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SM2015 – HONDURAS Study Protocol

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This protocol on the SM2015-Honduras surveys was produced in agreement with the Inter-American Development Bank (IDB). All analyses and report writing will be performed by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington.

About IHME

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

CHAPTER 1: INTRODUCTION

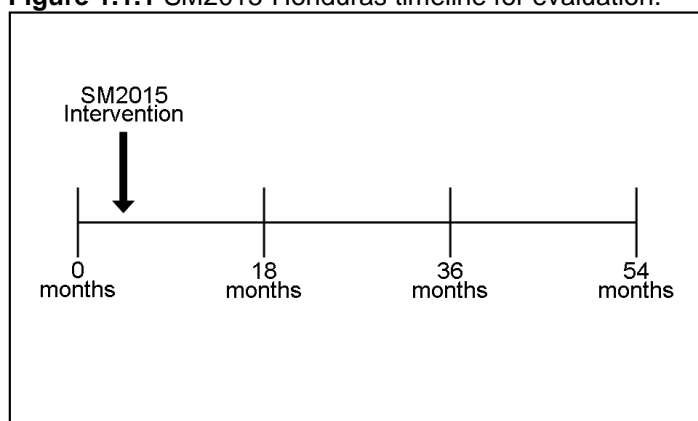
Salud Mesoamérica 2015 (SM2015) is a regional public-private partnership that brings together Mesoamerican countries, private foundations and bilateral and multilateral donors with the purpose of reducing health inequalities affecting the poorest 20 percent of the population in the region. Funding will focus on supply and demand-side interventions, including changes in policy, 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 model (RBF) that relies on serious performance measurement and enhanced transparency in reporting accountability and global impact assessment.

The initiative will focus its resources on integrating key interventions aimed at reducing health inequalities resulting from the lack of access to reproductive, maternal and neonatal health (including immunization and nutrition) for the poorest quintile of the population. A key element of SM2015 is the evaluation. In general, the evaluation will track the progress of the countries to reach a set of goals of the intervention, and will also estimate the impact of specific components of the intervention. The Inter-American Development Bank has contracted IHME to conduct this evaluation. In Honduras, Fundación FES will be the agency in charge of data collection.

1.1 Data Collection

In order to monitor efficacy of interventions and the status of indicators, data collection efforts are utilized. The overall data collection method employed in the initiative involves two major components: a health facility survey and a household survey. Twinning of both surveys is a defining and innovative feature designed to capture most accurately prevalence estimates of select key indicators. Indicator goals are established as a cooperative effort between IDB and the Honduras Ministry of Health following the collection of baseline information. Periodic waves of data collection will allow for continued monitoring of indicators among the population. These evaluations will occur at 18, 36, and 54 months following baseline surveys (Figure 1.1.1).

Figure 1.1.1 SM2015-Honduras timeline for evaluation.



The principal objective of the SM2015-Honduras Household Survey is to collect data on household characteristics, household expenditures, and numerous reproductive health, maternal and neonatal health, immunization, and nutrition indicators (including physical measurements) related to the strategic areas of the initiative in Honduras. Performance for these indicators will be evaluated after the baseline and each subsequent data collection wave.

In general terms, the objectives of the health facility survey are assessing facility conditions, evaluating service provision and utilization, and measuring quality of care. Equally important, the facility survey will capture changes of interventions at the level of the health services access point, the facility, and predict changes in population health outcomes. The baseline health facility survey, recounted in this report, measured baseline prevalence estimates of various health indicators in aim to monitor future changes in those indicators.

1.2 Objectives in Honduras

1.2.1 Health Issues and Health System Constraints in Honduras

Nine departments in Honduras have been selected as targets for SM2015-Honduras because of the current health status, health inequalities, and capacity for interventions. Within these departments, municipalities with health services attended by health organizations or “gestores” have been also selected. The goal of the initiative in this region is to reduce maternal, newborn, and child morbidity and mortality in the poorest municipalities of these jurisdictions. It is expected that there will be an increase in coverage, quality, and use of reproductive, maternal, newborn, and child health services, and an improvement in the health status and nutrition of women of reproductive age and children under 5 years old.

Honduras has achieved significant progress in recent decades in improving the overall health of its population. Since 1970, the life expectancy has increase from 52 to 72 years, while the infant mortality rate and under-five mortality rate have fallen gradually. Fertility and maternal mortality have declined, but to a lesser degree. There has also been a steady increase in immunization coverage with consistent high coverage levels since the mid-1990s. As of 2004, the vaccination coverage for children age 12-23 months was 81%. Despite this progress, the state of health in Honduras is still below the averages of the Mesoamerican region, and in recent years the improvements in basic health indicators have slowed. Many of the health gains that have been recently seen were in higher income populations. The poor, rural, and indigenous populations are more affected by health problems like chronic malnutrition (51% in these populations as compared to the national average of 30%).

Maternal mortality remains very high at 108 per 100,000 live births. Neonatal mortality is currently 14 per 1,000 live births, and accounts for 61% of child deaths. Low birth weight, pre-term birth, anemia in pregnant women, short birth intervals, and complications are all risk factors. Infant mortality is 23 per 1,000 live births, more than half of which are of children with some degree of malnutrition. Honduras has the second highest rate prevalence of chronic malnutrition in children under 5 years in Mesoamerica, behind Guatemala, with a prevalence of 30%. Among the poorest populations of Honduras, the prevalence is 51%. Contraceptive access for women remains a problem; 17% of women age 15-49 wanted but could not access some form of contraception.

There are also many inequalities within the Honduras health care system, reflecting a lack of consideration for the preferences of indigenous peoples, deficiencies in the provision of ser-

vices to rural and poor areas, and inadequate supply and training of personnel to all public facilities. Travel time or distance, and cost of care are reported often as obstacles to seeking care. About 70% of women reported a lack of money to be the main obstacle in finding care among rural areas; this is 50% for urban areas.

1.2.2 Targets for Improvement

Goals for maternal, newborn, and child health will be achieved through a network of community interventions, health system improvements, and education. The strategy incorporates a strong training component in hopes to strengthen existing practices and establish more efficient provision of services. Midwives will be trained to monitor delivery and recognize emergencies requiring referral, and to educate women about maternal and child health issues. There will also be efforts to strengthen regulation and oversight of health care systems. Preventative nutrition services, micronutrient supplementation, proper treatment of diarrhea, education about family planning methods, adequate supply of family planning methods, and obstetric emergency referral system strengthening are all proposed targets. Also, funding mechanisms will be put in place to increase demand in the health system. Formal consultations with representatives of indigenous peoples will contribute to SM2015 efforts to best align supply and demand of health services.

CHAPTER 2: METHODOLOGY

There are two components of the overall data collection method employed in the initiative: a household survey and a health facility survey. Twinning of both surveys is a defining and innovative feature designed to capture most accurately prevalence estimates of select key indicators.

2.1 Household Survey Methods

2.1.1 Segment Sample Selection

The sample for the SM2015-Honduras Household Survey is designed to provide estimates of the coverage of key health interventions and indicators among the lowest wealth quintile of the population. Indicators are used to calculate the sample size necessary to provide estimates with sufficient power (80%) and Type I error (0.05). The indicator with the highest sample size requirement is postnatal care for woman within 7 days of birth measured at 36 months from baseline. This requires a total of 1,273 intervention households. Additional indicator sample size calculations can be found in Appendix B. There will also be 1,200 control households.

The primary administrative units in Honduras are departments which are then divided into municipalities. There are eighteen departments in the country, and nine of those departments were selected for SM2015-Honduras. In these target departments of Honduras, IDB identified 19 municipalities in which the intervention will take place, and a set of 16 control municipalities with similar socio-economic characteristics and ethnic composition (Table 2.1.1). From these 35 municipalities, a random sample of approximately 88 census segments will be selected with probability of selection proportional to size (where size is represented by the number of occupied households within the segment, as captured on the 2001 Honduras Population Census). In addition, a set of alternate segments is selected using

identical methodology, to be surveyed in the event that any of the selected segments cannot be surveyed and needed to be replaced for any reason (e.g., security concerns or high proportion of absent households). In the next stage of sampling, households that contain women and children under five years old will be randomly selected to provide an expected sample of 2,473 households (1,273 intervention and 1,200 control households).

Table 2.1.1 Intervention and control municipalities

Treatment Municipalities		Control Municipalities	
Department	Municipality	Department	Municipality
Copán	Cabañas	Copán	Nueva Arcadia
Copán	San Jerónimo	Copán	San Antonio
Copán	Copán Ruinas	Copán	La Jigua
Copán	Santa Rita	Copán	San Nicolás
Lempira	San Juan Guarita	Comayagua	Taulabé
Lempira	Cololaca	Comayagua	San José de Comayagua
Lempira	Valladolid	Cortes	Santa Cruz de Yojoa
Lempira	Guarita	Lempira	Virginia
Lempira	Tambla	Lempira	Piraera
Lempira	Tomalá	Lempira	Mapulaca
La Paz	Santiago de Puringla	Lempira	Candelaria
Intibucá	San Antonio	Lempira	La Virtud
Intibucá	Magdalena	La Paz	Aguanqueterique
Intibucá	Santa Lucía	Intibucá	San Miguelito
Intibucá	Concepción	Intibucá	San Francisco de Opalaca
Choluteca	Concepción de Maria	Valle	Langue
Choluteca	Duyure		
Choluteca	San Marcos de Colón		
Olancho	Dulce Nombre de Culmí		

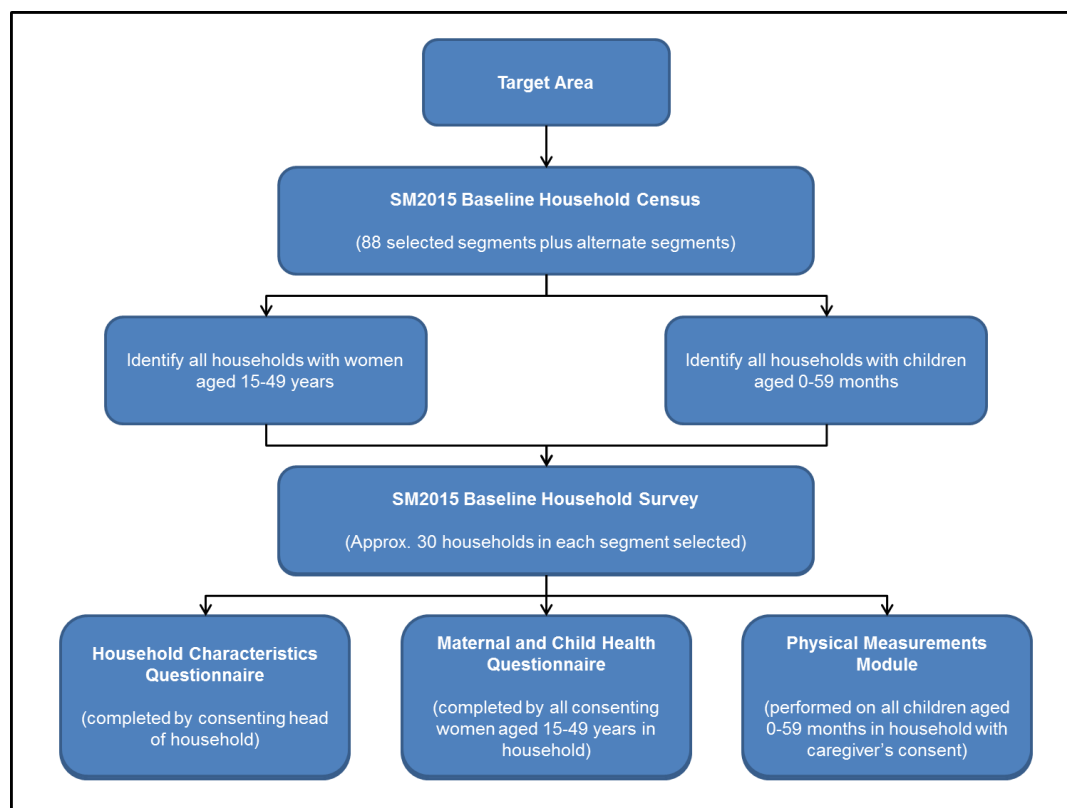
2.1.2 Household Census

In each of the selected segments, the SM2015-Honduras Household Census is conducted in order to identify eligible women and children for the survey. Interviewers visit every household in the segment and create a household roster capturing the age and sex distribution of household members. Information from the census is used to sample which households will complete the SM2015-Honduras Household Survey.

2.1.3 Household Survey

Using demographic data collected during the household listing exercise, households are then systematically selected for participation in the SM2015-Honduras Household Survey (i.e., if age-eligible women and children were listed as residents). All women aged 15-49 years who are residents of the household are eligible to be interviewed, and all children aged 0-59 months who are residents of the household are eligible for the physical measurement module. A schematic diagram of the survey implementation is shown in Figure 2.1.2.

Figure 2.1.2 SM2015-Honduras Household Survey implementation scheme



2.2 Health Facility Survey Methods

A total of 60 health facilities present in the intervention segments selected for household survey are to be sampled, and 30 health facilities in the control segments. Health facilities will be selected at random from the network of health facilities of the Secretary of Health in the study areas. As it will be detailed later, in each facility we will review also an average of 30 medical records.

CHAPTER 3: INSTRUMENTS

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

3.1 Electronic Data Entry

The SM2015-Honduras Surveys are conducted using a computer-assisted personal interview (CAPI). CAPI is programmed using DataStat Illume and installed into computer notebooks which are used by the surveyors at all times of the interview. CAPI supports skip patterns, inter-question answer consistency, and data entry ranges. The aim of introducing CA-

PI to the field is to reduce survey time by prompting only relevant questions, to maintain a logical answering pattern across different questions, and to decrease data entry errors. The use of CAPI also allows instantaneous data transfer via a secure link to IHME. Data can be continuously monitored, and modifications to the instrument can be updated remotely.

3.2 Household Survey

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

The content of the household questionnaires is developed to measure the coverage of key health interventions and indicators, and many items are adapted from existing Demographic and Health Surveys (DHS). The questionnaires are initially developed in English, then translated to Spanish. To best reflect the issues most relevant to the region under study and the local language, the Spanish-language questionnaires are revised following input from key stakeholders and at the conclusion of the pilot study (described below). The revised Spanish-language surveys are then back-translated to English. Study areas include a substantial proportion of indigenous populations; many of them also Spanish speakers. Although it is expected that it will be possible to apply most surveys in Spanish, the household survey will be also translated and back-translated to the most common indigenous languages in the study areas, Garifuna, Chortis, Lenca, Paya, Tol, and Jicaque, if required.

3.2.1 Household Census Instrument

The SM2015 Household Census is used to capture the age and sex distribution of all of the usual members of all of the households in the selected segments. Basic information including relationship to the head of the household and marital status is also collected. Children aged 0-59 months who had 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. All data for the census is recorded using an electronic data entry program.

As previously mentioned, data from the SM2015 Household Census is then used to systematically select households for the detailed interviews and the physical measurements module (Figure 2.1.1). Selected households are revisited typically within two weeks of the census and these questionnaires are completed during this visit.

3.2.2 Household Characteristics Questionnaire

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.

3.2.3 Maternal and Child Health Questionnaire

The Maternal and Child Health Questionnaire is used to collect information from all women of reproductive age (15-49 years). These women are asked questions on the following topics: background characteristics (including education, occupation, and exposure to media), access to health care, current health status, recent history of illness and associated medical

expenses, birth history (including relevant questions about pregnancies that ended in miscarriage, stillbirth, or abortion), antenatal, delivery, and postpartum care, fertility preferences, knowledge and use of family planning methods (including barriers to use), exposure to health system interventions, and satisfaction with community health workers. Those with children aged 0-5 years are asked detailed questions in reference to each child born in the past five years on topics such as: birth spacing, antenatal care, labor and delivery, postpartum care, breastfeeding and infant feeding practices, child's current health status, recent history of illness including diarrhea, fever, and acute upper respiratory infection and associated medical expenses, child's exposure to health system interventions, immunization and supplementation history.

3.2.4 Physical Measurements Module

The Physical Measurements Module captures weight, height/length, and hemoglobin levels of children aged 0-59 months. Portable scales and stadiometers are used for the anthropometric measurements and hemoglobin levels are assessed in the field using a portable HemoCueTM machine. Medically trained personnel (i.e., professional nurses) perform all assessments.

3.3 Health Facility Survey

The health facility survey includes three components: an interview questionnaire, an observation checklist, and a medical record review. The questionnaire captures information reported by the facility director or manager about the services provided and the general characteristics of the facility, human resource composition, supply logistics, infection control. The checklist captures objective data observed by the surveyors at the time of the survey about equipment and supplies required for prenatal and postnatal care, delivery care, emergency maternal and neonatal care, family planning and immunizations, depending on the level of the medical facility. Finally, we will conduct a review of medical records of cases of delivery, maternal and neonatal complications, prenatal and child care to collect information about the quality of health care.

CHAPTER 4: TRAINING AND MONITORING OF DATA

4.1 Training of Field Personnel

4.1.1 Training for Health Survey

Individuals are recruited and trained to serve as supervisors, male and female interviewers, and reserves for the household census and survey. Multiple data collection teams, consisting of multiple male and female interviewers are necessary to conduct the SM2015 Household Census. A fewer number of data collection teams are used to conduct the SM2015 Household Survey, each consisting of female interviewers. All field staff are required to have formal education through high school and exhibited sufficient literacy and speaking abilities in the language of the survey, as well as basic arithmetic skills. Personnel in charge of physical measures are required to have previous experience in anthropometry and collection of blood samples.

A multi-day training exercise is to be undertaken consisting of three primary training components. The first component of training is spent briefing and training the supervisors. The next component is devoted to classroom training for all field staff. The final component is devoted to field training. Staff from FES and invited experts from IHME lead the training, which is conducted mainly in Spanish and includes a variety of lectures, presentations, demonstrations, and role-playing exercises. Nutrition experts lead the training sessions on height and weight measurements and hemoglobin testing for the professional nurses who are hired to perform the physical assessments of children. These personnel are trained to perform standardized anthropometric and hemoglobin measurements using standard techniques.

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

Field training sessions are initiated in the last days of the training period. Household teams and anthropometry teams spend multiple days in the field collecting data. This field practice provides the interviewers with an opportunity to become aware of any issues with the survey that they did not previously understand. The field training sessions also provide an opportunity to conduct cognitive testing of the survey among target respondents. At the end of each day, the trainers and trainees review the questionnaires and discuss any problems that arise. Minor revisions to the questionnaires may be implemented based on feedback from the field training sessions.

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

4.1.2 Training for Health Facility Survey

Training sessions and health facility pilot surveys are conducted in Honduras over a three-day period. Approximately thirteen surveyors with a medical background undergo training. The training includes an introduction to the initiative, proper conduct of survey, in depth view of the instrument, and hands-on training on the CAPI software. Training is followed by a multi-day pilot at health facilities.

4.2 Data Monitoring

Information that is collected by each survey component is monitored by both field supervisors and analysts at IHME to ensure data quality and adherence to survey protocols. Data files are uploaded to a secure FTP site where they can be accessed by the data analysis team at IHME. After census, household, and health facility data is received, data is rigorous-

ly reviewed for quality with regards to consistency, clarity, and completeness. Prompt evaluation of data quality allows for clarification from data collectors regarding inadequacies and irregularities, and rapid correction of procedural errors.

4.2.1 Household Survey

For quality assurance, the data collected during the SM2015 Census are compared to data from the 2001 Honduras Population Census on an ongoing basis. When 20% fewer than expected households or people are captured on the SM2015 Baseline Census, or when more than 5% of households are classified as “absent”, field staff are instructed to return to segments and attempt to capture missing households. In most cases, households considered occupied on the 2001 Census but not captured on the SM2015 Baseline Census are unoccupied because former residents had relocated for work.

To assure completeness of the sample for the SM2015-Honduras Household Survey, field staff are instructed to return to selected households up to three times (on different days, and at different times during the day) in an attempt to complete the Household Characteristics Questionnaire, the Maternal and Child Health Questionnaire, and the Physical Measurements Module. Supervisors are responsible for reviewing all questionnaires for quality and consistency prior to departing each segment.

4.2.2 Health Facility Survey

Data collection for facility surveys is done by physicians, given the familiarity required with medical equipment and procedures in the observation checklist and medical record review. Data is collected using computer netbooks equipped with CAPI software. A lead surveyor monitors conduction of the facility survey and reports feedback. Data collection using CAPI allows data to be transferred instantaneously once a survey is completed via a secure link to IHME. IHME monitors collected data on a continuous basis and provides feedback. Suggestions, surveyor feedback, and any modifications are incorporated into the health facility instrument and readily transmitted to the field. The new instrument can be ready for use on the following day of data collection.

CHAPTER 5: PLAN FOR ANALYSES

Analyses done by IHME are tailored to evaluate the collaboratively predetermined indicators. These indicators are detailed in Appendix A. Data collection is designed to cover all the initiative indicators, although special care is taken for the measurement of payment indicators.

In the data analysis, frequencies of indicators and variables of interest will be obtained at baseline. Cross-tabulations with some demographic characteristics (education, age, etc.), as well as in intervention and control areas, will be also calculated for selected variables. Baseline information will be used later to assess changes when comparing against data collected at 18, 36 and 54 months, and estimating the effect of interventions.

All analyses are performed by IHME using STATA Version 11.2 (StataCorp, College Station, Texas), incorporating survey weights developed by IHME and robust standard errors to account for intra-class correlation within clusters (segments).

CHAPTER 6: REPORTS

A report will be published in the middle point and end of baseline, 18 month, 36 month, and 54 month SM2015-Honduras survey waves. These reports will highlight the status of the survey, data quality measures, and indicators of interest.

CHAPTER 7: ETHICAL ISSUES AND CONFIDENTIALITY

All SM2015-Honduras surveys, protocols, and procedures are reviewed by Institutional Review Boards (IRB). IHME activities are monitored by the IRB of the University of Washington; at the national level, FES obtains approval from its own institutional IRB. In addition, authorization from the Ministry of Health has been obtained to collect information from medical units. Previous to data collection, authorization to collect data in the community is also obtained from local authorities. Signed informed consent letters are obtained from informants prior to collecting any information at the household or health facility level.

The confidentiality of study participants' information is of critical importance. Any personal information captured is treated with the paramount concern for the participant's privacy. Assurance of confidentiality can provide more accurate data from respondents who are certain their personal information will remain secure. Interviewers are trained to present the SM2015-Honduras confidentiality agreement and address the concerns of the participants. Participation is completely elective, and efforts are made for each individual to be adequately informed when making the decision to participate. All data that is uploaded to IHME from survey sites lack personally identifiable information; there are no names, dates of birth, or addresses of study participants.

IHME TEAM

Principal Investigators:

Rafael Lozano, MSc, MD
Professor, IHME

Ali H. Mokdad, PhD
Professor, IHME

Project Officers:

Brent Anderson, BA
Project Officer, IHME

Tasha B. Murphy, PhD
Senior Project Officer, IHME

Team Members:

Bernardo Hernández Prado, MS, DSc
Clinical Associate Professor, IHME

Emily Carnahan, BA
Post-Bachelor Fellow, IHME

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

Marielle Gagnier, BS
Post-Bachelor Fellow, IHME

Erin Palmisano, BA
Data Analyst, IHME

Dharani Ranganathan, BA
Data Analyst, IHME

Gulnoza Usmanova, MPH, MD
Post-Graduate Fellow, IHME

Catherine M. Wetmore, MPH, PhD
Senior Fellow, IHME

Sarah Wulf, MPH
Research Associate, IHME

APPENDIX A: SM2015-HONDURAS INDICATORS

Indicator	Months	Source of Verification
Number of maternal deaths per 100,000 live births	0, 36, 54	Vital Records Household surveys
Number of deaths during the first 28 days of life per 1,000 live births in a given year or period	0, 36, 54	Vital Records Household surveys
Number of deaths during the first year of life per 1,000 live births in a given year or period	0, 36, 54	Vital Records Household surveys
Number of deaths of children under five per 1,000 live births in a given year or period	0, 36, 54	Vital Records Household surveys
Children 0-59 months with hemoglobin <110 g/L		Household surveys
Children 6-23 months with hemoglobin <110 g / L	0, 36, 54	Household surveys
Children aged 0-59 months with z score of height for age <-2 SD	0, 36, 54	Household surveys
Live births per 1,000 women aged 15 to 49 years, in a given year	0, 36, 54	Household surveys Vital Records
Number of births to women aged 15 to 19 years in a year per 1,000 women	0, 36, 54	Household surveys
Number of maternal deaths in hospitals	0, 36, 54	Hospital records
Number of neonatal deaths in hospitals	0, 36, 54	Hospital records
Women of reproductive age (15-49) currently using (or whose partner is using) a modern method of family planning	0, 36, 54	Household surveys
Women of reproductive age (15-49) who did not wish to become pregnant and who were not using / did not have access to family planning methods	0, 36, 54	Household surveys
Women of reproductive age (15-49) who report having stopped using a method of family planning during the previous year	0, 36, 54	Household surveys
Women of reproductive age (15-49) who received at least one prenatal care by skilled personnel in their most recent pregnancy in the last two years	0, 36, 54	Household surveys
Women of reproductive age (15-49) who received at least four prenatal care sessions with skilled personnel in their most recent pregnancy in the last two years	0, 36, 54	Household surveys
Women of reproductive age (15-49) who received four prenatal care sessions by qualified personnel according to best practices in their most recent pregnancy in the last two years	0, 36, 54	Health facility surveys
Women of reproductive age (15-49) who received at least five prenatal care sessions by qualified personnel according to best practices in their most recent pregnancy in the last two years	0, 36, 54	Health facility surveys
Women of reproductive age (15-49) who received their first prenatal visit by qualified personnel before 12 weeks of gestation in their most recent pregnancy in the last two years	0, 36, 54	Health facility surveys

Women of reproductive age (15-49) whose most recent delivery was performed by qualified personnel in a health unit in the last two years	0, 36, 54	Household surveys
Women of reproductive age (15-49) who received postpartum care by qualified personnel within the first 48 hours in their most recent pregnancy in the last two years	0, 36, 54	Household surveys
Women who received postpartum care by qualified personnel before seven days after birth for their most recent birth in the last two years	0, 36, 54	Household surveys
Women of reproductive age (15-49) who received postnatal check within 24 hours immediately following the birth, an additional check within 7 days and another check before 42 days by qualified health unit for their most recent delivery in the last two years	0, 36, 54	Household surveys
Institutional postpartum patients (vaginal and cesarean section deliveries) for which selected criteria were evaluated and recorded according to standard in perinatal clinical records at least every 15 minutes during the first hour and every 30 minutes to complete the two hours, and being discharged from the hospital, in her most recent birth in the last two years	0, 36, 54	Health facility surveys
Users of CMI that went over the alarm curve or had low cardiac fetal frequency, and a decision was made based on the partograph in the last year	0, 36, 54	Health facility surveys
Infants who developed a complication (sepsis, low birth weight, asphyxia, prematurity) managed according to standards in hospitals in the last two years	0, 36, 54	Health facility surveys
Women with obstetric complications (hemorrhage, sepsis and eclampsia) managed according to standards in their most recent birth in the last two years	0, 36, 54	Health facility surveys
Births (vaginal or cesarean) with active management of the third period of labor (given 10 IU oxytocin intramuscularly within one minute after birth, uterine massage and traction cord strain relief) in the most recent birth in the last two years	0, 36, 54	Health facility surveys
Neonates who received neonatal care by skilled personnel within the 48 hours following birth in the last 2 years	0, 36, 54	Household surveys
Mothers or caregivers (15-49) that can recognize at least five danger signs in a newborn for most recent birth in the last two years	0, 36, 54	Household surveys
Cesarean sections as a proportion of all births in the last two years	0, 36, 54	Health facility surveys
Children 0 to 59 months with diagnosis of diarrhea, assessed, classified and attended in medical units according to the norm in the last 2 years.	0, 36, 54	Health facility surveys

Children 0-59 months with diagnosis of pneumonia who attended a follow up appointment within 2 days in Cesares and Cesamos in the last 2 years	0, 36, 54	Health facility surveys
Children 0-59 months fully immunized identified for age	0, 36, 54	Household surveys
Children aged 12-59 months who received 2 doses of deworming in the last year	0, 36, 54	Household surveys
Children 0-5 months who were fed exclusively on breast milk during the previous day (intervention communities of AINC)	0, 36, 54	Household surveys
Children born in the last 24 months who were put to breast within the first hour after birth	0, 36, 54	Household surveys
Mothers/care providers who gave their children aged 0-59 months ORS and zinc in the most recent diarrhea episode in the last 2 weeks	0, 36, 54	Household surveys
Cases of diarrhea in children aged 0-59 months who were distributed ORS and zinc according to standards in the last two years	0, 36, 54	Health facility surveys
Mothers who reported having given their children aged 6-23 months at least 50 packets of micronutrient powder in the last 6 months	0, 36, 54	Household surveys
Percentage of children aged 12 to 15 months who were breastfed during the previous day	0, 36, 54	Household surveys
Children age 6 to 8 months who received solid or semi-solid food the previous day	0, 36, 54	Household surveys
Children age 6 to 23 months who received food from 4 or more food groups during the previous day	0, 36, 54	Household surveys
Breastfed or with complimentary feeding children age 6 to 23 months who received solid, semisolid and soft foods (including milk in children not breastfed) in the minimum amount or more	0, 36, 54	Household surveys
Children 6 to 23 months who received a minimum acceptable diet (apart from breast milk) during the previous day	0, 36, 54	Household surveys
Children 6 to 23 months who received iron-rich foods or iron-fortified foods during the previous day	0, 36, 54	Household surveys
Mothers who receive a subsidy for prenatal, postnatal, or delivery care and/or newborn care in the last two years	0, 36, 54	Health facility surveys
Mothers or caregivers of children age 0-23 months who can correctly describe aspects of quantity, consistency, and frequency of complementary food at the time of the interview	0, 36, 54	Household surveys
Mothers or caregivers of children age 0-59 months who received counseling about treatment of diarrhea in children in the past three months	0, 36, 54	Household surveys
Mothers of children age 0-23 months who received at least one face-to-face counseling session with a community health worker in the last month	0, 36, 54	Household surveys

Mothers or caregivers who have received individualized face-to-face counseling in key feeding practices and care of children age 0-23 months in the last three months	0, 36, 54	Health facility surveys
Analysis of the expansion of the public-public agreement for the potential implementation of the hospital network out of target areas of SM2015	0, 36, 54	Agreement
Population in target areas with decentralized “gestores” with access to benefits with public funds	0, 36, 54	Registries from the Secretary of Health and “gestores”
Women of reproductive age (15-49) who report having had any illness in the last two weeks	0, 36, 54	Household surveys
Women of reproductive age (15-49) who report having a sick child (0-59 months) in the past two weeks	0, 36, 54	Household surveys
Women of reproductive age (15-49) who report having a sick child (0-59 months) in the past two weeks but did not seek health care	0, 36, 54	Household surveys
Average travel time from home to the closest health care center in the last visit	0, 36, 54	Household surveys
Average amount the family paid in cash for health services in the past month	0, 36, 54	Household surveys
Amount of household spending last month	0, 36, 54	Household surveys
Units with equipment and supplies available for prenatal care, delivery, and postnatal routine	0, 18, 36, 54	Health facility surveys
CMI with continuous availability of drugs and supplies needed for obstetric and neonatal emergencies	0, 18, 36, 54	Health facility surveys
Hospitals with constant availability of medications and supplies and equipment for obstetric and neonatal emergencies	0, 18, 36, 54	Health facility surveys
First and second level health units stocked with family planning methods according to the current standards of SESAL	0, 18, 36, 54	Health facility surveys
First level health units (cesar, cesamo, and CMI) with continued availability of supplies and equipment for the care of diarrhea (including zinc) and of pneumonia in children under 5 years according to standards	0, 18, 36, 54	Health facility surveys
Cesares and cesamos with permanently available micronutrient powders for at-home supplementation	0, 18, 36, 54	Health facility surveys
Maternal and neonatal deaths by cause, selected, reported and investigated according to standards in hospitals in the last year	0, 18, 36, 54	Health facility surveys
Surveillance reports of maternal and infant mortality conducted and routinely analyzed in the last year	0, 18, 36, 54	Health facility surveys
Women following an obstetric event that requested a family planning method after counseling in the last year	0, 18, 36, 54	Health facility surveys
Targeted departmental regions with acceptable number of basic and expanded CONE units.	0, 18, 36, 54	Health facility surveys
Attended births in CMI that have been referred to health units in the last year	0, 18, 36, 54	Health facility surveys

Women that presented an obstetric complication that were evaluated by a specialist in the first 30 minutes after being called up in the last year	0, 18, 36, 54	Health facility surveys
Infants that developed a neonatal complication in a hospital (sepsis, asphyxia, and/or prematurity) that were evaluated by a specialist in the first 30 minutes after being called up in the last year	0, 18, 36, 54	Health facility surveys
Maternal homes working next to units with resolution capacity	0, 18, 36, 54	Health facility surveys
Women who arrive to health services with community personnel (by type) asking for deliveries attended for skilled personnel in the last 6 months	0, 18, 36, 54	Health facility surveys
Areas of health that can access data and generate regular reports on immunization, and maternal, newborn and child care	0, 18, 36, 54	Health facility surveys
New active committees for transportation of obstetric and neonatal emergencies	0, 18, 36, 54	Health facility surveys
Maternity homes with necessary inputs and resources allocated for operation	0, 18, 36, 54	Health facility surveys
CONE complete health units with 24/7 availability of ObG, pediatrician, neonatologist and anesthesiologist	0, 18, 36, 54	Health facility surveys
Midwife trained in their new role of accompanying pregnant women and counseling in the postpartum period	0, 18, 36, 54	Health facility surveys
Hospitals in target areas with availability of safe blood (if CONE intervention is present)	0, 18, 36, 54	Health facility surveys
Updating the national standard for the care of the of common childhood illnesses (diarrhea and infectious respiratory diseases and pneumonia)	0, 18, 36, 54	Revision of standards
National micronutrient standards approved	0, 18, 36, 54	Review of approval document
Gestores with 100% of monitors and health promoters selected and trained in face to face individualized counseling.	0, 18, 36, 54	Health facility surveys
Children 0-23 months who (i) did not show up to the monthly growth promotion checkup, (ii) are not breastfeeding, and/or (iii) are sick, who received at least one home visit with face-to-face individualized counseling in the last month	0, 18, 36, 54	Health facility surveys
First level health units with at least one service provider that is trained in counseling the best practices of exclusive breastfeeding, hygiene, food and nutrition	0, 18, 36, 54	Health facility surveys
First level health units that provide face-to-face individualized counseling on exclusive breastfeeding, hygiene, food and nutrition	0, 18, 36, 54	Health facility surveys
Monitors and health promoters trained in face-to-face counseling in best practices for feeding and care of children age 0-23 months	0, 18, 36, 54	Health facility surveys

APPENDIX B: SAMPLE SIZE CALCULATIONS BY INDICATOR

Indicator	Target time (months)	Baseline (%)	Target (%)	Sample size needed	Relevant age group to determine inclusion	Number of households needed to sample 1 person in this age-sex group	Total households needed
Contraceptive prevalence	36	41.1	51.1	306	Women 15-49*(4/3)	1	408
	54	41.1	56.1	136		1	181
Skilled attendant at birth in health facility	36	33	45	203	Children 0-2 years*(4/3)	3.1	839
	54	33	53	75		3.1	310
Postnatal care for woman within 7 days of birth	36	46.1	56.1	308	Children 0-2 years*(4/3)	3.1	1,273
	54	46.1	61.1	136		3.1	562
Prevalence of exclusive breast-feeding, children 0-5 months	54	6.6	18.6	94	Children 0-5 months	12.2	1,147
ORS and zinc	54	50	75	45	Children 0-59 months *1/0.145	1.3	403
Micronutrients	36	50	65	133	Children 6-23 months	4.1	545
Face-to-face counseling for mothers with children 0-23 mo	36	50	70	73	Children 0-23 months	3.1	226
Prevalence of anemia 6-23 months	54	56.5	41.5	136	Children 6-23 months	4.1	558