PY2 Annual Report

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"Community-Based Impact-Oriented Child Survival in Huehuetenango, Guatemala"
[Municipalities of San Sebastián Coatán, Santa Eulalia, and San Miguel Acatán]

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ABBREVIATIONS, ACRONYMS, and TRANSLATIONS

24/7	24 hours/day, 7 days/week
ADIVES	Life & Hope International Association of Integrated Development
ANC	Antenatal Care
ARI	Acute Respiratory Infection
ATMSL	Active Management of Third Stage of Labor
CBIO	Community-Based Impact-Oriented
CF	Community Facilitator (Care Group Leader)
Casa	*Casa Materna*
COICAM	Institutional Council of the Casa Maternas
Comadrona	Traditional Birth Attendant
Comunicadora	Health Communicator (Care Group Volunteer)
CSHGP	Child Survival & Health Grants Program
EBF	Exclusive Breastfeeding
Educadora	Health Educator
ENA	Essential Newborn Actions (clean cord care/thermal care/immediate breastfeeding)
FGD	Focus Group Discussion
FP	Family Planning
Hambrecero	Zero Hunger Initiative
HBLSS	Home-Based Life-Saving Skills
IBF	Immediate Breastfeeding
KPC	Knowledge, Practice, and Coverage
LOE	Level of Effort
MRC	Microregional Committee
Mini-KPC	Abbreviated KPC survey, done quarterly, focused on only two or three indicators
MM	Maternal Mortality
MMR	Maternal Mortality Rate
MNC	Maternal and Newborn Care
MSPAS	Ministry of Public Health and Social Welfare (of Guatemala)
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
OR	Operations Research
ORS	Oral Rehydration Solution
PD	Positive Deviance
PPC	Postpartum Care
PY	Project Year
RHV	Routine Home Visitation
RMHC	Ronald McDonald House Charities
SBA	Skilled Birth Attendant
SIAS	*Sistema Integral de Atención en Salud* (Integrated System of Health Care)
U5	Under-five (years of age)
U5M	Under-five Mortality
U5MR	Under-five Mortality Rate
USAID	United States Agency for International Development
WRA	Women of Reproductive Age

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I. Introduction, Key Progress, and Main Accomplishments

Curamericas' CSHGP, "Community-Based Impact-Oriented Child Survival in Huehuetenango, Guatemala," is being implemented in the three municipalities of San Sebastian Coatán, San Miguel Acatán, and Santa Eulalia with our in-country partner, Curamericas Guatemala. This isolated mountain region of overwhelming indigent Mayan population exhibits some of the worst health indicators in Latin America, earning it the name 'the Triangle of Death." Our objective is to significantly improve the health of 15,327 U5 children and 32,330 WRA with interventions in maternal/newborn health, nutrition, prevention and treatment of ARI and diarrhea, and immunizations, delivered through our integrated Community-Based Impact Oriented (CBIO) and Care Group Methodologies, and integrated into Guatemala Ministry of Health (MSPAS) initiatives. Our operational research will demonstrate how these methodologies' can cost effectively reduce U5 mortality in this context.

PY2 was a watershed year- we completed the roll-out of Phase 1 of the project into all 92 Phase 1 communities in the three municipalities. Key progress and accomplishments included:

Monitoring Actual Impact- We improved the accuracy and reach of our Community-Based Impact Oriented (CBIO) methodology in the detection of vital events (pregnancies, births, and U5/maternal deaths) and integrated household-level surveillance done by the *Comunicadoras*, our Care Group Volunteers, who, besides teaching health education to their neighbors, also gather vital events data so we can monitor, map, and respond to pregnancies, births, and deaths [see Annex 7A]. Our data show that a full 50% of U5 mortality in Phase 1 communities is now neonatal (mostly from asphyxiation), and 37% is in infants 1-11 months, mostly from ARI underlain with malnutrition. The U5MR is 69.6. Maternal deaths numbered 20, most often from hemorrhage. *Vital events detection triggers timely intervention responses to these events – routine home visitation (RHV) to newly pregnant women helped increase the percentage of pregnant women with 4 antenatal care checks from 13% at baseline to 35%; and prompt postpartum home visitation increased postpartum care within 48 hours from 22% to 76%.*

Catalyzing a Difference: Casa Maternas – A high priority of MSPAS is reducing maternal mortality by dramatically increasing health facility births. This is impeded by inaccessibility and scarcity of health facilities in this remote mountain region; traditional home delivery preferences; and culturally insensitive treatment of the Mayan women by staff in health facilities. Our Casa Maternas are strategically-located birthing centers staffed by skilled birth attendants who speak the local Mayan language and who attend deliveries 24/7 in culturally acceptable ways. This includes the integration of the local *Comadronas* into the Casa Materna team, who encourage the women to deliver in the Casa [see Learning and Research Briefs, Annex 4]. *In San Sebastián Coatán, where we have had 2 operational Casas in PY2, the results are dramatic: pregnant women with 4 antenatal checks rose to 53% (vs. 29% for the other two municipalities combined); health facility births increased to 50% (vs. 14%); and postpartum checks within 48 hours increased to 88% (vs.72%). In addition, 18 obstetric emergencies were successfully recognized and referred, saving 18 maternal and 16 neonatal lives.*

Clean Safe Births - In PY1, trainers from the American College of Nurse Midwives trained 12 (Health Educators) *Educadoras* as Master Trainers of Home-Based Life-Saving Skills (HBLSS), a skill set for prompt recognition and quick response to obstetric emergencies. In PY2, the *Educadoras* executed a massive roll-out of these skills, delivering training to 457 *Comunicadoras,* 118 *Comadronas,* 7 MSPAS staff, and 4396 mothers [see Annex 7C]. The *Comadronas* and our 6 Casa Materna skilled birth attendants (SBAs) were also trained in the three Essential Newborn Actions (ENA) and the Active Management of the Third Stage of Labor (ATMSL). *This yielded a marked improvement in the quality of deliveries – deliveries with all 3 ENAs increased from 6% at baseline to 38%; and deliveries with three elements of ATMSL from 9% to 15%.*

Fighting Malnutrition – We implemented a massive Positive Deviance intervention, weighing and measuring 1513 children 6 to 23 months of age and detecting 63% stunting; 30% underweight; and 2% incidence of acute malnutrition. After attending to acute cases, we surveyed the positive deviants (mothers whose children were not malnourished) and used the data to develop a weekly menu using locally available foods. The Care Group infrastructure was used to implement home-based workshops during which the mothers learned to prepare and feed their children from this menu while continuing to breastfeed. The children were then weighed and measured weekly. *After 3-4 weeks, stunting had been reduced to 50%, underweight to 19%, and acute malnutrition to 1%* [see Annex 7B].

Integrated Programming and Emerging Sustainability- Our routine sharing of project goals, data, and methods with the municipal MSPAS offices and governments is bearing fruit. Though the Guatemalan public health system is very centralized and bureaucratic, the local MSPAS offices have had enough autonomy to appreciate our methods and integrate their work with our CSHGP. *The San Miguel Acatán MSPAS staff has led the way in the training of Comadronas, preparing them for integration into the operation of the new Tuxlaj Casa Materna, to open in November 2013; has promised for this Casa a team of skilled birth attendants to match the Curamericas Guatemala team; and helped initiate a community-based business to market Clorox for water purification, with profits to support the new Tuxlaj Casa. Coordination with the municipal governments has also deepened – all three municipal governments donated the land for their new Casa Maternas; and the Santa Eulalia and San Sebastian Coatán municipal governments will be providing vehicles to use as ambulances. The town of Calhuitz will donate its community pharmacy to the Calhuitz Casa Materna, with pharmacy earnings supporting Casa operations. Sustainability lies with this combined MSPAS, municipal, and community support.*

A New Model: We launched this project with our unique methodology that integrates CBIO and Care Groups, seeking to test its efficacy with our OR. *What we have discovered is that the integration of the SIAS program and the Casa Maternas has created a new, even more powerful model*. SIAS brings basic health services such as antenatal care, treatment of diarrhea and ARI, and immunizations into the villages through Ambulatory Nurses. SIAS is implemented in the project area under contract with MSPAS by Curamericas Guatemala and by the Guatemalan NGO ADIVES, with SIAS and CSHGP functioning as one integrated project. *The synergies have proved powerful: Care Groups change key health behaviors and generate demand for health services, and the CBIO methodology ensures equitable coverage and tracking of impacts; meanwhile, SIAS and the Casa Maternas fulfill this demand for services at the community level in culturally acceptable ways*.

Table 1: Summary of Major Project Accomplishments

Inputs	Activities	Outputs	Outcomes
1. Increase Access to Quality Maternal and Newborn Care			
- *Guia* for Care Groups - *Manual de Capacitación* (Training Manual) for SBAs and *Comadronas* -HBLSS Training materials and trainers	- Community selection of Community Facilitators -Recruitment of *Comunicadoras,* establishment of Care Groups and Self-Help Groups -Training of *Educadoras,* Community Facilitators, and *Comunicadoras* in maternal/ newborn health	-17 *Educadoras,* 83 Community Facilitators and 484 *Comunicadoras* recruited and trained in maternal/ newborn health - 3492 women educated in MNC - 4396 women educated in HBLSS	- Pregnant women with 4 antenatal care checks increased from 13% to 35% (CBIO data) - Pregnant women with tetanus inoculation increased from 63% to 67% (mini-KPC survey)

Inputs	Activities	Outputs	Outcomes
1. Increase Access to Quality Maternal and Newborn Care			
-*Casa Materna Replication Manual* -Community registers and maps -Personnel: 17 Educadoras, 3 Educadora Supervisors, 3 Municipal Coordinators, 6 Casa Materna SBAs, 1 Casa Materna Supervisor, 83 Community Facilitators, 484 *Comunicadoras*, 3 SIAS Ambulatory Nurses, 5 SIAS Auxiliary Nurses, 17 SIAS Community Facilitators, 118 trained *Comadronas* - Casa Materna construction materials -Donated land for Casa Maternas -Volunteer community labor to build Casa Maternas	-Care Group meetings - Self-Help Group Meetings -Mobilization of Casa Materna (CM) partner communities - Formation and training of Micro-Regional Committees (MRCs) using the *Casa Materna Replication Manual* - Securing commitment from municipal government for Casa Maternas -Construct and equip Casa Maternas -Train Casa Materna SBAs and *Comadronas* in ENA, ATMSL, and HBLSS -Train communities in HBLSS and establish community emergency transportation plans -Reporting of vital events (new pregnancies, births, maternal and neonatal deaths) -Home visitation in response to new pregnancies and to deliveries -Verbal autopsies and community assemblies for deaths	- 3609 women educated in post-partum care - 3708 women educated in Family Planning -118 Comadronas trained in HBLSS, ENA, ATMSL - 506 women receive 4 antenatal care checks - 320 health facility deliveries - 127 Casa Materna deliveries --1043 postpartum visits -18 obstetric emergencies successfully referred -51 Casa Materna partner communities mobilized -3 Micro-regional committees formed and trained - 3 municipal gov'ts donate land for Casa Maternas -1 new Casa Maternas built and operational; 2 Casas under construction -101 verbal autopsies completed	-Pregnant women who took iron supplement 90 days increased from 22% to 73% (mini-KPC) - Women who know at least 2 signs of danger in pregnancy increased from 22% to 58% (mini-KPC) -Health facility births increased from 16% to 23% (CBIO data) -Deliveries with ENA increased from 6% to 38% (mini-KPC) -Deliveries with 3 elements of ATMSL increased from 9% to 15% (mini-KPC) -Women with postpartum check within 48 hours increased from 22% to 76% (CBIO data)
2. Improve Child Nutrition and Decrease Child Underweight in children 6-23 months			
- *Guia* for Care Groups - *Guia* for Positive Deviance intervention -Community registers and maps - Personnel: 17 *Educadoras*, 3 *Educadora* Supervisors, 3 Municipal Coordinators, 83 Community Facilitators, 484 *Comunicadoras*, 3 SIAS Ambulatory Nurses, 5 SIAS Auxiliary Nurses, 17 SIAS Community Facilitators -Scales for weighing children -Measuring boards for children	-Training of *Educadoras,* Community Facilitators, and *Comunicadoras* in nutrition - Establishment of Care Groups and Self-Help Groups -Training of staff in Positive Deviance intervention and anthropometry - Care Group meetings - Self-Help Group Meetings -Positive Deviance Intervention: weighing/measuring; survey of positive deviants; design of menu and workshops -*Talleres Hogareños* (community workshops on complementary feeding) -Growth monitoring of children 6-23 mos.	-17 *Educadoras,* 83 CFs and 484 *Comunicadoras* trained in EBF, complementary feeding, anthropometry, and Positive Deviance -1513 children 6-23 months evaluated for stunting, underweight, acute malnutrition. -31 children referred to health facilities/SIAS staff for acute malnutrition -4520 household visits for child growth monitoring and Vitamin A dosing -736 home complementary feeding workshops -3807 mothers educated in EBF and IBF - 3959 mothers educated in proper complementary feeding practices	- Stunting (<-2 SD height/age) reduced from 63% (n=954) to 50% (n=763)[Positive Deviance data] -Underweight (<-2 SD weight/age) reduced from 30% (n=461) to 19% (n=286) [Positive Deviance data] -Acute malnutrition reduced from 2% (n=31) to 1% (n=13) [Positive Deviance data]

Inputs	Activities	Outputs	Outcomes
3. Increase Prevention and Treatment of Diarrhea and ARI			
- *Guia* for Care Groups -Community registers and maps -Personnel: 17 *Educadoras*, 3 *Educadora* Supervisors, 3 Municipal Coordinators, 130 Community Facilitators, 484 *Comunicadoras,* 3 SIAS Ambulatory Nurses, 5 SIAS Auxiliary Nurses, 17 SIAS Community Facilitators	-Training of *Educadoras,* Community Facilitators, and *Comunicadoras* in diarrhea and ARI prevention and care-seeking, hand washing, and water treatment/storage - Establishment of Care Groups and Self Help Groups - Care Group meetings - Self-Help Group Meetings -Provision of diarrhea and ARI treatment by SIAS staff -Provision of rotavirus and pneumococcus vaccine by SIAS staff	-17 *Educadoras,*83 Community Facilitators and 484 *Comunicadoras* selected and trained in diarrhea and ARI prevention and treatment - 3883 mothers educated in proper hand washing and water treatment - 3790 mothers educated in dangers signs and treatment of diarrhea and ARI -1025 children with diarrhea received treatment with ORS and zinc [SIAS data] - 254 children with ARI receive treatment with antibiotics [SIAS data]	[Coverage data not available]
4. Improve Coverage of Child Immunization			
- *Guia* for Care Groups -Community registers and maps -Personnel: 17 *Educadoras*, 3 *Educadora* Supervisors, 83 Community Facilitators, 484 *Comunicadoras*, 3 SIAS Ambulatory Nurses, 5 SIAS Auxiliary Nurses, 17 SIAS Community Facilitators	-Training of *Educadoras,* Community Facilitators, and *Comunicadoras* in immunizations - Establishment of Care Groups and Self Help Groups - Care Group meetings - Self-Help Group Meetings - Provision of immunizations by SIAS and MSPAS staff	-17 *Educadoras,* 83 Community Facilitators and 484 *Comunicadoras* trained in immunizations -3776 mothers educated in importance and function of immunizations -722 children vaccinated for measles (SIAS data) -621 children received all immunizations (SIAS data)	[Coverage data not available]
5. Improve Participation of Women and Community Support of Maternal/Child Health			
-CBIO Manual -Vital Events Manual -Community registers and maps -Community Participatory Diagnoses -Community Health Plans -Personnel: 17 Educadoras, 3 Educadora Supervisors, 3 Municipal Coordinators, 83 Community Facilitators, 484 Comunicadoras	-Formation of Community Health Committees -Mapping and census of communities - Participatory Community Diagnoses of health problems -Drafting of Community Health Plans -Selection and training of Community Facilitators - Recruitment and training of *Comunicadoras* - Establishment of Care Groups and Self Help Groups - Care Group meetings - Self-Help Group Meetings -Monthly community assemblies to discuss progress & challenges	- 92 Community Health Committees established -92 Community Diagnoses and Health Plans completed -83 Community Facilitators selected and trained -484 *Comunicadoras* recruited and trained -3952 mothers educated in Self-Help Groups -1104 monthly community assemblies held -28 communities establish emergency transportation plans	- Percentage of women reporting contact with Self-Help Group in past month increased from 8% to 96% (mini-KPC) -Percentage of mothers who reported participating actively in a community meeting in the past month increased from 10% to 48% [mini-KPC) -Percentage of women who report that their community executed a project to directly benefit children in the past three months increased from 2% to 20% [mini-KPC]

II. Discussion of Implementation Activities and Results

Objective 1- Increase access to quality maternal and newborn care (35% LOE)

With maternal mortality rates in the project area exceeding Sub-Saharan Africa's and neonatal deaths comprising 50% of all U5 mortality, this is our cornerstone intervention. The key technical interventions are: 1) utilizing vital events detection to ensure that all pregnant and postpartum women and newborns promptly receive maternal/neonatal services with timely RHV; 2) stimulate demand for these services by developing a community Care Group and Self-Help Group infrastructure that brings health education down to the household level; 3) and fulfill this demand by providing antenatal and postpartum care and access to FP in the community via SIAS ambulatory nurses and by constructing and operating strategically-placed Casa Maternas where women can receive pregnancy, postpartum, and FP counseling and deliver with a SBA in a culturally acceptable manner.

We have developed a Training Guide (*Guia)* utilizing proven participatory adult-education methods appropriate for non- or semi-literate learners [see Annex 6A]. This Guide supports the Care Group training cascade, with 83 Community Facilitators training and leading Care Groups in their communities. Care Groups comprise 7 to 10 Care Group Volunteers known as *Comunicadoras,* 484 in all, who in turn train 7 to 10 other mothers of U5 children in meetings called Self-Help Groups (*Grupos de autocuidado)*. We have reached nearly 4,000 women at the household level, with all training done in their native Mayan language. We have also trained 6 Casa Materna SBAs and 118 *Comadronas* in Essential Newborn Actions, AMTSL, and HBLSS [see Annex 6B], which has resulted in 18 timely obstetric referrals and a marked improvement in quality of deliveries done by both staff SBAs and *Comadronas.* Our Casa Materna Replication Manual is used to train Microregional Committees (MRCs) in the establishment and operation of their Casa Materna.

Sustainability is being developed through the creation of Community Health Committees, community emergency transport plans, and the Casa Maternas. Two (2) Casas have been operational in PY2, in Calhuitz and Santo Domingo, San Sebastián Coatán. Two more are under construction in Tuxlaj, San Miguel Acatán and Pett, Santa Eulalia. The San Miguel Acatán MSPAS has promised a team of 3 SBAs for the new Casa in Tuxlaj, set to open in November 2013; the municipal governments have donated the land for the Casas and pledged ambulances to serve the 2 Casas in San Sebastian Coatán and the new Casa to open in Pett in early 2014; all the Casas have been built with volunteer community labor.

What has facilitated this work is 1) the painstaking trust-building of the CBIO methodology, which involves the communities from the start in taking responsibility for improving their health by forming a Community Health Committee, participating in a Community Diagnosis, and developing a Community Health Plan; 2) the creativity and persistence of the *Educadoras,* who constitute the front-line contact with the communities, and their skilled use of our CBIO methodology, which enables each *Educadora* to know the MNC indicators of her assigned communities; and 3) the Casa Maternas themselves, which have catalyzed community participation in ways beyond our anticipation.

What has impeded the work has been 1) isolation and treacherous mountain roads which impedes access of staff *Educadoras* to families, and families' access to maternal/newborn services- only 3 MSPAS clinics serve this area and the nearest hospital in Huehuetenango is 4 hours away; 2) community discord and persistent male chauvinism (*machismo*) which often impede women from attending Self Help Groups or using the Casas; 3) the traditional preference for home deliveries; and 4) lack of interest at

the regional and national level from a very bureaucratic MSPAS. We are coping with these impediments by 1) locating new Casas strategically to maximize access to isolated communities, and initiating an emergency transport insurance scheme; 2) seeking allies among men, mothers-in-law, religious leaders, *Comadronas,* and other community stakeholders to overcome discord and *machismo*; 3) continued monthly trainings of *Comadronas* to engage them in their new role supporting Casa Materna births [see Research Brief, Annex 4]; and 4) deepening our coordination with the local district MSPAS, sharing results with regional MSPAS leaders to generate support for our work, while assisting the creation of the Institutional Council for the Casa Maternas (COICAM) to advocate for the Casas before regional and national MSPAS authorities.

The progress of this intervention is exceeding our expectations, as the Table 1 outcomes bear out. If in Phase 2 we approximate the coverage of MNC services achieved in Phase 1 but with 2 additional operating Casas, it will have a huge impact on maternal/newborn health results of the project.

Objective 2- Improve child nutrition (30% LOE)

The prevalence of child stunting, underweight, and acute malnutrition in Guatemala is among the worst in Latin America, and the nutritional indicators for Huehuetenango Department are among the worst in the country. Therefore, improving child nutrition is our next largest intervention. The key interventions are 1) utilize our CBIO community registers to locate and do home-based growth monitoring for every child 0-23 months; 2) educate mothers in EBF and proper complementary feeding practices using the Care Group and Self-Help Group infrastructure; and 3) implement an intensive Positive Deviance (PD) intervention that weighs, measures and identifies every stunted, underweight, or acutely malnourished child; identifies locally available foods to enrich the diet; and provides timely nutritional intervention, including referrals to SIAS staff for the acutely malnourished, and home-based workshops *(talleres hogareños)* utilizing the Care Group infrastructure in which women of malnourished children learn to prepare and feed their child a menu utilizing the locally available food while continuing to breastfeed. Ongoing growth monitoring by CFs and *Educadoras* ensures adherence and recuperation.

The path to sustainability lies with the Care Group/Self-Help Group infrastructure, so new paradigms of nutrition can penetrate into the household level, and the PD use of locally available foods. What has facilitated the work has been 1) Community Registers and maps that allow us to locate and serve every under-2 child; 2) the PD methodology, with its sustainable reliance of locally available food; and 3) the household-level surveillance by the *Comunicadoras*, who function as the project's eyes and ears and allow us to monitor actual feeding practices. What has impeded the work has been 1) persistent lack of knowledge about nutrition and ancient beliefs that corn tortillas alone suffice, exacerbated by the ready availability of cheap junk food; and 2) the widespread use of *pachas* (bottles) to feed tea, coffee, or possibly contaminated water instead of EBF. We are addressing these impediments with 1) intensified nutritional education in the Self-Help Groups; 2) holding Circles of Lactating Women (support groups for EBF) at the Casa Maternas; and 3) utilizing the locally available foods identified with the PD study and hands-on teaching of the preparation of these foods in the *talleres hogareños.*

The success of the PD intervention has greatly exceeded our expectations, and by continuing the intervention and extending it in Phase 2 to EBF, as well as adding Circles of Lactating Women in the new Casas, we anticipate achieving our child nutrition objectives.

Objective 3 - Increase prevention and treatment of ARI (15% LOE) and diarrhea (15% LOE)

ARI is the main cause of infant deaths and diarrhea underlies much malnutrition. The key interventions include: 1) education on prevention, symptom recognition, and treatment of ARI and diarrhea taught

in the Self-Help Groups, which includes demonstrations of home fluid ORS, proper water treatment and hand washing; 2) closely coordinating services with the SIAS ambulatory nurses who provide treatment for ARI and diarrhea; and 3) immunizations provided by SIAS staff against rotavirus and pneumococcus. Training has focused on the Self-Help Groups, teaching the mothers how to recognize the symptoms (e.g. breath counting, sunken fontanel) and promptly respond with treatment or care seeking. Inculcating this knowledge and behavior is the clearest route to sustainability. Facilitating the work has been the household surveillance of the *Comunicadoras* and CFs, who detect and report cases, and encourage care seeking. Impeding the work is malnutrition, lack of hand washing, inadequate boiling of water, and poor access to remote health facilities in the difficult mountain terrain, plus environmental factors such as exposure to damp cold and firewood smoke. We are responding by 1) reinforcing the training done in the Self-Help Groups, including thermal care, hand washing, proper water treatment, and improved nutrition; 2) reinforcing household surveillance and coordination with mobile SIAS nurses to promptly detect and treat cases of pneumonia and diarrhea in the community; 3) reinforcing in Self Help Groups the importance of immunization for rotavirus and pneumococcus.

Objective 4 – Increase coverage of childhood immunizations (5% LOE)

Though immunization coverage in the project area is fairly good, large pockets of low coverage exist, particularly in Santa Eulalia. The key interventions include: 1) education on the importance of immunizations taught in Self-Help Groups; 2) closely coordinating services with the SIAS ambulatory nurses and auxiliary nurses who can provide the immunizations in the community. Training has focused on teaching the purpose and timing of immunizations in the Self-Help Groups. Facilitating the work has been 1) close coordination with the SIAS ambulatory staff who provide immunizations via routine village visits and periodic immunization campaigns, and 2) a good cold chain and steady supply of vaccines from the MSPAS. Impeding has been the difficult mountain geography, discouraging immunization-seeking at remote health facilities and requiring that immunizations be brought to the household/community level. We are responding by detecting children needing vaccinations and improving coordination with the mobile SIAS nurses who provide them.

Objective 5: Increase the participation of women in community meetings and in family health-related decision-making, and improve community social capital and support for maternal and child health.

The foundation of the CBIO+CG Methodology is mobilizing communities to recognize and address their health priorities. This is vital in the project context, where centuries of marginalization, trauma of civil war, and ancient traditions have fomented distrust of outsiders, ignorance of life-saving behaviors, and pervasive male chauvinism that combine to impede women's ability to improve their and their children's health. We therefore target the empowerment of women and the cultivation of community social capital to support maternal and child health.

To this end we 1) generate trust via Participatory Community Diagnoses of health priorities; drafting Community Health Plans to address those priorities; and establishing Community Health Committees; 2) create the Care Group infrastructure to bring health education to the household level by empowering women peer educators; and 3) hold monthly community assemblies to share project data in their language and with understandable graphic formats so they can celebrate successes and discuss challenges. What has facilitated this is 1) the excellent training in CBIO and Care Groups received by staff; 2) the patience, persistence, and creativity of the staff, especially the *Educadoras;* and 3) enlisting community stakeholder allies, especially the *Comadronas.* Impeding the work is distrust of outsiders, community infighting, and pervasive *machismo.* We will respond by systematizing and broadening our

recruitment of stakeholder allies and by providing training to staff in community strengthening and conflict resolution, institutionalizing the training into the CBIO Methodology.

Despite the challenges the progress is excellent. We have attained a 73% overall Self-Help Group participation rate among mothers of U5 children. The percentage of women who report participating in community meetings increased from 10% to 48% and the percentage of women reporting that their community completed a successful project increased from 13% to 66%.

Implementation Lessons Learned

Lessons learned have been multiple and we cannot here discuss them all. But three stand out:

1) The Casa Maternas catalyze a huge improvement in MNC indicators when planted in the fertile ground prepared by our CBIO and Care Group Methodologies. The communities often struggle with abstractions such as "health education" and are used to "bricks and mortar" assistance. The Casas become such a tangible focus for their engagement in improving maternal and child health.

2) The CSHGP's Care Groups help change health behaviors and generate demand for health services, and the CBIO methodology can track who needs and receives those services – but public health services here are physically inaccessible, unaffordable (due to transportation costs to reach them), unavailable 24/7, inadequate, or culturally unacceptable. *The integration of the CSHGP with SIAS and the Casa Maternas has forged a new model that integrates demand generation with demand fulfillment*.

3) The generation of community confidence and support is challenging in this region still traumatized by civil war atrocities, and characterized by community infighting and stubborn *machismo*. Despite these challenges, the *Educadoras*, the front-line workers in the communities, have achieved a 73% participation rate among mothers of U5 children. Nevertheless, they need additional support from a) further training in community mobilization and conflict resolution; and b) systemization of the recruitment of community allies to help them in their work.

Table 2: Summary of Key Analysis and Use of Findings

Key Finding	The critical results difference catalyzed by the 2 operating Casa Maternas in San Sebastian Coatán
Expected/Actual Results	Expected: Result indicators modestly better in San Sebastian Coatán (with 2 Casa Maternas) vs. the other two municipalities. Results: 4 ANC 53% (vs.29%), health facility births 50% (vs. 14%), PPC 88% (vs. 72%).
Analysis	Nearly all indicators show better coverage in San Sebastian Coatán- and disaggregation of the data for the 19 partner communities of the two Casas shows clearly that the difference is nearly entirely due to the results in these 19 communities (e.g., 4 ANC checks - 82%; health facility births - 65%)
Stakeholders Engaged	Curamericas Guatemala helped form Micro-regional Committees comprising members of the Health Committees of the partner communities which are responsible for the Casas. The 3 municipal governments donated the land for Casas and 2 will provide ambulance vehicles. The local MSPAS office in San Miguel Acatán has pledged 3 SBAs for the Tuxlaj Casa Materna. The communities provided the volunteer labor to build the Casas.
Lessons Learned/ Recommendations	The combined CBIO and CG methodologies through their community mobilization and engagement have prepared "fertile ground" for the Casa Maternas. The Casas provide a concrete focus for the communities and stakeholders that catalyzes their engagement. The strategy is proving successful and should be continued and expanded, while supporting the new Institutional Casa Materna Committee (COICAM).
Use of Findings	Continuation of the Casa Maternas, with 2 now under construction in Pett, Santa Eulalia and Tuxlaj, San Miguel Acatán set to come on line in PY3 and 3 more planned for the following years (contingent on funding). Support of COICAM to generate departmental and national MSPAS support.

Key Finding	**Integrating Casa Maternas and SIAS with the CBIO and CG methodologies has forged a new integrated model of enormous potential that combines demand generation and fulfillment for health services, improving accessibility, adequacy, affordability, availability, and acceptability of services.**
Expected/Actual Results	With the CSHGP focusing on education and prevention, and not offering direct services, we feared little community interest and that the generation of demand for health services would not be satisfied, impeding project results in key indicators. As one staff put it, "We were going into battle without weapons." This has not happened. SIAS and the Casa Maternas are satisfying the demand for health services as it is generated, as the project indicators clearly show.
Analysis	Health services (as opposed to education) have nearly always been provided by the SIAS program and/or Casa Maternas, particularly maternal/newborn care.
Stakeholders Engaged	C/G's own SIAS program, as well as that of ADIVES; the three municipal governments; the 3 MSPAS district offices; and the Micro-regional Committees of the Casa Maternas...
Lessons Learned/ Recommendations	The integration of SIAS and the Casa Maternas into the project provides the critical fulfillment of the demand for ACCESSIBLE and culturally ACEPTABLE services generated by the CSHGP.
Use of Findings	This 4-part model, consisting of Care Groups to generate demand, CBIO to ensure full and equitable coverage and tracking of actual impact, and SIAS and Casa Maternas to provide fulfillment of demand for services in culturally acceptable ways, should be further perfected for replication elsewhere in Guatemala. Careful analysis of the OR findings at the end of Phase 2 of the CSHGP should be used to generate local, national, and international support for this model.

Key Finding	***Educadoras* face difficult challenges in generating trust and female participation and overcoming community discord and *machismo.***
Expected/Actual Results	*Educadoras* expected low rates of female participation (~50%). Husbands often forbid their wives to attend Self-Help Groups. But participation of mothers of U5 children in Self-Help Groups was 73%. Still, pockets of low participation persist.
Analysis	Participation rates achieved: 73% mothers U5 children; 78% pregnant women; 73% mothers of under-2 children; 73%; mothers of children 2-5; 20% Adolescents.
Stakeholders Engaged	Community Health Committees, CFs, *Comunicadoras.* In Santa Eulalia, and to some extent in the other two municipalities, *Educadoras* have achieved success by enlisting support of other stakeholders, including husbands, mothers-in-law, *Comadronas,* religious leaders, schools.
Lessons Learned / Recommendations	1) *Educadoras* have been trained well in CBIO, but can benefit from specific training in community mobilization and conflict resolution; 2) the project needs to systematize its involvement of community stakeholders, including husbands/men, to broaden support and counteract distrust and *machismo.*
Use of Findings	1) provision of training in community work and conflict resolution; 2) adding to the CBIO Manual skills/resources for community mobilization; 3) systematization of stakeholder engagement.

Engagement with stakeholders has been one of our key foci during PY2. We have supported and educated Community Health Committees via monthly community assemblies to share community and project results in their Mayan language with understandable graphic formats. This support has now extended to the Micro-Regional Committees of the Casa Maternas, and to the COICAM, which will advocate in support of the Casas. We have similarly educated and collaborated with the three municipal governments, garnering their support for the Casa Maternas. Integrating our work with MSPAS has been a priority and the fruits of that integration with the local district offices have already been described above. Sharing our data has been key: the numbers talk. With MSPAS, the challenges going forward include: 1) confirming promised assistance from local MSPAS offices with signed MOUs; and 2) getting the attention of the departmental and national MSPAS offices, utilizing our MSPAS local allies and our project data to convey how we are helping them achieve the goals of their two large initiatives, *Proyecto Hambrecero* and *La Ventana de las 1,000 Dias.* This and our success in executing the SIAS program under contract with MSPAS offers a route to sustainability through increased MSPAS support. We are working steadily towards a vision of sustainability that combines contributions from MSPAS, the municipal governments, and the communities themselves.

Our project clearly complements and supports the USAID Mission's priorities and initiatives to improve maternal/newborn care and combat child malnutrition. We have regular communication with the Mission, specifically with Dra. Alfaro and Dr. Lopez, including presentations of our PY1 and PY2 results. They have been extremely helpful, providing linkages with resources and with potential partners. Dra. Alfaro visited our project site in April 2013 and was able to visit the new Santo Domingo Casa Materna, and provided us valuable feedback as well as validation of our work.

III. Operations Research Annual Progress Report – Executive Summary

The objective of the Operational Research is to document how the anticipated synergy of the CBIO and Care Group (CBIO+CG) methodologies can achieve the goals of reducing maternal and child mortality in rural Guatemala. Health impact will be measured by changes in health behavior and mortality, and social impact will be measured by changes in empowerment of women and community social capital. A detailed report of the Operation Research is found in Annex 5. An Executive Summary follows.

Formative Research: We utilized Phase 1 to assess and improve the combined CBIO+CG methodologies, including integrating *Comadronas* into a new role in maternal/newborn care.

- The project's CBIO vital events and verbal autopsy systems were audited, analyzed, and streamlined to improve the detection of vital events and the accuracy of the vital events data.
- In interviews and FGDs the field staff cited various advantages of the methodology, especially community engagement and addressing real community health priorities. The main disadvantage cited was the challenge of community work in discordant and male chauvinist contexts. We must add resources in community work and conflict resolution to the CBIO methodology and manual.
- Interviews with *Comadronas* revealed that our strategy for integrating them into maternal/newborn health, congruent with MSPAS goals and methods, is working extremely well.

Evaluative Research: End of Phase 1 assessment of the health and social impacts achieved to date.

- The data indicates that vital events detection has improved key MNC outcomes; that the Casa Maternas greatly improve MNC outcomes; that the U5MR is 69.6, with 50% of U5M being neonatal (mostly from asphyxiation). There were 20 maternal deaths, primarily from hemorrhage.
- The data indicated increased empowerment of women and increased community solidarity.

Changes Made to Original OR Plans – A grant from URC-Project Traction will enable us to add a Case Study of the impact of the Casa Maternas in achieving equity in MNC services.

Plans for PY3: We will conclude the collection and analysis of Phase 1 data and produce definitive documents capturing all Phase 1 findings, including updating of the CBIO Manual. We will define our methodology for measuring cost-effectiveness of CBIO+CG and begin collecting the necessary data. We will also do the data collection for and writing of the Case Study for Project Traction.

IV.Annexes

Annex 1: Project Year 3 Workplan

C/G=Curamericas/Guatemala; CSPS=Child Survival Program Specialist; PI- Operational Research Principal Investigators; CSPM=Child Survival Program Manager; IF=Institutional Facilitators; CF=Community Facilitators (Care Group Leaders); CBIO=Community-Based Impact-Oriented; Health Educators=HE; OR=Operations Research Committee; Adm=Program Administrator/ Accountant; TBA=Traditional Birth Attendant (*Comadrona)*; CHC=Community Health Committee; CGVs=Care Group Volunteers; HBLSS=Home Based Life Saving Skills; MNC=Maternal/Neonatal Care; MSPAS=Ministry of Public Health and Social Welfare; AN=Ambulatory Nurse; MC- Municipal Coordinator; NS-Casa Materna Nurse Supervisor; SBA- Casa Materna Skilled Birth Attendants; MRC- Micro-Regional Committee; COICAM – Institutional Council for the Casa Maternas; Muni – Municipal Government

Activity	Q1	Q2	Q3	Q4	
Operational Research					
Complete Phase 1 Focus Groups and Key Informant Interviews for Operational Research	●				CSPM; PIs; OR; HE
Write definitive documents summarizing Phase 1 findings	●	●			CSPM; PIs; OR
Bi-annual visits from the Research Technical Support Committee		●		●	CSPS, CSPM, OR
Determination of methodology for assessing Cost Effectiveness	●	●			CSPS, CSPM, OR
Case Study Research, Analysis, Publication, Dissemination		●	●	●	
Project Implementation- Casa Maternas					
Continued Operation of 2 existing Casa Maternas	●	●	●	●	MRCs, NS, SBAs, TBAs
Construction and opening of 2 new *Casa Maternas*	●→				Curamericas Global, C/G, MRCs, Munis,
Recruitment and training of staff for new Casa Maternas(SBAs and TBAs); ongoing training of SBAs and TBAs	●	●	●	●	MRC; MC; NS; SBAs; TBAs
Securing of stakeholder commitments from MRCs, municipal governments, and MSPAS	●	●	●	●	CSPM, MC, MRC, Munis, MSPAS
Meetings and advocacy work of COICAM	●	●	●	●	CSPM, MC, COICAM
Project Implementation – CBIO, Care Groups, SIAS					
Community Mobilization, formation of CHCs, Community Diagnoses and Health Plans, ongoing Development and Updates of Censuses and Maps in Phase II communities throughout Roll-Out of Phase II	●	●	●	●	MCs, IFs, HEs, CFs
Initiation of CHCs to discuss the current health situation and create Community Health Action Plan, including Emergency Response Plan. On-going CHC meetings	●	●	●	●	CSPM, FCs, HEs
Registration of U5 children, WRA, and pregnant women (on-going); vital events capture of pregnancies, births, deaths; verbal autopsies	●	●	●	●	IFs, HEs, CFs, CFs, CGVs, TBAs
Recruitment and Continuous Training of Community Facilitators and Care Group Volunteers	●	●	●	●	CHCs, HEs, CFs, CGVs
Phase 2 SIAS Services. Implementing and promoting on-going SIAS health activities in Phase 1 and Phase 2 communities	●	●	●	●	IFs, HEs, CFs, FCs, ANs
Phase II Workshops on Care Groups and their impact on improving MNC	●	●			HEs, CFs, CGVs
Phase II Workshops on Adult Education Methods (*Guia* Modules 1 and 2) for Care Groups and Self-Help Groups	●	●			HEs, CFs, CGVs
Community Facilitators and CGVs begin using Modules No. 1 and 2 and report Vital Events	●	●			HEs, CFs, CGVs

Monthly Community Assemblies	●	●	●	●	MCs, HEs, FCs, CHCs
Quarterly Coordination Meetings with MSPAS, MRCs, Munis, COICAM	●	●	●	●	CSPM, MCs
Ongoing Technical Assistance from Program Specialist	●	●	●	●	CSPS
Phase II Workshops on use of *Guia* Modules No. 3/4 for the CFs, CGVs, TBAs	●	●	●		HEs, FCs, CGVs
Phase II Workshops on MNC & FP	●	●	●		HEs, FCs, CGVs
Phase II Workshops on Nutrition/Growth Monitoring		●	●	●	HEs, ANs, FCs, CGVs
Continuation of Positive Deviance intervention and conducting home nutrition workshops.	●	●	●	●	HEs, FCs
Phase II Workshops on use of Modules No. 5/6 for FCs, CGVs, TBAs		●	●		HEs, FCs, CGVs; TBAs
Phase II Workshops on Prevention and Management of Diarrheal Diseases		●	●		CSPM, CSPS, ANs, IFs, HEs, FCs, CGVs
Phase II Workshops on Prevention and Management of Pneumonia		●	●		CSPM, CSPS, ANs, IFs, HEs, FCs, CGVs
Phase II Workshops on Immunizations				●	CSPM, CSPS, ANs, IFs, HEs, FCs, CGVs
Annual Audits				●	External Auditor
TBA Training Phase II: HBLSS, MNC, Family Planning, Pneumonia and Diarrheal Disease, Emergency Response	●	●	●	●	Curamericas, C/G, ANs, HEs, TBAs
Ongoing Mini-KPCS	●	●	●	●	CSPM, MC, HE
Training in Community Mobilization and Conflict Resolution		●		●	CSPS
Sustainability Workshops Grant-Writing, Fund-Raising, & Partnership Development		●		●	CSPS
Annual Stakeholders Meeting				●	Curamericas, C/G; MSPAS, MRCs, Munis, CHCs
Writing the PY3 Annual Report and PY4 Annual Implementation Plan				●	CSPS, CSPM, OR

Annex 2: Updated performance monitoring indicator table (Phase 1 Communities)

Outcome Indicator	Baseline Phase 1	Current Data Phase 1	Data Source	Proposal EOP Target
Nutrition (30% LOE)				
Exclusive breastfeeding (0-5 months): **P**ercent of infants aged 0-5 months who were given breast milk only in the 24 hours preceding survey	75.0%			85%
Vitamin A Supplementation for Child: Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months: card verified or mother's recall *	79.1%	83%	Mini-KPC	70%
IYCF practice indicator (6-23 months): Percent of infants and young children aged 6-23 months fed according to a minimum of appropriate feeding practices*	53.0%	NA		60%
Underweight: Percentage of children age 0-23 months who are underweight (-SD for the median weight for age, according to WHO/NCHS reference population)*	16.4%	19%	Positive Deviance Study	12%
Immunization (5% LOE)				
Measles Immunization: Percentage of children aged 12-23 months who received Measles vaccination by the time of the survey (card verified).	79.3%	NA		80%
Vaccination Coverage: Percentage of children aged 12-23 months who received all required antigens and doses by the time of the survey- BCG, PENTA1-3, Polio1-3, and Measles (card verified).	73.6%	NA		80%
Prevention and Treatment of Diarrhea (15%)				
ORT Use During a Diarrheal Episode: Percentage of children age 0-23 months with diarrhea in the last two weeks who received oral rehydration solution and/or recommended home fluids	28.3%	NA		50%
Increased fluid intake during a diarrheal episode: Percent of children 0-23 months with diarrhea in the last two weeks who were offered more fluids during the illness	7.5%	NA		60%
Increased food intake during a diarrheal episode: Percent of children 0-23 months with diarrhea in the last two weeks who were offered the same amount or more food during the illness	0.0%	NA		60%
Zinc Treatment for Diarrhea: Percent of children 0-23 months with diarrhea in the last two weeks who were treated with zinc supplements	6.7%	NA		50%

Outcome Indicator	Baseline Phase 1	Current Data Phase 1	Data Source	Proposal EOP Target
Regular Point of Use Water Treatment: Percentage of households of children age 0-23 months that treat water effectively and regularly	66.6%	NA		40%
Safe Water Storage: Percent of households that store water safely	11.7%	NA		40%
Safe Feces Disposal: Percentage of households that disposed of the youngest child's feces safely the last time s/he passed stool	43.1%	NA		80%
Handwashing at Critical Times: Percent of mothers who usually wash their hands with soap before food preparation, before feeding children, after defecation, and after attending to a child who has defecated	1.3%	NA		80%
Appropriate Hand Washing Station: Percentage of mothers of children age 0-23 months who live in households with soap, water, and recipient at a designated place for hand washing *	2.3%	NA		70%
Treatment of ARI/Pneumonia (15%)				
Appropriate Care Seeking for Pneumonia: Percentage of children age 0-23 months with chest-related cough and fast and/or difficult breathing in the last two weeks who were taken to an appropriate health provider	26.0%	NA		50%
Maternal/Newborn Care (35%)				
Quality Antenatal Care: Percentage of mothers of children age 0-23 months who had four or more antenatal visits with a skilled provider (doctor, nurse, professional midwife)	13.4%	35%	CBIO Data	60%
Tetanus Toxoid: Percentage of mothers with children age 0-23 months who received at least 2 tetanus toxoid vaccinations before the birth of their youngest child.	63.2%	67%	Mini-KPC	75%
Iron Tablets for Pregnant Women: Percentage of mothers of children age 0-23 months who took iron tablets or syrup for at least 90 days before the birth of their youngest child.	21.7%	73%	Mini-KPC	80%
Knowledge of Danger Signs during Pregnancy: Percentage of mothers of children 0-23 months who knew at least two danger signs during pregnancy.	22.1%	58%	Mini-KPC	50%
Skilled Birth Attendant: Percentage of children age 0-23 months whose births were attended by skilled personnel (doctor, nurse, professional midwife) in a health facility	15.4%	23%	CBIO Data	40%
Essential Newborn Care: Percentage of children age 0-23 who received all three elements of essential newborn care: thermal protection immediately after birth, clean cord care, and immediate and exclusive breastfeeding.	6.0%	38%	Mini-KPC	25%

Outcome Indicator	Baseline Phase 1	Current Data Phase 1	Data Source	Proposal EOP Target
Active Management of Third Stage of Labor (ATMSL): Percentage of mothers of children age 0-23 months who received AMTSL during their most recent delivery: uterotonic drug; uterine massage; controlled cord traction.	9.4%	15%	Mini-KPC	25%
Knowledge of Maternal Danger Signs During Delivery: Percentage of mothers of children 0-23 months who know at least two danger signs during delivery.	13.4%	NA		50%
Post-Partum Visit for the Mother and Newborn: Percentage of mothers of children age 0-23 and children age 0-23 months who received a post-partum visit from an appropriate trained health worker within two days after the birth of the youngest child.	22.4%	76%	CBIO Data	60%
Knowledge of Post-partum Danger Signs: Percentage of mothers of children age 0-23 months who knew at least two post-partum danger signs.	17.1%	NA		50%
Knowledge of Neonatal Danger Signs: Percentage of mothers of children age 0-23 who know at least two neonatal danger signs.	27.4%	NA		50%
Vitamin A Supplementation for Mother: Percentage of mothers of children 0-23 months who received Vitamin A supplementation with 2 months post-partum	22.1%	25%	Mini-KPC	70%
Knowledge of Risk Associated with Birth to Pregnancy Intervals Less than 24 Months: Percentage of mothers of children 0-23 months who know at least two risks of having a birth to pregnancy interval of less than 24 months	6.4%	NA		50%
Current Contraceptive Use Among Mothers of Young Children: Percentage of non-pregnant mothers of children age 0-23 months who are using a modern contraceptive method*	35.8%	NA		25%
Women's Empowerment				
Decision-Making re: ARI Treatment: Percentage of ARI episodes in 0-23 months old children in the past two weeks in which either the mother or the mother jointly with another person decided the care-seeking and/or treatment	72.7%	NA		85%

Outcome Indicator	Baseline Phase 1	Current Data Phase 1	Data Source	Proposal EOP Target
Decision-Making re: Location of Delivery and Birth Attendant: Percentage of households with children 0-23 months in which either the mother of the mother jointly with another person decided the location and birth attendant of her last delivery	68.2%	NA		80%
Control of Money for Purchasing Food for Children: Percentage of mothers of children 0-23 months who indicate that they do not need to ask for the money needed to buy the food necessary to meet the minimum acceptable feeding practices for infants and young children	12.6%	NA		30%
Decision-Making re: Contraception: Percentage of households with children 0-23 months in which either the mother or the mother jointly with her husband/partner (or another person) would practice contraception and, if so, the method to be used	56.5%	NA		70%
Women's Participation in Community Meetings**:** Percentage of mothers of 0-23 month old children who report that in the past month they both attended and expressed their opinion at a community meeting.	10.0%	48%	Mini-KPC	30%
Community Support of Maternal Child Health				
Community OE Response Pla**n:** Percentage of mothers of children 0-23 months old who report that their community has in place an emergency response plan that would provide transport for them and/or their newborn child to the nearest health facility in the event of a difficult delivery or danger signs in pregnancy or during the post-partum period	29.4%	NA		60%
Care Group Activity: Percentage of mothers of children 0-23 months old who report that in the past month they have either been a Care Group volunteer, participated in a Care Group meeting, or have been instructed by a Care Group member.	8.4%	96%	Mini-KPC	70%
Community Social Capital				
Community Solidarity: Percentage of mothers of 0-23 month old children who report that their community has worked together to solve a community problem or make a community improvement in the past 30 days.	13.0%	66%	Mini-KPC	40%

Annex 3: Project Data Form

(completed online)

Child Survival and Health Grants Program Project Summary

Oct-29-2013

Curamericas (Guatemala)

General Project Information

Cooperative Agreement Number: AID-OAA-A-11-00041
CURAMERICAS Headquarters Technical Backstop: Ira Stollak
CURAMERICAS Headquarters Technical Backstop Backup:
Field Program Manager: Mario Valdez
Midterm Evaluator:
Final Evaluator:
Headquarter Financial Contact: Ira Stollak
Project Dates: 10/1/2011 - 9/30/2015 (FY2011)
Project Type: Innovation
USAID Mission Contact: Baudilio Lopez
Project Web Site: http://www.curamericas.org/our-work/guatemala

Field Program Manager

Name: Mario Valdez (Child Survival Program Manager)
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Skype Name:

Alternate Field Contact

Name:
Address:
Phone:
Fax:
E-mail:
Skype Name:

Grant Funding Information

USAID Funding: $1,748,559 **PVO Match:** $1,270,835

General Project Description

Curamericas Global, a 2011 Innovation category grantee, is implementing the *Community-Based Impact-Oriented Child Survival Project* in three underserved municipalities of the Department of Huehuetenango, Guatemala. The project goal is to improve health and nutrition, and ultimately reduce mortality, in under-five children through community mobilization, training and capacity building of local partners, establishment of emergency response networks, and implementation of high-impact interventions at the community, municipality and district levels. Interventions include: Maternal/Newborn Care (35%), Nutrition (30%), Pneumonia (15%), Diarrhea (15%), Immunizations (5%). The project will reach approximately 40,692 beneficiaries consisting of 28,058 women of reproductive age and 12,634 under-five children.

Project Location

Latitude: 15.78 **Longitude:** -90.23

Project Location Types: Rural
Levels of Intervention: Health Center
Health Post Level
Home
Community
Province(s): Department of Huehuetenango
District(s): Municipalities of San Sebastián Coatán, Santa Eulalia, and San Miguel Acatán
Sub-District(s): --

Operations Research Information

OR Project Title: Community-Based Impact-Oriented (CBIO) Methodology and Care Groups
Cost of OR Activities: $112,284
Research Partner(s): Johns Hopkins Bloomberg School of Public Health; Centro Universitario de Occidente
"CUNOC"
OR Project Description: Curamericas will conduct operations research that examines combining
Community-Based Impact-Oriented (CBIO) methodology and the Care Group model as a means to ensure that culturally appropriate high-quality care reaches those most in need. Research will assess the synergistic effects these methodologies have on health outcomes, health behavior, and social impact when implemented together. Formative research will also be conducted on redefining the role of traditional birth attendants in a manner that aligns with the Ministry of Public Health and Social Welfare's national strategy and their role in improving the quality of maternity care and reducing maternal mortality.

Partners

Curamericas Guatemala (Collaborating Partner) $0
Mayan Families (Collaborating Partner) $0
American College of Nurse Midwives (Collaborating Partner) $8,000

Strategies

Social and Behavioral Change Strategies: Community Mobilization
Group interventions
Interpersonal Communication
Health Services Access Strategies: Emergency Transport Planning/Financing
Addressing social barriers (i.e. gender, socio-cultural, etc)
Implementation with a sub-population that the government has identified as poor and underserved
Implementation in a geographic area that the government has identified as poor and underserved
Health Systems Strengthening: Quality Assurance
Conducting capacity assessment of local partners
Supportive Supervision
Task Shifting
Developing/Helping to develop clinical protocols, procedures, case management guidelines
Developing/Helping to develop job aids
Monitoring health facility worker adherence with evidence-based guidelines
Providing feedback on health worker performance
Monitoring CHW adherence with evidence-based guidelines
Referral-counterreferral system development for CHWs
Community role in recruitment of CHWs
Development of clinical record forms

Review of clinical records (for quality assessment/feedback)
Coordinating existing HMIS with community level data
Pharmaceutical management and logistics
Community input on quality improvement
Strategies for Enabling Environment: Stakeholder engagement and policy dialogue (local/state or national)
Building capacity of communities/CBOs to advocate to leaders for health
Tools/Methodologies: BEHAVE Framework
Rapid Health Facility Assessment
Community-based Monitoring of Vital Events
LQAS
Participatory Rapid/Rural Appraisal
MAMAN Framework

Capacity Building

Local Partners: Local Non-Government Organization (NGO)
National Ministry of Health (MOH)
Dist. Health System
Health Facility Staff
Health CBOs
Government sanctioned CHWs
Non-government sanctioned CHWs
TBAs

Interventions & Components

Control of Diarrheal Diseases (15%)
- Water/Sanitation
- Hand Washing
- ORS/Home Fluids
- Feeding/Breastfeeding
- Care Seeking
- Case Management/Counseling
- POU Treatment of water
- Zinc
- Community Case Management with Zinc (Implementation)
- Community Case Management with ORS (Implementation)

CHW Training
HF Training

Immunizations (5%)
- Polio
- Vitamin A
- Surveillance
- Cold Chain Strengthening
- Injection Safety
- Mobilization
- Measles Campaigns
- Community Registers

CHW Training
HF Training

Infant & Young Child Feeding
- ENA
- Comp. Feed. from 6 mos.
- Cont. BF up to 24 mos.

- Growth Monitoring
- Maternal Nutrition
- Peer support
- Promote Excl. BF to 6 Months
- Intro. or promotion of LAM

CHW Training
HF Training

Maternal & Newborn Care (35%)

- Emergency Obstetric Care
- Neonatal Tetanus
- Recognition of Danger signs
- Newborn Care
- Post partum Care
- Child Spacing
- Integation. with Iron & Folic Acid
- Normal Delivery Care
- Birth Plans
- Home Based LSS
- Control of post-partum bleeding
- Emergency Transport
- Neonatal Vitamin A
- Kangaroo Mother Care (skin to skin care)
- Misoprostol
- AMTSL
- Pre-eclampsia

CHW Training
HF Training

Pneumonia Case Management (15%)

- Case Management Counseling
- Access to Providers Antibiotics
- Recognition of Pneumonia Danger Signs

CHW Training
HF Training

Operational Plan Indicators

Number of People Trained in Maternal/Newborn Health			
Gender	**Year**	**Target**	**Actual**
Female	2012	92	
Female	2012		3200
Male	2012		385
Male	2012	42	
Female	2013	4000	
Female	2013		4315
Male	2013		462
Male	2013	450	
Female	2014	6000	
Female	2014		0
Male	2014		0
Male	2014	600	
Female	2015	7000	
Male	2015	700	
Number of People Trained in Child Health & Nutrition			
Gender	**Year**	**Target**	**Actual**
Female	2012	52	
Female	2012		3200
Male	2012		385
Male	2012	52	
Female	2013	4000	
Female	2013		4543
Male	2013		462
Male	2013	450	
Female	2014	6000	
Female	2014		0
Male	2014		0
Male	2014	600	
Female	2015	7000	
Male	2015	700	
Number of People Trained in Malaria Treatment or Prevention			
Gender	**Year**	**Target**	**Actual**
Female	2012		0
Female	2012	0	
Male	2012		0
Male	2012	0	
Female	2013		0
Female	2013	0	
Male	2013		0
Male	2013	0	
Female	2014		0
Female	2014	0	
Male	2014		0
Male	2014	0	
Female	2015	0	
Male	2015	0	

Locations & Sub-Areas

San Miguel Acatán	30,977
San Sebastián Coatán	21,945
Santa Eulalia	45,419
Total Population:	98,341

Target Beneficiaries

	San Miguel Acatán	San Sebastián Coatán	Santa Eulalia	Total
Children 0-59 months	4,403	3,961	6,963	15,327
Women 15-49 years	9,113	7,445	15,772	32,330
Beneficiaries Total	13,516	11,406	22,735	47,657

Rapid Catch Indicators: DIP Submission

Sample Type: 30 Cluster

Antenatal Care

Description -- Percentage of mothers of children age 0-23 months who had four or more antenatal visits when they were pregnant with the youngest child

Numerator: Enter the number of mothers with children age 0-23 months who had at least four antenatal visits while pregnant with their youngest child

Denominator: Enter the total number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	12	140	8.6%	6.6
San Sebastián Coatán	27	140	19.3%	9.2
Santa Eulalia	20	319	6.3%	3.8

Maternal TT Vaccination

Description -- Percentage of mothers with children age 0-23 months who received at least two Tetanus toxoid vaccinations before the birth of their youngest child

Numerator: Enter the number of mothers with children age 0-23 months who received at least two tetanus toxoid vaccinations before the birth of their youngest child

Denominator: Enter the total number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	81	140	57.9%	11.6
San Sebastián Coatán	115	140	82.1%	9.0
Santa Eulalia	182	319	57.1%	7.7

Skilled Birth Attendant

Description -- Percentage of children age 0-23 months whose births were attended by skilled personnel

Numerator: Enter the number of children age 0-23 months whose birth was attended by a doctor, nurse, midwife, auxiliary midwife, or other personnel with midwifery skills

Denominator: Enter the total number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	11	140	7.9%	6.3
San Sebastián Coatán	25	140	17.9%	9.0
Santa Eulalia	28	319	8.8%	4.4

Current Contraceptive Use Among Mothers of Young Children

Description -- Percentage of mothers of children age 0-23 months who are using a modern contraceptive method

Numerator: Enter the number of mothers with children age 0-23 months who are using a modern contraceptive method

Denominator: Enter the total number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	68	140	48.6%	11.7
San Sebastián Coatán	54	140	38.6%	11.4
Santa Eulalia	66	319	20.7%	6.3

Post-Natal Visit to Check on Newborn Within the First 2 Days After Birth

Description -- Percentage of children age 0-23 months who received a post-natal visit from an appropriately trained health worker within two days after birth

Numerator: Enter the number of children age 0-23 months who received a post-natal visit within two days after birth by an appropriate health worker

Denominator: Enter the total number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	17	140	12.1%	7.7
San Sebastián Coatán	22	140	15.7%	8.5
Santa Eulalia	76	319	23.8%	6.6

Exclusive Breastfeeding

Description -- Percentage of children age 0-5 months who were exclusively breastfed during the last 24 hours

Numerator: Enter the number of children age 0-5 months who drank breast milk in the previous 24 hours AND did not drink any other liquids in the previous 24 hours AND was not given any other foods or liquids in the previous 24 hours

Denominator: Enter the total number of children age 0-5 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	27	35	77.1%	19.7
San Sebastián Coatán	22	28	78.6%	21.5
Santa Eulalia	71	93	76.3%	12.2

Infant and Young Child Feeding

Description -- Percentage of infants and young children age 6-23 months fed according to a minimum of appropriate feeding practices

Numerator: Enter the number infants and young children age 6-23 months fed according to a minimum of appropriate feeding practices
Denominator: Enter the total number of children age 6-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	52	105	49.5%	13.5
San Sebastián Coatán	57	112	50.9%	13.1
Santa Eulalia	133	226	58.8%	9.1

Vitamin A Supplementation in the Last 6 Months

Description -- Percentage of children age 6-23 months who received a dose of Vitamin A in the last 6 months: card verified or mother's recall

Numerator: Enter the number of children age 6-23 months who received a dose of Vitamin A in the last 6 months (mother's recall or card verified)
Denominator: Enter the total number of children age 6-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	89	105	84.8%	9.7
San Sebastián Coatán	89	112	79.5%	10.6
Santa Eulalia	160	226	70.8%	8.4

Measles Vaccination

Description -- Percentage of children age 12-23 months who received a measles vaccination

Numerator: Enter the number of children age 12-23 months who received a measles vaccination by the time of the interview as seen on the card or recalled by the mother
Denominator: Enter the total number of children age 12-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	57	64	89.1%	10.8
San Sebastián Coatán	55	63	87.3%	11.6
Santa Eulalia	100	141	70.9%	10.6

Access to Immunization Services

Description -- Percentage of children age 12-23 months who received DTP1 according to the vaccination card or mother's recall by the time of the survey

Numerator: Enter the number of children age 12-23 months who received a DTP1 at the time of the survey according to the vaccination card/child health booklet or mother's recall
Denominator: Enter the total number of children age 12-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	63	64	98.4%	4.3
San Sebastián Coatán	56	63	88.9%	11.0
Santa Eulalia	112	141	79.4%	9.4

Health System Performance Regarding Immunization Services

Description -- Percentage of children age 12-23 months who received DTP3 according to the vaccination card or mother's recall by the time of the survey

Numerator: Enter the number of children age 12-23 months who received DTP3 at the time of the survey according to the vaccination card/child health booklet or mother's recall
Denominator: Enter the total number of children age 12-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	61	64	95.3%	7.3
San Sebastián Coatán	56	63	88.9%	11.0
Santa Eulalia	101	141	71.6%	10.5

Treatment of Fever in Malarious Zones

Description -- Percentage of children age 0-23 months with a febrile episode during the last two weeks who were treated with an effective anti-malarial drug within 24 hours after the fever began

Numerator: Enter the number of children age 0-23 months with a febrile episode in the last two weeks AND whose mother/caretaker sought treatment for the child within 24 hours AND who were treated with an appropriate anti-malarial drug
Denominator: Enter the total number of children age 0-23 months with a febrile episode in the last two weeks

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán			%	
San Sebastián Coatán			%	
Santa Eulalia			%	

ORT Use

Description -- Percentage of children age 0-23 months with diarrhea in the last two weeks who received oral rehydration solution (ORS) and/or recommended home fluids

Numerator: Enter the number of children age 0-23 months with diarrhea in the last two weeks AND who received oral rehydration solution (ORS) and/or recommended home fluids
Denominator: Enter the total number of children age 0-23 months who had diarrhea in the last two weeks

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits

Malaria Rapid CATCH indicators not recorded due to no malaria interventions as part of the project.

San Miguel Acatán	14	65	21.5%	14.1
San Sebastián Coatán	9	61	14.8%	12.6
Santa Eulalia	47	112	42.0%	12.9

Appropriate Care Seeking for Pneumonia

Description -- Percentage of children age 0-23 months with chest-related cough and fast and/or difficult breathing in the last two weeks who were taken to an appropriate health provider

Numerator: Enter the number of children age 0-23 months with chest-related cough and fast and/or difficult breathing in the last two weeks who were taken to an appropriate health provider

Denominator: Enter the total number of children with chest-related cough and fast and /or difficult breathing in the last two weeks

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	8	35	22.9%	19.7
San Sebastián Coatán	3	31	9.7%	14.7
Santa Eulalia	25	89	28.1%	13.2

Point of Use (POU)

Description -- Percentage of households of children age 0-23 months that treat water effectively

Numerator: Enter the number of households of mothers of children 0-23 months that treat water effectively

Denominator: Enter the total number of households of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	88	140	62.9%	11.3
San Sebastián Coatán	32	140	22.9%	9.8
Santa Eulalia	254	319	79.6%	6.3

Appropriate Hand Washing Practices

Description -- Percentage of mothers of children age 0-23 months who live in households with soap at the place for hand washing

Numerator: Enter the number of mothers with children age 0-23 months who live in households with soap at the place for hand washing

Denominator: Enter the total number of mothers of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	10	140	7.1%	6.0
San Sebastián Coatán	4	140	2.9%	3.9
Santa Eulalia	0	319	0.0%	0.0

Child Sleeps Under an Insecticide-Treated Bednet

Description -- Percentage of children age 0-23 months who slept under an insecticide-treated bednet (in malaria risk areas, where bednet use is effective) the previous night

Numerator: Enter the number of children age 0-23 months who slept under an insecticide-treated bednet the previous night

Denominator: Enter the total number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán			%	
San Sebastián Coatán			%	
Santa Eulalia			%	

Underweight

Description -- Percentage of children 0-23 months who are underweight (-2 SD for the median weight for age, according to the WHO/NCHS reference population)

Numerator: Enter the number of children 0-23 months with weight/age -2 SD for the median weight for age, according to the WHO/NCHS reference population

Denominator: Enter the total number of children age 0-23 months in the survey

Sub Area Name	Numerator	Denominator	Percent(calculate)	Confidence Limits
San Miguel Acatán	26	140	18.6%	9.1
San Sebastián Coatán	36	140	25.7%	10.2
Santa Eulalia	45	319	14.1%	5.4

Annex 4 (below) - Program Learning Brief and Operations Research Learning Brief

Casa Materna in Santo Domingo, San Sebastian Coatan

Key Findings:

- **The Casa Maternas have a significant impact on improving coverage of MNC and decreasing maternal and neonatal mortality.**
- **The Casas are accessible, available, affordable, adequate, and culturally acceptable.**
- **Success derives from stakeholder involvement at every stage and the combined CBIO and Care Group Methodologies.**

PROGRAM LEARNING BRIEF

Impacting Maternal and Neonatal Care in rural Guatemala: the Casa Materna

Maternal and neonatal mortality among the rural Mayan population of northern Huehuetenango department of Guatemala are perhaps the worst in Latin America. The root causes include sheer remoteness from maternal/newborn care (MNC) services, traditional preferences for home deliveries by traditional birth attendants (*Comadronas)*, and MNC services, where they do exist, that are unaffordable due to transportation costs and that are culturally unacceptable. We are addressing this challenge by creating Casa Maternas, strategically-located, community-owned birthing centers staffed by skilled birth attendants who speak the local Mayan language and who attend deliveries 24/7 in culturally acceptable ways. This includes the integration of the local *Comadronas* into the Casa Materna team, who encourage the women to deliver in the Casa. The PY2 outcomes have exceeded our expectations: in the municipality of San Sebastián Coatán, where we have had two operating Casas, health facility deliveries by a skilled birth attendant has increased to 50%, and 18 obstetric emergencies have been successfully resolved, implying a reduction in municipal maternal mortality of 75%.

This project was funded by the U.S. Agency for International Development through the Child Survival and Health Grants Program.

[October 2013]

Background

Curamericas' CSHGP, "Community-Based Impact-Oriented Child Survival in Huehuetenango, Guatemala," is being implemented in the three municipalities of San Sebastian Coatán, San Miguel Acatán, and Santa Eulalia. This isolated mountain region of overwhelming indigent Mayan population exhibits some of the worst health indicators in Latin America. Knowledge and practice of key health behaviors are at extremely low levels. Health facilities are few and usually inaccessible- the nearest hospital is 4 hours away in Huehuetenango. Our goal is to significantly improve the health of 15,327 U5 children and 32,330 WRA with interventions in maternal/newborn health, nutrition, prevention and treatment of ARI and diarrhea, and immunizations, delivered through our integrated CBIO and Care Group Methodologies. We coordinate closely with the Guatemala Ministry of Health (MSPAS) initiatives to increase health facility births and reduce malnutrition and maternal and child mortality. The project is being implemented in two Phases: in Phase 1 (PY1 and PY2) the project was implemented in 92 communities comprising 44% of the population of the project catchment. A key feature of the MNC intervention are Casa Maternas strategically-located, community-owned birthing centers staffed by skilled birth attendants who speak the local Mayan language and who attend deliveries 24/7 in culturally acceptable ways.

Project Design

The project seeks to 1) change critical health behaviors and create demand for critical health services among the population; 2) ensure that all in need receive care, while documenting actual impacts; and 3) satisfy the demand generated with accessible, affordable, available, adequate, and culturally acceptable health services.. Demand is generated utilizing the Care Group Methodology. We ensure equitable coverage and document impact with our CBIO Methodology, by mobilizing communities to take charge of their health, forming Community Health Committees, doing a census and mapping of all communities to monitor health at the household level, and detecting, recording and promptly responding to vital events – pregnancies, births, and U5/maternal deaths.

Satisfying demand for health services in this remote mountainous region is the greatest challenge. We integrate our work with the MSPAS' SIAS program, whose ambulatory nurses provide health services in the villages, such as antenatal care, treatment of ARI and diarrhea, and immunizations. But this cannot fulfill the demand for clean safe births in a health facility with a skilled attendant. Casa Maternas fill this critical gap.

After determining where geographically a Casa is most needed to provide maximum access, we mobilize the communities in the catchment to form a Micro-regional Committee (MRC) comprising two representatives of each communities' Health Committee. Utilizing our *Casa Materna Replication Manual*, we train the MRC to take charge of the Casa construction and management. Education of the municipal government is also key: the three municipal governments have donated the land on which their three new Casas have been built, as well as construction materials. Importantly, *the Casas have been built entirely with volunteer community labor.*

Our Casa Materna in Calhuitz, San Sebastián has been operational for over three years; in PY2 we constructed and opened a second Casa in Santo Domingo, San Sebastián, and two more are under construction, one to open in November 2013 in Tuxlaj, San Miguel Acatán, and one to open in March 2014 in Pett, Santa Eulalia. The Calhuitz Casa has 8 partner communities; Santo Domingo, 11; Pett, 11; and Tuxlaj, 29; giving us a total of 69 partner communities with a population of over 32,000.

Physically, the Casas conform to a basic design the MRC may customize that includes a waiting room/training room, birthing room, kitchen, bathroom (with running water and flush toilet), examination room, and recovery room. An important feature is the *chuj*, the traditional sweat-lodge used by Mayan women after giving birth.

Each Casa is staffed 24/7 by an on-call Auxiliary Nurse and two Support Women, continually trained in ENA, ATMSL, and HBLSS by an RN Supervisory Nurse. These staff also provide prompt recognition of and response to obstetric emergencies, and coordinating emergency transport. Pregnant women pay a 50 Quetzal ($6.50) insurance premium which covers 50% of the cost should she need obstetric emergency transportation. Otherwise, services are free. In addition, the Casa staff offer antenatal care, FP counseling, Papanicolaou tests, and feature support groups for pregnant and lactating women and for adolescents. Cultural acceptability is paramount – the women are attended in their native language, family is permitted to visit and perform non-obstructive traditional spiritual practices, and trained *Comadronas* are integrated into the Casa team in a redefined role: they encourage the woman to deliver in the Casa, accompany her there, assist appropriately in the delivery as part of the Casa team, and continue to receive from the family their traditional payment for services. *Comadronas* participate in monthly trainings in ENA, ATMSL and HBLSS from the Supervisory Nurse.

Methodology

Staff respond to all births with a home visit to provide post-partum care within 48 hrs. At this visit the mother is interviewed and her *carnet* (maternal health card) examined to determine 1) how many quality antenatal care checks she has had; and 2) if her delivery was attended by a skilled birth attendant in a health facility. We can thus calculate the coverage for 4 antenatal checks (including tetanus toxoid and iron/folic acid supplementation), health facility births with a SBA, and postpartum care within 48 hours. This data was disaggregated by municipality and by community.

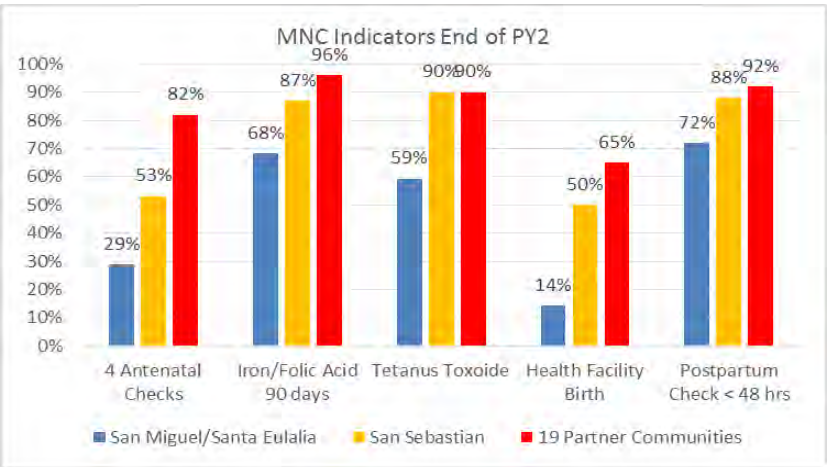
Each Casa keeps detailed records of all services provided, including obstetric emergencies attended at the Casa or referred to the hospital in Huehuetenango. Follow-up contact for all obstetric emergencies allows us to track all OE outcomes for both mother and neonate. Lives saved can be compared with actual maternal and U5 mortality to estimate the reduction in mortality rates achieved.

Findings

The two Casas attended 167 deliveries in PY2, including 19 obstetric emergencies referred to the hospital in Huehuetenango (primarily for hemorrhage, retained placenta, and eclampsia), 18 with a successful outcome and 1 ending in maternal death. In these 18 referrals, 2 neonates died, implying 16 neonatal lives saved. With 6 total maternal mortalities detected in Phase 1 communities in San Sebastián in PY2, the 18 saved maternal lives imply a reduction in maternal mortality of 75% for the Phase 1 communities of the municipality. With 20 U5

deaths detected in Phase 1 communities in San Sebastián in PY2, the 16 saved neonatal lives saved imply a U5M reduction of 44%.

The following graph compares the preliminary CBIO data for end-of-PY2 coverage for MNC services for 1) San Miguel and Santa Eulalia combined, with no operating Casas in PY2; 2) San Sebastian, with 2 operating Casas; and 3) the 19 partner communities of the two operating Casa Maternas in Calhuitz and Santo Domingo.



MNC coverage for ANC indicators was significantly higher in San Sebastian Coatán, with its 2 operating Casas, than in the other two municipalities combined.

Disaggregation of the coverage for the 19 partner communities of the 2 Casas reveals that this difference is largely due to the outcomes in these 19 partner communities.

Conclusions and Lessons Learned

The Casa Maternas had a dramatic impact on coverage of MNC services and on reducing maternal and neonatal mortality. They provide MNC that is accessible, affordable, available, adequate, and culturally acceptable. By mobilizing communities to improve their own health and generating demand for MNC services, the combined CBIO and Care Groups Methodologies prepare the way. The success of the Casas derives from involving all stakeholders from the beginning and empowering them to own, build and operate the Casa and to find locally specific ways to achieve sustainability. By involving the municipal government, the challenge of securing land for the Casas was overcome. The challenge of securing labor for Casa construction was overcome with community volunteer labor that represents community "sweat equity." The challenge of securing construction materials was overcome with matching grant funds, contributions from Curamericas volunteer teams, and contributions from the municipal governments. The challenge of cultural acceptability was met by the successful integration of the *Comadronas* and the recruitment and training of SBAs from the local communities who speak the language.

Recommendations and Use of Findings

The findings confirm the impact of the Casa Maternas, and so the Casas will be continued and expanded. Besides the two new Casas to come on line in the next six months, three more are being planned. The dramatic results are helping us secure commitments from stakeholders that will ensure sustainability. Helping us in the effort to advocate for the Casas with the regional and national MSPAS will be the Institutional Council of the Casa Maternas (COICAM), a committee comprising representatives of the 4 Casa MRCs, the 3 municipal governments, and the 3 local MSPAS offices. Municipal and community support will also be strengthened: the municipal governments of Santa Eulalia and San Sebastian are pledging vehicles to use as ambulances; and the community of Calhuitz is donating its pharmacy to the Casa, with pharmacy profits to support Casa operations. We are already hosting visitors from other NGOs interested in replicating the Casa Materna model. Our Casa Materna Replication Manual will facilitate this process.

The Community-Based Impact-Oriented Child Survival in Huehuetenango, Guatemala Project in Huehuetenango, Guatemala is supported by the American people through the United States Agency for International Development (USAID) through its Child Survival and Health Grants Program. The Project is managed by Curamericas Global, Inc. under Cooperative Agreement No. AID-OAA-A-11-00041. The views expressed in this material do not necessarily reflect the views of USAID or the United States Government. For more information about *The Community-Based Impact-Oriented Child Survival in Huehuetenango, Guatemala Project*, visit: http://www.curamericas.org/

New mother and Comadrona at the Calhuitz Casa Materna

Key Findings:

- **Integration of trained *Comadronas* into the maternal/ newborn care has been accomplished first by providing them first with training in clean safe delivery practices, and then by integrating them fully into the Casa Materna team**
- **Acceptance of the *Comadona's* new role follows a dose-response relationship proportional to her direct involvement with the Casa Materna**

OPERATIONS RESEARCH BRIEF

Integrating Comadronas into Maternal Newborn Care in rural Guatemala

Maternal and neonatal mortality among the rural Mayan population of northern Huehuetenango department of Guatemala are perhaps the worst in Latin America. The root causes include sheer remoteness from maternal/newborn care (MNC) services, traditional preferences for home deliveries by traditional birth attendants (*Comadronas)*, and MNC services, where they do exist, that are unaffordable due to transportation costs and culturally unacceptable. Both Curamericas and the Guatemala Ministry of Health and Social Welfare (MSPAS) are addressing this challenge by training *Comadronas* in safe delivery techniques that include essential newborn actions, elements of ATMSL and home-based life-saving skills. In addition, Curamericas is creating Casa Maternas, strategically-located, community-owned birthing centers staffed by skilled birth attendants who speak the local Mayan language and who attend deliveries 24/7 in culturally acceptable ways. This includes integration of the trained *Comadronas*, who accompany women to the Casa, and assist in the delivery as an integral part of the Casa Materna team.

This project was funded by the U.S. Agency for International Development through the Child Survival and Health Grants Program. [October 2013]

Background

The Guatemala Ministry of Health and Public Welfare (MSPAS) is struggling to reduce the extremely high maternal and neonatal mortality rates of the rural Mayan population of the country. While its official policy is to accomplish this by increasing health facility births attended by health professionals, it acknowledges the near-absence of accessible health facilities in many areas and the persistence of traditional home delivery preferences. MSPAS is therefore also taking a pragmatic "harm-reduction" approach that recognizes the critical role of *Comadronas* in maternal/newborn health in traditional Mayan culture, by training *Comadronas* to do clean, safe deliveries, providing training in the essential newborn actions, elements of ATMSL, and the prompt recognition and referral of obstetric emergencies. A rarely-enforced Guatemalan law forbids a *Comadrona* from doing a home delivery unless she has been certified as having received this training.

But unacceptably high maternal and neonatal mortality persist in northern Huehuetenango department, the site of Curamericas' child survival project; the MSPAS strategy is not enough. Therefore Curamericas is creating strategically-located, community-owned birthing centers called Casa Maternas, staffed by skilled birth attendants who speak the local Mayan language and who attend deliveries 24/7 in culturally acceptable ways. This includes integration of the trained *Comadronas* into the Casa Materna, who accompany women to the Casa, and assist in the delivery as an integral part of the Casa Materna team.

Intervention Design and Implementation

Each Casa Materna is strategically located to provide maximum physical access to the communities it serves. It is constructed, owned and managed by the partner communities. Each is staffed 24/7 by a Curamericas Guatemala on-call Auxiliary Nurse and two Support Women, continually trained in ENA, ATMSL, and HBLSS by an RN Supervisory Nurse. These staff also provide prompt recognition of and response to obstetric emergencies, including coordinating emergency transport. In addition, the Casa staff offer antenatal care, FP counseling, Papanicolaou tests, and feature support groups for pregnant and lactating women and for adolescents. The Casas conform to a basic design that includes a waiting room/training room, birthing room, kitchen, bathroom (with running water and flush toilet), examination room, and recovery room. An important feature is the *chuj*, the traditional sweat-lodge used by Mayan women after giving birth. This is because cultural acceptability is paramount or the women will not use the Casa. They are attended in their native language, family is permitted to visit and perform non-obstructive traditional spiritual practices, and trained *Comadronas* are integrated into the Casa team in a redefined role: they encourage the woman to deliver in the Casa, accompany her there, and assist appropriately in the delivery. *Comadronas* continue to receive from the family their traditional payment for services. They participate in monthly trainings in ENA, ATMSL and HBLSS provided by the Supervisory Nurse.

This training of *Comadronas* begins long before the Casa Materna is operational, done in coordination with the ongoing MSPAS certification trainings. Curamericas has added a component for home-based life-saving skills (HBLSS), taught by Master Trainers who were trained by trainers from the American College of Nurse Midwives. This equips the *Comadrona* to respond to obstetric emergencies with immediate life-saving measures, but still requires her to refer the mother and neonate to the closest health facility. Once a Casa Materna becomes operational, these trainings continue. However, the training now also emphasizes delivery in the Casa Materna rather than in the home, with the *Comadrona* accompanying the woman there and helping with the delivery, primarily via pre- and post-delivery uterine massage under the supervision of the Auxiliary Nurse.

Methodology

The goal of the investigation was to document the perceptions of the *Comadronas* regarding how their integration into the health care system is proceeding and how it can be further improved. We did key informant interviews with 36 *Comadronas*, 20 from San Sebastián Coatán, which had 2 operating Casa Maternas in PY2; and 10 from San Miguel Acatán and 6 from Santa Eulalia, where there are not yet operating Casas. Two separate interview questionnaires were used: the San Sebastián questionnaire included more questions about interaction with the Casa Maternas and their staff; the San Miguel and Santa Eulalia interviews focused more on perceptions of the Casas The *Comadronas* were selected from our *Comadrona* census to represent as many communities as possible over a broad geographic area. The interviews were conducted in the *Comadrona's* Mayan language facilitated by bi-lingual Spanish-speaking translators. The interviews were audio-recorded and transcribed into Spanish with the help of the translators. Later, the Spanish transcriptions were translated into English. The interview locations were either the Casa Materna in Santo Domingo, San Sebastián or the home of the *Comadrona.* This investigation was executed by Tulane University MPH student Kaitlin Cassidy

Findings

All 20 of the San Sebastián *Comadronas* had a positive perception of the Casa Materna, stating that it helps women and is appropriate for all deliveries. They feel it is a good alternative to the hospital, as the hospital is very far and expensive. The Casa Materna allows *Comadronas* to handle complications more safely and efficiently, and facilitates referrals and emergency transport. Many noted that the Casa has helped to reduce infant and maternal mortality. They think it is a clean, safe place to have a delivery, and they believe the staff of the Casa Materna is an asset, especially when complications arise. Of the 15 (75%) *Comadronas* that have used the Casa Materna, all of them say they have worked well with the staff. The Comadronas say that deliveries require them to work together; delivering the baby is not the job of just the nurses or just the *Comadrona*, but a job that requires teamwork. Some of the *Comadronas* who haven't used the Casa Materna often say that there is still a little bit of fear or discomfort coming to the Casa, but when they have come, everything has gone well. The majority mentioned doing prenatal uterine massage to check the position of the baby and postpartum uterine massage immediately after the delivery to prevent hemorrhage. A few described the prayers that they perform in order to protect the woman and child. Nearly half mentioned receiving the baby, cleaning the baby, and helping to cut the cord. Several said they advise mothers throughout pregnancy, mostly about nutrition.

In a home, the *Comadronas* say they are alone and have many responsibilities during the delivery, whereas at the Casa Materna there is a team of people who support each other and share the work. It removes a lot of

pressure, and she feels better knowing that if there is a complication, she will have support, and won't receive the blame if something goes wrong. Three *Comadronas* said that they won't work with a woman unless she agrees to deliver at the Casa Materna. The rest said they talk to their women and family about the Casa Materna and explain its function. However, the *Comadronas* also said that the decision to go to the Casa Materna is ultimately made by the woman and her family; if they say no, there is nothing more she can do. While some feel uncomfortable about this, others had a more defensive reaction and "washed their hands" of it, placing responsibility on the family should there be a bad outcome.

When asked how they felt regarding the integration of their roles with medical professionals, all of the San Sebastián *Comadronas* reported feeling good about the trend toward integration. They report a sense of teamwork and equality. The *Comadronas* and nurses learn from each other; no one is more important than the other. Also, in the communities the *Comadronas* now have more interaction with the Ambulatory Nurses during prenatal checkups, and they feel satisfied with their interaction and the support they receive.

When asked which type of woman should give birth in her home or the Casa Materna, the 10 *Comadronas* from San Miguel and the 6 from Santa Eulalia offered the unanimous opinion that the Casa Materna serves for complicated deliveries such as prolonged labor or breach position. However, if the delivery appears normal and the woman is in good health, it is the opinion of all of these *Comadronas* that the birth should take place at home. The Casa Materna is not viewed as a place for normal, uncomplicated deliveries. Nearly all expressed satisfaction with the training they have received and a desire for continued support, including more training, prenatal vitamins to provide women, and help with complicated deliveries. All responded that they would be willing to bring a pregnant woman to a health center, especially if there is a complication. Half, however, mentioned that their willingness to bring a woman to a health center is dependent on the knowledge and approval of the woman's family.

Conclusions and Lessons Learned

A key finding is the clear differences in perception of the Casa Materna: in both Santa Eulalia and San Miguel, the Casa Materna was viewed as a resource only when obstetric complications arise, but in San Sebastian Coatán, the *Comadronas* preferred deliveries at the Casa Materna, including normal deliveries. This perception increased as exposure to and usage of the Casa Materna increased. *There is an apparent dose-response relationship to the Casa Materna: the more interaction Comadrona has with the Casa Materna, the more positive her perception and willingness to bring deliveries.*

The strategy of beginning training *Comadronas* well before there is an operational Casa Materna seems to prepare the *Comadronas* for eventual integration once the Casa is operational. It accustoms them to working with health professionals, helps them accept a positive role for health facilities, and provides them with the skills they will need to participate fully in the Casa Materna team, as well as a better understanding of the limits of their abilities. With MSPAS already invested in training *Comadronas* in order to integrate them appropriately into maternal/newborn care, a clear path to sustainability is suggested if MSAPS then further supports this integration by adopting and funding the Casa Materna strategy.

Recommendations and Use of Findings

The findings provide a ringing endorsement of our strategy to train and integrate *Comadronas* appropriately into the maternal newborn care through their integration into the Casa Materna. The San Sebastián *Comadronas* understand and accept their new role, and feel accepted by the Casa Materna staff as equal members of a team. The findings also support our strategy of coordinating with the MSPAS to train *Comadronas* long before there is an operational Casa to prepare them for eventual integration.

The dose-response relationship suggests that in areas still lacking a Casa Materna, more can be done to expose *Comadronas* to the Casas, such as facilitating dialogue between them and *Comadronas* who are using the Casas, as well as arranging visits and observations of deliveries. In addition, we have to recognize the limits of the influence the *Comadronas* have in persuading families to utilize the Casa. Often it is not the decision of the woman alone, but the decision is made with or by her husband or other family members. Therefore, increasing Casa Materna utilization will also require Curamericas staff working directly with husbands and families to help the *Comadronas* make their case.

The Community-Based Impact-Oriented Child Survival in Huehuetenango, Guatemala Project in Huehuetenango, Guatemala is supported by the American people through the United States Agency for International Development (USAID) through its Child Survival and Health Grants Program. The Project is managed by Curamericas Global, Inc. under Cooperative Agreement No. AID-OAA-A-11-00041]. The views expressed in this material do not necessarily reflect the views of USAID or the United States Government. For more information about *The Community-Based Impact-Oriented Child Survival in Huehuetenango, Guatemala Project*, visit: http://www.curamericas.org/

Annex 5: Operations Research Report for PY2

Overview: OR Goals and Design

The objective of our Operational Research is to document the anticipated synergy of the CBIO and Care Group (CBIO+CG) methodologies to demonstrate an approach that can achieve the goals of reducing maternal and child mortality in rural Guatemala. The research will provide important evidence and insights into the strengths and weaknesses of the CBIO+CG combined methodology, and it will hopefully provide evidence for a more holistic and effective long-term strategy for improving the health of mothers and children in resource-constrained, high-mortality settings that engages communities and uses their resources for optimizing health impact. It is anticipated that the operations research will reveal best practices that can inform programs and policy relevant to: (1) Curamericas Global's and Curamericas/Guatemala's critical knowledge on best practices for addressing barriers to accessing culturally-appropriate, quality health services in rural Guatemala among indigenous populations, (2) the Guatemala national government's and USAID/Guatemala's priority to increase availability, accessibility, affordability, adequacy, and acceptability of health services for rural indigenous populations of the Western Highlands in Guatemala.

The project is being rolled out in two Phases – in Phase 1 (PY1&2), 92 communities have been served in all 3 municipalities. In Phase 2 (PY3 & 4), service will continue in those Phase 1 communities, and 104 new communities in all 3 municipalities will be added. Health impact will be measured by changes in health behavior and mortality, and the social impact will be measured by changes in empowerment of women and community social capital in the project area.

Formative Research in Phase 1 (PY1 & 2) will refine the integrated methodologies, including redefining the role of *Comadronas* to improve the quality of maternity care and reduce maternal mortality. We will apply the lessons learned during Phase 1 during Phase 2 in all communities. Evaluative research at the end of Phase 2 will assess the health and social impacts achieved and the cost-effectiveness of the approach by comparing the results obtained in Phase 1 communities with those for Phase 2 communities. The investigation will thus use a quasi case/control design.

The Formative Research Objectives and Questions are:

Objective 1: Refine the CBIO+CG methodology, procedures and field manuals
Question: How can the CBIO+CG methodology be improved so that it is readily usable and not overly cumbersome for field programs?

Objective 2: Define the project population, determine the community health priorities and the epidemiological priorities and document the activities carried out
Questions: Who is living where within the project area?
What are the community health priorities and the epidemiological priorities??
What are the priority sub-groups?
How can these be priorities be combined to create program priorities for the project area?

Objective 3: Assess and document the challenges and advantages of implementing the CBIO+CG methodology and integrating it into the MPHSW framework for health care delivery
Questions: What are the lessons learned in implementing the CBIO+CG methodology?
How can the CBIO+CG methodology be best and most feasibly introduced into the MPHSW framework for health care delivery?

Objective 4: In partnership with *Comadronas*, the community, and the MPHSW, establish a new role for *Comadronas* in maternity care and document the process of project activities in helping *Comadronas* to perform their new role.

Question: How can *Comadronas* transition into an effective new role in maternity care that improves the quality of care provided to mothers in the project area and that respects cultural traditions and expectations?

Objective 5: Establish and pre-test procedures and forms for the *Comadrona* census, the *Comadrona* surveys, and the Care Group Volunteer surveys, for training *Comadronas* in their new role, and for measuring community engagement in program activities and women's participation in community activities and in decision-making related to their own health and the health of their children.

Questions: What are appropriate methods for carrying out a census of *Comadronas?*
What are appropriate forms for interviewing *Comadronas* and Care Group Volunteers?
What are appropriate methods for reorienting *Comadronas* for their new role?
What are appropriate methods for measuring complex key project outcomes such as community engagement in program activities and women's participation in community activities and in decision-making related to their own health and the health of their children?

Table 3A (below) summarizes the PY2 progress and achievements for the Formative Research. A narrative describing key points follows.

Table 3A: OR Study Progress and Achievements in Year 2- Formative Research

Objective 1	**Assess and Refine the CBIO Methodology in the CSHGP context**
OR Study Key Activities/ Tasks	- Refinement of the CBIO vital events registry system of the CSHGP - Integration of *Comunicadoras* and CFs into vital events gathering system at village level - Refinement of the method of performing verbal autopsies, including adoption of MSPAS forms and creation of Manual/Guide
Findings, Data, Discussion	-Audit of vital events registry and verbal autopsy systems reveals errors and duplication of data; refinement of system and adoption of vital events numbering system improves accuracy - Mini-KPC results in March 2013 for coverage of HF births (18.7%) corroborates the vital events/CBIO data as of that time (19.5%) verifying the accuracy of this aspect vital events registry system. Vital events/M & E system could benefit from more such corroboration using mini-KPC data. -Use of MSPAS verbal autopsy forms alleviates paperwork load for staff and Manual aids completion -Volume of CBIO vital events and M & E data is proving a challenge to manage for M & E staff- streamlining of system is needed, as well as a virtual network linking the three project offices utilizing improved internet signal capture and the "cloud" as a shared drive
Use and/or Dissemination of Results	-Improved vital events detection and registries used to calculate key intervention indicators (esp. ANC, HF births and PPC) -Verbal autopsies used to analyze causes of mortality to inform program responses -Death registries used to locate deaths and determine project-specific mortality rates to track impact -Verbal autopsies discussed at community assemblies to generate lessons learned -Verbal autopsy data shared with MSPAS

Objective 2	**Document community health/epidemiological priorities**
OR Study Key Activities/ Tasks	-Perform baseline KPC survey, FGDs, and Participatory Community Diagnoses to identify community health priorities - Document CBIO processes used to determine health priorities: KPC survey, FGDs, Community Diagnoses and uses/findings each provides

	-Mini KPC survey at end of Phase 1 to detect changes in perceived community health priorities
Findings, Data, Discussion	-Baseline KPC survey and FGDs reveal that communities acknowledge priority of diarrhea and ARI but not FP and malnutrition -Baseline KPC survey and FGDs confirm community perception of lack of accessible/affordable health services -Significant changes between baseline KPC and end of Phase 1 mini-KPC in percentage of women citing health priorities: Diarrhea as priority increased to 55% from 36%; ARI/pneumonia increased to 67% from 26%; malnutrition increased to 15% from 5%; lack of transportation to health facilities jumped to 34% from 7%. General lack of medical care remained largely unchanged (decrease to 19% from 22%). Lack of family planning still was not cited – 0% mini-KPC vs. 2% at baseline KPC.
Use and/or Dissemination of Results	-Participatory Community Diagnoses prove critical in obtaining community buy-in - Intensive health education done at community and municipal level to educate re: perception of priority for malnutrition, FP - Findings confirm need for SIAS and Casa Maternas to provide accessible and acceptable health services -Project has been successful in raising awareness of ARI, diarrhea, transportation to health facilities, and malnutrition, but still needs to increase awareness of FP as a priority, as well further increasing awareness of malnutrition and obstetric emergencies as a priority.

Objective 3	**Assess and document challenges and advantages of CBIO+CG methodology**
OR Study Key Activities/ Tasks	-Interviews with Curamericas staff -FGDs with Curamericas staff
Findings, Data, Discussion	-Staff exhibit excellent understanding of methods and cite many advantages, including community involvement, home visitation, use of Care Group volunteers, and focus on health priorities. -Staff does not see data collection work as onerous, understands need for the data and uses it appropriately -Disadvantages cited: 1)coping with community discord, distrust, and machismo; 2) need for improved coordination/communication with SIAS and MSPAS
Use and/or Dissemination of Results	-Staff training methodology used – emphasizing fieldwork/mentoring – is succeeding and should continue -Staff need more skills in community mobilization and trust building and conflict resolution -CBIO methodology and manual can benefit from including skills/resources for community/gender work -Meetings with SIAS/MSPAS staff needed to find ways to improve communication and coordination

Objective 4	**Develop protocols and instruments for *Comadrona* census and interviews and for assessing women's empowerment and participation in family health decision-making**
OR Study Key Activities/ Tasks	-*Comadrona* census and interview instruments drafted -Women's empowerment questions drafted
Findings, Data, Discussion	-*Comadrona* census and interview protocols completed -Women's empowerment questions drafted for use in mini-KPC, FGDs, and key informant interviews
Use and/or Dissemination of Results	-*Comadrona* census and interview protocols utilized to execute census and key informant interviews

	-Women's empowerment/decision-making questions incorporated in September 2013 mini-KPC survey

Objective 5	**Establish and document a new role for *Comadronas***
OR Study Key Activities/ Tasks	-Census of *Comadronas* - Interviews with *Comadronas* and Casa Materna staff -Observation of *Comadronas* working with Casa Materna staff
Findings, Data, Discussion	- *Comadronas* in San Miguel and Santa Eulalia appreciate training they have received, which has improved their skills, and acknowledge the Casa Maternas as appropriate for difficult pregnancies and for obstetric emergencies. -*Comadronas* in San Sebastian, who have been working with the 2 Casa Maternas, understand their new role, appreciate their ongoing training, and feel a valued part of the Casa Materna team. -Integration of *Comadronas* with Casa Maternas following dose/response, with increased exposure to working with the Casas corresponding to increased understanding of satisfaction with new role. -The interviews and direct observation of Casa Materna deliveries confirm that the Casas in San Sebastian Coatán have established excellent teamwork with the *Comadronas,* especially during deliveries, with each understanding their respective roles. -The integration of the *Comadronas* into the Casa Materna operations appears to be a key factor in their success and their use by women and needs to be further explored.
Use and/or Dissemination of Results	-The findings confirm the effectiveness of our strategy for integrating the *Comadronas* in the maternal/newborn care system, done in coordination with the MSPAS, and that it should proceed and be documented, with results shared with MSPAS

Objective 1: We performed a thorough audit of our vital events gathering and recording system, including our electronic vital events registries, maintained in Excel files. Errors and discrepancies were rectified, and systems for numeration and data cleaning introduced to reduce errors, particularly from multiple reporting of vital events (e.g., 2 CFs reporting the same new pregnancy). The system will now need to be rigorously tested. In the meantime, a key data element provides preliminary validation of the accuracy of the registers: the mini-KPC survey of March 2013 indicated 18.7% health facility births, closely corroborating our CBIO birth registry data indicating 19.5% coverage at that time, calculated by our standard methodology of interviewing all post-partum women during post-partum care and determining what antenatal care they received, including examination of their *carnet*. [Note: mini-KPCs are KPC surveys done quarterly, each focusing on only two or three indicators. They are being done in place of a single mid-term KPC in order to get a better ongoing reading of key indicator coverage. As such, they can be a good way to validate the accuracy of the CBIO vital events registry data].

We also looked at the records of the verbal autopsies, which are meant to be done for each U5 and maternal death. Because we are required to fill out and submit the MSPAS standard form for each death, we decided to dispense with our in-house form and utilize only the MSPAS form. A Guide was drafted to help staff accurately complete the autopsy form. An audit of the death registries revealed deaths for which no autopsies were done. We will complete these if feasible.

Work remaining to be done includes: testing the accuracy of the new vital events registry system; complete missing verbal autopsies; assemble and analyze all verbal autopsies and capture results in document summarizing findings; and update/revise the CBIO Manual for local adaptation. In addition, the large volume of CBIO vital events and M & E data is proving a challenge to manage for M & E staff - streamlining of the system is urgently needed, we will explore establishing a virtual network linking the three project offices utilizing improved internet signal capture and the "cloud" as a shared drive. We will

explore the feasibility of using more sophisticated database software rather than Excel. In this light, the data for the KPC surveys needs to be entered into a database such as Epi-Info or Stata for ease of analysis.

Objective 2: We assembled and reviewed all the data and documents used to define the target population and their health needs and priorities, which includes data from the baseline KPC survey (e.g., demographic data plus questions re: perception of community health priorities), the Participatory Community Diagnoses, and the results of FGDs done with community members. This was captured in a document titled ""**Using the Community-Based, Impact-Oriented Methodology to Determine Program Priorities"** by MPH student Jason Lambden, and will serve as a guide to this important CBIO process. Key findings included the baseline lack of community perception that malnutrition, lack of access family planning services, and lack of transportation to health facilities were priorities. However, pneumonia and diarrhea in children *were* considered priorities. We will use this data to continue to emphasize in communities the problem of malnutrition, and the importance of child-spacing/family planning in improving maternal and child health and reducing maternal mortality.

Objective 3: The in-depth interviews and FGDs with Curamericas staff re: the advantages and disadvantages of the CBIO+CG methodology and recommendations for improvement yielded key findings: 1) the staff showed an excellent understanding of the methodologies, validating the staff training methods now being used; 2) staff did not feel the data collection was a burden, but understand and used the data to inform their work. This was especially true of the *Educadoras*: because the basic unit of data is the community, each *Educadora* knows the current key indicators for each of her villages and for her territory as a whole; 3) they cited many advantages to the CBIO+CG methodologies, including community participation, addressing actual health priorities, and the use of community volunteers (*Comunicadoras).*

Disadvantages and challenges cited included 1) the need to improve communication and coordination further with the other integrated programs (SIAS and MSPAS in particular), especially re: coordinating community visits and transportation; and 2) the ongoing challenge of dealing with community distrust, community discord, and *machismo*, which impedes in particular the work of the *Educadoras* in their efforts to secure high participation of the U5 mothers in the Care Groups and Self-Help Groups and use of the Casa Maternas. Some resourceful *Educadoras* have learned to combat this by recruiting multiple community stakeholders as allies, including husbands, mothers-in-law, religious leaders, and schoolteachers.

An anecdotal finding from the interviews and FGDs is revealing: Despite all the challenges, the *Educadoras* have achieved in Phase 1 a 73% overall participation rate among mothers of U5 children in Care Groups and Self-Help Groups. But they are not satisfied. First, their own village data shows them where pockets of low participation persist, validating their skillful use of the CBIO data. Second, and very importantly, they have so absorbed the CBIO paradigm of 100% coverage ("Everyone counts, and everyone is counted") that they feel that only participation rates exceeding 90% indicate success.

Going forward, we need to complete interviews with the staff from the San Miguel Acatán and Santa Eulalia municipalities and with MSPAS staff in order to complete the report for this objective. We will need to apply staff recommendations to streamlining communication with the SIAS, ADIVES, and MSPAS to ensure improved coordination. We will also 1) systematize the recruitment of stakeholder allies, and 2) incorporate into the CBIO Methodology specific skills and resources for generating trust, resolving conflict, and overcoming male chauvinism, and provide this training to the staff.

Objectives 4 and 5: The formative research with the Comadronas is highlighted in the Operations Research Brief so will only be briefly summarized here. The work was done by graduate student Kaitlin Cassidy and is captured in her report, "The Changing Roles of *Comadronas* in the Highlands of Guatemala." In short, the census and in-depth interviews reviewed that the efforts of the project to successfully integrate the *Comadronas* into MNC and thus achieve higher coverage of key MNC services – congruent with and supported by MSPAS efforts and policy – is a great success. The *Comadronas* in

all three municipalities appreciate the training they are receiving from both Curamericas and MSPAS staff and this is reflected in improved delivery quality detected by our mini-KPC surveys (increased ENA, increased elements of ATMSL) and by referrals of emergencies. The *Comadronas* in San Sebastián Coatán are integrating themselves well into the operation of the Casa Maternas and understanding and adapting well to their new role of encouraging health facility births and accompanying the women to the Casas where they function smoothly as part of the Casa Materna team.

Measuring women's empowerment and community mobilization is a challenge, and at the moment we are using as the basis for our inquiries the questions drafted for and used in the baseline KPC survey, which asks the woman 1) if she participated in key family health decisions, including place of delivery; 2) if she has control of the money needed to feed her children; 3) if she has had contact with a Care Group or Self-Help Group; and 4) if she has participated in a community meeting and expressed her opinion. For community mobilization and investment in maternal and child health, the questions look at 1) if the community has a transportation plan for obstetric emergencies; and 2) has the community in the past three months collaborated on a successful community project. The latter question also determines if the project was specifically to benefit the education or well-being of children.

Table 3b (below) summarizes the PY2 progress and achievements for the Evaluative Research. A narrative describing key points follows.

Table 3B: OR Study Progress and Achievements in Year 2- Evaluative Research

Objective 1	**Quantify the health impact of CBIO+CG in project area and cost-effectiveness of CBIO+CG (end of Phase 1)**
OR Study Key Activities/ Tasks	-Analysis of vital events data (especially U5 and maternal deaths) -Organization and analysis of verbal autopsies -Mini-KPC surveys on key health indicators -Analysis of Casa Materna data
Findings, Data, Discussion	- 50% of U5M in Phase 1 (n=48) is neonatal (chiefly asphyxia) and 37% [n=36] is infant 1-11 months (chiefly ARI). U5MR calculated at 69.6. - 20 maternal deaths recorded, with chief causes identified as hemorrhage, retained placenta, and eclampsia. Implied MMR is 1450. - Mini KPC and CBIO M&E data for San Sebastián Coatán shows superior outcomes for MNC indicators than for the other 2 municipalities, indicating effect of the 2 operational Casa Maternas: 4 ANC checks 53% (vs. 29% for the other two municipalities combined); health facility births 50% (vs. 14%); postpartum checks within 48 hours 88% (vs.72%); iron/folic acid: 87% (vs. 68%); tetanus toxoid: 90% (vs. 59%) -Disaggregation of CBIO/Casa Materna data for the 19 partner communities of the Casa Maternas reveals very impressive coverage rates and that that these communities are responsible for superior results in San Sebastián: 4 ANC checks: 82%; iron/folic acid 90 days: 96%; tetanus toxoid: 90%; HF births: 65%; PPC < 48 hrs: 92%. -Vital events reporting has helped improve MNC indicator coverage- prompt detection of and RHV for pregnancies and births contributed to significant increases in key MNC indicators: pregnant women with 4 ANC checks increased to 28% from 13%; PPC < 48 hrs increased to 76% from 22% -Mini KPC surveys confirm improved delivery practices: deliveries with 3 ENA increased to 38% from 6%; deliveries with 3 elements of ATMSL increased to 15% from 9%.
Use and/or Dissemination of Results	- Results of every death/verbal autopsy discussed in communities to generate lesson learned - Analysis of U5 and maternal deaths confirms project priority for Maternal/Newborn care - Mini KPC and vital events data provides evidence for the impact of the Casa Maternas supporting their development

	-Mini KPC data on improved quality of deliveries supports strategy of training SBAs and *Comadronas* in 3 ENA, ATMSL, and HBLSS -Outcomes were disseminated in presentations to local and regional MSPAS staff and to USAID

Objective 2	**Understand and quantify social impact of CBIO+CG and effectiveness in promoting women's and community involvement**
OR Study Key Activities/ Tasks	Baseline KPC and subsequent mini KPC incorporating questions on women's participation in family health decision-making; women's participation in Care Groups and community meetings; and successful execution of projects
Findings, Data, Discussion	-Women reporting contact with a Care Group or Self-Help group increased from 8% to 96% -Women reporting that they attended and expressed their opinion in a community meeting increased to 48% from 10%. -Women reporting that their community successfully executed a community project in the previous 3 months rose to 66% from 13%. -Women who reported that their community successfully executed a project to improve the education or well-being of children in the past 3 months increased to 20% from 2%.
Use and/or Dissemination of Results	-Data results disseminated in presentations to local and regional MSPAS and to USAID -Data indicates that despite challenges of community discord and male chauvinism, women are becoming empowered and communities gaining in social capital.

Objective 1: We gathered, cleaned, and analyzed our end-of-Phase 1 outcomes data from our vital events and community registries, mini-KPC surveys, and verbal autopsies. In the process of data cleaning, errors were detected and corrected, as well as ways to streamline data gathering, cleaning, and presentation [see Objective 1 of Formative Research, above]. The findings validated many of our current methods and priorities:

- The death registries and verbal autopsies established effective neonatal, infant, and U5 mortality baselines. With neonatal deaths in PY2 being a full 50 % [n=96] of all U5 deaths, nearly all from asphyxiation, this validated our emphasis on training in HBLSS, ENA, and ATMSL and roll-out of the Casa Maternas for maximum impact on reducing U5M.
- Another 37% [n=36] were in infants 1-11 months, overwhelmingly from ARI/pneumonia underlain by malnutrition, confirming the need to strengthen the ARI/pneumonia and nutrition interventions.
- 20 maternal deaths – largely from hemorrhage – were detected, with an implied MMR of 1450, confirming our emphasis on training in HBLSS, ENA, and ATMSL and the roll-out of the Casa Maternas.
- The mini-KPC data confirmed improvements in quality of deliveries, with percentage of mothers reporting all 3 ENAs and ATMSL increasing dramatically, confirming the HBLSS, ENA, and ATMSL training investment in the Casa Materna SBAs and the *Comadronas.*
- The ability to see this vital events data to confirm impact and validate program priorities once again proved the utility of the CBIO vital events detection.
- The significant increase in women with 4 ANC checks and postpartum checks within 48 hours also validated the vital events detection and reporting system, as we were able to respond to these vital events - new pregnancies and deliveries - with home visitation by FCFs, *Educadoras,* and SIAS ambulatory nurses.
- The mini-KPC data and vital events data, and the CBIO method's ability to disaggregate data readily by community enabled us to confirm the huge positive impact the Casa Maternas are having on MNC and other outcome indicators. Disaggregation of the outcome indicators for the 19 partner communities of the 2 operating Casas in San Sebastian Coatán showed coverage of

key indicators – particularly ANC and health facility births – dramatically higher for these communities [see Program Learning Brief, Annex 4].

Objective 2: The mini-KPC for September 2013 included many of the questions re: women's empowerment and community social capital and support for maternal/child health that were asked on the baseline KPC. The findings confirmed that despite the challenges of distrust and *machismo*, women's participation in Care Groups and Self Help Groups and in community meetings has risen significantly. In addition, the percentage of women reporting that their community executed a community project in the past three months also rose greatly, including the percentage that did projects for the education or well-being of children.

In summary, the end of Phase 1 evaluative findings confirmed the efficacy of the CBIO+CG methodology, and especially confirmed the efficacy of that methodology when combined with Casa Maternas and SIAS ambulatory health services. Remaining to be done is further data cleaning and analysis to confirm these results, and produce the definitive documents.

Research Products [all in-house]: "Using the Community-Based, Impact-Oriented Methodology to Determine Program Priorities" by Jason Lambden; "Comadrona Census Summary", "The Changing Role of *Comadronas* in the Highlands of Guatemala," and "Direct Observation of Comadrona Delivery" by Kaitlin Cassidy.

Problems/Challenges: The OR is ambitious and we are struggling to secure the resources needed for its execution. Relying excessively on the CSHGP field staff imposes undue stress. We have therefore relied on volunteer MPH graduate students doing capstone or thesis work, guided by the Principle Investigators.

Changes Made to Original OR Plans – A grant from URC-Project Traction will enable us to add a Case Study of the impact of the Casa Maternas in achieving equity in MNC services.

Plans for PY3: In addition to the tasks already identified above, we will conclude the collection and analysis of Phase 1 data by conducting FGDs and interviews with women, community leaders, and *Comunicadoras* on women's and community empowerment to supplement the quantitative mini-KPC data. We will produce definitive documents capturing all Phase 1 findings. We will also do the data collection for and writing of the Case Study for Project Traction.

Annex 6A- Example of Care Group/Self-Help Group Lesson from *Guia de Capacitación*- Lesson on Exclusive Breastfeeding

GUIA SOBRE LA LACTANCIA MATERNA EXCLUSIVA

1. SALUDO (3 minutos)

✓ PRESENTACIÓN: La dirigente le da la bienvenida al grupo, pasa el listado y seguidamente cantan

Bienvenidas todas vamos a iniciar
Con todas las vecinas vamos a aprender.(bis)

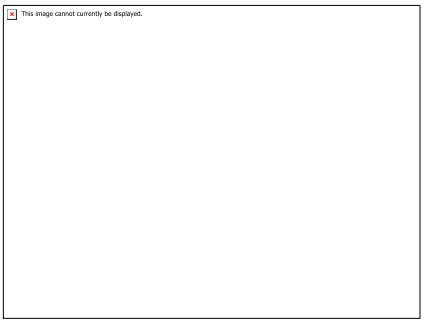
2. EVENTOS VITALES (5 minutos)

✓ La dirigente pregunta al grupo si han pasado hechos o sucesos en la comunidad recientes o del mes.

3. REVISION DE COMPROMISOS Y REPASO DEL TEMA ANTERIOR.

Dinámica (la caja preguntona)

➢ La dirigente pasa una caja con papeles de preguntas del tema anterior, mientras se está pasando la caja la dirigente toca algún objeto y cuando termina de tocarlo; a la persona que le quedo la caja saca un papelito seguidamente responde a la pregunta que está en el papelito.



4. INTRODUCCION (5 minutos)

✓ La dirigente relata una historia de un niño nutrido y un niño desnutrido usando ilustraciones:

Mateo y Juan eran dos niños que nacieron en la misma fecha, los dos nacieron sanos y con buen peso, a Mateo desde que nació le dieron lactancia materna, mientras que Juan su madre lo sobre protegido y lo alimentó con leche de bote (pacha) al concluir el año había una gran diferencia en peso y altura, Mateo que fue alimentado correctamente tenia peso y estatura adecuada a su edad y gozaba de buen salud. Mientras que Juan que no fue alimentado correctamente estaba desnutrido y en muy mal estado de salud.

5. Reconocimientos de saberes (8 Minutos)

- la dirigente informa al grupo que se tienen que formar en círculo, sobreponer la mano derecha sobre la mano de otra compañera y la izquierda debajo de la mano de la compañera, se inicia dando una palmada con la otra compañera y se canta lo siguiente.

La pregunta de la buena suerte:

Ahí, viene el conejo de la buena suerte con cara de inocente que dice así: tú responderás a la pregunta que te haga la dirigente (educadora, FC, comunicadora)

A la participante donde se termina la última palmada responde a la pregunta que la dirigente le hace.

6. Desarrollo del tema (20 Minutos)

- ✓ **Lactancia materna inmediata**. Es el contacto físico que debe establecerse entre el recién nacido y su madre, y dar el pecho lo antes posible después del parto.

- ✓ Calostro: Es la primera leche que produce la mujer, es de color amarillento y, es importante que se le dé al recién nacido en la primera hora de vida ya que es como la primera vacuna y contiene los nutrientes esenciales y necesarios para su desarrollo en los primeros meses.

- ✓ lactancia materna exclusiva: Es alimentar al bebe únicamente con leche materna Durante los primeros 6 meses de vida, Sin darle ningún otro líquido, la leche materna es el alimento más completo y más limpio que existe, esto protegerá al bebé contra la diarrea y muchas infecciones.

- ✓ Ventajas de la Lactancia Materna Exclusiva:

  - Para el bebé:

    Lo protege contra enfermedades.
    Le ayuda para un mejor crecimiento.
    Exclusiva adaptación para el bebé.

- Para la madre:

  Involución uterina.
  Menor riesgo de cáncer de mama.
  Produce oxitocina.
  Facilita la unión y afecto entre madre e hijo.
  Disminuye la hemorragia.
  Depresión post parto.
  Económico.

✓ Formas y posiciones correctas de amamantar al bebe

De lado

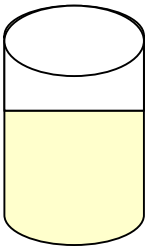
Agarre

Cuna

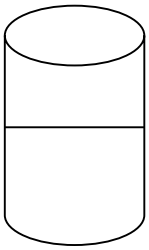
Cruce

✓ Demostración sobre los diferentes tipos de leche materna, de formula y de calostro.

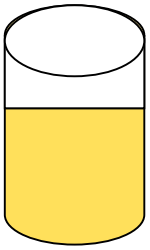
Leche Materna



Leche de Formula



Calostro



7. Retroalimentación (4 Minutos)

✓ <u>Dinámica</u>:

Pasa la bola: la Dirigente lleva algún objeto redondo, luego les pide a las madres que se paren y les explica que hay que pasar el objeto de madre a madre con la única condición de que no deben utilizar las manos entonces debe de usar única mente el cuello y la que lo suelte o lo deje caer tendrá una penitencia (la dirigente le hace una pregunta)

8. Conclusión (2 Minutos)

- ✓ La Dirigente informa los puntos principales del tema.
- ✓ DICEN QUE LOS NIÑOS
- ✓ NO TOMAN OTROS LIQUIDOS
- ✓ PORQUE SI LOS TOMAN
- ✓ SE PUEDEN ENFERMAR
- ✓ QUE BIEN QUE LES VIENE
- ✓ QUE BIEN QUE LES VA
- ✓ VIVA LA LACTANCIA
- ✓ LACTANCIA EXCLUSIVA

9. Compromisos. La dirigente informa a las madres o participantes que se comprometan en cumplir y practicar en solo dar lactancia materna exclusiva durante los 6 meses o que informen con sus vecinas, sus familiares, o amigas tomándolos de las manos con todas las participantes.

10. Recordatorio y agradecimiento (2 Minutos)

- ✓ Recordatorio: el grupo se pone de acuerdo para escoger la fecha y el lugar de la siguiente capacitación.

- ✓ Agradecimiento: La dirigente o una voluntaria agradece al grupo su participación e invitándoles para la siguiente capacitación.

ANNEX 6B. Example of lesson from Training Guide for training of Casa Materna SBAs and *Comadronas*- Lesson on Antenatal Care

IMPORTANCIA DEL CONTROL PRENATAL

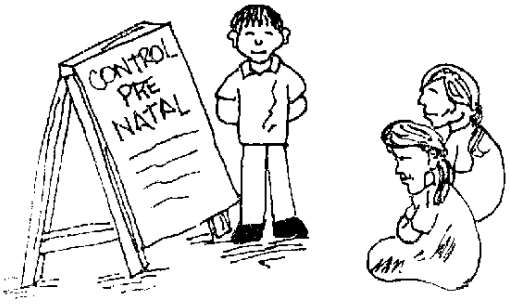
1. **SALUDO** **(3 MINUTOS)**
   - ✓ PRESENTACIÓN: La encargada de la capacitación le da la bienvenida a las participantes.
   - ✓ ASISTENCIA: Se toma asistencia de las participantes.

2. **INTRODUCCION** **(2MINUTOS)**

La encargada presenta el tema del mes.

3. **DESARROLLO DEL TEMA**

Control Prenatal



Definición: Es el conjunto de acciones y procedimientos sistemáticos y periódicos, destinados a la prevención, diagnóstico y tratamiento de los factores que puedan condicionar enfermedad y mortalidad materna y del recién nacido.

¿Cuáles son las características del control prenatal? El control prenatal debe ser:

- ✓ Precoz: La gestante debe iniciar el control del embarazo lo más pronto posible, es decir, desde el momento en que descubre que está embarazada.
- ✓ Periódico: El control prenatal se debe realizar mensualmente, si no es posible, por lo menos se debe realizar cuatro controles durante todo el embarazo. En el primer trimestre antes de las 12 semanas, segundo trimestre alrededor de las 26 semanas, el tercer trimestre dos controles a las 32 semanas y entre las 36 y 38 semanas.
- ✓ Completo: Es decir debe tomar en cuenta la salud integral de la mujer embarazada.

  La atención deberá incluir:
  *Examen y evaluación del embarazo y del crecimiento fetal.
  *Cálculo de la edad gestacional y fecha probable de parto.
  *Atención Odontológica.
  *Vacunación antitetánica.
  *Apoyo Psicológico.
  *Atención Nutricional.
  *Educación para la salud.
  *Enseñar a las madres a preparar las mamas para la lactancia.
  Acciones y procedimientos periódicos.
- ✓ Apertura del Carné Prenatal y elaboración de la historia clínica prenatal.

  -Proporciona información necesaria de manera simple.
  -Se prepara para el examen físico, se le indica que debe miccionar si es necesario y se le explica en forma sencilla en que consiste la evaluación.
  -Identifica riesgos de la madre.
  -Registra la evolución del embarazo.

- ✓ Medición Peso/talla materna.

  -Evaluar el estado nutricional de la embarazada.
  -Ayudar en el seguimiento del incremento de peso durante el embarazo. Normalmente la gestante debe aumentar 1 kilo por mes y en promedio aumenta de 9 a 12 kilos durante todo el embarazo.

  Es importante controlar el peso de la gestante, la variación mayor o menor a lo normal nos indicará que la gestante tiene problema. Por ejemplo: si la variación del peso entre los controles (mensuales) es menor de 500 gramos nos podría indicar malnutrición, presencia de escaso líquido en el útero.
  Si la variación es mayor a 1 kg entre los controles (mensuales) nos podría indicar que existe demasiado líquido en el útero, o existe retención de líquidos en las piernas. En ambos casos debemos evitar inmediatamente a la embarazada al centro de salud más cercano para su evaluación.

Estado Nutricional	**Incremento de peso Total en Kg/libras**	**Incremento de peso semanal en gramos-onzas/semanas**
Bajo peso	12-18 kg. 26-39 libras.	400 a 600 gr. 14-21 onzas.
Normal	10-13 kg. 22-28 libras	330 -400 gr. 11-15 onzas.
Sobre peso	7-10 kg. 15-22 libras	230-330 gr. 8-15 onzas.
Obesa	6-7 kg. 13-15 libras	200-300 gr. 7-8 onzas.

- ✓ **Determinación de los signos vitales:**

  Los signos vitales normales son:
  -Temperatura: De 36.2 a 37.4 grados centígrados.
  -Pulso: De 60 a 80 latidos.
  -Presión Arterial: 120/80mm Hg como máximo, 90/60mm Hg como mínimo.
  Todo valor por encima de 130/90 o por debajo de 90/60 nos indica una Señal de Peligro de muerte, tanto para la madre como para él bebe.
  -Seguimiento de hipertensión previa.
  -Detección de hipertensión inducida por el embarazo.
- ✓ Examen Clínico General:

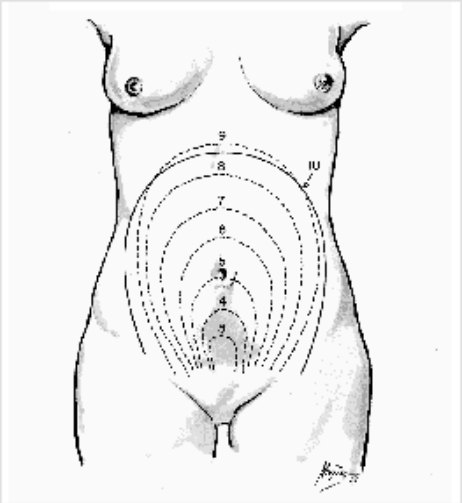
  -Evalúe el estado general de la embarazada y su adaptación a la gestación.
  -Permite detectar alteraciones que pueden afectar a la madre y al feto.
- ✓ Examen de mamas:

  -Identificar anormalidades anatómicas, nódulos.
  -Seguimiento de los cambios durante el embarazo.

- ✓ Examen Ginecológico:

  -Detectar precozmente vulvovaginitis, ITS.
  -Tratar y evitar complicaciones.
- ✓ Determinación de la edad Gestacional.

-Por ultima regla o por altura uterina y ultrasonido.



- ✓ Diagnóstico de vitalidad fetal:

  -Percepción de movimientos fetales a partir de las 16 semanas o alrededor del cuarto mes y permite vigilar el estado del feto.
  -Auscultar frecuencia cardiaca fetal. Los latidos fetales se pueden escuchar desde el quinto mes.
  El número normal de latidos fetales va de 120 a 160 latidos por minuto.

- ✓ Evaluación del Crecimiento Fetal:

  -Determinar altura uterina.
  -El útero aumenta en promedio de 4 cms por mes.
  -A las 12 semanas está a nivel del pubis y
  -A las 20 semanas está a nivel del ombligo.
  -Identificar retardo del crecimiento intrauterino o macrosomia fetal.

- ✓ Diagnóstico de la Presentación Fetal:

  -Se le llama presentación a la parte del feto más cercana al pubis, y puede ser:
  Cefálica, la cabeza hacia abajo es normal.
  Podálica, de nalgas o de pies, se considera señal de peligro está al final del embarazo.
  Transverso, cuando el feto se encuentra longitudinalmente atravesado, se considera señal de peligro al final del embarazo.

- ✓ Indicación de hierro y ácido fólico:

  Prevención de la anemia gestacional.

Suplementación	**Presentación**	**Dosis**	**Frecuencia de entrega**
Hierro	Tabletas de 300mg de sulfato ferroso.	2 tabletas de 300mg cada 8 días.	Entregar 24 tabletas en cada control.
Ácido Fólico	Tableta de 5mg.	1 tableta de 5mg cada 8 días.	Entregar 12 tabletas en cada control.

- ✓ Indicación de toxoide tetánico.

No. Dosis	Esquema Convencional	Esquema acelerado.
Primera (Td-1)	Primer Contacto	Primer Contacto
Segunda (Td-2)	1 mes después	1 mes después
Tercera (Td-3)	6 meses después	6 meses después
Primer refuerzo (Td-4)	10 años después	1 año después
Segundo refuerzo (Td-5)	10 años después	1 año después

- ✓ Oriente a la embarazada sobre:

  -Preparar su plan de emergencia familiar.
  -Revisar con la mujer el plan de emergencia familiar.

-Explicar las partes del plan de emergencia familiar.
-Ayudar a la mujer a identificar el establecimiento a donde ir en caso de una complicación.
-Pedir a la mujer que haga el plan de emergencia junto con su esposo y/o la familia.
-Importancia de sus controles durante el embarazo y en el puerperio.
-Signos y Señales de peligro durante el embarazo, parto y puerperio.

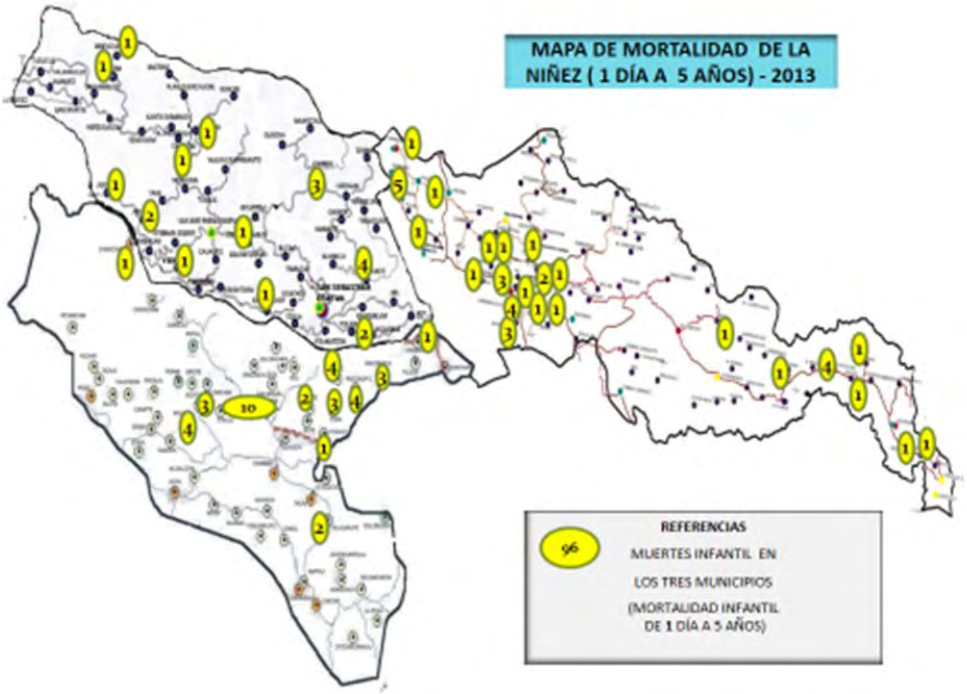
(15 MINUTOS)

4. **RETROALIMENTACION** **(5 MINUTOS)**
   - ✓ **DINAMICA:**

     La silla musical; consiste en colocar varias sillas en forma de circulo y las participantes giraran alrededor de las silla cuando pare la música de sonar tendrán que sentarse y la que no se siente tendrá una penitencia y así se seguirá con las demás participantes.

5. **RECORDATORIOS Y AGRADECIMIENTOS** **(3 MINUTOS)**
   - ✓ Recordatorio: Las participantes juntamente con la encargada de la capacitación se ponen de acuerdo para la próxima capacitación.
   - ✓ Agradecimiento: La encargada de la capacitación agradece a las participantes tanto comadronas como a personal de salud de casas maternas por su participación.

Annex 7A: MAPS OF U5 AND MATERNAL MORTALITY – PY 2



Location of Under-Five Deaths, Phase 1 Communities, PY2

Location of Maternal Deaths, Phase 1 Communities, PY2

Annex 7B – Summary Data of Positive Deviance Intervention

RESULTS OF POSITIVE DEVIATION INTERVENTION – BEFORE AND AFTER WORKSHOPS							
BEFORE WORKSHOPS							
MUNICIPALITY	No. Children Measured and Weighed	No. Stunted	% Stunted	No. Under-weight	% Under-Weight	No. Acute	% Acute
San Sebastián Coatán	368	186	51%	81	22%	3	1%
San Miguel Acatan	470	351	75%	163	35%	8	2%
Santa Eulalia	675	417	62%	217	32%	20	3%
TOTAL	1513	954	63%	461	30%	31	2%
AFTER WORKSHOPS							
MUNICIPALITY	No. Children Measured and Weighed	No. Stunted	% Stunted	No. Under-weight	% Under-Weight	No. Acute	% Acute
San Sebastián Coatán	368	130	35%	64	17%	1	0%
San Miguel Acatan	470	316	67%	148	31%	8	2%
Santa Eulalia	675	317	47%	74	11%	4	1%
TOTAL	1513	763	50%	286	19%	13	1%

Annex 7C- SUMMARY REPORT OF HBLSS COMMUNITY TRAINING

INFORME DE LA CAPACITACION TECNICAS PARA SALVAR VIDAS EN EL HOGAR.

Objetivo General: Facilitar el entrenamiento a actores de salud sobre los conocimiento adquiridos de la capacitación HSBNH en los municipio de San Sebastián Coatán, San Miguel Acatán y Santa Eulalia, a través de personal del **PROYECTO DE SUPERVIVENCIA INFANTIL.**

San Sebastián

Lugar y fecha	Actividades	PARTICIPANTES	CARGO
San Sebastián Coatán agosto del 2012	Capacitación sobre el **Control Prenatal,** como compromiso asumido durante el entrenamiento recibido se realizaron réplicas sobre los temas siguientes: • Signos y señales de peligro durante el embarazo. ✓ Hinchazón generalizada. ✓ Hemorragia vaginal. ✓ Salida de líquidos. ✓ Dolor al orinar. ✓ Visión borrosa. ✓ Dolor en la boca del estomago. La metodología utilizada fue de acuerdo a como se recibió el entrenamiento contextualizándolo con nuestra cultura, principalmente en el idioma maya chuj.	5	Educadoras
		10	FC
		54	Comunicadoras de la salud
		586	Madres de familia
		35	Comadronas
		2	Distrito de Salud
		6	Otros Grupos de mujeres
San Sebastián Coatán septiembre del 2012	Capacitación sobre la **Atención del Parto** ✓ Trabajo de parto prolongado. ✓ Convulsiones o ataques ✓ Feto en transversa. ✓ Hemorragia abundante.	5	Educadoras
		9	FC
		50	Comunicadoras de la salud
		512	Madres de familia
		30	Comadronas
		1	Distrito de Salud
		3	Otros Grupos de mujeres
San Sebastián Coatán octubre del 2012	Capacitación sobre la **Atención del Post-parto** ✓ Signos y señales de peligro. ✓ Hemorragia vaginal abundante. ✓ Retención Placentaria. ✓ Flujo con mal olor. ✓ Fiebre. ✓ Dolor de cabeza. ✓ Convulsiones.	5	Educadoras
		10	FC
		52	Comunicadoras de la salud
		613	Madres de familia
		36	Comadronas
		1	Distrito de Salud
		4	Otros Grupos de mujeres

San Sebastián Coatán Noviembre del 2012	Capacitación sobre **Cuidados en el Recién nacido** • Cuidado del cordón umbilical. • Temperatura corporal adecuada. • Prácticas de atención y afecto. • Signos y señales de peligro: ✓ No mama. ✓ Dificultad para respirar. ✓ Ataques o convulsiones. ✓ Bebe muy pequeño. ✓ Bebe muy frío. ✓ Bebe morado. ✓ Infección en el ombligo.	5	Educadoras
		11	FC
		48	Comunicadoras de la salud
		615	Madres de familia
		30	Comadronas
		3	Distrito de Salud
		7	Otros Grupos de mujeres
San Sebastián Coatán, Diciembre 2012	Capacitación sobre **El Plan de Emergencia Comunitario**, actividad donde se dio a conocer Qué es el Plan de Emergencia, Quiénes actúan en el Plan de Emergencia y Cómo se debe ejecutar el Plan de Emergencia a la hora de una emergencia.	6	Educadoras
		8	FC
		62	Comunicadoras de la salud
		645	Madres de familia
		24	Comadronas
		1	Distrito de Salud
		8	Otros Grupos de mujeres

San Miguel Acatán

Lugar y fecha	Actividades	PARTICIPANTES	CARGO
San Miguel Acatán agosto del 2012	Capacitación sobre el **Control Prenatal,** como compromiso asumido durante el entrenamiento recibido se realizaron réplicas sobre los temas siguientes: • Signos y señales de peligro durante el embarazo. ✓ Inchazon generalizado. ✓ Hemorragia vaginal. ✓ Salida de líquidos. ✓ Dolor al orinar. ✓ Visión borrosa. ✓ Dolor en la boca del estomago. La metodología utilizada fue de acuerdo a como se recibió el entrenamiento contextualizándolo con nuestra cultura, principalmente en el idioma maya akateko.	5	Educadoras
		25	FC
		147	Comunicadoras de la salud
		1926	Madres de familia
		36	Comadronas
		2	Distrito de Salud
		3	Otros Grupos de mujeres
San Miguel Acatán Septiembre del 2012	Capacitación sobre la **Atención del Parto** ✓ Trabajo de parto prolongado. ✓ Convulsiones o ataques ✓ Feto en transversa. ✓ Hemorragia abundante.	5	Educadoras
		23	FC
		118	Comunicadoras de la salud
		1833	Madres de familia
		38	Comadronas
		1	Distrito de Salud

		4	Otros Grupos de mujeres
San Miguel Acatán octubre del 2012	Capacitación sobre la **Atención del Post-parto** ✓ Signos y señales de peligro. ✓ Hemorragia vaginal abundante. ✓ Retención Placentaria. ✓ Flujo con mal olor. ✓ Fiebre. ✓ Dolor de cabeza. ✓ Convulsiones.	5	Educadoras
		24	FC
		132	Comunicadoras de la salud
		1802	Madres de familia
		29	Comadronas
		2	Distrito de Salud
		1	Otros Grupos de mujeres
San Miguel Noviembre del 2012	Capacitación sobre **Cuidados en el Recién nacido** • Cuidado del cordón umbilical. • Temperatura corporal adecuada. • Prácticas de atención y afecto. • Signos y señales de peligro: ✓ No mama. ✓ Dificultad para respirar. ✓ Ataques o convulsiones. ✓ Bebe muy pequeño. ✓ Bebe muy frío. ✓ Bebe morado. ✓ Infección en el ombligo.	5	Educadoras
		22	FC
		165	Comunicadoras de la salud
		1948	Madres de familia
		28	Comadronas
		2	Distrito de Salud
		6	Otros Grupos de mujeres
San Miguel Acatán, Diciembre 2012	Capacitación sobre **El Plan de Emergencia Comunitario**, actividad donde se dio a conocer Qué es el Plan de Emergencia, Quiénes actúan en el Plan de Emergencia y Cómo se debe ejecutar el Plan de Emergencia a la hora de una emergencia.	5	Educadoras
		25	FC
		147	Comunicadoras de la salud
		1933	Madres de familia
		30	Comadronas
		2	Distrito de Salud
		7	Otros Grupos de mujeres

Santa Eulalia

Lugar y fecha	Actividades	PARTICIPANTES	CARGO
Santa Eulalia agosto del 2012	Capacitación sobre el Control Prenatal, como compromiso asumido durante el entrenamiento recibido se realizaron réplicas sobre los temas siguientes: • Signos y señales de peligro durante el embarazo. ✓ Hinchazón generalizado. ✓ Hemorragia vaginal. ✓ Salida de líquidos. ✓ Dolor al orinar. ✓ Visión borrosa. ✓ Dolor en la boca del estomago.	6	Educadoras
		13	FC
		132	Comunicadoras de la salud
		1910	Madres de familia
		36	Comadronas
		2	Distrito de Salud
		8	Otros Grupos de mujeres

	La metodología utilizada fue de acuerdo a como se recibió el entrenamiento contextualizándolo con nuestra cultura, principalmente en el idioma maya Q'anjob'al		
Santa Eulalia, septiembre del 2012	Capacitación sobre la Atención del Parto ✓ Trabajo de parto prolongado. ✓ Convulsiones o ataques ✓ Feto en transversa. ✓ Hemorragia abundante.	6	Educadoras
		15	FC
		148	Comunicadoras de la salud
		1603	Madres de familia
		22	Comadronas
		3	Distrito de Salud
		2	Otros Grupos de mujeres.
Santa Eulalia, octubre del 2012	Capacitación sobre la **Atención del Post-parto** ✓ Signos y señales de peligro. ✓ Hemorragia vaginal abundante. ✓ Retención Placentaria. ✓ Flujo con mal olor. ✓ Fiebre. ✓ Dolor de cabeza. ✓ Convulsiones.	6	Educadoras
		16	FC
		144	Comunicadoras de la salud
		1407	Madres de familia
		32	Comadronas
		1	Distrito de Salud
		0	Otros Grupos de mujeres
Santa Eulalia, Noviembre del 2012	Capacitación sobre Cuidados en el Recién nacido • Cuidado del cordón umbilical. • Temperatura corporal adecuada. • Prácticas de atención y afecto. • Signos y señales de peligro: ✓ No mama. ✓ Dificultad para respirar. ✓ Ataques o convulsiones. ✓ Bebe muy pequeño. ✓ Bebe muy frío. ✓ Bebe morado. ✓ Infección en el ombligo.	6	Educadoras
		16	FC
		124	Comunicadoras de la salud
		1803	Madres de familia
		44	Comadronas
		1	Distrito de Salud
		5	Otros Grupos de mujeres
San Eulalia, Diciembre 2012	Capacitación sobre El Plan de Emergencia Comunitario, actividad donde se dio a conocer Qué es el Plan de Emergencia, Quiénes actúan en el Plan de Emergencia y Cómo se debe ejecutar el Plan de Emergencia a la hora de una emergencia.	6	Educadoras
		18	FC
		146	Comunicadoras de la salud
		1404	Madres de familia
		22	Comadronas
		1	Distrito de Salud
		1	Otros Grupos de mujeres