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SM2015 – BELIZE Study Protocol

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This protocol on the SM2015-Belize 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

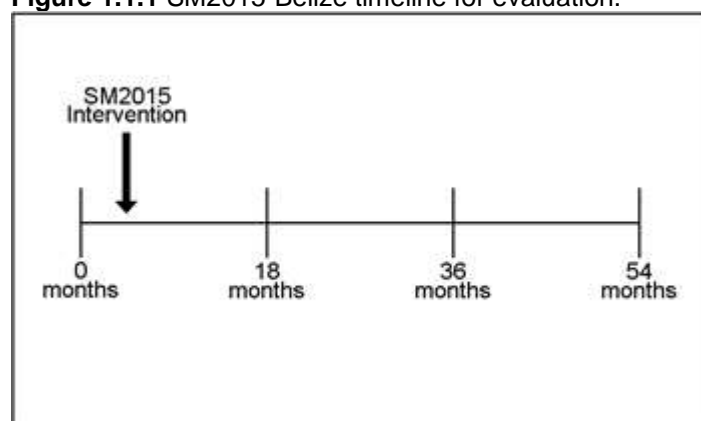
Salud Mesoamérica 2015 (SM2015) is a regional public-private partnership that brings together Mesoamerican countries, private foundations and bilateral and multilateral donors with the purpose of reducing health inequalities affecting the poorest 20 percent of the population in the region. Funding will 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 Belize, the University of Belize will be 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 lot quality assurance sampled (LQAS) study. Twinning of both components is designed to capture most accurately prevalence estimates of select key indicators. Indicator goals are established as a cooperative effort between IDB and the Belize 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-Belize timeline for evaluation.



The principal objective of the SM2015-Belize LQAS Survey is to assess if the indicators are reaching the proposed targets. The LQAS method collects information on small samples of households, and allows estimation of not the actual value of a variable, but if it is above or below a predetermined level. 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 Belize

1.2.1 Health Issues and Health System Constraints in Belize

The districts of Corozal, Orange Walk, and Cayo in Belize have been selected as targets for SM2015-Belize because of the current health status, health inequalities, and capacity for interventions. The goal of the initiative in this region is to increase the coverage of quality reproductive, maternal, neonatal and child health care in the poorest geographic areas and increase the use of information in decision making to reduce neo-natal death and increase the use of family planning among adolescents. 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.

Belize is undergoing a demographic transition; the reduced fertility rate and increase in life expectancy has led to an increase in the population's age. Paralleling this is an epidemiologic transition to a state of double burden. Non-communicable diseases are increasing due to life expectancy and a change in lifestyles, but there is still occurrence of communicable disease related to poverty, sanitation, malnutrition, and risky behaviors. Belize has relatively low maternal and infant mortality compared to other countries of the region, and has high vaccination rates. However, there are continuing problems with malnutrition among some populations, and many have an unmet need for reproductive health services. Another target of SM2015-Belize is the high prevalence of teen pregnancy; mothers in the 15-19 year age group account for 18.1% of all births, and in 2001-2005 there was an average of 24 births per year for females age 10-14.

In the districts of Corozal, Orange Walk, and Cayo, the Ministry of Health operates health services for the population. There is universal access to health services on the personal and population levels at no direct cost to the individual. In rural areas, such as those SM2015 will target, there are permanent health staff, mobile health units, community aids, and traditional birth attendants.

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. Aligning incentives, promoting integrated interventions, and strengthening the use of information in all levels of

decision making are primary channels for SM2015-Belize target achievement. Three components include quality improvement of maternal, neonatal, child, and reproductive health services; strengthening health service delivery platforms to increase coverage; and strengthening of administration and auditing. In order to achieve these targets, there will be efforts to establish standards for service quality, incorporate quality evaluation components into health care management, and to consolidate and strengthen the health information system. Increased health care capacity and coverage is also necessary.

CHAPTER 2: METHODOLOGY

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

2.1 LQAS Survey Methods

Lot quality assurance sampling (LQAS) involves the random selection of a small sample of households. The sample for the SM2015-Belize LQAS Survey is designed to provide estimates of the coverage of key health interventions and indicators among the lowest wealth quintile of the population. A lot of approximately 350 surveys will be administered to provide sufficient power. Following the methodology of LQAS, surveys will be collected in localities selected at random from the districts of Corozal, Orange Walk and Cayo, where the intervention will take place.

Each selected household is asked basic household roster information to determine eligibility. If there is a woman aged 15-49 years or a child under age 5 years, then the household is asked to complete the questionnaire.

2.2 Health Facility Survey Methods

A total of 40 health facilities present in the segments selected for the LQAS survey are to be sampled. Health facilities will be selected at random from the network of health facilities of the Ministry 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-Belize Surveys are conducted using a computer-assisted personal interview (CAPI). CAPI is programmed using DataStat Illume and installed into computer netbooks which are used by the surveyors at all times of the interview. CAPI supports skip patterns,

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

3.2 LQAS Survey

The content of the LQAS household questionnaire 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, as they can be applied in most areas of Belize. Although it is expected that it will be possible to administer most surveys in English, the survey will be also translated and back-translated to the most common indigenous languages in the study areas. All data for the LQAS survey is recorded using an electronic data entry program.

The questionnaire captures the number of eligible women age 15-49 years and children age 0-59 months that are living in the household. All women of reproductive age (15-49 years) are asked questions on the following topics: background characteristics (including marital status), birth history, antenatal, delivery, and postpartum care, fertility preferences, and knowledge and use of family planning methods (including barriers to use). 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, and immunization and supplementation history.

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 LQAS Survey

Individuals are recruited and trained to serve as supervisors, male and female interviewers, and reserves for the LQAS survey. Multiple data collection teams are used to conduct the SM2015 LQAS Survey. 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.

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 the University of Belize and invited experts from IHME lead the training, which is conducted mainly in English and includes a variety of lectures, presentations, demonstrations, and role-playing exercises.

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 LQAS questionnaires in close detail, and receive basic instruction on the principles of, and strategies for, data quality monitoring, team communication and problem-solving. LQAS teams engage in role-playing scenarios to practice administering the full questionnaire. 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. LQAS 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 Belize 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 LQAS and health facility data is received, data is rigorously 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 LQAS Survey

To assure completeness of the sample for the SM2015-Belize LQAS Survey, field staff will supervise the data collection of LQAS in each selected locality, and make sure the required sample is covered. 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. In the data analysis, frequencies of indicators and variables of interest will be obtained at baseline. 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).

CHAPTER 6: REPORTS

A report will be published in the middle point and end of baseline, 18 month, 36 month, and 54 month SM2015-Belize 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-Belize 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, University of Belize 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. This is especially relevant in the Corozal, Orange Walk, and Cayo regions of Belize, where some indigenous communities rule

themselves by uses and traditions. 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-Belize 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.

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APPENDIX A: SM2015-BELIZE INDICATORS

| Indicator | Months | Source of Verification |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------|
| Number of maternal deaths per 100, 000 live births | 0, 36, 54 | Vital Statistics |
| Number of deaths during the first 28 completed days of life per 1,000 live births in a given year or period | 0, 36, 54 | Vital Statistics |
| Number of deaths during the first year of life per 1,000 live births in a given year or period | 0, 36, 54 | Vital Statistics |
| Number of deaths under five year of life per 1,000 live births in a given year or period | 0, 36, 54 | Vital Statistics |
| Number of live births per 1.000 women between 15 and 49 years old, in year given | 0, 36, 54 | Vital Statistics |
| Number of live births per 1.000 women between 15 and 19 years old, in year given | 0, 36, 54 | Vital Statistics |
| Women of reproductive age (15-49 years) who currently use (or whose partner is using) a modern method of family planning | 0, 36, 54 | Household LQAS survey |
| Women of reproductive age (15-49 years) who were not using/unable to obtain contraception during last year | 0, 36, 54 | Household LQAS survey |
| Female health facility patients of reproductive age that are given family planning counseling according to the norms in the last two years | 0, 36, 54 | Health Facility Survey |
| Women of reproductive age (15-49) who attended at least 4 antenatal care visits by skilled attendant for their most recent pregnancy during the last two years | 0, 36, 54 | Household LQAS survey |
| Pregnancies for which the woman attended at least one antenatal care visit during the first trimester for the most recent pregnancy in the last two years | 0, 36, 54 | Health Facility Survey |
| Women of reproductive age (15-49) whose most recent birth was attended by a skilled attendant in an institutional setting in the last two years | 0, 36, 54 | Household LQAS survey |
| Live births for which the women received post-partum care before the first 7 days of birth in the last two years for the most recent pregnancy | 0, 36, 54 | Health Facility Survey |
| Deliveries for which a partograph was carried out and correctly interpreted according to the norms in the last two years for the most recent delivery | 0, 36, 54 | Health Facility Survey |
| Neonatal complications (prematurity, low birth weight, asphyxia and sepsis) managed according to norms in the last two years | 0, 36, 54 | Health Facility Survey |
| Obstetric complications (sepsis, hemorrhage, severe pre-eclampsia and eclampsia) managed according to the norms in the past two years | 0, 36, 54 | Health Facility Survey |
| Institutional deliveries for which oxytocin was administered immediately following birth as part of Active Management of the Third Stage of Labor (AMTSL) in the last two years for the most recent delivery | 0, 36, 54 | Health Facility Survey |

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| Institutional deliveries for which immediate (within 24 hours) neonatal care was provided to the infant according to the norms in the last two years for the most recent delivery | 0, 36, 54 | Health Facility Survey |
| Mothers with a child 0-23 months that that can recognize 3 out of 5 signs of danger | 0, 36, 54 | Household LQAS survey |
| C-sections as proportion of childbirths in the last two years | 0, 36, 54 | Health Facility Survey |
| Children 0-23 months with low weight-for-age managed according to norms in the last two years | 0, 36, 54 | Health Facility Survey |
| Newborns enrolled for child health services within seven days of birth in the last two years | 0, 36, 54 | Health Facility Survey |
| Children 0-59 months identified as having received full vaccinations for age | 0, 36, 54 | Household LQAS survey |
| Children (12-59 months) who received two doses* of deworming treatment in the last year according to facility records | 0, 36, 54 | Health Facility Survey |
| Infants 0-5 months of age who were fed exclusively with breast milk the previous day | 0, 36, 54 | Household LQAS survey |
| Children born in the last 24 months who were put to the breast within one hour of birth | 0, 36, 54 | Household LQAS survey |
| Mothers who gave their children (0-59 months) ORS and zinc supplements during the last episode of diarrhea in the last two weeks | 0, 36, 54 | Household LQAS survey |
| Children aged 6-23 months that consumed 60 sachets of micronutrients in the last 6 months | 0, 36, 54 | Household LQAS survey |
| Diarrhea cases in children 0-59 months presenting in health facilities that were treated with Oral Rehydration Solution (ORS) and zinc during their last visit | 0, 36, 54 | Health Facility Survey |
| Health facilities that have the necessary inputs to provide child health care according to the norms | 0, 18, 36, 54 | Health Facility Survey |
| Health facilities that have the necessary inputs for providing pre- and post natal care according to the norms | 0, 18, 36, 54 | Health Facility Survey |
| Health facilities that have the necessary inputs for providing emergency obstetric and neonatal care according to the norms | 0, 18, 36, 54 | Health Facility Survey |
| Health facilities that have permanent availability of all 5 types of modern family planning methods (injectable, barrier, oral, IUD, permanent) according to the norms | 0, 18, 36, 54 | Health Facility Survey |
| Health facilities that have submitted a Quality Improvement Fund (QIF) proposal to the national quality audit team | 0, 18, 36, 54 | Health Facility Survey |
| Health facilities that have implemented Quality of Care job aid tools for reproductive health | 0, 18, 36, 54 | Health Facility Survey |
| Health facilities that have sexual and reproductive health (SRH) educational materials specifically targeted at adolescents | 0, 18, 36, 54 | Health Facility Survey |

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|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------|
| Norms for improving the quality of reproductive and child health and nutrition services and for the establishment of a community platform of services adopted | 0, 18, 36, 54 | Document of Approval of the Norm |
| Community health workers (CHW) trained in the community platform | 0, 18, 36, 54 | Health Facility Survey |
| District HECOPAB Officers that are currently monitoring the CHWs | 0, 18, 36, 54 | Health Facility Survey |
| Health facilities with a mechanism in place for carrying out patient satisfaction surveys | 0, 18, 36, 54 | Health Facility Survey |
| Health facilities that can submit and receive data from the Belize Health Information System (BHIS) | 0, 18, 36, 54 | Health Facility Survey |