Reducing inequities in maternal and child health in rural Guatemala through the CBIO+ Approach of Curamericas:

A mortality assessment

Curamericas Global
HOPE THROUGH HEALTH

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Presenter Disclosures

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No relationships to disclose

Agenda

- Curamericas Global in Guatemala
- Background
- Methodology
- Study results
- Conclusions

Curamericas Global and -Guatemala

- Local partner of international NGO, Curamericas Global
  - Founded in 1983 at Duke University
- Curamericas-Guatemala started in 2002
  - Founded and directed by Dr. Mario Valdez
  - Expansion with US government and philanthropic support
  - Now supported by Guatemalan government
- Unique model for primary heath care:
  Census-Based, Impact Oriented (CBIO) + Care Groups + *Casas Maternas*

Dr. Henry Perry & Dr. Mario Valdez

Project Area

- Located in one of most isolated and impoverished areas of Guatemala
  - 36-year civil war → longstanding distrust of outsiders
- Population served
  - Primarily indigenous Mayan
  - Endemic poverty, insufficient education and health care
  - Maternal mortality of 681/100,000
  - 3rd highest under-5 mortality in western hemisphere
- Impact
  - Percentage of deliveries taking place at a facility doubled
  - 59% reduction in maternal mortality and zero maternal deaths at Casas Maternas
  - Reduced mortality in children 1-5 years old from 9 per 1000 to 2 per 1000 live births

The project area of Huehuetenango in the western highlands of Guatemala

CBIO – census-based impact-oriented

1. Conduct a census
2. Register all households
3. Identify Epidemiological priorities "Frequent, serious readily preventable or treatable conditions.
4. Identify health priorities of the community
5. Develop a plan
6. Assess over time if health has improved.

Key CBIO Steps

1. Establish a relationship of trust with the community and engage its participation

2. Conduct census and mapping of the community, and determine the most serious treatable/preventable illness (community diagnosis)
- Determine community health priorities
- Determine epidemiological priorities

5. Redefine the most serious preventable or treatable diseases and community health priorities. Update census/mapping, assess progress, redefine new priorities, and refocus efforts

3. Prioritize the health problems and then focus efforts, using Primary Health Care Teams and Community Health Volunteers

4. Monitor and evaluate results; Conduct surveillance of service outcomes.

OUR COMMUNITY MAP

KEY
- 🏫 SCHOOL
- ⛪ CHURCH
- 🏈 FOOTBALL FIELD
- PUMP
- CLINIC
- MARKET
- CEMETARY
- ~ RIVER
- ≈ ROAD
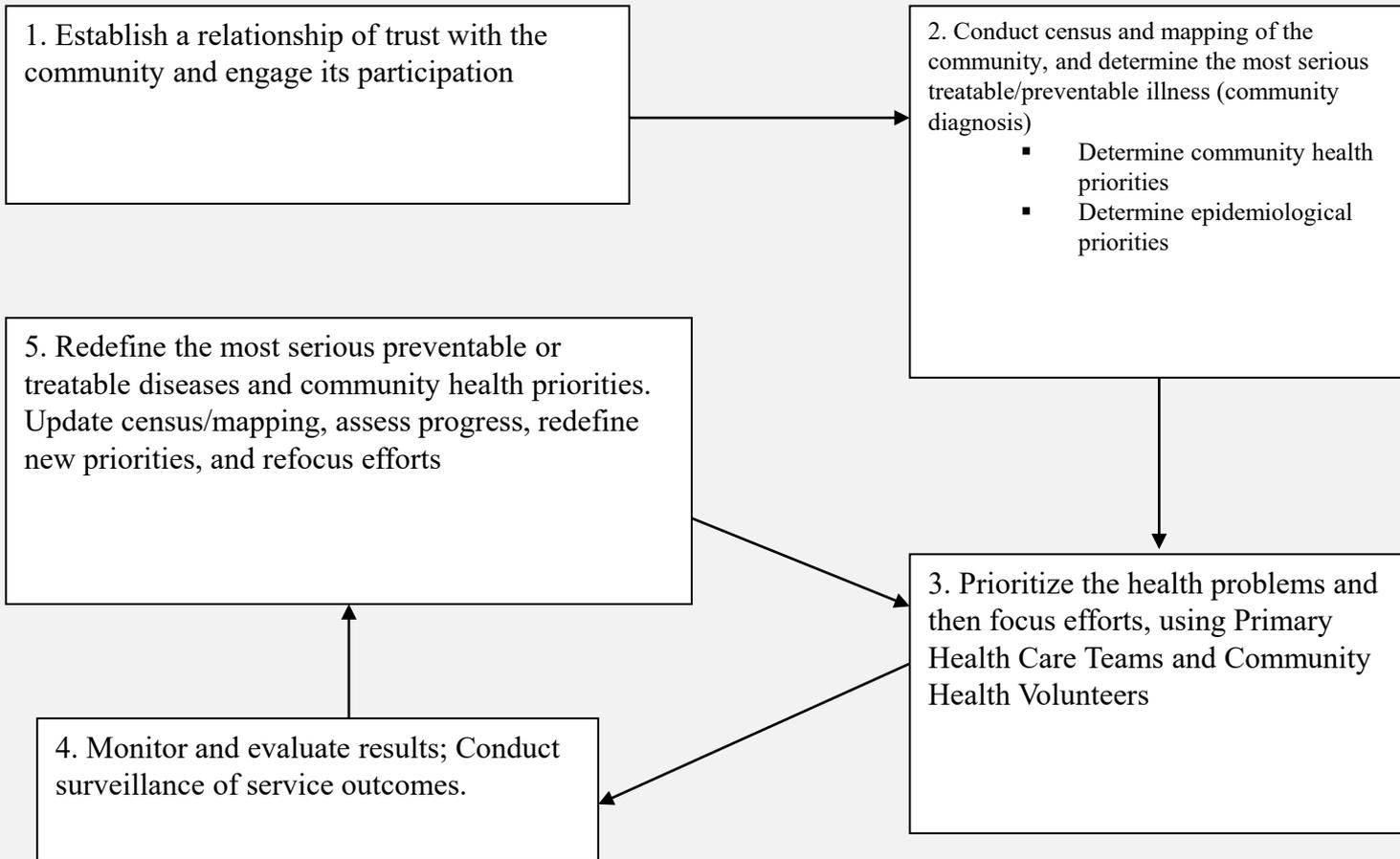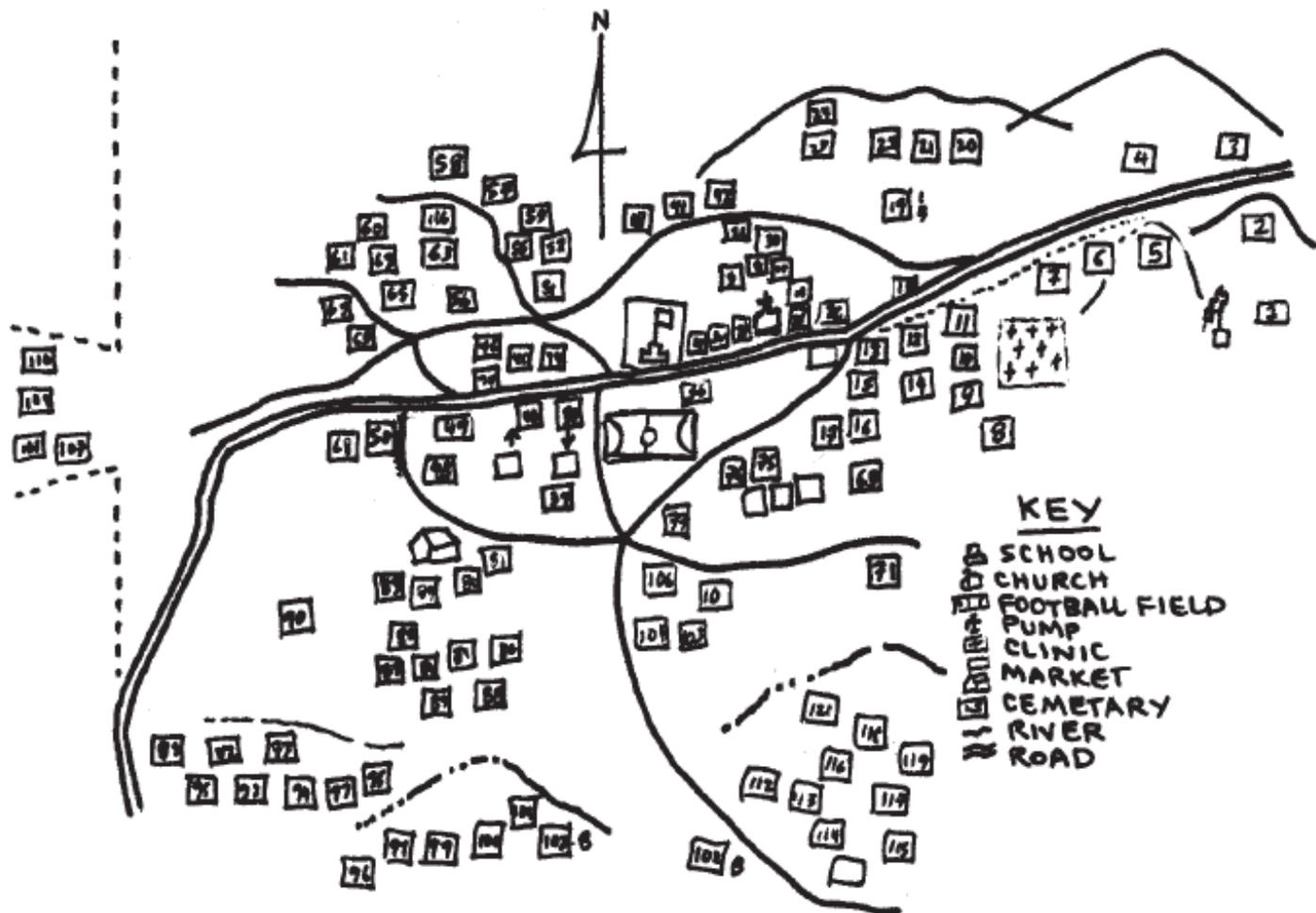
Care Group Approach

A cascading health promotion model based on

– **volunteerism**,
– **peer-to-peer** education,
– and equitable **universal coverage**

to all households with under-5 children

Each **Coordinator** (paid staff) is responsible for 3–6 Supervisors.

A project may hire multiple Coordinators (overseen by a **Manager**) if needed to meet the desired coverage.

Each **Supervisor** (paid staff) is responsible for 4–6 Promoters.

Each **Promoter** (paid staff) supports 4–9 Care Groups.

Each **Care Group** has 10–15 Care Group Volunteers who are elected by Neighbor Group members.

Each **Care Group Volunteer** shares lessons with 10–15 **Neighbor Women** and their families, known as a **Neighbor Group**. (There is a maximum of 15 Neighbor Women in each Neighbor Group.)

Each Promoter reaches about 500–1,200 women through the Care Group Volunteers.

Perry et al., 2015

Casa Maternas Rurales

Casa delivery room

Casa exam room

Outside of the *Casa* in Calhuitz

The Casa Materna Rural

- Built by community, staffed by auxiliary nurses with supervision of project staff, managed by community committees

- *Comadronas* accompany women for delivery - trained by the project to advise and monitor pregnant women, recognize danger signs, and bring them to the *Casa Materna*

- Ready local transport system for referral of complications

Methodology – Vital Events

Chart 1. Chain of reporting for vital events
Household
↓
Care Group Volunteer (CGV): Collects vital events data for 5-12 households
↓
Level-1 Promoter (Community Facilitator/*Facilitadora Comunitaria*): Aggregates data from 1-2 Care Groups of 6-15 members each
↓
Level-2 Promoter (Staff *Educadora*): Aggregates data from 5-8 Community Facilitators
↓
Care Group Supervisor (*Educadora Superivsory*) aggregates data from all *Educadoras* in her municipality
↓
Institutional Facilitator (a nurse): Maintains municipal vital events register and performs verbal autopsy

Methodology – Verbal Autopsy

Cause of Maternal Death
- Hemorrhage
- Pre-eclampsia/eclampsia
- Sepsis
- Other direct and indirect causes

Causes of child death
- Birth asphyxia
- Complications of prematurity
- Pneumonia
- Diarrhea
- Sepsis/infection

Four Delays
- (1) recognizing danger signs,
- (2) taking action in response to danger signs,
- (3) reaching a medical facility, and
- (4) obtaining appropriate medical care once the facility is reached.

Methodology – Lives saved tool modeling

Cause-specific mortality	×	Intervention coverage change	×	Affected fraction x Effectiveness

=

Lives saved

Results

Maternal Mortality

- 7131 live births
- 34 maternal deaths
- 477 per 100,000 live births

Sepsis, 2, 6%

Complications of C-section, 1, 3%

Pre-eclampsia/eclampsia, 3, 9%

Hemorrhage, 28, 82%
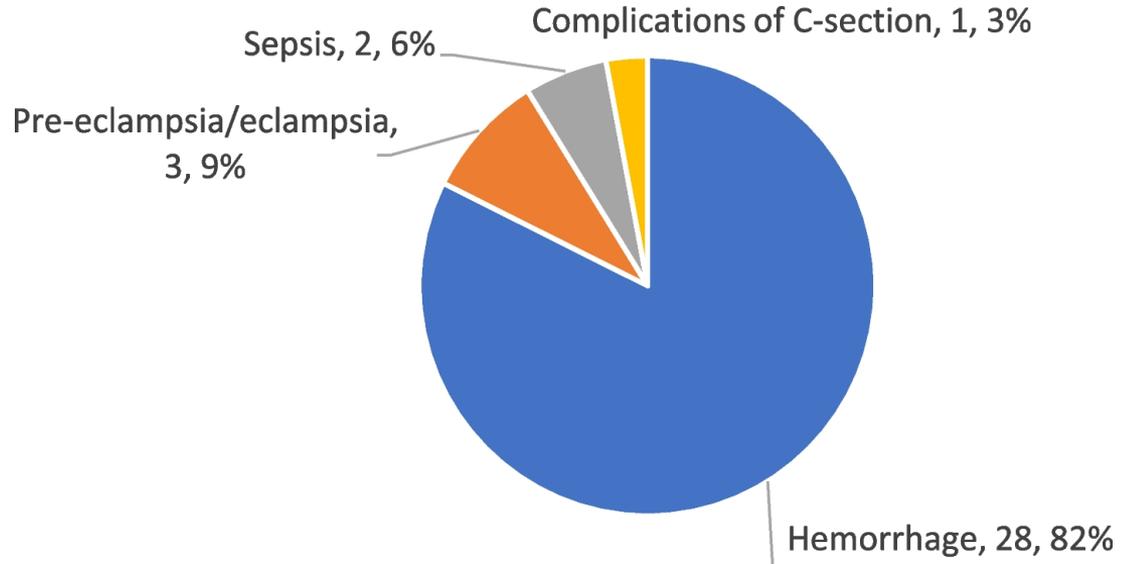
Maternal Mortality

- 7131 live births
- 34 maternal deaths
- 477 per 100,000 live births

Location of delivery

Health facility, 1, 3%
En route, 1, 3%
Home, 32, 94%

Location of death

Health facility, 4, 12%
En route, 9, 26%
Home, 21, 62%

Other, 8, 6%

Sepsis, 9, 7%

Pneumonia, 24, 17%

Birth asphyxia/intrapartum complication, 72, 52%

Prematurity, 25, 18%
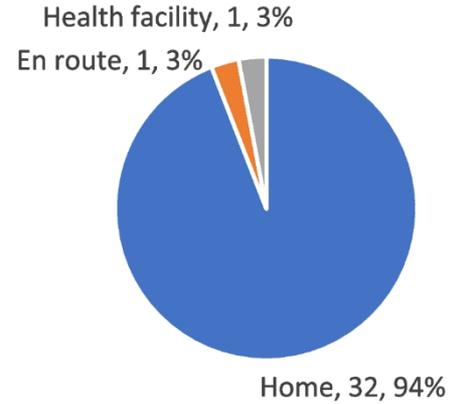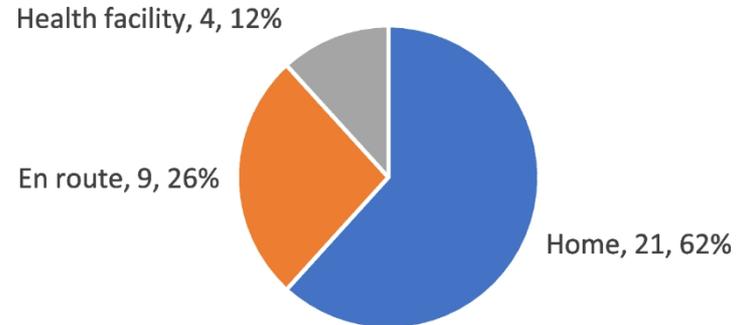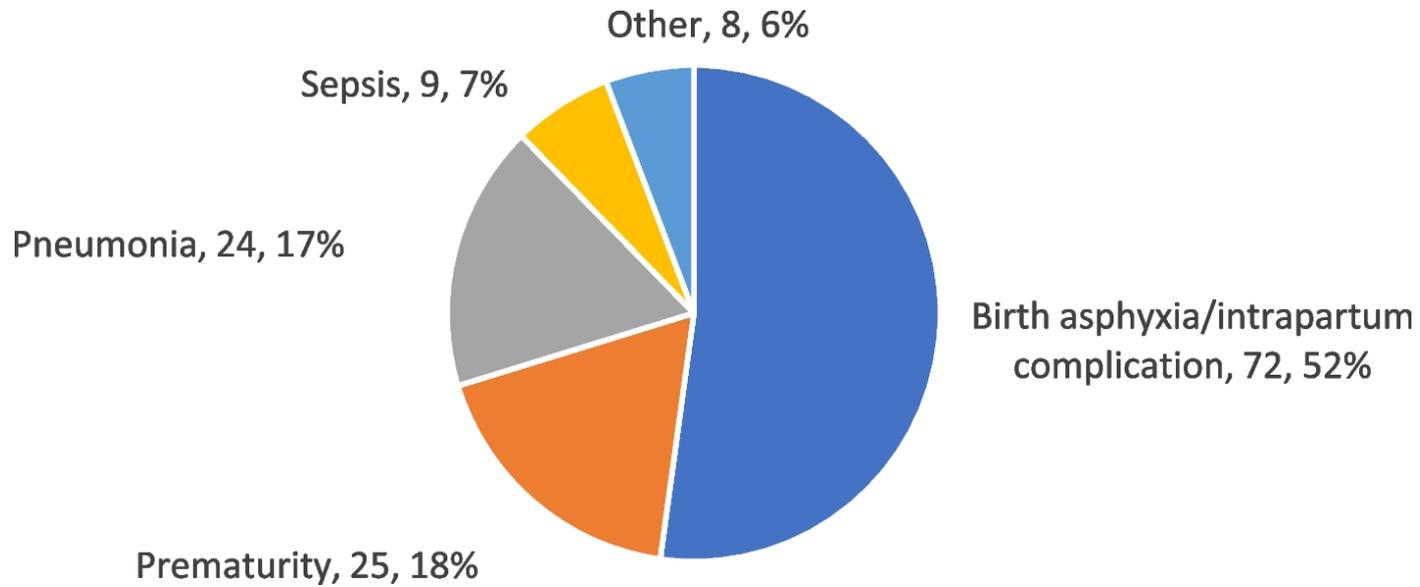
Neonatal Mortality

- 7131 live births
- 138 neonatal deaths
- NNMR of 19/1000 live births

The first days of life

- 61% of neonatal deaths occur on the first day

- 81% of neonatal deaths occur in the first week

a.

b.
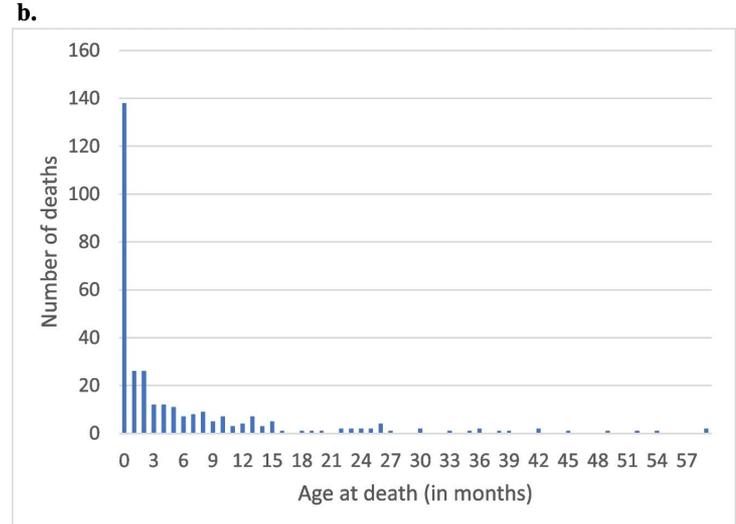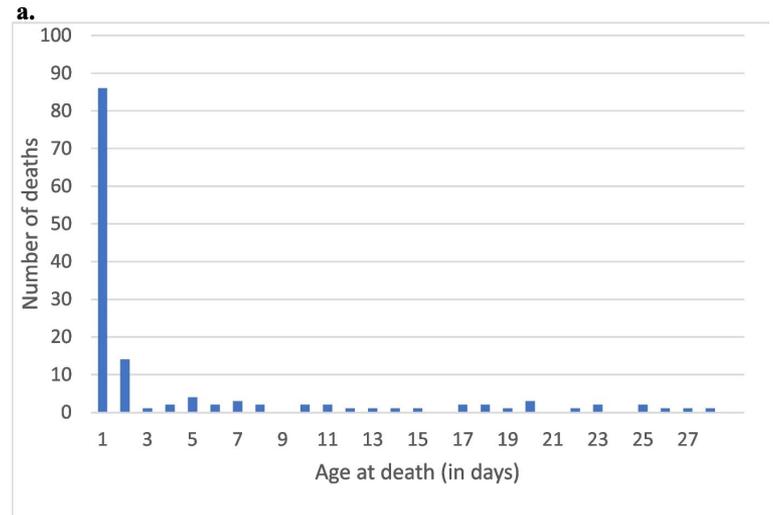
1-<60 month mortality

- 176 deaths
- 25 deaths/1,000 live births

Other, 31, 17%

Diarrhea, 40, 23%

Pneumonia, 105, 60%
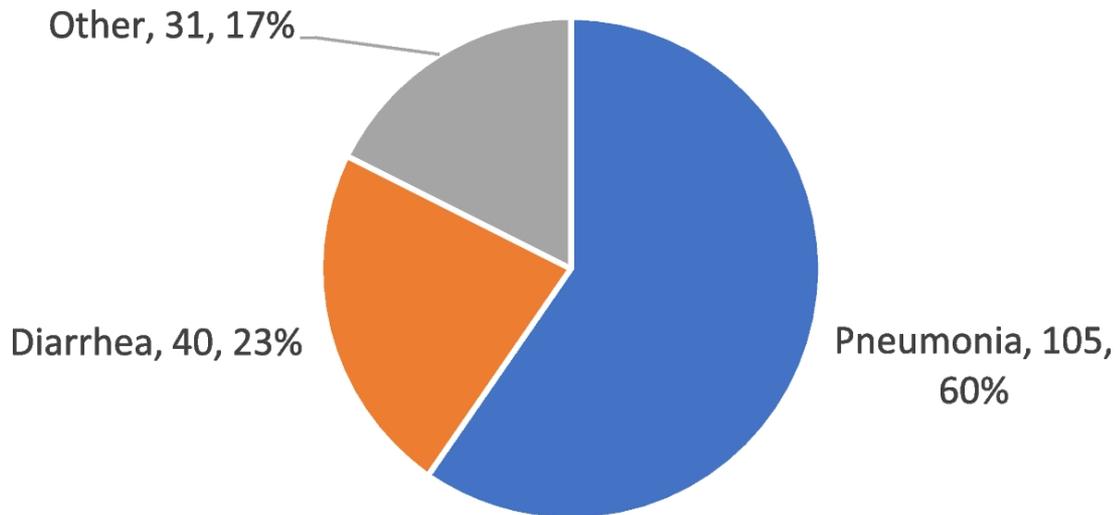
Limitations

- Vital events through home visitation
- Classification of deaths
- Maternal deaths from abortion is suspected to be under-reported

Conclusions

FOCUS

- Leading causes of death (Postpartum hemorrhage, intrapartum complications/birth asphyxia, pneumonia, diarrhea)
- WHO recommended advance oral misoprostol distributions to mothers who intend to deliver at home
- WHO-recommended strategy of training iCCM
- Casa Maternas provide services responding to these leading causes of death
- Focus on geographic areas not just national data

For more information

Access the full article here

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Acknowledgements