The Community Birthing Center

An Innovative Approach to Reducing Maternal

and Neonatal Mortality in Low Resource Contexts



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Contents

[Acknowledgements 4](#_Toc502402086)

[Glossary 5](#_Toc502402087)

[The Community Birthing Center Definition, Purpose, Characteristics 7](#_Toc502402088)

[Definition of a Community Birthing Center 7](#_Toc502402089)

[Characteristics/Criteria of a CBC 9](#_Toc502402090)

[1. Location 9](#_Toc502402091)

[1.1 Located in an area of high Maternal Mortality 9](#_Toc502402092)

[1.2 Responding to the leading causes of mortality 9](#_Toc502402093)

[1.3 Proximity to its communities 10](#_Toc502402094)

[1.4 Strategic location 10](#_Toc502402095)

[1.5 Population of micro-region/catchment 10](#_Toc502402096)

[2. Services 10](#_Toc502402097)

[2.1 Open 24/7 10](#_Toc502402098)

[2.2 Core Services 11](#_Toc502402099)

[3. CBC Staffing & Support 14](#_Toc502402100)

[3.1 Staffing 14](#_Toc502402101)

[3.2 Skilled birth attendants (SBAs) 15](#_Toc502402102)

[3.3 The Supervisory Nurse 16](#_Toc502402103)

[3.4 Support Women 16](#_Toc502402104)

[3.5 Health Educator/CHEW 17](#_Toc502402105)

[3.6 Traditional Birth Attendants (TBAs) 17](#_Toc502402106)

[4. Physical plant/equipment/supplies 18](#_Toc502402107)

[4.1 Physical Plant 18](#_Toc502402108)

[4.2. Utilities and Amenities - 19](#_Toc502402109)

[4.3 Equipment 20](#_Toc502402110)

[4.4 Supplies, Drugs, and Medicines 20](#_Toc502402111)

[5. Respectful, Culturally Appropriate Deliveries and Services in the Woman’s First Language 21](#_Toc502402112)

[5.2 Culturally appropriate care 22](#_Toc502402113)

[5.3 Care in the Woman’s First Language - 23](#_Toc502402114)

[5.4 Formative Research for Respectful Culturally Appropriate Care – 23](#_Toc502402115)

[6. Health Information/Clinical Records and M&E 23](#_Toc502402116)

[6.1 Register of deliveries 23](#_Toc502402117)

[6.2 Register of obstetric complications – 24](#_Toc502402118)

[6.3 Clinical file of the delivery - 24](#_Toc502402119)

[6.4 Woman’s clinical file – 25](#_Toc502402120)

[6.5 Registers of Catchment/Micro-regional Vital Events – 25](#_Toc502402121)

[6.6 M&E System 27](#_Toc502402122)

[7. Community Partnership 29](#_Toc502402123)

[Foundation of Community Engagement 30](#_Toc502402124)

[7.1. Initiating Engagement: Begin with the Community Health Committee/Community Leaders 31](#_Toc502402125)

[72 Village Assemblies 31](#_Toc502402126)

[7.3 The Memorandum of Agreement (MOU) 31](#_Toc502402127)

[7.5 The Care Groups and Self-Help Groups 33](#_Toc502402129)

[7.6 Community Emergency Transport Plan 34](#_Toc502402130)

[7.7 Community Coordination of Deliveries and OE Response - 35](#_Toc502402131)

[7.8 Coordinating Volunteer Labor and Materials 36](#_Toc502402132)

[7.9 Sharing Community Health Data – 36](#_Toc502402133)

[7.10 Communication with the CBC - 37](#_Toc502402134)

[7.11 CHC Health Education and Capacity Building - 37](#_Toc502402135)

[7.12 Setting Community Policies Regarding Maternal/Newborn Health - 37](#_Toc502402136)

[7.13 The Microregional Committee or Health Facility Committee (MRC/HFC) 37](#_Toc502402137)

[7.14 The Council of MRCs/HFCs 38](#_Toc502402138)

[8. Women’s Empowerment 38](#_Toc502402139)

[Appendix 1: CBC Matrix 40](#_Toc502402141)

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# Glossary

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| |  |  | | --- | --- | |  |  | | ANC | Antenatal Care | | AMTSL | Active Management of the Third Stage of Labor | | BP | Birth Planning | | Care Group | Group of mother peer educators (CGVs) led by CHWs | | Care Group Promoters | Works with the CHC to recruit mothers who will function as Care Group Volunteers | | Casa Materna Rural | Community-owned and operated maternal birthing center (*Casa Materna Rural*) | | CBC | Community Birthing Center | | CBIO | Community-based, Impact-Oriented Methodology | | CGV | Care Group Volunteer | | CHEW | Community Health Extension Workers | | CHV | Community Health Volunteers | | CHW | Community Health Workers | | CHC | Community Health Committee. Volunteer committee within partner communities | | CSC | Community Score Card methodology | | EBF | Exclusive Breastfeeding | | ENA | Essential newborn actions | | FP | Family Planning | | HBLSS | Home-Based Life-Saving Skills | | HFC | Health Facility Committee | | HFD | Health Facility Delivery | | HMIS | Health Management Information System | | KPC | Knowledge Practice and Coverage Surveys of USAID Child Survival Projects | | M&E | Monitoring and Evaluation | | MNC | Maternal and Newborn Child Health | | MOU | Memorandum of Understanding | | MoH | Ministry of Health | | MM | Maternal Mortality | | MMR | Maternal Mortality Ratio (maternal deaths per every 100,000 live births) | | MRC | Micro-Regional Committee | | NWG | Neighborhood Women’s Group | | OE | Obstetric Emergency | | PDQ | Partner Defined Quality methodology | | PDP | Professional Development Plans | | PPC | Postpartum Care | | PPH | Postpartum Hemorrhage | | RAMOS | Reproductive Age Mortality Survey | | RDF | Rotating Drug Fund | | RHFA | Rapid Health Facility Assessment | | SBA | Skilled Birth Attendants | | Self -Help Groups | Groups of mother-peer educators led by CGVs with 10-12 mothers living in their community | | Supervisory Nurse | Nurse that supervises the Casas Materna Rural | | Support Woman | Woman from the community who is trained on how to provide support during the birth at the Casa Materna | | TBA | Traditional Birth Attendant | | VHC | Village Health Committee | | WRA | Women of Reproductive Age | |  |

# The Community Birthing Center Definition, Purpose, Characteristics

## Definition of a Community Birthing Center

The Community Birthing Center (CBC), as originally conceived by Dr. Mario Valdez of Curamericas Guatemala, is a community-based health facility, managed or co-managed by the communities it serves, that is strategically located in proximity to these communities, and offers high-quality, respectful, culturally appropriate maternal/neonatal care provided by professional health workers who are of the culture and/or speak the language of the communities served. *An essential characteristic is that the communities it serves are fully engaged in the design, creation, and subsequent operation of the CBC.*

A CBC is designed to respond to high maternal and neonatal mortality in rural regions that face multiple barriers to attaining health facility deliveries and emergency obstetric care. These barriers can include: strong traditions of home deliveries; sheer distance from Ministry of Health (MoH) clinics and hospitals, usually combined with rough terrain and poor roads and poor access to affordable transportation; lack of high-quality, respectful, culturally appropriate and affordable care in the local language at local health facilities, including over-medicalization of childbirth, which discourages their use; and low demand for health facility deliveries at the community and household level due to low levels of literacy and health education, and low trust in and engagement with the formal health system. This results in lack of adequate prenatal and postnatal care, and lack of family planning. These barriers combine to manifest as the “four delays” during obstetric emergencies (OEs) that characterize areas of high maternal and neonatal mortality: 1) delay by the family in recognizing that there is an emergency; 2) once recognized, delay in responding to the emergency by seeking professional medical help at the closest health facility; 3) delay in arrival at the health facility, due to inability to access transportation or sheer distance over bad roads; and 4) once arrived at the health facility, delay in receiving treatment.

The CBC is designed to reduce maternal mortality (MM) by dramatically increasing health facility deliveries. While it’s primary function is to safely handle normal deliveries, its staff must be able to promptly and efficiently recognize, stabilize, and refer obstetric complications to the nearest referral facility. *In this way, the CBC becomes the vital link between the community/household and the closest tertiary care.* Occasionally, when there is no recourse or when the complication is readily manageable with staff skills, CBC staff resolve the complication at the CBC. The outcomes of a CBC not only depend on the capabilities of CBC staff, but also heavily relies on intensive community outreach and health education at the household level, which fosters proper birth preparation and prompt recognition of and response to obstetric danger signs, including systems of transportation to facilitate prompt attention to OEs. These measures are designed to reduce the “4 delays” that result in high maternal and neonatal mortality.

To these ends, CBCs are strategically located in proximity to their communities; provide free services 24 hours/day, 7 days/week; are staffed by indigenous health professionals who attend normal deliveries and manage and refer OEs, as well as providing holistic maternal/newborn care; are linked to their communities and to the nearest referral hospital with an emergency transportation system; and are managed or co-managed by the communities in its catchment. Further, intensive community mobilization and behavior change communication at the household level stimulates demand for CBC services, including the integration of traditional birth attendant (TBAs) who encourage women to deliver in the CBC. These characteristics will be described in detail below.

The original CBC in Huehuetenango Department of Guatemala, is the Casa Materna Rural (Casa) of Curamericas Guatemala, a facility constructed and owned entirely by what are called “partner communities,” the communities in its service catchment who are actively engaged in its creation and subsequent operation. In Guatemala, the catchment comprising these communities is called the micro-region, which generally includes 6 to 15 communities with a population of 2,500-3,500. The partner communities build the Casa with volunteer community labor and manage it through a Micro-regional Committee (MRC) consisting of representatives of all the partner communities. The MRC operates the Casa in partnership with Curamericas Guatemala.

The original Casa Materna Rural in Calhuitz, San Sebastián Coatán municipality in the department of Huehuetenango, in Guatemala, was created under the direction of Dr. Valdez and Curamericas Guatemala, and began operating in 2009. Since then two more Casas have entered into operation, one in 2013 in Santo Domingo, also in San Sebastian Coatán, and one in 2014 in Tuzlaj Coya in the municipality of San Miguel Acatán, also in Huehuetenango. A fourth Casa has just been inuagurated in Pueblo Nuevo, in the municipality of Tajumulco, in the department of San Marcos. The Casas have dramatically increased coverage of health facility deliveries and lowered both maternal and neonatal mortality in their partner communities.[[1]](#footnote-1) Much of the content of this document is taken from Curamericas Guatemala’s manual for the replication of the Casa Matera Rural.[[2]](#footnote-2)

The concept of the CBC has since expanded to include health facilities created and operated by the communities in partnership with the local Ministry of Health (MoH). In San Marcos Department in Guatemala, these are Casas being built adjacent to, or added to, existing MoH Health Posts. These Casas are created and operated through a four-way partnership between the partner communities, Curamericas Guatemala, the MoH, and the municipal government.

In San Marcos Department in Guatemala and in Kisii County, Kenya, we will pilot a new, expanded CBC concept - adapting existing MoH clinics and small local hospitals to the CBC model by retrofitting them physically and operationally to meet the criteria that define a CBC, particularly co-design, co-creation, and co-management by the partner communities being served in the facilities’ catchments/micro-regions. This will require not only the mobilization of the catchment partner communities to engage them in the CBC, but also the creation of a working partnership between the communities, the MoH and the clinic staff. *The mobilization of the communities and the forging of this community-MoH partnership will be the key tasks for the successful realization of CBCs created on this new model.*

This guide will address both models, CBCs created by adapting existing MoH clinics to the CBC model, as well as the original Guatemala Casa Materna Rural model. Going forward, the term “Community Birthing Center” (CBC) will refer to the general model, be it a Casa Materna on the Guatemala model, constructed by its partner communities or an existing health facility adapted to the Casa Materna model

## Characteristics/Criteria of a CBC

### Location

1.1 Located in an area of high Maternal Mortality - A CBC should be located in an area of high maternal and neonatal mortality. Where existing clinics are to be adapted to the CBC model, these should be clinics whose catchment communities are suffering high maternal and neonatal mortality rates according to the best locally available data, be they formal or anecdotal. Generally, this means sub-optimal utilization of the local clinic for attending deliveries and obstetric complications, including high prevalence of the 4 delays. *The creation of a Casa Materna or the conversion of a clinic to a CBC is intended to reduce this mortality by 1) reducing home deliveries as women choose to deliver instead in the Casa or CBC and 2) by teaching families to recognize and respond quickly to obstetric danger signs.*

Ideally, local mortality data is available from the MoH and/or other sources that permit a mapping of maternal and neonatal mortality showing exactly where these deaths are occurring, be it at home, in route to health facilities, or at the health facilities. Qualitative data gathered from interviews with clinics staff and with community members can supplement formal MoH data in making this assessment of local need.

As the CBC is meant to serve those most in need and most at risk, it should be located where there the highest maternal and neonatal mortality, particularly in areas most distant from health facilities and referral hospitals. Clinics located in such areas can be prioritized for becoming CBCs.

1.2 Responding to the leading causes of mortality - The mapping process should also look at the causes of maternal and neonatal mortality, where such data is available. Typically, the leading cause of MM in low-resource, rural areas is postpartum hemorrhage (PPH), followed by pre-eclampsia/eclampsia and sepsis. For neonatal mortality, typically the leading cause is birth asphyxia, followed by complications of prematurity (particularly respiratory distress syndrome). The services provided by the CBC staff and the training they receive must respond to these causes, especially the prevention and management of PPH. This will be addressed more below when discussing CBC services and staff skills and training. *The need for prompt attention and swift transport in cases of hemorrhage, where every minute counts, dictates that great attention be paid to strategically locating the CBC and linking it to both communities and referral hospitals by an efficient communication and transportation network.* *The CBC must be the nexus of an efficient network linking communities with increasingly higher levels of maternal/neonatal care*.

1.3 Proximity to its communities - First and foremost, the CBC must be in proximity to its partner/catchment communities to encourage its use, to remove the barrier of distance, and to be able to respond quickly to OEs. *A general rule of thumb is that the most distant partner/catchment community should not be more than 30 minutes distance by vehicle (usually 8-12 kilometers, depending on road conditions and terrain).* Where there are good roads and flat or rolling terrain, the distance to the edge of the catchment/micro-region may be greater; where roads are difficult and the terrain mountainous and dangerous, a smaller micro-region may be required. Something to keep in mind is rainy-season conditions, which may provoke mudslides, road washouts, and create dangerous road conditions. Therefore, when defining a micro-region and the location of its CBC, night-driving rainy-season conditions should be prime determining factors.

1.4 Strategic location - The exact location of the CBC will also depend on other factors, particularly the layout of the road networks. For example, in the Santo Domingo micro-region in Guatemala, the Casa is not located in the center of the micro-region, but rather near its eastern end because that is where the roads in the micro-region happen to converge. Where an existing health facility is being made into a CBC, this location has already been established, and so the delineation of the micro-region will then have to take into account the configuration of the road networks and availability of local transportation. Generally, the road system and the time it takes to reach the CBC along those roads will define the boundaries of the CBC’s micro-region and therefore its partner communities.

1.5 Population of micro-region/catchment - While the length and breadth of the micro-region is determined by geography, the road and transportation network, and the need to have its outer boundaries ideally no more than a 30-minute rainy-season drive to the CBC, the population contained within that area can vary widely, depending on the population density of the region. *Because maternal death from hemorrhage is so time-dependent, the paramount factor in defining the size and boundaries of the CBC’s catchment is the time needed to transport a woman from her home to the CBC, and not the population of the catchment.*  Once the micro-region is defined based on these parameters, its component communities and its population can be determined as well as an estimation of the number of annual pregnancies and deliveries in order to gauge what level of staffing will be required at the CBC to meet the demand for maternal/neonatal services.

### Services

2.1 Open 24/7 - Accessibility is more than physical proximity; the CBC must provide attention to deliveries and OEs 24 hours a day, 7 days a week, including holidays, as deliveries and emergencies may happen at any time. If an existing clinic-to-become-CBC does not already have such scheduling, then staffing and scheduling will need to be so adapted, with the necessary budgeting and personnel adjustments. Generally, this will require that staff who attend deliveries and obstetric complications work in rotating shifts.

Since most, if not all, staff may not be from the local community, this 24/7 staffing may require that the CBC be equipped with dormitories/sleeping quarters for staff working night shifts/weekend (or arrangements made for lodging in the community) and budgeting for the required room and board. Personnel policies may require overtime pay or pay differentials to adhere to MoH policies and so staff does not feel exploited. If staff is unionized, clearly union buy-in will be necessary and negotiated. Also, if there have been issues of delayed remuneration of staff by the MoH, it is vital these issues be resolved to ensure the high staff morale and support needed for successful 24/7 operations.

Also important is that “off-hours” delivery and OE services – between 5 pm and 8 am and on weekends– be of high quality. While full staffing is generally not feasible during off hours and weekends, by the same token, “skeleton crew” minimal staffing during those times should also be avoided. *A key guideline is that the CBC staff attending deliveries and complications during off hours and weekend should never be working alone, but always as part of a team with support staff (see below).*

2.2 Core Services - The essential, indispensable core services provided by a CBC are: 1) attending to normal deliveries cleanly and safely; 2) promptly and efficiently recognizing, stabilizing, and referring obstetric complications to the nearest tertiary facility/referral hospital; and 3) when there is no recourse (e.g., when a woman arrives too far along in her labor or delivery) or when the complication is readily manageable with the skills and equipment of the staff, resolution of the complication in the CBC; 4) attention to neonatal complications, particularly resuscitation with Ambu bag and mask; and 5) attention to miscarriages.

2.2.1 Normal Deliveries - These will follow MoH protocols and include Active Management of the Third Stage of Labor (AMTSL) to prevent PPH, including use of partogram, routine administration of uterotonic drugs (oxytocin 10 IU IM or IV, or oral misoprostol 600 ug), controlled umbilical cord traction for delivery of placenta, and uterine (fundal) massage. [Note: the most recent WHO guidelines state that controlled cord traction and uterine massage are optional, still lacking definitive evidence for their efficacy in preventing PPH. Latest WHO guidance also recommends delayed cord clamping (1-3 minutes after birth) to prevent neonatal anemia].[[3]](#footnote-3)

Deliveries will also include the essential newborn actions (ENA): thermal care (immediate drying and wrapping and skin-to-skin contact with mother); umbilical cord care to prevent sepsis; and immediate breastfeeding (within 1 hour of delivery). Depending on MoH protocols, ENA may include immediate weighing and measuring of the neonate and the administration of immunizations (e.g., BCG and Hepatitis B, as in Guatemala).

2.2.2. Attention to complications in pregnancy, delivery, and postpartum - CBC delivery staff must receive intensive training in the MoH protocols for the identification, stabilization and management of obstetric complications. *While the intent of the CBC is to stabilize and refer complications, the reality on the ground, based on experience in Guatemala, is that CBC staff will often find it unavoidable to resolve complications, particularly if the women arrives too late to refer.* This guide cannot delineate those treatment protocols, but the essential message is that CBC staff who routinely attend deliveries receive sufficient training and empirical learning opportunities to develop the skills needed to handle some types of complications. [Note: in Guatemala, Casa Materna staff now manage 70% of breech deliveries]. For a MoH clinic-turned-CBC, exactly which complications they will be permitted to manage will be determined by MoH policy and protocols.

Prevention and control of PPH will be of paramount concern for both normal deliveries and complications. A key task of the CBC is to ensure that its staff has the training and skills necessary to prevent and manage/refer PPH. Therefore, skills in AMTSL and especially the administration of uterotonic drugs (oxytocin or misoprostol) per WHO guidelines are crucial.

Training of staff may also include the following WHO recommendations for uterine atony, or for when the woman does not respond to uterotonics, and for stabilization of PPH while awaiting transfer to higher level facility: a) use of intrauterine balloon tamponade; b) bimanual uterine compression; and c) external aortic compression.3

2.2.3 Referrals of complications - The CBC must develop a communication and transportation system for both receiving women with complications from the surrounding communities and referring them to the referral hospital for attention. This should include telephone communication with community members (see below), coordination with local systems/providers of transport (or, ideally, an ambulance assigned to the CBC that can pick up women in the villages and bring them to the CBC or directly to the referral hospital), and a well-developed referral system arranged with the referral hospital that includes a) timely communication/forewarning of imminent referrals, b) follow-up communication with hospital personnel, and c) a counter-referral system to validate reception of care and coordinate postpartum care (PPC) at the CBC and in the household. Since OEs may not be very frequent, it is recommended that this referral system be field-tested via simulation *beforehand*, to adequately test and perfect. In addition, every referral should be debriefed to assess its execution, identify problems, derive lessons learned, and apply the lessons to improve the referral and follow-up processes.

A critical corollary of this referral system is orientation of the referral hospital staff to the CBC – its purpose, services, and role in management of obstetric complications - and obtaining their buy-in to the CBC and its services. This will lay the foundation for the efficient and timely communication between CBC and referral hospital staff that will be essential to CBC success in referring obstetric complications and thus reducing maternal and neonatal mortality.

The other critical corollary, to be discussed below (7.0 Community Partnership), is the community and household contribution to this referral system, through community-based mobilization and education efforts at the community and household level that encourage family birth planning (BP), establishment of family and community emergency transportation funds/plans, and families’ prompt recognition and response to danger signs.

2.3 Holistic/Ancillary Services- A CBC should also provide holistic and ancillary maternal/newborn care services that help ensure healthy pregnancies and successful delivery outcomes. These are generally provided during standard 8am-5pm, Monday-Friday business hours. However, some activities may be provided in the evenings or on Saturdays (e.g. in areas where women, including pregnant women, must work, especially at paying jobs, and cannot afford to – or are not allowed to - take time off to access the CBC during regular business hours). These services include antenatal care ANC, BP, PPC, Papanicolaou (Pap-smear) testing, family planning (FP), pregnancy support/preparation, and breastfeeding support.

2.3.1 Antenatal care - This is the most essential ancillary service, and can be provided both at the CBC and in the community, at “rally posts” or through home visitation. The goal is for each pregnant woman to receive at least 4 correctly-timed high-quality ANC checks - a visit during each trimester and during the final month of pregnancy. [Note: recent WHO guidelines recommend eight (8) ANC visits, which may or may not be feasible or MoH policy].[[4]](#footnote-4)

ANC should adhere to MoH protocols and include pregnancy testing; testing for STDs (including HIV in high prevalence areas, following MoH policies on Voluntary Testing and Counseling), urine testing for bacteremia and proteinuria, and blood testing for anemia; monitoring of blood pressure; monitoring of maternal weight gain and BMI; provision of tetanus vaccination; and supplementation with iron/folate, maternal vitamins, and, if feasible, sustainable and in line with MoH policy, nutritional/caloric supplements. If the clinic-to-be-CBC does not have a lab, then it must be linked to a nearby health facility with lab facilities to promptly process blood and urine and, STD tests, etc.

Whenever possible, ultrasounds should be available at the CBC to support ANC, particularly for detection of conditions such as transverse positioning of the fetus and placenta previa, which require referral for C-sectioning (see below under supplies and equipment).

2.3.2 Support Classes for Pregnant Women - CBC staff teach these classes, which cover a) recognition and response to danger signs in pregnancy, labor/delivery, and postpartum; b) importance of proper ANC; c) maternal nutrition; d) exercises during pregnancy for fitness and preparation for delivery; e) relaxation and breathing exercises (e.g., Lamaze methodology) to facilitate delivery; f) preparation for delivery – what to expect, how to breathe, when to push, how to manage the contractions, how to walk during labor, and practice her chosen position for delivery; and g) developing birth plans (see 2.3.3 below). These can be coordinated/combined with ANC visits so women do not need to make frequent trips to the CBC, especially if they are working or have heavy domestic responsibilities.

2.3.3 Birth Planning - Either via ANC counseling (at the CBC or during home visitation), CBC pregnancy classes, or via Care Group lessons in the community (see 7.2.1., below), each pregnant woman and her family is helped to create a Birth Plan, which, at a minimum, includes a) at what health facility the woman will have her delivery; b) how she will get there (transportation arrangements); c) how much money will be needed for transportation and other costs and how the family will obtain/set aside these funds; d) who will accompany the woman to the health facility (and if necessary, to the referral hospital); and e) who will help care for the woman’s other children and as well as the woman herself during delivery and during the first postpartum weeks.

2.3.4 Postpartum care (PPC)- The CBC provides PPC for both the puerperal woman and her neonate, including a post-partum check within 48 hours of delivery, and monitoring of the mother’s and neonate’s health during the full 42-day post-partum period, all according to MoH protocols. This may occur in the CBC, or in the woman’s home or community. Ideally, the CBC will have a recovery room where the woman and her neonate can rest postpartum; in Guatemala, they are encouraged to stay 24 hours at the Casa Materna for monitoring and PPC. though this may not be feasible in a clinic adapted to the CBC model. The referral system discussed above must also be able to promptly respond to complications in mother or neonate discovered during PPC.

2.3.5 Family Planning (FP) - Ideally, FP counseling and provision of modern methods of contraception (per MoH protocols) are an integral service of the CBC. This will require that a) staff receive adequate training in FP counseling skills and provision of contraceptive services; and b) the CBC have an adequate supply chain of contraceptive devices/methods, free of stock-outs.

2.3.6 Papanicolaou (Pap smears) – As cervical cancer is the #1 cancer killer of women in the Global South, this is an essential CBC service and staff must be adequately trained and equipped to provide this service. This will require linkages with MoH labs/pathology services for timely analysis and provision of results. Follow-up to positive tests will likely be provided at the referral facility.

### CBC Staffing & Support

3.1 Staffing - The staff attending deliveries and complications (and providing most ancillary services) must be MoH-certified health professionals (Registered Nurses (RN), auxiliary nurses, matrons, professional midwives, etc.). Which such staff attend deliveries and manage complications will depend on staff available, MoH protocols and policies, and aresources available for personnel/staffing. But the CBC ideally utilizes *task shifting* - that is, the handling of deliveries and complications is shifted downward as low as feasible in the staffing hierarchy. This is especially important if there are acute shortages of RNs, as is often the case in low-resource rural areas. In Guatemala, with a dire shortage of rural RNs, the Casas Maternas have task-shifted normal deliveries (and initial management/stabilization of complications) to Auxiliary Nurses, who can be trained and certified in one third the time of an RN, and whose pay scale is one third to one half that of an RN, allowing far more “bang for the buck” of limited personnel resources. If there are sufficient RNs available for the CBC (including ancillary care and 24/7 staffing), this task shifting may not be necessary.

Another principal of CBC staffing is that *staff attending deliveries and complications should never function alone, but always as part of a team that includes both CBC staff and community actors.* This ensures the highest quality care to the mother and neonate, as well as improves morale of staff, who enjoy the support of a team. The CBC team should include other higher level health professionals, especially supervisory obstetric nurses and/or doctors, available by phone if not physically, to provide support and guidance, especially during the management of complications. *The staff managing complications must count on a wide circle of health professional support, even if via telephone, that may reach all the way to the referral hospital.*

Having community members on the team is also important, as they help link the CBC to the communities and the families, and provide a “familiar face” to the women in labor and thus serve as part of the cultural adaptation of CBC deliveries (see below). Examples from Guatemala are Support Woman (*Mujeres de Apoyo*) and the *Comadronas* (TBAs) who assist the Auxiliary Nurses during deliveries (see 3.4 and 3.6, below). Lastly, the CBC team should include a mobile Health Educator or Community Health Extension Worker (CHEW) who goes out into the communities to do outreach, health education, supervise Community Health Workers (CHW) or Community Health Volunteers (CHV), and oversee the training of mother peer educators using such methods as the Care Group approach (see 7.2.1, below).

3.2 Skilled birth attendants (SBAs) - As already related above, these SBAs can be RNs, professional midwives, or, where RNs and professional midwives are in short supply and/or too expensive to deploy 24/7, health professionals lower in the staffing hierarchy, such as Auxiliary Nurses. If such task-shifting is necessary for the CBC, the CBC partners must explore the locally available staffing options to determine to what lower-level health professionals should function as the primary SBA. As also stated, if there is an adequate supply of RNs, then they can certainly be the primary SBAs.

The training they receive will be locally determined, but should combine classroom and hands-on practical experience. In Guatemala we are modeling a 3 to 4-month training regimen that includes a) 4 weeks of training in handling normal deliveries and management of obstetric complications taught by MoH obstetric nurses and physicians at a local MoH clinic; b) a two-week practicum in management of obstetric complications at the referral hospital under supervision of MoH staff; and c) a 1 to 2 month hands-on field practicum, supplemented by workshops and simulations, at a Casa, under the supervision of Casa Auxiliary and Supervisory Nurses.

Once these staff are trained, they will require ongoing skill evaluation and improvement under the supervision of an experienced obstetric nurse (see 3.3, below).

3.2.2 Evaluation of SBA Skills - Even if a clinic-to-become-CBC is already staffed with trained personnel, a thorough initial evaluation of their skills must be done, including a self-assessment of their skills, and, on the basis of this evaluation, skill areas needing further improvement identified and addressed through a rigorous, well-documented training program. This may require the help of outside consultants/experts to provide this training, along with the purchase and deployment of training materials, such as “Mama Natalies” and “Resuscitation Annies” for simulations, training videos, and other learning aides. Afterward, ongoing periodic evaluations should continue to monitor skills and provide continuing education/training to refresh old skills and build new ones.

3.3 The Supervisory Nurse – The primary SBAs, be they RNs, professional midwives, or the Auxiliary Nurses (or their equivalent) should be closely supervised and supported by a supervisory RN, ideally with extensive obstetric experience. The ratio of supervisory nurses to CBCs and to staff will vary depending on available staffing and geography. In Guatemala, one Supervisory Nurse is able to supervise and support the staff of two Casas Maternas that are not very distant from each other. Another Casa Materna, more distant and isolated, has required its own dedicated Supervisory Nurse. Ideally, each CBC would have its own dedicated Supervisory Nurse.

The Supervisory Nurse should utilize a system of *supportive supervision* to regularly evaluate and train the primary SBAs. In Guatemala, the Supervisory Nurses utilize quarterly quality control checklists to observe and evaluate all aspects of the primary skilled birth attendants’ work. Monthly training refreshers are provided by the Supervisory Nurse to address skill deficiencies and to develop new skills.

The Supervisory Nurse also has a key role in providing support and assistance – in person or at a distance via cell phone – in the management of OEs. Ideally, staffing would permit availability of a Supervisory Nurse 24/7, with 2 or 3 working in shifts. In Guatemala, the Supervisory Nurses lodge at the Casa Materna during the week and so are always available for consultation. This arrangement may or may not be feasible for a MoH clinic converted to the CBC model. Thus, a key issue to resolve for a CBC is how to affordably arrange the 24/7 availability of Supervisory Nurse support for SBA oversight, training, and OE support/management.

Operational research in Guatemala has also shown that the network of support available to the primary skilled birth attendants need not be restricted to the Supervisory Nurses, but can include other MoH and local NGO health professionals in widening concentric circles of availability, including staff at the referral hospital. Such a network should be developed for each CBC. An intriguing possibility is to pilot “telemedicine”, utilizing the internet and smartphones and/or tablets.

3.4 Support Women – The Guatemala Casa model utilizes Support Women (*Mujeres de apoyo*) from the partner communities to enhance Casa services. In most low-resource rural areas, many or most RNs do not come from the local communities, but commute from outside towns or cities, and while over time they may develop a good rapport with the local communities, having support staff who are from the local communities working at the CBC can provide valuable support to the CBC staff as well as strengthen the links with the partner communities to ensure that the CBCs are utilized. The Support Woman is also effectively a Doula, providing emotional and practical support to the woman through her pregnancy, delivery, and postpartum.

In Guatemala, the Support Women are literate paid paraprofessionals from the local communities with at least a secondary school diploma who assist with ANC, co-teach the classes for pregnant women, provide PPC, as well as assist with deliveries and the handling of complications as part of the team. In a MoH clinic-turned-CBC, exactly what they do to assist deliveries will be determined at least in part by MoH protocols and personnel policies. They also accompany women in labor to the CBC as well as accompany them to the referral hospital to provide emotional and physical support and also act as advocates for the women to help them navigate the formal health system, which the Mayan women can find intimidating.

Support Women are recruited from the CBC’s catchment/micro-region communities and are of the local ethnicity and culture and speak the local language. They are likely known directly or indirectly to the women delivering at the CBC. Their training and supportive supervision is managed by the primary SBAs, be they RNs, professional midwives, or Auxiliary Nurses.

In clinics-turned-CBCs, Support Women can be employees of the MoH, along with other CBC staff; or they may be employees of a local NGO or supported by the catchment communities themselves. In theory, they could be volunteers or receive a modest stipend; in Guatemala, they are salaried, with excellent results with respect to recruitment, retention, and quality of work.

3.5 Health Educator/CHEW - This position can have many job titles and the exact roles and tasks of this position will vary greatly based on the strategies and specific approaches and interventions being utilized. This may be a CHEW who oversees the health education and community case management work of CHWs or CHVs. Or they may be a Care Group Promoter who oversees the implementation of the Care Group approach, which deploys mother peer educators doing household-level behavior change education in the communities to increase demand for ANC and health facility deliveries and teach danger sign recognition and response and birth planning. The essential element is that *there is a CBC staff person whose task is specifically to 1) mobilize the communities to invest in maternal/neonatal health and to partner with the CBC ; 2) serve as a link between the communities and the CBC; and 3) oversee health education (and possibly the community case management work) of CHW and community volunteers working at the community and household level. This position is essential to the success of a CBC.*

3.6 Traditional Birth Attendants (TBAs) - A key feature of a CBC, be it a Casa or a clinic-turned-CBC, is the integration of the TBAs into the CBC staffing and operations. *Trained TBAs can be an integral part of the CBC team. Their role is redefined to no longer attend home deliveries, but rather to monitor pregnancies and bring women in labor or experiencing an OE to the Casa Materna/CBC, where they assist the health professionals as part of the team.*

In both Liberia (with the Nehnwaa Project) and Guatemala (with the Casas Maternas) this model has been enormously successful [note: the Nehnwaa Project utilized the actual referral hospital as the primary place of delivery rather than a Casa Materna/CBC]. In both countries, we have found that the TBAs readily and even enthusiastically accept this new definition of their role, and, in particular, enjoy 1) being part of a team, with the responsibility of the delivery no longer solely on their shoulders; and 2) finally be recognized as having a place in the formal health system.

Integration of the TBAs begins with training them to be able to do clean safe home deliveries and to monitor pregnant and post-partum women for complications. In Liberia and Guatemala this training has been provided by both the MoH and by NGO staff (Nehnwaa and Curamericas Guatemala). In Guatemala, the MoH has devised a system to certify trained TBAs with an ID card (carnet) that identifies them as a trained TBA. While they may no longer perform home deliveries (unless unavoidable), this training prepares them with the skills and understanding of the formal health system and evidence-based obstetric practices to function as a fully participating member of the CBC delivery team. The presence of the trained TBA at the delivery can be i enormously reassuring to the mother, and CBC staff generally welcome the TBA’s assistance. A key learning of the Guatemala Casas Maternas is that the CBC staff learn from the trained TBAs, as well as the other way around.

, particularly In rural traditional cultures, TBAs are the confidantes and counselors to women, and having them integrated into the CBC’s services helps build confidence among the women in the CBC and its staff and services. It is important to note that in both Liberia and Guatemala, the trained TBAs continue to receive their usual fees from the families in exchange for their monitoring of pregnancy and postpartum and their assisting with deliveries at the CBC.

Where there are strong traditions of home deliveries and household-level resistance to health facility deliveries, TBAs have provided the vital bridge between the new ways and the old. *Operational research in Guatemala has shown that they are more instrumental than anyone else in persuading women and their families to have health facility deliveries in the Casa.[[5]](#footnote-5)*

A TBA integrated with a CBC a) closely monitors the health of the pregnant woman with home visitation; b) encourages the woman to receive her 4 ANC checks from a health professional; c) detects the onset of labor or of complications of pregnancy, labor, or postpartum, reports this immediately via cell phone to the CBC, and sees to it that the family brings the woman promptly to the CBC, usually accompanying the woman and her family; d) assists the CBC staff with the delivery; and e) monitors the puerperal woman and neonate for complications.

### Physical plant/equipment/supplies

4.1 Physical Plant - The physical plant of a Guatemala Casa adheres to a basic plan that may vary considerably from that of an existing clinic converted to a CBC. It is a cinder-block structure (with plastered and pleasantly painted interior and exterior walls) that seeks to duplicate much of a traditional Mayan house plan in order to make the facility more like a home (hence the name “Casa”) and less like a clinic in order to encourage its use.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Kitchen and classroom/waiting area | Pharmacy | Bathroom | Recovery Room | Storage |
|  | | | |
| Exam Room | Delivery Room | | Recovery Room/Staff quarters |

This plan is adjusted to local community preferences. Including a traditional Mayan kitchen allows families to come and prepare the traditional meals and teas/infusions that are a key ingredient to a “culturally appropriate delivery.” The exam room is the site of ANC, PPC, FP counseling/services, Pap smears, and other diagnostic work, and is equipped with a portable ultrasound to facilitate detection of potential complications. The pharmacy contains uterotonic and other delivery-related drugs, antibiotics, saline solution, and other MoH-required essential drugs and supplies; in Guatemala it is partially maintained with MoH support and partially through a rotating drug fund (RDF). The delivery room includes two beds (in the event of simultaneous deliveries) as well as props (such a rope hanging from the ceiling) to help the woman deliver in her preferred position. The recovery room has two beds; likewise a second recovery room which can double as staff living quarters during off-hours shifts. A storage room is essential to avoid clutter and to maintain sanitary conditions.

An existing MoH clinic adapted to the CBC model will obviously have to work with its legacy floor plan to find the best solution to providing a respectful, culturally appropriate delivery (see 5.1 and 5.2, below), and thus may differ widely from the above basic plan. Key factors to consider: a) that the exam rooms and delivery rooms afford adequate privacy to the pregnant, delivering, or postpartum woman; b) that there be a recovery room where the postpartum woman can rest; and c) that there be a space where family members can not only be accommodated, but able to practice birth-related customs, including the recovery room.

4.2. Utilities and Amenities - A CBC, be it a Casa Materna or an adapted clinic, must have the following:

a) potable water, either from a pure source or water properly filtered/treated in the facility;

b) complete toilet facilities, including flush toilet connected to a sewage system or septic tank, a sink, and a shower/bathing facilities;

c) proper waste disposal facilities, including of “sharps” and other medical waste;

d) 24/7 electricity, preferably from a connection to a local electric grid and, ideally, with a back-up generator;

e) reliable phone connections, be they landlines or via cell phones, and internet access, ideally with Wi-Fi; and

f) a washing machine or utility sink where clothing, bedding, and towels can be laundered and, if a clothes dryer is not feasible, ample protected/secure space to hang laundry to dry.

Generators must be properly maintained and located where fuel fumes will not affect the CBC’s air quality. Access to repair services and providers – plumbers, electricians, roofers – is essential and their services and their required materials must be budgeted. Community volunteer labor may provide some or even all of these services. A CBC cannot allow its life-saving services to be jeopardized by defective infrastructure, and attention to its maintenance and repair is crucial.

#### Equipment

4.3.1 Information Technology - Relating to M&E and medical records, CBC staff maintaining clinical records and Monitoring and Evaluation (M&E) data should have access to desktop and/or laptop computers. Desktop computers should have battery back-ups. All files should be backed up either on CDs, DVDs, external hard drives, or in the “cloud.” Ideally, a CBC will have a printer/scanner as well.

4.3.2 Clinical Equipment – For a MoH clinic being converted to a CBC, MoH clinical equipment protocols for facilities attending deliveries and complications will determine the exact equipment required. Minimum clinical equipment should include a) exam room bed/gurney; b) ultrasound (portable or desktop or free-standing); c) birthing beds that allow the delivering woman options for her delivery position; d) curtains where necessary to provide privacy in the exam room and delivery room; e) equipment for provision of IVs; e) blood pressure cuffs; f) Ambu bag and mask for neonatal resuscitation; g) stethoscopes; h) autoclave for sterilizing instruments; i) suction tube (for clearing neonates breathing passages); j) partographs; k) scale and measuring tape for weighing neonates; l) scale for weighing pregnant women; m) sharps box, and n) Doppler for antenatal care

4.4 Supplies, Drugs, and Medicines - For a MoH clinic to be converted to CBC, MoH protocols and guidelines for facilities attending deliveries and obstetric complications will determine the minimum supplies and drugs required.

4.4.1 Clinical Supplies - Minimum clinical supplies should include: a) clamps/string for clamping umbilical cord; b) scissors for cutting umbilical; c) IV supplies (stand, saline bags, catheters, flush syringes, etc.): d) latex gloves; and e) sutures, gauze, and other supplies for suturing not already mentioned.

4.4.2 Medicines and Drugs - Minimum medicines and drugs should include a) injectable oxytocin; b) oral misoprostol; c) prenatal vitamins; d) iron/folate supplements; e) tetanus vaccine; f) magnesium sulfate; g) acetaminophen and ibuprofen; h) amoxicillin and other antibiotics; i) pregnancy tests; j) urine tests; k) other ANC tests as appropriate. Ideally, all required MoH essential drugs are available and adequately supplies without stock outs. If stock outs are a problem, then an analysis of the root causes must be executed and the causes remedied. *Most critical is that there be no stock outs of uterotonic drugs, and that reserve supplies be secured in the event of stock outs.*

4.4.3 Household Supplies and baby clothing- These will include a) toilet paper; b) sheets, pillows, and pillow cases; c) blankets; d) towels; e) wrapping clothes (for drying and wrapping the neonate); f) hand soap; g) baby clothes for the neonate: shirts/”onesies”, caps, socks/booties, baby blankets; and h) diapers.

4.4.4 Health Facility Assessment – A clinic to be adapted to the CBC model will require an initial assessment of its physical plant, infrastructure, staffing, supplies, and equipment to determine where it already meets the CBC criteria described in this document and where further adaptation/improvement is necessary. For this purpose, we have developed an assessment tool called the Rapid Community Birthing Center Assessment (R-CBCA) Tool. Once the assessment is completed, a plan is drafted to address areas needing further improvement and adaptation, including formulating a budget to secure the needed equipment, supplies, repairs, and personnel. This R-CBCA can be done by a neutral third convening party (e.g., an NGO), but ideally it would be a process done jointly by the clinic staff and representatives of the partner/catchment communities, to engage them from the very start in working cooperatively with the clinic to ensure optimum CBC operations.

The R-CBCA is not a one-time process, but should be repeated annually, with quarterly assessments by the clinic staff and community representatives to ensure that improvements are on track and to identify new issues that can then be addressed without further delay.

### 5. Respectful, Culturally Appropriate Deliveries and Services in the Woman’s First Language

An essential feature of a Casa Materna/CBC, as important as the quality of its clinical services, is that it provides respectful maternal care in the woman’s native/first language in a manner that honors 1) her identity as a woman and 2) her culture. Even when health facilities are within relatively easy access of rural villages, they are often rarely used because services are disrespectful, overly-medicalized, in an unfamiliar language, and/or disrespectful of the woman’s culture, particularly if it does not allow the presence of her family and/or her TBA. A core precept of a CBC is that disrespect and abuse during maternal care are a violation of a woman’s basic human rights. CBCs intentionally respect a woman’s feelings, culture, choices, and preferences.

Consequently, a vital outcome indicator for a CBC is the indicator that defines respectful, culturally appropriate maternal care and a vital aspect of CBC M&E is determining if the women receiving CBC services are receiving such care.

5.1 Respectful care - Respectful care, as defined by the White Ribbon Alliance, means every woman has the right to a) be free from harm and ill treatment; b) information, informed consent, right of refusal, and respect for her choices and preferences, including companionship, attire, and position of delivery; c) privacy and confidentiality; d) be treated with dignity and respect; e) equitable care and freedom from discrimination; f) the highest attainable quality healthcare; and g) liberty, autonomy, self-determination, and freedom from coercion. [[6]](#footnote-6)

On this basis, the following indicators of respectful care are being widely accepted:

1. Absence of physical abuse
2. Informed, consensual care
3. Dignified care
4. Non-discrimination (no denial of services due to ethnicity, poverty, age, etc.)
5. Prompt attentive care
6. Liberty of movement
7. Confidentiality and privacy

CBC staff must understand and respect these rights and consistently provide treatment that meets these conditions, from the moment the woman arrives until the moment she leaves.

Exactly how “respectful care” shall be locally defined requires formative research, through which the voices of the women to be served by the CBC are heard and through which they are allowed to define for themselves what for them is “respectful care.” Then the CBC staff must, if necessary, adjust their ways of working to ensure that every aspect of respectful care is assiduously provided.

In Guatemala, two ways that this respectful care is manifested is by allowing the woman to a) choose her delivery attire; and b) choose her delivery position. These are compromised ONLY in the event of an OE requiring life-saving measures.

5.2 Culturally appropriate care - In most traditional rural cultures, childbirth is a social and spiritual (not medical) event, with associated traditional practices that are embedded in a woman’s culture. Failure to respect a woman’s culture during childbirth (as well as during other Maternal and Newborn Child Health (MNC) services, even emergency obstetric care) will result in low utilization of a CBC, no matter how physically accessible it is or how high the quality of its clinical services. Women opting for home deliveries often do so in order to have a culturally appropriate delivery, with the comforting presence of family and traditional foods and rituals. *Therefore, increasing health facility deliveries demands that a CBC provide a birth experience that allows key aspects of a home delivery; it must provide more than token accommodation, and must wholeheartedly embrace the woman’s culture.*

How this “culturally appropriate care” is defined, and its precise indicators, are locally determined and formative research is required to hear the women’s voices and preferences. But this is only the first step –CBC staff must then find ways to incorporate these cultural preferences into the provision of their services. For an existing MoH clinic, this may require adjustments to how services are provided, and perhaps also adjustments in the physical plant or space usage of the facility.

In Guatemala, cultural appropriateness is manifested by a) allowing the presence of the TBA and the family [note: number of family allowed in the delivery room is generally limited just two family members at a time (usually the husband and mother-in-law) plus the TBA]; b) allowing the preparation of traditional foods and infusions in the Casa kitchen; c) allowing traditional prayers and dedications; d) allowing, before or after delivery, the woman’s use of the traditional Maya sweat-lodge (*temescal*), built adjacent to the Casa; and e) the very name and layout of the Casa, which “feels” as much a Mayan home as a clinic. As mentioned above, the presence of the Support Women and the trained TBAs also enhances an atmosphere of cultural inclusion, as they are of the local culture and the local communities.

In the Nehnwaa Project in Liberia, the health facility, Ganta Hospital, provided designated cooking areas just outside the hospital where families could prepare traditional foods, engage in prayers and rituals, and the woman’s TBA and husband/partner were allowed at the delivery.

5.3 Care in the Woman’s First Language - In some rural regions, clinic staff are not of the local area and may not speak the local language. For example, in Guatemala, many rural Mayan women have had very limited schooling and do not speak or understand Spanish very well; many of their husbands also struggle with Spanish, particularly the medical jargon used in clinics and hospitals. Therefore, a CBC should provide services in the woman’s first language. The presence of the Support Woman and/or TBA can help enormously, as they will have proficiency in both the local language and the language of service provision. This should extend to signage as well.

Even if the CBC’s service providers and their women patients speak the same language, there may still be issues of comprehension, as poorly educated rural women may not understand and thus be intimidated by the technical/clinical language utilized by clinic staff (e.g., terms such as “stat” and “code red” may mean little to them and even frighten them). Therefore, CBC staff must learn to adjust their language and find ways to communicate effectively with the women and their families using non-medicalized, informal language.

5.4 Formative Research for Respectful Culturally Appropriate Care – If local formative research has not been done to define the local indicators for respectful culturally appropriate maternal care, then doing such research is an extremely high priority, since, as already noted, without provision of such care any CBC may be doomed to failure. Two methodologies very well suited to this process are Partner Defined Quality (PDQ),[[7]](#footnote-7) and the Community Scorecard (CSC)[[8]](#footnote-8). They utilize very similar processes and both have been proven successful in helping health facilities learn the preferences and needs of their patients and incorporate these needs and preferences into their operations. Both methodologies also foster a spirit of cooperation between service providers and communities/recipients of services and thus support building the partnership a successful CBC must have with the communities it serves.

It should be noted that this is only the first step. Once the indicators are defined, there must be regular monitoring of these indicators to ensure that they are being met. In Guatemala, women who deliver at the Casa Materna participate in exit interviews to assess their experience with respect to respectful culturally appropriate care.

### 6. Health Information/Clinical Records and M&E

For an MoH clinic to be converted to a CBC, MoH policies and protocols regarding clinical/facility recordkeeping will necessarily have to be followed. That said, the following Health Management Information System (HMIS) framework has worked well in both Liberia and Guatemala.

6.1 Register of deliveries - This is a register of all the deliveries handled at the CBC. [Note- miscarriages may alsdo be also included in this register]. All deliveries are recorded, including stillbirths. This allows monitoring of the CBC’s production as well as a mapping of what communities the women being served are coming from, their age and parity, and their obstetric history. Analysis of this data can show if services are being equitably provided according to geography (i.e., that women from the most distant communities are being proportionally served); and age/parity/obstetric history (i.e., that higher risk women of greater age and parity or with a history of C-sections and complications are being adequately served).

This register should include, at a minimum: a) woman’s name; b)community; c) birthdate/age; d) date(s) of service; e) obstetric history (parity, complications, C-sections, live births, miscarriages, etc.); f) number of living and deceased children and their ages (or age at death); g) a clinical description of the delivery/service; h) CBC staff in attendance; and i) the outcome of the delivery (miscarriage/stillbirth/neonatal death/live birth). In Guatemala, the delivery register also notes the name of the TBA (*Comadrona*); the exact birth time/date; and the sex, weight, and length of the neonate.

6.2 Register of obstetric complications – This is a register of all the complications of pregnancy, delivery, and postpartum managed at the CBC. There can be a separate register for complications resolved at the CBC, and another for complications referred. This allows for a periodic analysis of the CBC’s work in attending to OEs, documenting the kinds and frequencies of complications managed, the capabilities of the staff, and the utilization of the OE referral system. This can also serve to document issues that can affect CBC effectiveness, such as how often women with complications are arriving too late to refer, forcing CBC staff to resolve complications that should be referred, as well how often occur instances where women/families refuse to comply with a referral. This data can reveal systemic weaknesses that must be addressed with community-level work, so women arrive early enough in labor to allow referral of a complication and so all referrals are complied with. The outcomes data also allows the determination of what referrals are resulting in C-sections, and for what reasons, allowing an estimation of the C-section rate, which has been regarded as a good proxy for attention to obstetric complications.

The register of complications should include the same data as the register of deliveries, plus a) the type of complication (pregnancy, delivery, postpartum); b) clinical description of the complication (primary and secondary classifications – for example, PPH due to retained placenta; convulsions due to eclampsia); c) description of the services provided (be it resolution or stabilization and referral); d) outcome for the mother and neonate (including if the outcome involved a C-section); e) name of referral hospital; f) follow-up results of referral; g) indication if woman arrived too late to refer; h) indication if the referral was refused; and i) if the complication resulted in a maternal death, the results of the verbal [or actual] autopsy determining cause of death and, ideally, which of the 4 delays contributed to the mortality.

6.3 Clinical file of the delivery - Besides being added to the above registers, each delivery has a detailed clinical file, ideally both paper and digital, that provides the clinical details of the delivery. Besides the basic data included in the register of deliveries (6.1), it includes: a) notes of the woman’s condition on arrival; b) notes and observations of the delivery, including details on provision of AMTSL; c) a clinical evaluation of the neonate (APGAR-color/tone, movements, reflexes, etc.); d) sex, weight, length of the neonate; e) vital signs of mother and neonate; f) if the Essential Newborn Actions were provided – immediate thermal care, clean umbilical cord care, and immediate breastfeeding within the first hour of delivery; g) if there was a complication for the neonate – e.g., need for resuscitation, if neonate was premature, if there was a complication of prematurity and treatment and/or referral provided; h) if there was a stillbirth, and if so, if it was pre-partum or intra-partum and clinical indications of cause of the stillbirth; and i) if there was a neonatal death, description of condition, attributable causes, treatments provided, etc. [Note: all deaths are also recorded in the Vital events Register – see 6.5 below].

Note: in the event of the refusal of a woman or her family to comply with a referral, despite all encouragement to do so, it is recommended that this refusal be witnessed and recorded in a document signed by the woman (or a member of her family) and by attending CBC staff, as well as local leaders, to cover possible legal repercussions for the CBC and its staff should the complication result in a maternal or neonatal death. In the case of a MoH clinic functioning as a CBC, this should be done rigorously according to MoH protocols.

6.4 Woman’s clinical file – The clinical file of the delivery (6.3) is part of the woman’s overall clinical records, which includes all her conditions and services received from pregnancy through delivery and postpartum. This file is cumulative.

This file should include: a) during pregnancy, the dates and notes of prenatal checks, including timing of checks, vital signs/BP, results of lab tests, weight gain and BMI, position of fetus (ideally confirmed with ultrasound) and fetal pulse, report of any problems or complications and treatment provided, record of immunizations (especially for tetanus), and record of supplementation (iron/folate, maternal vitamins, etc.); b) the clinical file of the delivery (6.2); and c) the record of the postpartum check(s), noting mother’s and neonate’s condition, existence of any complication and response to the complication.

6.5 Registers of Catchment/Micro-regional Vital Events – Ideally, a Casa Materna/CBC is built on the foundation of a census- and community-based service platform that includes community-based surveillance and collection of vital events data – the detection and reporting of all births, new pregnancies, and deaths in the catchment communities of the CBC. Efficient detection of these events, and precisely locating the women/families involved, allows prompt and complete coverage of key MNC services, including ANC, health facility deliveries, and PPC; and tracking births and deaths (and the causes of death) allows computation of actual mortality rates, monitoring of actual mortality causes and of changes in actual mortality rates, i.e., the ability to track actual project impacts. In Guatemala, this service platform is the Community-based Impact-Oriented (CBIO) Methodology combined with the Care Group approach, which will be described below (see 7.0 Community Partnership). Detection and collection of the village-level vital events is done by community-based actors, which can include Care Group Volunteers (CGV), CHEWs, CHWs, CHVs, etc. and passed on to CBC M&E staff, who record the vital events for the catchment communities (or “partner communities”) in the Vital Events Register.

Because the CBC is the focal point for health services in its catchment/micro-region, it makes sense to have the Vital Events Register for the catchment communities maintained in the CBC by M&E staff. This data should be organized on a community basis, so the CBC staff, as well as each community, has access to its own vital events data.

The Vital Events Register has three component registers – for new pregnancies, births, and deaths. The Death Register, in turn, has three component parts, for maternal death, under-five child deaths, and all other deaths.

6.5.1 New Pregnancies Register - All new pregnancies detected in the partner/catchment communities are registered and followed up by CBC and/or community-based staff with monitoring of the pregnant woman to ensure she receives adequate prenatal care.

The Register includes, at a minimum the woman’s a) name; b) community/address; c) age/ birth date; d) estimated date of delivery; and e) actual date of delivery and delivery outcome. This Register can also include the ANC received by the woman – at least the number of checks – so that this register can also serve to monitor provision of ANC. As will be related below (

6.5.2 Birth Register - This Register includes all live births (and stillbirths) detected in the partner/catchment communities. Detection of the birth and location of the puerperal woman trigger follow-up by CBC- or community-based staff for PPC and subsequent monitoring of the woman for Exclusively Breastfeeding (EBF), postpartum complications, and the initiation of growth monitoring of the child. The Birth Register data provides the denominator for the computation of mortality ratios/rates- the number of live births. Stillbirths are also recorded in the Birth Register; this allows computation of the perinatal mortality rate, which divides the combined number of stillbirths and the number of neonatal deaths that happen within the first week of life by the total number of live births (see mortality rate computations, below).

The Birth Register includes, at a minimum – a) name of newborn (obviously, no name for a stillbirth); b) sex of newborn; c) name of mother; d) date of birth/delivery; e) name of community; f) if live birth or stillbirth (note: live births include neonatal deaths).

6.5.3 Death Registers - These Registers include all deaths detected in the partner/catchment communities. There are generally three distinct registers – a) for maternal deaths – deaths directly attributable to conditions relating to pregnancy, delivery, or postpartum; b) for under-5 child deaths; and c) for all other deaths in the general population.

All detected deaths are followed up with a verbal autopsy done by CBC clinical staff to determine, if possible, through interviewing parents/family members, the cause of death.

The Death Registers include a) name deceased; b) birthdate; c) date of death; d) age at death; e) location of death; f) cause(s) of death; g) a brief description of the circumstances of death; h) which of the 4 delays contributed to the death. For neonatal deaths (within the first 28 days of life), the age in days of the neonate at death is indicated in order to analyze when neonatal deaths are happening and to be able to calculate the perinatal mortality rate.

Utilizing this data, the CBC M&E staff can compute for a given calendar year the following mortality ratios/rates: a) maternal mortality ratio (MMR); b) neonatal mortality rate (<29 days); c) perinatal mortality rate; d) post-neonatal mortality rate (1-11months); e) infant mortality rate (< 12 months), f) 12-59-month mortality rate; and g) under-five mortality rate (<60 months).

Causes of maternal and child death should also be tracked to see if the project is impacting specific causes of death – for example, lowering the number of neonatal deaths from birth asphyxia due to application of neonatal resuscitation using Ambu bag and mask and other techniques (as was the case in Guatemala), or lowering the number of maternal deaths from hemorrhage due to AMTSL and administration of uterotonic drugs, also as was the case in Guatemala.

6.5.4 Reporting CBC Outputs/Production - The exact design and content of the CBC M&E reporting system will vary depending on specific project needs, and, with an MoH clinic-turned-CBC, the M&E/reporting protocols of the MoH. But ideally there is a monthly, quarterly, and annual report of the production/outputs of each CBC for the CBC staff and partner community leaders to review, comment, and use for data-driven decision making and work planning. The above-listed records and registers provide the raw data for these reports.

What data points are included in the report is at the project discretion, but, for reference, the Casas Maternas in Guatemala report the following for each Casa on a monthly, quarterly, and annual basis: a) number of deliveries attended; b) number of complications referred; c) number of complications resolved in the CBC; d) total number of complications managed (b+c); e) number of pregnancies detected; f) number of ANC checks provided/number of women receiving ANC; g) number of ultrasounds (to document use of ultrasounds); h) number of women receiving FP counseling/services; i) number of women receiving Papanicolaou tests; j) number of women receiving PPC checks; and k) number of women attending support group for pregnant women. They also include the vital events data (number of births, number of each classification of death, causes of death, and updated mortality ratios/rates.

[Note: women from more distant non-partner communities outside the CBC catchment can receive CBC services, be it ANC, delivery, management of complication, PPC, etc. Therefore, a good policy is to disaggregate the above data by women from partner communities and women from non-partner communities. The geographic distribution of the women receiving services should also be mapped. In this manner, one can determine what is the effective catchment of the CBC- that is, the entire geographic area it is actually serving. Based on our experience in Guatemala, if the CBC provides quality life-saving services, word will spread and women will begin coming from farther afield. This may stress CBC capacity and require either the expansion of the CBC catchment to include peripheral communities, or the establishment of new Casas/CBCs to serve those peripheral communities.]

#### 6.6 M&E System

The M&E systems of a CBC will depend on its personnel capacity, the health indicators it is tracking, and, in the case of MoH clinics adapted to the CBC model, protocols and reporting requirements specific to the MoH and its HMIS.

This document is not meant to prescribe specific M&E methods or systems, but only to give some general parameters that can be locally implemented given available resources and, if applicable, MoH policies.

This is crucial: *the population being monitoring should be the population of the entire micro-region/catchment, not only the beneficiaries receiving services at the CBC.* This means implementing an M&E system that can monitor and evaluate knowledge, practices, behaviors and services received by all pregnant, delivering, and puerperal women in the catchment/partner communities; the outcomes of all deliveries; and the services/attention received by all neonates. The corollary of this is that this data must be somehow gathered and recorded for all pregnant women who had home deliveries, or who had deliveries in health facilities other than the CBC.

6.6.1 Outcome Indicators – The following are recommended outcome indicators to utilize for the CBC’s M&E.

1. Percentage of women who received at least 4 ANC checks from a health professional
2. Percentage of women who had a health facility delivery (HFD) with a professional SBA (be it in a CBC or other facility)
3. Percentage of pregnant women who had at least two tetanus vaccinations
4. Percentage of pregnant women who took iron/folate supplements for at least 3 months during their pregnancy.
5. Percentage of puerperal women who had PPC from a qualified provider within 48 hours of delivery
6. Percentage of deliveries characterized by AMTSL (use of uterotonic drug; controlled cord traction; uterine massage)
7. Percentage of deliveries characterized by ENAs – immediate thermal care (drying and wrapping); clean umbilical cord care; immediate breastfeeding.
8. Percentage of non-pregnant women using a modern method of contraception
9. Percentage of health facility deliveries (at CBC or elsewhere) that meet the local criteria for respectful, culturally appropriate care.
10. Percentage of deliveries that resulted in a C-section [as an indicator of attention to obstetric complications].
11. Percentage of reproductive age women who can cite at least 3 danger signs of pregnancy, of delivery, and of post-partum (for both woman and neonate).
12. Percentage of pregnant women with a birth plan (indicating chosen place of delivery, transportation and cost, how funds will be gathered, who will accompany woman to the health facility, and who will care for the woman and her other children during childbirth and afterward.
13. Percentage of communities with a community OE transport plan or fund.

6.6.2 Evaluation- Household surveys - It is strongly recommended that to evaluate these indicators, baseline, mid-term, and final evaluations be performed utilizing household surveys, such as the Knowledge Practice and Coverage (KPC) Surveys of USAID Child Survival Projects. Interviewees are usually 300 randomly chosen women of under-2 children – or women who had had deliveries in the previous year – selected using a stratified cluster sampling methodology. Sample size and sampling methodology can vary based on local resources, preferences, and MoH policy; study design; and other factors, such as the size of the baseline-to final changes one seeks to detect. Ideally these evaluations are performed by neutral outside parties/consultants in order to maintain objectivity and reduce bias, including interviewers who are not also the CBC staff or community-based volunteers and health workers who provided services to the interviewed women, to reduce possible bias.

Before the CBC is operational, a baseline survey should be done to determine baseline values, particularly for ANC, health facility deliveries, AMTSL, ENA, PPC, FP, danger sign recognition, and BP. Subsequent mid-term and final (or periodic, perhaps every 3 years) surveys will then evaluate impact of the CBC on these key maternal/neonatal health indicators.

6.6.3 Monitoring of Outputs and Outcome Indicators – CBC outputs can be readily monitored utilizing the above-described registers and clinical files. Monitoring the outcome indicators is more problematic, and each CBC will need to derive its own locally-appropriate measures.

In Guatemala, the Care Group approach (see 7.2.1, below) establishes a community-based vital events surveillance system utilizing the mother peer educators known as the CGVs, who detect and report to CBC staff all births, new pregnancies, and deaths in their assigned households. [See Vital Events Monitoring, 6.6.4, below]. The puerperal women so detected are then targeted for PPC, and are interviewed to determine a) how many ANC checks they had; b) where they delivered; and c) if they received prompt PPC. These women can also be asked about receiving AMTSL, ENA for their neonate, if they had a birth plan, if they received respectful culturally appropriate care, if they had an obstetric complication, and if she received attention for the complication in a health facility.

6.6.4 Vital Events Monitoring and CBC Impact - It is strongly recommended that a CBC have a community-based vital events surveillance system that utilizes community actors to detect and report all births, new pregnancies, and deaths, such as described above utilizing the CGVs. This data can be utilized to calculate actual MMR ratio and neonatal and perinatal mortality rates, and thus the actual impact of the CBC on these kinds of mortality. Other options include household surveys, such as the sisterhood method, and Reproductive Age Mortality Survey (RAMOS), which triangulates data from multiple sources.

# 7. Community Partnership

Based on our success in Guatemala, and an instructive failure of the Mexican MoH in nearby Chiapas, Mexico, it is clear that the notion that “if you build it they will come” emphatically does NOT work for a CBC. The Chiapas failure involved a MoH effort to create a CBC that closely met the criteria presented in the previous pages. Few women used it. [[9]](#footnote-9) Why? The communities were not engaged from the start as co-designers, co-managers, and equal partners.

The outcomes of a CBC depend heavily on intensive community outreach and health education at the household level, fostering proper birth preparation and prompt household recognition of and response to obstetric dangers signs, including systems of community transportation to facilitate prompt attention to OEs. This cannot happen without community engagement. *To achieve optimum utilization of a CBC requires co-design, co-creation, and co-management of the CBC with the partner communities being served in the catchment/micro-region* In the case of a clinic-turned-CBC, this requires not only the mobilization of the catchment partner communities to engage them in the CBC, but also the creation of a working partnership between the communities and the MoH and the clinic staff, *a partnership of equals*. For a MoH clinic used to operating with direction only from above through the MoH hierarchy, establishing and implementing this bottom-up community partnership, with community members having an oversight and co-management role, can sometimes be a difficult adjustment.

Two key entities, to be described below, are the Community Health Committee (CHC) [often called Village Health Committee (VHC)]; and the Micro-regional Committee (MRC) [sometimes called the Health Facility Committee (HFC)]. The CHC leads and coordinates its community’s efforts to improve its maternal/neonatal health. The MRC/HFC, is composed of members of the micro-region’s CHCs, with all partner/catchment communities represented, and is the vehicle of community-CBC co-management, working closely with CBC staff to ensure high quality, timely, respectful, culturally appropriate maternal care and attention to OEs.

### Foundation of Community Engagement

Community engagement and partnership with the CBC is greatly facilitated if there are already community-based efforts around health education and provision of primary health care. Curamericas Global in both Liberia and Guatemala trained the local NGO partners to implement its signature methodology, the CBIO methodology, which has proven highly effective in mobilizing communities to improve their own health, engaging them as active partners, and generating household-level support for improving community health, including recruitment of community volunteers.[[10]](#footnote-10) CBIO is one option, and there are others that may prove equally effective. The main message is that ideally such a service platform is in place before a community is approached to partner with a CBC. If not, some kind of foundational work may be necessary to prepare the communities.

7.1. Initiating Engagement: Begin with the Community Health Committee/Community Leaders - Generally, through the work of the MoH and/or other NGOs, such a foundation already exists, particularly, the existence of a CHC, consisting of community leaders tasked with overseeing, guiding, and encouraging community efforts for health improvement. The CHC is essential for both initiating the community-CBC partnership, as well as overseeing its actual implementation. If there is no CHC, it will be essential to work with the community to form one. Community leaders can be assembled – mayor, water committee members, religious leaders, chiefs, CHWs or CHVs – to form an ad hoc CHC, which can later be formalized.

In Liberia and Guatemala, the model of engagement that has worked successfully began with representatives of the convening NGO (and in the case of a MoH clinic-to-become-CBC, the MoH) initiating contact with the CHC and other community leaders to convene a meeting. During the meeting, the NGO and/or MoH staff presents their vision of the CBC and the community-CBC partnership, explaining its purpose and benefits (to reduce maternal and neonatal mortality) and outlining how it will work, as well as the community’s prospective role. In the case of a MoH clinic-to-become-CBC, *the fact that the community will have an active say in how the CBC works – will be an equal partner – is an essential message*. The NGO and/or MoH representatives answer questions, resolve doubts, and ensure that there is clear understanding by the CHC of the CBC and how it will work, and the community’s role.

72 Village Assemblies - Then the CHC brings this information to other community leaders and secures their buy-in, and then to the community-at-large through village assemblies. Generally, seeing the CHC and other leaders’ support for the CBC will facilitate gaining community support. It is vital that all community members – men and women – participate in these assemblies. This is then usually followed by another general village assembly convened by the CHC, this time with the representatives of the NGO and/or MoH/CBC present to make their case directly to the population – to explain the vision and objectives of the CBC, the community’s role as full partners, and answer questions and resolve doubts. *The overarching purpose of this assembly is to not only clearly communicate the vision of the CBC, but to generate trust and confidence.* These assemblies have proven essential because they are a process indicator – the community members are being respectfully consulted and their engagement as full partner is thus already being modeled. An essential message is that they will always be consulted, with the CHC as their representative to convey their desires and resolve their doubts.

[Note: great care must be taken to not over-promise, or promise things the CBC will not be able to deliver!!! Often villagers will voice a desire for a football (soccer) field, or a new school, and the NGO/MoH conveners must not fall into the trap of making any such promises. What they can do to foster confidence is offered to put the village leaders in communication with entities who can work with the village towards such ends, if such entities exist. If such as offer is made, it is vital to follow through!]

7.3 The Memorandum of Agreement (MOU) – An approach that has functioned very well in Guatemala is to then formalize the working relationship between the CBC and the community via the drafting of a formal MOU that clearly delineates the mutual and respective roles and responsibilities of the community, and of the MoH/CBC (and if a convening NGO is involved, the NGO as well).

Local models for MOUs should always be followed, but generally the MOU will list specifically the commitments of each partner, including any financial commitments, be it actual cash or through in-kind provision of materials, volunteer labor etc. The MoH/CBC will delineate the services it will provide (as described above), such as 24/7 access, high quality MNC, respectful culturally appropriate care, prompt referrals to tertiary care, acceptance and engagement of the TBAs, sharing of the village’s health data, and perhaps most important, a commitment to create a co-management system whereby the village’s representatives have a voice in how the CBC is operated. The CHC, on behalf of the village, will commit to fulfilling its role as partner and co-manager; to build a culture of MNC by encouraging ANC , health facility deliveries, etc.; by providing community volunteers – such as volunteer construction labor or CGVs, mother peer educators (to be described below) and by fostering household-level health education; by instituting a community emergency transport plan (see below); perhaps to provide materials and volunteer labor to either build a Casa Materna or to help retrofit or maintain/repair the MoH clinic-turned-CBC; and any other mutually agreed upon community commitments. The MOU should also describe how compliance with these commitments will be monitored and by whom, how deficiencies will be addressed, how conflicts/disputes will be resolved, and how the MOU can be either modified or terminated.

The CHC should then bring the draft of the MOU to the community to discuss with leaders and in an assembly, and before signing, be assured that there is community agreement with the MOU. Then there should a formal celebratory signing ceremony with the representatives of the MoH and NGO present, each signing what will be their copy of the MOU.

Something to keep in mind is that there must be a large degree of uniformity in these MOUs. There must be a “core” set of mutual roles and responsibilities to maintain focus and coherence in the project. That said, there can be minor/secondary variations for each community. A model utilized in Guatemala is to have one MOU for all the partner communities in the CBC catchment micro-region. As they agree to become partner communities after the usual process of meetings and assemblies, their representatives simply sign the existing MOU at a signing ceremony.

7. 4 The Community Health Committee - The CHC becomes the cornerstone of community partnership and co-management, as it will oversee the community’s work to improve its own maternal/neonatal health and fulfill its part in facilitating CBC success. It functions as the intermediary between the CBC and the community and it must nurture a culture of maternal/newborn health in its community.

Its functions include a) overseeing, with NGO and MoH help, the establishment of the community’s Care Group infrastructure of mother peer educators who provide health education to reproductive age women; b) establishing a community emergency transport plan and fund to facilitate transportation of women in labor or having obstetric complications to the CBC; c) assembling community materials and volunteer labor for CBC maintenance/repair/retrofitting; d) becoming informed promptly of every new pregnancy, complication, and onset of a woman’s labor to ensure that the woman receives prompt and proper care and that the woman’s family facilitates this care; e) sharing and discussing with the community – via assemblies and/or posters/signage – the village’s health data; f) communicating to the community events and progress of the CBC; g) providing health education directly to the community, usually via assemblies; and h) having one of its members – usually the president – sit on the Micro-regional Committee/Health Facility Committee, the committee which represents all the partner catchment communities and which is the entity that works directly with the CBC/MoH to co-manage the CBC.

7.5 The Care Groups and Self-Help Groups – For the community to fulfill its role in ensuring CBC success, it must nurture at the household level awareness of the family’s role in maternal and newborn health. Key household behaviors must be fostered, such as practicing FP/child spacing; obtaining adequate ANC; having a HFD; immediately recognizing and responding to obstetric danger signs by going to the CBC; having a birth plan in place, including arranging prompt transportation of the woman to the CBC; practicing immediate breastfeeding (and exclusive breastfeeding during the child’s first 6 months); and obtaining PPC within 48 hours of delivery.

An advantage of the CBIO methodology and Care Groups approach, is that they mobilize communities to become full partners in the health system, linking the communities firmly with the CBC in a working partnership that ensures that communities and families do their part to increase health facility deliveries and recognizing and responding immediately to OEs.

The Care Group approach, originally developed by Save the Children in Africa and since replicated globally, has shown itself highly effective in rapidly achieving such behavior change, with a penetration typically of at least 80% of households of women who are pregnant and/or have young children. This success has been replicated in both Liberia and Guatemala, with dramatic improvements in the practice of the above-mentioned behaviors that, combined with the services of a CBC, resulted in reductions of maternal and child mortality on the order of 65% to 85%. Other peer educator models are available, but none have the evidence base of the Care Group approach.[[11]](#footnote-11)

Only the broad strokes of the Care Group approach can be described here. A full training manual is available online.[[12]](#footnote-12). The CHC works with the Health Promoter from the CBC (a position often called the Care Group Promoter) to recruit mothers who will function as CGVs, who each meet twice a month with 8-15 neighbor women, the Neighborhood Women’s Group (NWG) for 1 to 1 ½ hours each time, to teach a participatory active-learning lesson designed for non-literate audiences targeting a specific health behavior. In between these lessons the CGV does home visitations to the women in her NWG to answer questions, monitor compliance with the behavior, and provide support and encouragement. The Health Promoters come to the village twice monthly to train the CGVs (usually a group of 6-12) to teach the lessons; the CGVs then teach this lesson on to their NWG utilizing demonstrations, songs, games, and other forms of participatory learning. The multiplier effect of this training cascade is impressive – one Health Promoter can train seven groups of 10 CGVs who can collectively educate and drive behavior change in 840 women.

*Because the success of the CBC so heavily depends on the household-level behaviors described above, and because the Care Group approach is so highly effective for household-level behavior change, one should consider the Care Group approach an indispensable part of the CBC model.*

7.5.1 Vital Events Surveillance by CGVs – - A strategy utilized by the Guatemala Casas, as well as by other Care Group projects in Mozambique and elsewhere in Africa, is to have the CGVs detect and report to their Promoters at Care Groups meetings all vital events in their assigned households – all births, new pregnancies, and deaths. [[13]](#footnote-13) The Promoter then passes this data to the CBC staff, and in this manner 1) actual maternal and child mortality rates can be determined and 2) newly pregnant women are detected and can be targeted to receive ANC; and 3) puerperal women are detected and can be targeted to receive PPC and other post-delivery services (such as breastfeeding support and FP counseling/services).

7.6 Community Emergency Transport Plan - Through the education at the CBC or Self-Help Groups,families are tasked with having a Birth Plan in place that includes provisions for transport to the CBC in the event of an OE or the initiation of labor,. However, our experience in Liberia and Guatemala has shown that families cannot always be relied on to adequately arrange this – or intervening circumstances prevent execution (e.g., Uncle Carlos’ pick-up has a flat tire; the the emergency transport money was needed to purchase food or medicine).

Therefore, the CHC should, with community buy-in, put in place a plan that helps ensure prompt transportation of the woman to the CBC. This can take many forms and should be a locally appropriate and sustainable plan. One common element is that the CHC negotiates with local transportation providers (bush taxis, *cooperativos, combis*, vans, *tuk-tuks*, etc.) to ensure their availability 24/7 at a reasonable price, with the CHC having the cellular telephone numbers of these providers readily at hand.

Examples of transport plans include: a) each household is assessed a modest sum to put into a common “kitty” or fund, administered by the CHC, to use to pay the on-call drivers; usually the families are expected to later repay these funds by replenishing the fund; b) the TBAs pool a portion of their fees to create a similar fund (the “life-saving clubs” spontaneously created by the Liberia TBAs); c) the Guatemala Casa model, whereby at her first ANC check, the family pays a modest premium ($US8) which covers 50% of the cost of transport to the referral hospital, with the collection of premiums, administration of the funds, and payment of the drivers handled by the MRC ).

*Having this plan in place is paramount, because lack of funds for often-expensive transportation is one of the main barriers to health facility deliveries and emergency obstetric care.*

Another solution is the availability of a well-maintained, fueled 4WD ambulance with driver that is available 24/7. In one municipality in Guatemala, the municipal government has provided ambulance, fuel and driver, with free transport both to the Casa Materna and to the referral hospital, with excellent results – timely arrivals at the Casa Materna of women in labor and compliance with referrals have all increased dramatically. Consequently, the MRC/HFC should actively explore the implementation of an ambulance service with the MoH/CBC and/or local government.

7.7 Community Coordination of Deliveries and OE Response - A key concept of the Casa Materna/CBC model is that *deliveries and OEs are community events.* When these events occur in isolation, within household walls, it breeds the conditions for high mortality, because the tragedies of maternal and neonatal death are hidden, obscuring community awareness of the pervasiveness of the problem. When these are public community events they can become the shared responsibility of the family *and* the community, which fosters better outcomes. Our Guatemala experience has shown that most families welcome this community support. TBAs, we have found, are especially supportive of this model, as they no longer have the responsibility for the woman’s and newborn’s lives resting solely on their shoulders.

The system used with the Guatemala Casas can serve as a model. It takes advantage of the pervasive use of cell phones to include the family, the TBA, the Casa staff, and the CHC in a network of communication. The CHC is informed, usually by the TBA or by the Health Promoter, of a new pregnancy in its village and the expected delivery date so they are forewarned of the future need for transport and can place the delivery on their calendar. The Casa staff is similarly forewarned, with the expected delivery noted in the Register of New Pregnancies (see 6.5.1 above). As the due date approaches, all involved – CHC, TBA, and Casa staff - are prepared, and the family is consulted to be sure its birth plan is ready. The CHC confirms the availability of local drivers and arranges to have a backup driver if the primary driver is not available.

The family is expected to contact the TBA and the CHC when the woman goes into labor (or when an OE occurs). The CHC is informed (by the TBA and/or by the family) and then sets in motion the community’s emergency transport plan, contacting the drivers on call. [Note: if the family has arranged their own transportation, the CHC confirms this, but will still maintain a driver on call as a contingency]. The CHC member also contacts the Casa to alert them to the imminent arrival of the woman in labor or having an (OE), so they can prepare to receive them. In Guatemala, a member of the CHC is expected to actually go to the Casa Materna and be present for the delivery (or the handling of the OE).

The presence of both the CHC member and the TBA at the Casa for the delivery or OE (as well as the Support Woman) can become especially important if the woman or her family rejects a referral to the tertiary care hospital. [In Guatemala, there are many possible reasons for this – fear of travel, fear of the hospital and possible bad treatment there, the devaluation of the woman’s life, among others]. Having community members there – the Support Woman, the TBA, and the CHC representative - allows them to apply their powers of persuasion to convince the family to accept the referral.

In the model of a MoH clinic adapted to the CBC model, the presence of the TBA and CHC member at the delivery or OE management can also serve to ensure that the woman is promptly attended when she arrives at the CBC (no 4th delay), that she receives respectful culturally appropriate care in her first language, and that in the event of a referral, that the CBC’s emergency transport system (be it via ambulance or on-call drivers) is promptly activated and that the woman promptly transferred to tertiary care. In this sense, the presence of the CHC member can serve as a “watchdog” to monitor quality of CBC care, thus serving effectively as the woman’s advocate.

7.8 Coordinating Volunteer Labor and Materials - In Guatemala, the Casas are built with community labor and community-provided materials (supplemented by materials purchased by the convening NGO and/or municipal government). This work is coordinated by a Construction Committee representing all the partner communities. Putting their own “sweat equity” into the Casa construction cements community buy-in and provides a sense of real ownership and investment in MNC, especially on the part of the husbands who lay the blocks to build the Casa. With a MoH clinic operating as a CBC, engaging community volunteer labor and community-provided materials for CBC retrofitting, repairs, and maintenance can accomplish a similar “sweat equity” buy-in and serve to foster the community/CBC partnership. The MRC is tasked with coordinating these efforts, but it is the CHC that secures its community’s contributions to this effort, working through its member on the MRC.

7.9 Sharing Community Health Data – It is the CHC’s responsibility – helped by the Health Promoter assigned to its community– to display, report, discuss with the community and act on its community health data.

A key precept of the CBIO methodology is that 1) community-level M&E data must be gathered, analyzed, and acted on to tailor results to community needs; and 2) this data belongs to the community and must be transparently shared with the community. Whether or not the CBC’s community work is built on the CBIO service platform, this precept still holds for the partner communities in the CBC’s catchment. CBC staff must have intimate knowledge of exactly what is going on at the village level, meaning village-level data for all project indicators, especially ANC, HFD, attention to OEs, and PPC.

As mentioned above in the description of the HMIS and M&E data, this data must be disaggregated at the community level, as well as aggregated for the entire CBC catchment/micro-region and for the project as a whole. Who exactly gathers this local data and how it is gathered must be locally determined by the project staffing structure. In Liberia and Guatemala, this data is gathered by the village’s CHV, who is called a Community Facilitator in Guatemala, with help from the CGVs (who detect and report vital events among their NWG); this data includes who has obtained ANC, who has delivered and where the delivery happened, who is practicing FP, etc. When the Health Promoter (*Educadora* in Guatemala, Community Support Specialist in Liberia) assigned to the village comes to train the CGVs, she also gathers the health data for the community and passes it on to the CBC’s M&E staff.

*But this is crucial: she also shares this community level data with the CHC at a monthly meeting with them at which the data is presented and discussed*. This sharing can also happen at a village assembly - or the CHC can share at an assembly it convenes later. The meaning of the data must be discussed with the CHC (and in the assembly) – are health facility deliveries increasing? Is ANC improving? Have there been any maternal or child deaths? And if so, why? This discussion should then lead to local data-driven decision making. For example, if coverage of ANC is not improving or many families don’t have birth plans, the CHC might need to call a village assembly to discuss these themes, or ask the CGVs to repeat these lessons in their NWG.

This data should also be on public display in the village in readily understandable graphic form (as well as in tables/charts for literate audiences) for public consumption. This can be at the local school or church, or at the CHV’s home, etc.

7.10 Communication with the CBC - The CHC is the conduit of communication between the CBC and the community, usually through its representative(s) on the MRC (see below). The CHCs representative on the MRC participates in the MRC’s regular meetings with CBC/MoH staff, and reports CBC news, developments, progress, setbacks, new initiatives, etc. to the CHC, who, in turn, will pass this on to the community, usually at a monthly assembly. A good practice is for these assemblies to also be attended by the CBC Health Promoter (or other CBC staff) to strengthen the line of communication between CBC and community.

When the community has questions, doubts, complaints/dissatisfactions with CBC services, their CHC member on the MRC must bring this to the MRC who, in turn, present these issues to the CBC/MoH for resolution. Sometimes a CBC/MoH representative – be in the Health Promoter or higher-level staff- should come personally to the village to talk directly with the CHC and, if appropriate, a community assembly.

7.11 CHC Health Education and Capacity Building - Something not to be overlooked is the CHC’s role in health education. Ideally, CHCs become among the most knowledgeable health educators in their community, thus ensuring that health knowledge does not come solely from outside via the Health Promoter but also from within the community itself. In Guatemala, when the Health Promoter conducts her monthly village visits to share community health data, she will also conduct training with the CHC members in the same themes she teaches to her CGVs. Thus, the CHC members can readily share this knowledge in village assemblies and other venues, disseminating this knowledge as widely as possible.

Because CHC members often have limited formal education, the Casa/CHC staff (or staff of its supporting NGO) will also conduct periodic capacity-building training for the CHC in such skills as conducting meetings, work planning, understanding health data, conflict/dispute resolution, gender equity, and strategic planning.

7.12 Setting Community Policies Regarding Maternal/Newborn Health - Often the CHC, in coordination with other community leaders, is in a position to establish community policies that all households are expected to follow, such as getting 4 ANC checks or having a HFD in the CBC. Some partner communities in Guatemala have established fines that families must pay, for example, if a woman delivers at home instead of at the Casa Materna. In some communities, this has proven very effective, achieving 100% HFD coverage. TBAs often help enforce these community policies by refusing to attend a woman through her pregnancy unless she agrees to deliver in the Casa. Note that these are locally-driven community policies and may not be universally present throughout the micro-region.

7.13 The Microregional Committee or Health Facility Committee (MRC/HFC) – This is the committee that co-manages the CBC with CBC staff. The MRC/HFC is comprised of one or two members of the CHC for all the partner/catchment communities of the CBC. If there are many communities, there will be only one representative. In small catchments of 6-10 communities, there may be two.

The MRC is the primary co-management entity working with the staff of the CBC. As mentioned above, if this is a MoH clinic-turned-CBC, this will require adjustments on the part of MoH staff and the MoH organizational hierarchy, which may not be accustomed to this kind of community oversight and partnership. Consequently, buy-in for this co-management model from higher level MoH authorities may be crucial to provide a support policy “umbrella” to the MoH CBC staff.

The MRC and the CBC staff meet periodically – quarterly, if not monthly, as well as an annual review – to discuss how their co-managed health system is functioning. Micro-regional data aggregating the data for all the partner communities is presented and discussed, in the same manner as on the CHC/community level. Are ANC and HFDs increasing? If so, what is contributing to this success? If not, why not? What barriers must be addressed? What is the state of the CBC physical plant, staffing, supplies, equipment? Are there repairs or modifications needed? How will these be accomplished? Will this involve community labor or materials? Are the communities doing their part? Are the first 3 delays still problems? Are women arriving in time to be referred in the event of an OE? Are women/families accepting referrals? These meetings should thus involve a thorough review of the operation of all aspects of the community/CBC partnership. Where deficiencies or barriers are identified, work plans will be drawn up that clarify what will be done, by whom, with what resources, by when, clearly delineating the mutual responsibilities of the communities and the CBC.

As mentioned above, the PDQ and (CSC) methodologies both can provide a framework for organizing this co-management work between the MRC and the CBC.

7.14 The Council of MRCs/HFCs – As the project expands to include multiple CBCs and hence multiple catchments/micro-regions and their MRCs, a Council of MRCs should be formed with representation of all the individual MRCs. How many members of each MRC will participate is subject to local decisions, but the MRC should be both very representative, yet not too large to become unwieldy. The Council provides a forum for all the MRCs to discuss their common concerns and challenges, share lessons learned, and do strategic planning for the way forward. Their unified voice can advocate for all the partner/micro-regional communities vis-à-vis the MoH and local and even national government. For example, the advocacy of the Council may be the best vehicle for securing the services of ambulances for the CBCs, or to lobby the MoH and county/municipal government for more resources to support the CBCs.

In Guatemala, to avoid an adversarial relationship with the MoH and to expand its membership, the Council includes representatives of the local MoH/CBC, as well as from the convening NGO, local women’s organizations, and other local leaders.

# 8. Women’s Empowerment

Women’s empowerment, autonomy, self-determination, and respect for a woman’s rights, are cornerstone values of a community/CBC partnership. The Casa Materna/CBC model sees high MM due to lack of affordable, acceptable, available, adequate and accessible maternal newborn care a form of “structural violence” that constitutes a violation of a woman’s human rights.

Therefore, women’s empowerment and gender equity must become operational values of the community/CBC partnership.

**8.1 Representation of Women on the Community Health Committee -**The traditional rural cultures which a Casa Materna or CBC will serve are often very male-dominated, with leadership at every level – municipal, community, and family – dominated by men, with limited or no participation by women and thus little involvement by women in the decision-making processes that affect their lives. One way to counter this is to make a very conscious effort to include women in the CHCs, and therefore, the MRC.

Where this has proven difficult – as in Guatemala – the Casa has established a Women’s Committee, a female counterpart of the MRC, which is tasked with various co-management responsibilities. As men see that women can handle these responsibilities, this can lead to women’s full incorporation in the MRC. Another vehicle has been TBA Committees (in Guatemala, *Comadrona* Committees), who also work parallel with the MRC on the aspects of the community/Casa partnership that involves them.

Ideally, the CHC and the MRC should include women, and if there are no women on the existing CHCs when the project begins, every effort should be made to include them, and later, to include as many women as possible as the CHC representative on the MRC. But that said, this can be a very sensitive issue and should be handled with care, with advice and support from those with expertise and experience in achieving gender equity.

**8.2 Nurturing a Community Culture of Women’s Empowerment -** Operational research in Guatemala has shown that when women function as CGVs, they not only experience a sense of empowerment, but their provision of education to other women serves to enhance their prestige, and with it, the prestige of women. Their knowledge is respected and they are often consulted. So this is another reason to include the Care Group approach in the CBC model.

Other community actors should also be enlisted to disseminate messages that encourage women’s decision-making autonomy and acceptance of women’s leadership. The CHC can convey such messages at village assemblies, and other leaders- teachers, religious leaders, elders, chiefs, traditional healers, etc. – can be enlisted to not only encourage use of the CBC, but also to convey messages supportive of women’s rights and autonomy. In Guatemala, the operational research showed that religious leaders in the local Catholic churches were highly instrumental in disseminating such messages.

Since in male-dominated cultures men are more likely to listen to other men, a strategy than can be considered is to find and recruit male “positive deviants” – that is, men, particularly leaders, who are supportive of women’s empowerment, who can talk to other men to change traditional attitudes.

# Appendix 1: CBC Matrix

**Community Birthing Center**

**Essential and Desirable Characteristics**

1. **Location**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Characteristic** | **Essential** | **Desirable** |
| 1.1 | Catchment area (micro-region) of the CBC has a high MMR and low coverage of health facility deliveries | X |  |
| 1.2 | CBC strategically located a maximum of 30 minutes by vehicle from the most distant catchment communities to the CBC | X |  |
| 1.3 | CBC located no more than 2 hours from nearest referral hospital |  | X |

1. **Services**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Characteristic** | **Essential** | **Desirable** |
| 2.1 | Open 24/7 (including holidays) | X |  |
| 2.2 | Equipped with sleeping quarters for staff |  | X |
| 2.3 | CBC staff well-trained to do normal/vaginal deliveries | X |  |
| 2.4 | All deliveries include the Essential Newborn Actions (clean umbilical cord care, thermal care- immediate drying and wrapping, immediate breastfeeding), weighing and measuring, BCG and Hep B vaccinations | X |  |
| 2.5 | All deliveries characterized by AMTSL: use of partograph, uterotonic drugs (oxytocin or misoprostol), uterine massage, and controlled cord traction | X |  |
| 2.6 | CBC Delivery staff trained in diagnosis/ stabilization/ management/referral of obstetric complications | X |  |
| 2.7 | CBC staff trained to prevent/manage post-partum hemorrhage | X |  |
| 2.8 | CBC coordinates with communities to establish transportation system to pick up women from village and bring them to CBC or referral hospital | X |  |
| 2.9 | CBC has well developed referral /counter-referral system arranged with referral hospital | X |  |
| 2.10 | Referral system is field-tested via simulation |  | X |
| 2.11 | Every obstetric emergency and referral is debriefed to derive and apply lessons learned |  | X |
| 2.12 | CBC provides holistic maternal/newborn care services- at the minimum: antenatal care, deliveries, post-partum care, family planning, Pap smears | X |  |
| 2.13 | CBC has a lab or is linked to a nearby lab facility | X |  |
| 2.14 | CBC offers voluntary counseling at testing for HIV and PMTCT services |  | X |
| 2.15 | CBC offers support classes for pregnant women | X |  |
| 2.16 | CBC offers birth planning for each pregnant woman | X |  |
| 2.17 | CBC offers breastfeeding support groups |  | X |

1. **CBC Staffing and Support**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Characteristics** | **Essential** | **Desirable** |
| 3.1 | Staffing is sufficient to respond to the anticipated number of pregnancies/deliveries of the micro-region | X |  |
| 3.2 | CBC staff work in rotating shifts to allow 24/7 services | X |  |
| 3.3 | Team attended deliveries – primary SBA is always assisted | X |  |
| 3.4 | Primary SBAs are certified health professionals (RN, professional midwife, Auxiliary Nurse) | X |  |
| 3.5 | Task shifting from RNs to lower level staff- e.g., Auxiliary Nurses- as primary SBAs |  | X |
| 3.6 | Primary SBAs trained and supervised by a Supervisory Nurse (a skilled obstetric RN) | X |  |
| 3.7 | Continual evaluation and continuous quality improvement (CQI) of SBA skills by the Supervisory Nurse | X |  |
| 3.8 | Availability of a Supervisory Nurse 24/7 |  | X |
| 3.9 | Staff includes Support Women (Doulas, delivery assistants) |  | X |
| 3.10 | Staff includes a Health Educator or Community Health Extension Worker for community outreach and health education work | X |  |
| 3.11 | Traditional Birth Attendants are trained and integrated into CBC staffing with specified responsibilities, including monitoring pregnant women, detecting and reporting complications of pregnancy/delivery/post-partum, accompanying women to the CBC, assisting the CBC staff with the delivery, and monitoring post-partum women and neonates. | X |  |

1. **Physical Plant/Equipment/Supplies**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Characteristics** | **Essential** | **Desirable** |
| 4.1 | Constructed and/or maintained with volunteer community labor |  | X |
| 4.2 | Designed with input from partner communities according to their preferences | X |  |
| 4.3 | Exam/counseling room that offers adequate privacy | X |  |
| 4.4 | Delivery room with at least 2 beds, that offers adequate privacy | X |  |
| 4.5 | Post-partum recovery room for resting |  | X |
| 4.6 | Space for family members to wait and practice non-intrusive birth customs | X |  |
| 4.7 | Potable water supply | X |  |
| 4.8 | Complete toilet facilities (toilet, sink, shower) | X |  |
| 4.9 | Proper waste disposal facilities, including medical waste/sharps | X |  |
| 4.10 | 24/7 electricity | X |  |
| 4.11 | A washing machine or utility sink for laundry | X |  |
| 4.12 | Reliable phone connection (landline or reliable cell phone signal) | X |  |
| 4.13 | Information Technology (i.e. computers/printers/back-up batteries) | X |  |
| 4.14 | Internet access (via modem/Wi-Fi) |  | X |
| 4.15 | Essential clinical equipment, including bag and mask, ultrasound and Doppler | X |  |
| 4.16 | Essential clinical supplies (IVs, gloves, surgical instruments, bandages/gauze, syringes, etc.). | X |  |
| 4.17 | Essential medicines and drugs (tetanus vaccine, iron/folate, maternal vitamins, antibiotics, saline solution, contraceptive, etc.) | X |  |
| 4.18 | Reliable supply of oxytocin and/or misoprostol | X |  |
| 4.19 | Transfer incubator for premature newborns |  | X |
| 4.20 | Positive airway pressure (PAP) machine (for premature newborns with respiratory distress syndrome) |  | X |
| 4.21 | Household supplies (linens, blankets, pillows and pillowcases, etc.) | X |  |
| 4.22 | Supplies for newborns – caps, booties, blankets, diapers, etc. | X |  |
| 4.23 | Training supplies – manikins (e.g. Mama Natalie), videos, etc. | X |  |
| 4.24 | Cleaning supplies – soap, shampoo, detergent, mops, sponges, etc. | X |  |

1. **Respectful Culturally Appropriate Care**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Characteristics** | **Essential** | **Desirable** |
| 5.1 | CBC staff provide friendly attentive care that respects the woman’s right to be free from harm or ill treatment, and her liberty, autonomy, self-determination, and freedom from coercion | X |  |
| 5.2 | CBC staff provide right to information, informed consent, and right of refusal | X |  |
| 5.3 | CBC staff provide right to privacy and confidentiality | X |  |
| 5.4 | Women allowed choice of delivery attire and delivery position during delivery | X |  |
| 5.5 | CBC allows presence of the TBA and at least one family member during delivery | X |  |
| 5.6 | CBC allows culturally appropriate delivery; woman and family allowed to practice non-intrusive traditional birth customs and rituals | X |  |
| 5.7 | CBC care provided in woman’s 1st language (or preferred language) | X |  |

1. **Health Information/Clinical Records/M&E**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Characteristics** | **Essential** | **Desirable** |
| 6.1 | Register of all deliveries handled at CBC (include miscarriages/stillbirths) | X |  |
| 6.2 | Register of obstetric complications (including outcomes) | X |  |
| 6.3 | Clinical file for each client | X |  |
| 6.4 | Signed document noting a refusal of a woman/family to comply with an obstetric emergency referral, witnessed and recorded by CBC staff |  | X |
| 6.5 | Vital Events Register for each community to report all births, new pregnancies, and deaths | X |  |
| 6.6 | New Pregnancy Register/system to detect new pregnancies in the partner communities | X |  |
| 6.7 | Birth Register (live and stillbirths) for all births within partner communities | X |  |
| 6.8 | Death register for all maternal and U-5 deaths in partner communities | X |  |
| 6.9 | All deaths receive verbal autopsy by CBC clinical staff w/family to determine cause of death | X |  |
| 6.10 | CBC establishes an M&E system to monitor key indicators such as ANC, health facility deliveries, PPC, C-section rate, FP uptake, and presence of community and family emergency transportation systems | X |  |
| 6.11 | M&E system includes household surveys (or other appropriate method) to obtain baseline and periodic data on coverage of key indicators | X |  |
| 6.12 | Monthly, quarterly, and annual reports of production/outputs and M&E data of each CBC; reports shared with partners communities, MoH, and other stakeholders | X |  |
| 6.13 | Maternal mortality ratio and neonatal mortality rates for partner communities, as well as causes, calculated quarterly and annually, based on vital events data | X |  |
| 6.14 | CBC integrates its M&E data with the MoH HMIS |  | X |
| 6.15 | CBC staff utilize mobile data technology for field data capture and transmission to “cloud” |  | X |

1. **Community Partnership**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Characteristic** | **Essential** | **Desirable** |
| 7.1 | Partner communities all mobilized to invest in maternal/newborn care and to partner with the CBC, with community buy-in secured after a process of orientation to the goals and operations of the CBC | X |  |
| 7.2 | Partner community has a Community Health Committee (CHC)/Village Health Committee (VHC) to oversee community health efforts | X |  |
| 7.3 | Partner community has written/signed Memorandum of Understanding (MOU) with the CBC that formalizes its partnership with the CBC and defines each party’s commitments and responsibilities | X |  |
| 7.4 | CHC/VHC creates a community emergency transportation plan to facilitate transport of women in labor or having obstetric emergencies to the CBC | X |  |
| 7.5 | CHC/VHC works with CBC to establish a system of community vital events surveillance so all new pregnancies, births, and deaths are detected and reported to the CBC for follow-up | X |  |
| 7.6 | The CBC Health Outreach staff meets regularly with the CHC/VHC to review community health data and do data-driven decision-making | X |  |
| 7.7 | The CHC/VHC works with the CBC Health Outreach Worker and the Community Health Volunteer to establish a Care Group infrastructure of mother peer educators to deliver behavior change communication and health education at the household level and to detect vital events (new pregnancies, births, deaths) | X |  |
| 7.8 | Mother peer educators deliver behavior change communication to all pregnant women and women with under-2 children 1) to obtain at least 4 antenatal care checks; 2) to take iron/folic acid supplementation and receive tetanus immunization; 3) to deliver in the CBC or other health facility; 4) to obtain postpartum care within 48 hours after delivery; 5) family planning benefits and options; 6) recognition and response to danger signs in pregnancy, delivery, and post-partum; and 7) to have a birth plan that includes provisions for emergency transportation. | X |  |
| 7.9 | Member of the CHC is present at CBC for every delivery/obstetric emergency |  | X |
| 7.10 | CHC/VHC has representation on a Micro-Regional Committee (MRC)/Health Facility Committee (HFC) | X |  |
| 7.11 | MRC/HFC co-manages the CBC with the CBC staff, with regular quarterly and annual meetings to review CBC and community data, discuss challenges, solve problems, and do joint planning | X |  |

1. **Women’s Empowerment**

|  |  |  |  |
| --- | --- | --- | --- |
| **No.** | **Characteristics** | **Essential** | **Desirable** |
| 8.1 | Women represented on CHCs/VHCs and on MRC/HFC |  | X |
| 8.2 | TBAs are integrated into CBC operations | X |  |
| 8.3 | Women’s committees established to assist with CHC work and with CBC operations | X |  |

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