municipality	3rd Operation
San Miguel	Ciudad Barrios	5
San Miguel	Nueva Guadalupe	1
San Miguel	San Gerardo	1
San Miguel	San Miguel	1
Santa Ana	Chalchuapa	1
Usulután	Alegría	1
Usulután	Berlín	3
Usulután	San Agustín	1
Usulután	Santiago de María	1
Usulután	Tecapán	1
Usulután	Usulután	1
Total		22

Figure D.6: Map of health facilities in third operation comparison areas



• Health facility

Table D.40: Medical Record Review sample size, comparison areas

MRR Type	3rd Operation, Pre-Evaluation	3rd Operation, Evaluation
Antenatal care	59	126
Cervical cancer screening	0	168
Child follow-up	50	98
Diarrhea	60	108
Immediate postpartum care	80	160
Neonatal complications	81	151
Obstetric complications	80	153
Uncomplicated delivery	80	160
Total	490	1,124

D.2.2 Child health and vaccination

Table D.41: Cold chain (MI7000), comparison, ambulatory and complete facilities

Description	3rd Operation		
	N	%	CI
Temperature monitoring chart for each functional refrigerator	22	90.9	(67.3-98)
Temperature recorded twice daily during past 30 days	22	86.4	(62.8-96)
Temperature within appropriate range (2-8°C) at each recording*	22	90.9	(67.3-98)
Cold chain according to standard (MI7000)	22	86.4	(62.8-96)

If temperature is outside 2-8 degree range, the record passes the indicator if a record of action is recorded on the chart.

Table D.42: Child care services (MI7010), comparison, ambulatory facilities

Description	3rd Operation		
	N	%	CI
All equipment observed and functional	14	50	(23.2-76.8)
Pediatric scale	14	50	(23.2-76.8)
Child scale	14	78.6	(46-94)
Height rod	14	85.7	(52-97.1)
Stethoscope	14	100	(-)
Thermometer	14	100	(-)
All vaccines observed day of survey (among facilities that store vaccines)	13	30.8	(10.2-63.5)
Pentavalent (DPT + HepB + Hib)	13	100	(-)
Polio	13	100	(-)
Measles, mumps, rubella	13	100	(-)
Rotavirus	13	100	(-)
Pneumococcal conjugate	13	100	(-)
BCG	13	30.8	(10.2-63.5)
Influenza	13	92.3	(53.1-99.2)
All vaccines continuously available in past 3 months	13	30.8	(10.2-63.5)
Child health care provision according to standard (MI7010)	14	28.6	(9.6-60.1)

Drug requirements omitted from ambulatory facility calculation due to recategorization of facility types.

Three-month vaccine stock only evaluated for MMR and BCG at first operation.

Polio data missing for one facility at first operation.

Table D.43: Child care services (MI7010), comparison, complete facilities

Description	3rd Operation		
	N	%	CI
All equipment observed and functional	8	50	(14.3-85.7)
Pediatric scale	8	62.5	(20.8-91.3)
Child scale	8	87.5	(31.9-99.1)
Height rod	8	87.5	(31.9-99.1)
Pediatric stethoscope	8	75	(27.6-95.9)
Pediatric blood pressure device	7	71.4	(21.5-95.8)
All drugs observed day of survey	8	100	(-)
Oral rehydration medication	8	100	(-)
Ferrous sulfate / micronutrients	8	100	(-)
Penicillin crystals / ampicillin IV / amoxicillin	8	100	(-)

	3rd Operation		
Ringers lactate / Hartman's / saline solution	8	100	(-)
All drugs continuously available in past 3 months	8	62.5	(20.8-91.3)
All vaccines observed day of survey (among facilities that store vaccines)	7	14.3	(1-74.3)
Pentavalent (DPT + HepB + Hib)	7	14.3	(1-74.3)
Polio	7	14.3	(1-74.3)
Measles, mumps, rubella	7	28.6	(4.2-78.5)
Rotavirus	7	28.6	(4.2-78.5)
Pneumococcal conjugate	7	42.9	(9.1-85)
BCG	7	100	(-)
Influenza	7	42.9	(9.1-85)
All vaccines continuously available in past 3 months	7	14.3	(1-74.3)
Child health care provision according to standard, evaluating drug availability only on the day of the survey (MI7010)	8	25	(4.1-72.4)
Child health care provision according to standard, including three month drug availability	8	12.5	(0.9-68.1)

Ringers lactate / Hartman's / saline solution not captured at first operation.

Three-month drug stock data not captured at first operation.

Three-month vaccine stock only evaluated for MMR and BCG at first operation.

Albendazol / mebendazol requirement omitted due to lack of available data across rounds.

Table D.44: Children 0-5 diagnosed with diarrhea treated (MI4130), comparison, ambulatory facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
All of the following symptoms evaluated	60	41.7	(29.6-54.8)	108	37	(28.3-46.7)
General condition	60	85	(73.2-92.2)	108	85.2	(77-90.8)
Eyes	60	85	(73.2-92.2)	108	79.6	(70.8-86.3)
Thirst	60	51.7	(38.8-64.3)	108	54.6	(45-63.9)
Skin	60	45	(32.6-58)	108	42.6	(33.5-52.2)
All of the following checks performed	60	36.7	(25.2-49.9)	108	28.7	(20.9-38.1)
Pulse / heart rate	60	90	(79.1-95.5)	108	79.6	(70.8-86.3)
Capillary fill	60	40	(28.1-53.2)	108	32.4	(24.1-41.9)
Treated appropriately (ORS / IV)	60	91.7	(81.1-96.6)	108	95.4	(89.2-98.1)
Diarrhea treated according to SMI standard (MI4130)	60	15	(7.8-26.8)	108	13.9	(8.5-21.9)

D.2.3 Women's health

Table D.45: Preconception care (I3000), comparison, ambulatory facilities

Description	3rd Operation		
	N	%	CI
At least one preconception care visit	29	0	(-)
Height checked at least once	0		
Weight checked at least once	0		
Blood pressure checked at least once	0		
Folic acid at least once	0		
Blood group	0		

	3rd Operation		
Rh factor	0		
HIV test	0		
Management of HIV, if applicable	0		
Syphilis test	0		
Management of syphilis, if applicable	0		
Management of biological risk factors, if applicable	0		
Management of social risk factors, if applicable	0		
At least one preconception care visit to standard (I3000)	29	0	(-)

Table D.46: At least four antenatal care (ANC) visits to standard (I3030), comparison, Unidad de Salud Básica and Unidad de Salud Intermedia ambulatory facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
First ANC visit before 13 weeks gestation	34	82.4	(64.8-92.2)	80	66.2	(55-75.9)
At least four ANC visits	34	64.7	(46.6-79.4)	80	60	(48.7-70.3)
All appropriate checks performed, at least four ANC visits	34	50	(33-67)	80	41.3	(30.8-52.5)
All lab tests performed at least once during pregnancy:	34	73.5	(55.5-86.1)	80	40	(29.7-51.3)
Blood group	34	97.1	(80.2-99.6)	80	81.2	(70.9-88.5)
Rh factor	34	97.1	(80.2-99.6)	80	78.7	(68.2-86.5)
Blood glucose	34	100	(-)	80	82.5	(72.3-89.5)
HIV test	34	94.1	(78-98.6)	80	82.5	(72.3-89.5)
Syphilis test (VDRL / RPR*)	34	85.3	(68.1-94)	80	76.2	(65.5-84.5)
Hemoglobin	34	82.4	(64.8-92.2)	80	45	(34.3-56.2)
Urinalysis	34	91.2	(74.8-97.3)	80	83.7	(73.7-90.4)
Tetanus vaccine	34	85.3	(68.1-94)	80	77.5	(66.8-85.5)
Appropriate management of risk factors:	11	63.6	(28.8-88.3)	16	75	(45.7-91.4)
HIV: specialist consultation	0			0		
Syphilis: specialist consultation	0			0		
RH factor negative: specialist consultation	2	0	(-)	0		
Hypertension: specialist consultation	0			2	0	(-)
Gestational diabetes: specialist consultation	0			0		
Urinary infection: antibiotics	9	77.8	(33-96.1)	14	85.7	(52-97.1)
Antenatal care performed according to standard (I3030)	34	38.2	(23-56.2)	80	12.5	(6.8-21.9)

Table D.47: Pre/postnatal care services (M17020), comparison, ambulatory facilities

Description	3rd Operation		
	N	%	CI
All equipment observed and functional	14	0	(-)
Scale	14	57.1	(28.4-81.7)
Height rod	14	50	(23.2-76.8)
Gynecological table	14	7.1	(0.7-44.1)
Obstetric tape	14	71.4	(39.9-90.4)
Lamp	14	50	(23.2-76.8)
Blood pressure apparatus	14	14.3	(2.9-48)

	3rd Operation		
Stethoscope	14	35.7	(13.7-66)
Perinatal history card	14	71.4	(39.9-90.4)
Perinatal license	14	50	(23.2-76.8)
IUD insertion kit (if doctor on staff)	14	28.6	(9.6-60.1)
All drugs observed day of survey	14	64.3	(34-86.3)
Multivitamins / (folic acid + iron)	14	85.7	(52-97.1)
Ayre palettes	14	92.9	(55.9-99.3)
Microscope slides	14	100	(-)
Nitrofurantoin	14	78.6	(46-94)
Tetanus vaccine (among facilities that store vaccines)	13	100	(-)
All drugs in continuous supply in past three months	14	57.1	(28.4-81.7)
ANC/PPC provision according to standard, evaluating drug availability only on the day of the survey	14	0	(-)
ANC/PPC provision according to standard, including three month drug availability (MI7020)	14	0	(-)

Tetanus vaccine data not captured at first operation.

Erythromycin / Ampicillin / Penicillin benzathaine drug requirement omitted due to facility-type recategorization.

Table D.48: Pre/postnatal care services (MI7020), comparison, complete facilities

Description	3rd Operation		
	N	%	CI
All equipment observed and functional	8	12.5	(0.9-68.1)
Scale	8	50	(14.3-85.7)
Height rod	8	87.5	(31.9-99.1)
Gynecological table	8	37.5	(8.7-79.2)
Obstetric tape	8	62.5	(20.8-91.3)
Lamp	8	62.5	(20.8-91.3)
Blood pressure apparatus	8	25	(4.1-72.4)
Stethoscope	8	75	(27.6-95.9)
Perinatal history card	8	100	(-)
Perinatal license	8	100	(-)
IUD insertion kit	8	37.5	(8.7-79.2)
All drugs observed day of survey	8	0	(-)
Multivitamins / (folic acid + iron)	8	100	(-)
Ayre palettes	8	12.5	(0.9-68.1)
Microscope slides	8	0	(-)
Nitrofurantoin	8	100	(-)
Tetanus vaccine	7	85.7	(25.7-99)
Cefalexin	8	0	(-)
All drugs in continuous supply in past three months	8	0	(-)
All lab inputs observed	8	0	(-)
Dark field microscope	8	0	(-)
Enzyme immunoassay	8	25	(4.1-72.4)
Fluorescent microscope	8	12.5	(0.9-68.1)
Urinalysis equipment	8	50	(14.3-85.7)
Glocometer	8	12.5	(0.9-68.1)
Automated blood cell counter	8	62.5	(20.8-91.3)
Blood type antibody	8	100	(-)

	3rd Operation		
Rh factor	8	87.5	(31.9-99.1)
Syphilis & HIV reactives (if immunoassay observed)	2	100	(-)
ANC/PPC provision according to standard, evaluating drug availability only on the day of the survey	8	0	(-)
ANC/PPC provision according to standard, including three month drug availability (MI7020)	8	0	(-)

Tetanus vaccine data not captured at first operation.

Table D.49: Cervical cancer screening with quality (I6005), comparison, ambulatory facilities

	3rd Operation: Evaluation		
Description	N	%	CI
Negative HPV result in past 5 years	132	6.1	(3-11.7)
Evidence of any CACX screening in past 2 years?	132	86.4	(79.3-91.3)
Positive CACX screening result in past 2 years	114	0	(-)
Evidence of result delivery within 8 weeks	0		
Referral	0		
Doctor's signature included if tests conducted elsewhere	3	66.7	(0.3-99.9)
Cervical cancer screening to standard (I6005)	132	86.4	(79.3-91.3)

Table D.50: Contraceptive services (MI7050), comparison, ambulatory facilities

	3rd Operation		
Description	N	%	CI
Male condom	14	92.9	(55.9-99.3)
Any oral pill	14	57.1	(28.4-81.7)
Any injectable	14	100	(-)
All methods continuously in stock in past three months	14	85.7	(52-97.1)
Contraceptive services according to SMI standard (MI7050)	14	50	(23.2-76.8)

Table D.51: Contraceptive services (MI7050), comparison, complete facilities

	3rd Operation		
Description	N	%	CI
Male condom	8	100	(-)
Any oral pill	8	75	(27.6-95.9)
Any injectable	8	100	(-)
Intrauterine device	8	100	(-)
IUD insertion kit	8	100	(-)
All methods continuously in stock in past three months	8	75	(27.6-95.9)
Doctor trained in tubal ligation and vasectomy	8	50	(14.3-85.7)
Contraceptive services according to SMI standard (MI7050)	8	25	(4.1-72.4)

D.2.4 Obstetric care

Table D.52: Active management of the third stage of labor (MI4090), comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Oxytocin / other uterotonic administered	71	100	(-)	149	100	(-)
Oxytocin / other uterotonic administered within 1 minute (MI4090)	71	69	(57.1-78.9)	149	75.2	(67.5-81.5)

Table D.53: Delivery services (MI7040), comparison, complete facilities

Description	3rd Operation		
	N	%	CI
All equipment observed and functional	8	62.5	(20.8-91.3)
Macro/microgotera serum	8	87.5	(31.9-99.1)
Sterile sheets/blankets for neonate	8	100	(-)
Nasogastric probe K33	8	75	(27.6-95.9)
Metal clamp / umbilical tape	8	100	(-)
Intravenous sterile catheter N.18	8	100	(-)
All drugs observed day of survey	8	0	(-)
Ergonovine maleate / Ergometrine	8	100	(-)
Povidone-iodine	8	0	(-)
Insulin syringe	8	25	(4.1-72.4)
Lidocaine	8	100	(-)
Butylscopolamine / Hyoscine bromide	8	100	(-)
Oxytocin	8	100	(-)
Ringer's / Hartmann's / saline solution	8	100	(-)
Ophthalmic chloramphenicol drops	8	62.5	(20.8-91.3)
Vitamin K	8	100	(-)
All drugs continuously available in past three months	8	100	(-)
Delivery care provision according to standard (MI7040)	8	0	(-)

Table D.54: 24/7 on-call availability of obstetric care staff (MI7190), comparison, complete facilities

Description	3rd Operation		
	N	%	CI
Internist	8	0	(-)
Obstetrician / gynecologist	8	25	(4.1-72.4)
Anesthesiologist	8	50	(14.3-85.7)
All of the above available on-call 24/7	8	0	(-)

Table D.55: Maternal postpartum care within two hours after birth (I4050), comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Blood pressure	80	71.2	(60.2-80.3)	160	78.1	(71-83.9)
Four times in first hour	80	73.7	(62.8-82.4)	160	78.7	(71.6-84.5)
Two times in second hour	80	85	(75.2-91.4)	160	86.2	(79.9-90.8)
Once at discharge	80	95	(87.2-98.2)	160	96.2	(91.8-98.3)
Respiratory rate	80	28.8	(19.7-39.8)	160	33.8	(26.8-41.5)
Four times in first hour	80	68.7	(57.6-78.1)	160	77.5	(70.3-83.4)

	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Two times in second hour	80	78.7	(68.2-86.5)	160	85	(78.5-89.8)
Once at discharge	80	52.5	(41.4-63.4)	160	46.3	(38.6-54.1)
Heart rate / pulse	80	63.7	(52.5-73.7)	160	73.1	(65.6-79.5)
Four times in first hour	80	83.7	(73.7-90.4)	160	86.2	(79.9-90.8)
Two times in second hour	80	85	(75.2-91.4)	160	86.2	(79.9-90.8)
Once at discharge	80	78.7	(68.2-86.5)	160	84.4	(77.8-89.3)
Blood abnormalities	80	47.5	(36.6-58.6)	160	28.8	(22.2-36.3)
Four times in first hour	80	71.2	(60.2-80.3)	160	77.5	(70.3-83.4)
Two times in second hour	80	85	(75.2-91.4)	160	86.2	(79.9-90.8)
Once at discharge	80	55	(43.8-65.7)	160	30.6	(23.9-38.3)
Temperature, once at discharge	80	88.7	(79.5-94.1)	160	83.1	(76.4-88.2)
Immediate maternal postpartum care with quality (I4050)	80	13.8	(7.7-23.4)	160	8.8	(5.2-14.3)

Table D.56: Postpartum contraception following an uncomplicated delivery (I2500), comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Progestin-only injectable*	47	12.8	(5.7-26.3)	79	10.1	(5.1-19.2)
Progestin-only oral contraceptive pill**	47	2.1	(0.3-14.5)	79	0	(-)
Implant***	47	4.3	(1-16.2)	79	17.7	(10.7-28)
IUD	47	4.3	(1-16.2)	79	5.1	(1.9-13)
Tubal ligation	47	10.6	(4.3-23.8)	79	15.2	(8.7-25.1)
Postpartum contraception administered (I2500)	47	34	(21.6-49.1)	79	48.1	(37.1-59.3)

Table D.57: Cesarean section prevalence (MI4120), comparison, complete facilities

Description	3rd Operation	
	N	%
Cesarean section prevalence (MI4120)	21672	32.8

Table D.58: Management of obstetric complications (I4080), comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Sepsis managed to standard	3	0	(-)	4	75	(4.1-99.5)
Hemorrhage managed to standard	27	29.6	(14.8-50.4)	63	23.8	(14.7-36.2)
Pre-eclampsia managed to standard	45	6.7	(2.1-19.4)	73	0	(-)
Eclampsia managed to standard	4	0	(-)	8	0	(-)
Management of obstetric complications	79	13.9	(7.8-23.7)	148	12.2	(7.8-18.6)

Table D.59: Management of obstetric complications (I4080), sepsis, comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Vital signs checked:	3	66.7	(0.3-99.9)	4	100	(-)
Pulse / heart rate	3	66.7	(0.3-99.9)	4	100	(-)
Blood pressure	3	100	(-)	4	100	(-)
Temperature	3	100	(-)	4	100	(-)
Lab tests (blood biometry):	3	66.7	(0.3-99.9)	4	100	(-)
Leukocyte count	3	66.7	(0.3-99.9)	4	100	(-)

	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Platelet count	3	100	(-)	4	100	(-)
Hemoglobin	3	100	(-)	4	100	(-)
Hematocrit	3	100	(-)	4	100	(-)
Antibiotics administered (double therapy)	3	66.7	(0.3-99.9)	4	100	(-)
Causes treated appropriately:	3	66.7	(0.3-99.9)	2	50	(0-100)
Septic abortion	1	100	(-)	0		
Uterine perforation	0			0		
Pelvic abscess	0			0		
Retained product	1	0	(-)	1	100	(-)
Postpartum endometritis	0			2	50	(0-100)
Puerperal fever	1	100	(-)	1	100	(-)
Neonatal sepsis managed to standard	3	0	(-)	4	75	(4.1-99.5)

Table D.60: Management of obstetric complications (I4080), hemorrhage, comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Vital signs checked:	27	100	(-)	63	85.7	(74.4-92.5)
Pulse / heart rate	27	100	(-)	63	93.7	(83.9-97.7)
Blood pressure	27	100	(-)	63	92.1	(81.9-96.7)
Ringer's lactate / Hartmann's / saline solution administered	27	96.3	(75.5-99.5)	63	84.1	(72.6-91.4)
Lab tests:	27	33.3	(17.5-54)	63	38.1	(26.7-50.9)
Hematocrit	27	85.2	(64.9-94.7)	63	88.9	(78.1-94.7)
Hemoglobin	27	85.2	(64.9-94.7)	63	96.8	(87.8-99.2)
Platelet count	27	81.5	(60.9-92.5)	63	95.2	(85.9-98.5)
Prothrombin time	27	40.7	(23.2-61)	63	42.9	(31-55.6)
Partial thromboplastin time	27	37	(20.3-57.5)	63	42.9	(31-55.6)
Causes treated appropriately:	24	79.2	(56.8-91.7)	57	71.9	(58.5-82.3)
Abortion	2	100	(-)	4	100	(-)
Ectopic pregnancy	0			0		
Placenta previa	5	60	(8.1-96.2)	14	50	(23.2-76.8)
Placental abruption	0			0		
Uterine rupture	0			4	75	(4.1-99.5)
Uterine atony	9	100	(-)	15	86.7	(54.6-97.2)
Uterine inversion	0			1	0	(-)
Retained placenta	2	0	(-)	4	100	(-)
Retained product	7	85.7	(25.7-99)	20	75	(49.7-90.1)
Hemorrhage managed to standard	27	29.6	(14.8-50.4)	63	23.8	(14.7-36.2)

Table D.61: Management of obstetric complications (I4080), pre-eclampsia, comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Vital signs checked	45	28.9	(17.2-44.3)	73	16.4	(9.5-27.1)
Pulse / heart rate	45	100	(-)	73	98.6	(90.5-99.8)
Blood pressure	45	97.8	(84.9-99.7)	73	94.5	(86-98)

	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Respiratory rate	45	93.3	(80.6-97.9)	73	91.8	(82.6-96.3)
Patellar reflex	45	28.9	(17.2-44.3)	73	16.4	(9.5-27.1)
Lab tests	45	11.1	(4.5-24.7)	73	0	(-)
Urine protein	45	31.1	(19-46.5)	73	9.6	(4.6-19.1)
Platelet count	45	77.8	(62.8-87.9)	73	75.3	(63.9-84.1)
Aspartate aminotransferase	45	13.3	(5.9-27.3)	73	0	(-)
Alanine transaminase	45	13.3	(5.9-27.3)	73	0	(-)
All appropriate medications administered	45	68.9	(53.5-81)	73	43.8	(32.7-55.6)
Ringer's lactate / Hartmann's / saline solution	45	88.9	(75.3-95.5)	73	78.1	(66.9-86.3)
Magnesium sulfate	45	91.1	(77.9-96.8)	73	91.8	(82.6-96.3)
Hydralazine / labetalol / nifedipine (if systolic BP >= 160 or diastolic BP >= 110)	16	81.2	(51.4-94.7)	46	54.3	(39.5-68.5)
Dexamethasone / betamethasone (if gestational age 24-35 weeks)	5	20	(0.8-88.9)	11	9.1	(0.9-53.7)
Pre-eclampsia managed to standard	45	6.7	(2.1-19.4)	73	0	(-)

Table D.62: Management of obstetric complications (I4080), eclampsia, comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Vital signs checked	4	0	(-)	8	12.5	(0.9-68.1)
Pulse / heart rate	4	100	(-)	8	100	(-)
Blood pressure	4	100	(-)	8	100	(-)
Respiratory rate	4	100	(-)	8	100	(-)
Patellar reflex	4	0	(-)	8	12.5	(0.9-68.1)
Lab tests	4	0	(-)	8	0	(-)
Urine protein	4	0	(-)	8	0	(-)
Platelet count	4	25	(0.5-95.9)	8	75	(27.6-95.9)
Aspartate aminotransferase	4	0	(-)	8	0	(-)
Alanine transaminase	4	0	(-)	8	0	(-)
All appropriate medications administered	4	50	(2.5-97.5)	8	25	(4.1-72.4)
Ringer's lactate / Hartmann's / saline solution	4	75	(4.1-99.5)	8	75	(27.6-95.9)
Magnesium sulfate	4	75	(4.1-99.5)	8	87.5	(31.9-99.1)
Hydralazine / labetalol / nifedipine (if systolic BP >= 160 or diastolic BP >= 110)	1	0	(-)	3	33.3	(0.1-99.7)
Dexamethasone / betamethasone (if gestational age 24-35 weeks)	0			3	0	(-)
Eclampsia managed according to SMI standard	4	0	(-)	8	0	(-)

Table D.63: Emergency care services (MI7030), comparison, complete facilities

Description	3rd Operation		
	N	%	CI
All emergency equipment observed and functional	8	12.5	(0.9-68.1)
Blood pressure apparatus	8	100	(-)
Neonatal / pediatric stethoscope	8	62.5	(20.8-91.3)
Pinard / doppler	8	100	(-)
Autoclave / heat sterilizer	8	100	(-)
Oxygen tank	8	100	(-)
Adult reanimation bag	8	100	(-)

	3rd Operation		
Neonatal reanimation bag	8	100	(-)
Laryngoscope	8	100	(-)
Manual vacuum aspiration	8	25	(4.1-72.4)
Anesthesia equipment	8	75	(27.6-95.9)
Cesarean kit	8	25	(4.1-72.4)
All drugs observed day of survey	8	25	(4.1-72.4)
Ergonovine maleate / ergometrine	8	100	(-)
Oxytocin	8	100	(-)
Dexamethasone / betamethasone	8	100	(-)
Crystal penicillin / ampicillin / amoxicillin	8	100	(-)
Magnesium sulfate	8	100	(-)
Amikacin	8	100	(-)
Ceftraxione	8	100	(-)
Chloramphenicol / metronidazole	8	100	(-)
Hydralazine / Hydrochloride	8	100	(-)
Nifedipine	8	100	(-)
Furosemide	8	87.5	(31.9-99.1)
Diazepam / Midazolam hydrochloride	8	100	(-)
Sevoflurane	8	87.5	(31.9-99.1)
Succinylcholine	8	37.5	(8.7-79.2)
All drugs continuously available in past three months	8	25	(4.1-72.4)
Emergency care provision according to standard, evaluating drug availability only on the day of the survey	8	12.5	(0.9-68.1)
Emergency care provision according to standard, including three month drug availability (MI7030)	8	12.5	(0.9-68.1)

D.2.5 Neonatal care

Table D.64: Management of neonatal complications (I4070), comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Sepsis managed to standard	32	12.5	(4.5-30.2)	42	4.8	(1.1-18)
Asphyxia managed to standard	7	100	(-)	8	75	(27.6-95.9)
Low birth weight managed to standard	28	75	(54.7-88.2)	85	68.2	(57.4-77.4)
Prematurity managed to standard	28	32.1	(16.9-52.5)	38	34.2	(20.5-51.2)
Management of neonatal complications (I4070)	81	38.3	(28.2-49.5)	149	45.6	(37.7-53.8)

Table D.65: Management of neonatal complications (I4070), sepsis, comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Vital signs checked	32	100	(-)	42	97.6	(83.8-99.7)
Pulse / heart rate	32	100	(-)	42	97.6	(83.8-99.7)
Respiratory rate	32	100	(-)	42	100	(-)
Temperature	32	100	(-)	42	100	(-)
Lab tests	32	12.5	(4.5-30.2)	42	4.8	(1.1-18)
Oxygen saturation	32	31.3	(17.1-50)	42	57.1	(41.3-71.6)
C-reactive protein	32	75	(56.3-87.5)	42	50	(34.7-65.3)
Platelets	32	100	(-)	42	90.5	(76.4-96.5)

	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Leukocytes	32	100	(-)	42	88.1	(73.6-95.1)
Hemoglobin	32	100	(-)	42	90.5	(76.4-96.5)
Hematocrit	32	100	(-)	42	85.7	(70.9-93.7)
Blood culture	32	53.1	(35.2-70.2)	42	19	(9.5-34.4)
Neutrophil band ratio / absolute ratio	32	56.2	(38.1-72.9)	42	33.3	(20.4-49.4)
Antibiotics administered (double therapy)	32	93.7	(76.8-98.6)	42	83.3	(68.2-92.1)
Sepsis managed to standard	32	12.5	(4.5-30.2)	42	4.8	(1.1-18)

Table D.66: Management of neonatal complications (I4070), asphyxia, comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Vital signs checked	7	100	(-)	8	87.5	(31.9-99.1)
Pulse / heart rate	7	100	(-)	8	87.5	(31.9-99.1)
Respiratory rate	7	100	(-)	8	87.5	(31.9-99.1)
APGAR score at one minute	7	100	(-)	8	100	(-)
APGAR score at five minutes	7	100	(-)	8	100	(-)
Oxygen saturation lab test (if APGAR <= 3 at five minutes)	7	57.1	(15-90.9)	8	62.5	(20.8-91.3)
Heat application	7	100	(-)	8	87.5	(31.9-99.1)
Oxygen application (if APGAR <= 3 at five minutes)	0			2	100	(-)
AMBU / positive pressure ventilation / endotracheal intubation / chest compressions (if APGAR <= 3 at five minutes)	0			2	100	(-)
Asphyxia managed to standard	7	100	(-)	8	75	(27.6-95.9)

Table D.67: Management of neonatal complications (I4070), low birth weight, comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Vital signs checked	28	89.3	(69.9-96.8)	85	87.1	(77.9-92.8)
Weight	28	100	(-)	85	98.8	(91.8-99.8)
Height / length	28	100	(-)	85	97.6	(90.8-99.4)
Pulse / heart rate	28	100	(-)	85	97.6	(90.8-99.4)
Respiratory rate	28	100	(-)	85	96.5	(89.4-98.9)
Head circumference	28	89.3	(69.9-96.8)	85	88.2	(79.3-93.6)
APGAR score (if in-facility)	28	96.4	(76.3-99.6)	80	95	(87.2-98.2)
Gestational age calculated using Capurro/Ballard	28	100	(-)	85	100	(-)
Weight classification (if in-facility)	28	92.9	(73.7-98.4)	80	98.7	(91.3-99.8)
Breastfed / given glucose	28	100	(-)	85	85.9	(76.5-91.9)
Appropriate management of any associated complications	11	90.9	(46.3-99.1)	26	88.5	(67.9-96.5)
Pneumonia: antibiotics	0			2	50	(0-100)
Diarrhea: liquids/ORS	0			0		
Seizures: anticonvulsants	1	0	(-)	0		
Hypoglycemia: glucose IV	10	100	(-)	25	92	(70.9-98.2)
Low birth weight managed to standard	28	75	(54.7-88.2)	85	68.2	(57.4-77.4)

Table D.68: Management of neonatal complications (I4070), prematurity, comparison, complete facilities

Description	3rd Operation: Pre-evaluation			3rd Operation: Evaluation		
	N	%	CI	N	%	CI
Vital signs checked	28	92.9	(73.7-98.4)	38	71.1	(54.1-83.7)
Weight	28	100	(-)	38	97.4	(82.2-99.7)
Pulse / heart rate	28	100	(-)	38	100	(-)
Respiratory rate	28	96.4	(76.3-99.6)	38	97.4	(82.2-99.7)
Head circumference	28	96.4	(76.3-99.6)	38	73.7	(56.8-85.6)
APGAR score (if in-facility)	28	92.9	(73.7-98.4)	33	93.9	(77.4-98.6)
Lab tests	28	53.6	(34.3-71.8)	38	78.9	(62.4-89.5)
Oxygen saturation	28	75	(54.7-88.2)	38	86.8	(71.1-94.6)
Glycemia	28	64.3	(44.1-80.4)	38	81.6	(65.2-91.3)
Gestational age calculated using Capurro/Ballard	28	96.4	(76.3-99.6)	38	100	(-)
Weight classification (if in-facility)	28	67.9	(47.5-83.1)	33	97	(79.7-99.6)
Heat application	28	96.4	(76.3-99.6)	38	97.4	(82.2-99.7)
Breastfed / given glucose	28	89.3	(69.9-96.8)	38	84.2	(68.1-93)
Appropriate management of any associated complications	9	100	(-)	15	86.7	(54.6-97.2)
Pneumonia: antibiotics	2	100	(-)	6	66.7	(14.9-95.8)
Diarrhea: liquids/ORS	0			0		
Seizures: anticonvulsants	0			0		
Hypoglycemia: glucose IV	7	100	(-)	9	100	(-)
Prematurity managed to standard	28	32.1	(16.9-52.5)	38	34.2	(20.5-51.2)

D.2.6 Data for decision-making

Table D.69: Use of data for decision-making (I7500), comparison, ambulatory facilities

Description	3rd Operation		
	N	%	CI
Minutes of monthly meetings observed for past three months	14	92.9	(55.9-99.3)
Appropriate actions observed for one randomly selected month:	13	92.3	(53.1-99.2)
Summary of data analysis	13	92.3	(53.1-99.2)
Summary of the follow-up plan	13	92.3	(53.1-99.2)
Written evidence of at least one agreement made	13	92.3	(53.1-99.2)
Evidence of follow-up action taken based on agreements made	12	100	(-)
Use of data for decision making to standard (I7500)	14	85.7	(52-97.1)

D.2.7 Access to safe blood

Table D.70: Access to safe blood (MI7210), comparison, complete facilities

Description	3rd Operation		
	N	%	CI
Access to safe blood	8	100	(-)

D.2.8 Indicator matrices

Table D.71: Health facility MRR-based performance indicators

Indicator	Description	Time Period	N	%	CI
I2500	Postpartum contraception*	3rd Op. Pre-evaluation	47	34	(21.6 - 49.1)
		3rd Op. Evaluation	79	48.1	(37.1 - 59.3)
I3000	Preconception care with quality	3rd Op. Pre-evaluation	Not measured at 3rd operation pre-evaluation		
		3rd Op. Evaluation	29	0	(-)
I3030	Antenatal care with quality**	3rd Op. Pre-evaluation	34	38.2	(23 - 56.2)
		3rd Op. Evaluation	80	12.5	(6.8 - 21.9)
I4050	Postpartum care with quality***	3rd Op. Pre-evaluation	80	13.8	(7.7 - 23.4)
		3rd Op. Evaluation	160	8.8	(5.2 - 14.3)
I4070	Management of neonatal complications	3rd Op. Pre-evaluation	81	38.3	(28.2 - 49.5)
		3rd Op. Evaluation	149	45.6	(37.7 - 53.8)
I4080	Management of obstetric complications	3rd Op. Pre-evaluation	79	13.9	(7.8 - 23.7)
		3rd Op. Evaluation	148	12.2	(7.8 - 18.6)
I6005	Cervical cancer screening with quality	3rd Op. Pre-evaluation	Not measured at 3rd operation pre-evaluation		
		3rd Op. Evaluation	132	86.4	(79.3 - 91.3)

* Injection and implant postpartum contraceptives not captured at first operation; 'progestin-only' not specified for OCP at first operation.

** Referral not captured at first operation so the subsequent exclusion cannot be applied as it is at second and third operation. At first operation, uterine height and fetal checkups are only evaluated at first visit, if eligible based on gestational age. Risk factor management not captured at first operation. RPR not captured as VDRL alternative at first operation.

*** Blood abnormalities postpartum check not captured at first operation.

Table D.72: Health facility observation-based performance indicators

Indicator	Description	Time Period	N	%	CI
I7500	Use of data for decision-making	3rd Operation	14	85.7	(52 - 97.1)

Table D.73: Health facility MRR-based monitoring indicators

Indicator	Description	Time Period	N	%	CI
MI4090	Active management of the third stage of labor	3rd Op. Pre-evaluation	71	69	(57.1 - 78.9)
		3rd Op. Evaluation	149	75.2	(67.5 - 81.5)
MI4130	Children 0-5 diagnosed with diarrhea treated	3rd Op. Pre-evaluation	60	15	(7.8 - 26.8)
		3rd Op. Evaluation	108	13.9	(8.5 - 21.9)

Table D.74: Health facility observation-based monitoring indicators

Indicator	Description	Time Period	N	%	CI
MI7000	Cold chain	3rd Operation	22	86.4	(62.8 - 96)
MI7010	Child care services	3rd Operation	8	12.5	(0.9 - 68.1)
MI7020	Pre/postnatal care services	3rd Operation	22	0	(-)
MI7030	Emergency care services	3rd Operation	8	12.5	(0.9 - 68.1)
MI7040	Delivery services	3rd Operation	8	0	(-)
MI7050	Contraceptive services	3rd Operation	22	40.9	(21.6 - 63.5)
MI7190	24/7 on-call availability of obstetric care staff	3rd Operation	8	0	(-)
MI7210	Access to safe blood	3rd Operation	8	100	(-)

Table D.75: Health facility prevalence-based monitoring indicators

Description	3rd Operation	
	N	%
Cesarean section prevalence (MI4120)	21672	32.8

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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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