

Background

- In the isolated Western Highlands Department of Huehuetenango, Guatemala, the primarily indigenous Maya people suffer endemic poverty, insufficient access to education and health care, a maternal mortality of 681/100,000, and the third highest under-5 mortality in the Americas.¹
- Based on 40 years of experience, Curamericas-Guatemala implemented a USAID Maternal and Child Health Project (2011-2015) that integrated 3 evidence-based approaches to address high maternal and child mortality: **Census-Based, Impact-Oriented (CBIO), Care Groups, and Community Birthing Centers**. Together, these are referred to as the **Expanded CBIO Approach**, or **CBIO+**.



Figure 1. Typical view of project area (left) and mother and child living in project area (right). Source: Mario Valdez.

Methods

We describe CBIO+ and its development. We also describe the implementation of CBIO+ in Guatemala.

Findings

1. CBIO

- Developed by Curamericas Global (then Andean Rural Health Care) in the 1980s in rural Bolivia. Achieved high coverage of MCH interventions and reduced child mortality by 50%.²
- Participatory selection of interventions is based on (1) epidemiological priorities based on locally acquired surveillance data and (2) the community's selected priorities.
- Regular visits to all homes, vital event registration, and health education are key components.

2. Care Groups

- Developed by World Relief in Mozambique.³
- A cascading health promotion model based on volunteerism, peer-to-peer education, and equitable universal coverage to all households with under-5 children (Figure 2).^{3,4}
- Paid Promoters meet with care groups every 2-4 weeks to teach life-saving health messages (Figure 4). Care Group Volunteers then share the knowledge in their Neighbor Groups.

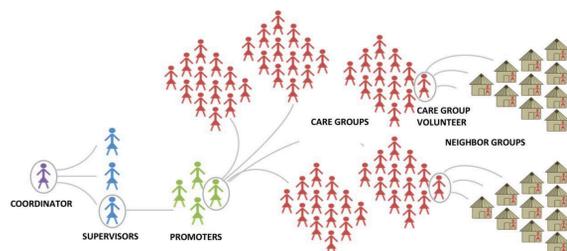


Figure 2. Typical Care Group Structure, adapted from Perry et al., 2015⁵

3. Community Birthing Centers

- Safe, clean spaces that are accessible, provide traditional Maya care, and are supported by a system of emergency transport and supervising obstetric professionals

Curamericas-Guatemala provides a blueprint for engaging rural communities in maternal and child health.

CBIO+ is a methodology for strengthening community-based primary health care that builds on principles of:

- community partnerships
- routine visitation of all homes
- addressing both epidemiological priorities and health priorities defined by the community
- establishing women's support groups
- incorporating local cultural traditions



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Findings (continued)

Implementation of CBIO+

- CBIO+** reached a population of 98,000 people in 3 municipalities.
- CBIO+** was integrated with the Guatemalan government's rural health care system and its coverage extension program for mothers and children (*Programa de Extensión de Cobertura, PEC*).
- Implementation guides aided application of the 3 approaches.
- CBIO** began slowly with project staff earning the community's trust, notably through fulfilling promises and exhibiting honesty and respect. Open community assemblies (*asambleas*) were key.



Figure 3. A Promoter leads a Care Group, training mothers to be peer educators. Source: Ira Stollak.

- 184 **Care Groups** were established after mapping all households. Each comprised of 5–12 Care Group Volunteers who were each responsible for 10–15 households. Their detection of vital events established a community-based vital events surveillance system as part of **CBIO** and led

to prompt care for pregnant and postpartum women and newborns. A year-long lesson plan was developed and taught in the local language and included ice-breakers, learning games, songs, skits, and practicing of skills (e.g., breastfeeding, hand washing).

- The **Birthing Centers** are based on **CBIO** principles of community engagement and community partnership. They resemble traditional Maya homes and each is staffed by Maya speaking health professionals who were trained and supervised by an obstetric nurse in Calhuitz (figure 4). Traditional birthing attendants (*Comodronas*) were integrated, leading the Guatemalan government to include them through a "harm reduction" strategy. Services were free of charge.



Figure 4. The first *Casa Materna* was built in the town of Calhuitz by Curamericas-Guatemala and the community (2009).

Discussion

- This serves as an introduction to **CBIO+** in rural Guatemala. Impact of the project are presented elsewhere.⁶
- Many **CBIO+** principles (center panel) have been embedded in the implementation of many other community-based projects, including those implemented at scale.

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References

- Averages of 2009 maternal mortality rate from Huehuetenango according to the Guatemalan Ministry of Health and Social Assistance (MSPAS) of Epidemiological Surveillance Basic Indicators of Health Situational Analysis reports.
- Valdez M, Stollak I, Pfeiffer E, Lesnar B, Leach K, Modanlo N, Westgate CC, Perry HB. Reducing inequities in maternal and child health in rural Guatemala through the **CBIO+** Approach of Curamericas: 1. Introduction and project description. *Int J Equity Health*. 2023 Feb 28;21(Suppl 2):203. doi: 10.1186/s12939-022-01752-y. PMID: 36855139; PMCID: PMC9976357.
- Laughlin M. The Care Group Difference: A Guide to Mobilizing Community-Based Volunteer Health Educators (2nd Edition). Baltimore, MD: World Relief and the Child Survival Collaborations and Resources (CORE) Group; 2010.
- Edward A, et al. Examining the evidence of under-five mortality reduction in a community-based programme in Gaza, Mozambique. *Trans R Soc Trop Med Hyg* 2007; 101(8): 814-22
- Perry H, et al. Care Groups I: An Innovative Community-Based Strategy for Improving Maternal, Neonatal, and Child Health in Resource-Constrained Settings. *Global health, science and practice* 2015; 3(3): 358-69.
- This work is presented in the *International Journal for Equity in Health* Volume 21 Supplement 2, 2022: *Reducing inequities in maternal and child health in rural Guatemala through the **CBIO+** approach of Curamericas*. The full contents of the supplement are available online at <https://equityhealth.biomedcentral.com/articles/supplements/volume-21-supplement-2>.