Sustainable and Scalable Maternity Waiting Homes: The Maternity Home Alliance in Zambia

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Overview

• MHA introduction
• MHA effectiveness results
• MHA operational & financial sustainability
• Scalability – MWHs as a catalyst for maternal and child care
• MHA dissemination and visibility
• Questions and discussion
MHA introduction
The distance problem...
Maternity Waiting Home: residential lodging next to a qualified health facility where a woman can wait in the last few weeks of her pregnancy in order to deliver at the health facility
The Maternity Home Alliance

Partnership between:

• Government of Zambia
• The Saving Mothers Giving Life (SMGL) project
• ZaMS: Africare & University of Michigan
• MAHMAZ: Right to Care Zambia & Boston University
• Bill & Melinda Gates Foundation
• Merck for Mothers (and 14 Merck Fellows)
• The Elma Foundation

The Alliance seeks to conduct a robust evaluation to answer the question: “Is a Minimum Core Model for Maternity Homes associated with increased access to improved BEmONC providers and improved pregnancy outcomes among women living greater than 10km from the health facility?”
Formative Evaluation: listening to the community

- Existing MWH or designated spaces for waiting mothers are overcrowded, have poor infrastructure, are not comfortable, are unsafe, are not culturally appropriate.
- MWH could be an acceptable option for women who live farthest away.
- MWH broadly supported by GRZ, traditional leadership and local communities.
- Need to be community owned and managed.
- Need to be financial sustainability.
- Informed intervention design and evaluation.
The Minimum Core MWH Model

**Infrastructure, Equipment, & Supplies**
- Lighting (lanterns)
- Lockable doors, windows
- Cooking area and supplies
- Bathing and laundry areas
- Latrines
- Beds, bedding, & bed nets
- Staff room (for storage, office, etc.)
- Space for postnatal women/newborns to stay
- Functional equivalence: concrete floors, no leaky roofs and water

**Policies, Management, & Finances**
- Formalized management structure with government and facility representation
- Clear definition of ownership (land, material assets, income generated)
- Revenue and asset management
- Standard operating procedures (SOPs) for clear roles and responsibilities
- Mechanism for community/women’s feedback
- Intake, registration, and monitoring procedures
- Eligibility: prioritize women living > 10km from health facility, available for postnatal stays

**Linkages & Services**
- Adjacent to BEmONC within 2 hours of a CEmONC
- Daily end-of-day check-ins by facility staff
- ANC and PNC visits conducted at health facility
- Emergency transport system identified
- Family planning/Post-partum family planning education
- Breastfeeding and IYCF education
- Education on newborn danger signs, well-baby care
- Education on antenatal and postpartum period
- Entertainment, recreational activities

Maternity Waiting Homes will NOT Provide Clinical Care:
ANC and PNC Visits Will Still Be Conducted at the Health Facility

Developed from community input during formative research
The Minimum Core MWH Model

**MHA Model/Intervention**

- Designated space for waiting women
- Existing MWH, ward floors, under a tree
- Variable quality
- Current practice

**Standard of Care/Control**

![Image of MHA Model/Intervention]

![Image of Standard of Care/Control]
Study districts

- 7 rural districts in 3 provinces

- All districts SMGL supported

1. Southern Province (MAHMAZ)
   - Choma
   - Pemba
   - Kalomo
   - Zimba (CEmONC)

2. Eastern Province
   - Nyimba (MAHMAZ)
   - Lundazi (ZaMS)

3. Luapula Province (ZaMS)
   - Mansa
   - Chembe
Impact evaluation: population based

Implementation evaluation: facility based

Generalizable sample of remote women regardless of MWH utilization or where they delivered

Census of women who used MWH and facility regardless of distance and implementing staff
Timeline for study

- **Site Selection & assignment to study arm**: Late 2015
- **Baseline Impact Evaluation**: April-May 2016
- **New MMW Opening & Operational**: June 2016 – July 2018
- **Endline Impact Evaluation**: Aug – Sept 2018

**Intervention**: Newly constructed according to community standards

**Standard of Care**: MWH or space of variable quality
Evaluation results: Did the MWH Core Model address the distance challenge?
Women in intervention sites were 2X as likely to use a MWH than those in a control site.
MWH significantly improved PNC and Counselling

<table>
<thead>
<tr>
<th>Health care use</th>
<th>Adjusted</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referred or transferred to a higher-level facility</td>
<td></td>
<td>1.13 (0.84, 1.52)</td>
<td>0.408</td>
</tr>
<tr>
<td>Postnatal care within 2 weeks of delivery</td>
<td></td>
<td>1.77 (1.25, 2.52)</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Women >10k in a catchment area with a new MWH were 77% more likely to get PNC within 2 weeks.

Counselling received around time of delivery

<table>
<thead>
<tr>
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<tr>
<td>Family planning</td>
<td></td>
<td>1.57 (1.28, 1.93)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Breast feeding</td>
<td></td>
<td>1.60 (1.35, 1.90)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Kangaroo care</td>
<td></td>
<td>1.59 (1.36, 1.86)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

And ~60% more likely to receive counseling on family planning, breast feeding and kangaroo care.
Consistently higher utilization at intervention MWHs
4.2% increase in women delivering at the facility who came from >10km

- > 20 km: 3%
- 20 km: 13%
- 0 - 2.4 km: 19%
- 2.5 - 5 km: 25%
- 5.1 - 7.5 km: 20%
- 7.6 - 10 km: 20%
- 10.1 - 20 km: 25%

All MHA: (N=6,622)
AVERAGE LENGTH OF STAY
in days for women utilizing a waiting space at MAHMAZ sites

L&D

\[\begin{align*}
2.39 & \quad \text{Intervention: Postnatal care** (sd 3.5)} \\
1.5 & \quad \text{Control: Postnatal care** (sd 0.9)}
\end{align*}\]

PNC

\[\begin{align*}
2.39 & \quad \text{Intervention: Postnatal care** (sd 3.5)} \\
1.5 & \quad \text{Control: Postnatal care** (sd 0.9)}
\end{align*}\]
Increase in PNC utilization at intervention sites over time

Deliveries > 10 km ; PNC visits > 10 km; ANC visits >10 km
Reflections on the effectiveness of the Core MWH Model

• An **absolute change of ~4% is good**, particularly given the unexpectedly high baseline - likely be higher in non-SMGL areas, but need to ensure quality and capacity of facilities

• Suggests intervention is reaching the intended target population of remote, rural women

• Reduced home delivery **by around 1/3**

• Doubling of MWH use and exposure to the courses is likely associated with extended health benefits

• Synergistic effects of GRZ efforts, SMGL project and MHA

• **Facilitates compliance** with government L&D and PNC guidelines but opportunities to improve ANC and referrals to higher level care
MHA operational & financial sustainability
MHA governance & management structures facilitate operational sustainability

Community-selected decision-making body for the MWH. Oversees operation, long-term functioning and future sustainability of the MWH.

Community members/caretaker responsible for the day-to-day operations of the MWH
“The MWH has helped us as staff in providing the best service possible because we are able to make a quick decision on a problem as early as possible. We can only help someone properly if that person comes in at the right time to the clinic.” – Intervention, R3
“The MWH material assets of course the material assets were donated by MAHMAZ but after MAHMAZ donated the materials, the material is owned by the community. We are the custodians as a clinic, as a committee but the whole property is actually owned by the community.” – HF Staff, R3
The average MAHMAZ start-up costs per MWH = $111,078

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<th>Cost Category</th>
<th>Amount</th>
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<tr>
<td>Stakeholder Engagement</td>
<td>$14,685</td>
</tr>
<tr>
<td>MS Infrastructure &amp; Furnishings</td>
<td>$57,151</td>
</tr>
<tr>
<td>Operational Sustainability</td>
<td>$16,565</td>
</tr>
<tr>
<td>Financial Sustainability</td>
<td>$22,677</td>
</tr>
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</table>
Operating Costs of a MWH (MAHMAAZ)

Average monthly operating costs* of MWH:

~$ 21

*Operating cost data do not include valuations for: donated cleaning supplies from health facilities, volunteer labor, or any food provided to mothers from gardens/community donations.

Note:
- 7 sites pay MU
- 3 sites have volunteer MU
- Sites do not consistently feed women
Institutionalizing financial sources within the health system

- MWH in national strategic plan
- MWH in districts’ plans & budgets
- MWH perceived as extension of health facility
- Health facilities contributing resources and supplies to MWH

“For maintenance we have included the MWH. Before that we were not talking about MWHs, but this time we are including them.” - District Health Officer

“We usually sit to have a finance meeting. That’s when we buy cleaning materials, stationary and things we use at the center. So even the MWH comes in, we squeeze it under the same.” – Health Facility Staff

“The MS is linked with the health facility. The health facility staff support us with gloves, soap, imprest, and the electricity and watchman are both from the facility. So we are working together at the MWH.” - Governance Committee Member
Financial sources outside of the health system

Income Generating Activities

Hammermill
- Grinds maize as service

Agrodealership/ tuckshop
- Sells agricultural inputs & groceries

Goat Rearing
- Raises & sells goats

Oil Press
- Presses sunflower seeds for oil
Average monthly IGA statistics (USD) are promising

<table>
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<tr>
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<th>Hammermill + tailoring</th>
<th>Agrodealership + tailoring</th>
<th>Goat rearing + tailoring</th>
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<tr>
<td><strong>Revenue</strong></td>
<td>$625</td>
<td>$998</td>
<td>$88</td>
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<tr>
<td><strong>Expenses</strong></td>
<td>$404</td>
<td>$592</td>
<td>$6</td>
</tr>
<tr>
<td><strong>Net Income</strong></td>
<td>$221</td>
<td>$372</td>
<td>$82</td>
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Revenue:
- **Hammermill** $625 (0 – 2,500)
- **Agrodealership** $998 (0 – 5,970)
- **Goat rearing** $88 (0 – 15,000)

Expenses:
- **Hammermill** $404 (0 – 1,091)
- **Agrodealership** $592 (0 – 3,848)
- **Goat rearing** $6 (0 – 1,090)

Net Income:
- **Hammermill** $221 (-268, -2,003)
- **Agrodealership** $372 (-1,240, -3,845)
- **Goat rearing** $82 (-19, -1,563)
Reflections on the MHA sustainability approach

- **Strong health system (organizational) support:**
  - GCs link the community and the health system, and by nature of their composition bring community-level stakeholders together
  - Perceived health system and community ownership
- **Intervention characteristics:**
  - Derived from community input
- **Evidence of financial institutionalization:**
  - Government planning, budgets, adoption of registers
- **External finance structure critical:**
  - IGAs generally cover costs but MWH requires other internal and in-kind contributions for community ownership and accountability
- **Financial literacy at the community level is essential and requires heavy investment**
Scalability: MWHs as a catalyst for maternal and child care
The ripple effects: MWHs are more than a safe space to wait

Benefits the women:
- Improves access for women living most remotely
- Improving on high rates/reaching last mile is difficult but MWH seem to do that
- Additional benefits associated with doubling of MWH usage and exposure to counselling
- Evolved into a **community MCH hub**

Benefits the health system:
- Better care
- Used to advocate for more staff, renovated delivery wards
- Shared resources – bore holes, supplies, staff

Community partnerships:
- Communities are a critical building block of MWHs
- IGAs benefit communities, MWH and health facilities
- Community ownership is necessary but not sufficient
- Improved relationships between communities, SMAGs and formal health system
MHA overall sustainability & scalability

Organizational (health system) policies
• The most successful MWHs are those that do not rely entirely on outside or internal health system support
• Facilitates compliance with government L&D and PNC guidelines; GRZ interested in improving ANC via MWH after dissemination

Broader attention:
• Comprehensive dissemination strategy
• MWHs are only part of the equation: Access and quality go hand-in-hand.
  • Potential role for MWHs in the Lancet Global Health series proposed paradigm shift for quality maternal care

Replication:
• Other research on barriers similar to Zambia
• Toolkit for scale up
• Registers adopted by MOH Zambia
• Proposal to support scale up
MHA dissemination & visibility

WHAT LEARNED FROM SIMAKUTU:

1. NIPPER GOATS EVERY 60D MAKES GOATS MORE HEALTHIER AND SKIN APPEARANCE LOOK GOOD.
2. DRY-ICE IDEAS TO BE PUT INTO SUGAR OF BEER. BEER AND FIRE THEM TO REDUCE BRINE WATER.
3. EXPECTING DAYS SHOULD BE LEFT OUT OF THE GOATS.

LEANED FROM L.A. GC:

1. PARMENTER TO MARKER FOR T&G MARKS IN - HALF DAYS ON NDAYS MORNING 14:00 HRS.
The distance problem...
Scientific dissemination to date: MHA Impact

BMJ Open Impact of maternity waiting homes on facility delivery among remote households in Zambia: protocol for a quasiexperimental, mixed-methods study

International Journal of MCH and AIDS (2019), Volume 8, Issue 1, 1-10

ORIGINAL ARTICLE

International Journal of Women’s Health

ORIGINAL RESEARCH
Factors affecting home delivery among women living in remote areas of rural Zambia: a cross-sectional, mixed-methods analysis

PLOS ONE

RESEARCH ARTICLE
Characteristics of maternity waiting homes and the women who use them: Findings from a baseline cross-sectional household survey among SMGL-supported districts in Zambia

Addressing the Second Delay in Saving Mothers, Giving Life Districts in Uganda and Zambia: Reaching Appropriate Maternal Care in a Timely Manner
Continued dissemination and learning platform:
https://www.maternitywaitinghomes.org/ (coming soon)
We would like to thank:

- The Government of the Republic of Zambia
- The Ministry of Health at the national, provincial, and district levels
- The health facility and mothers’ shelter staff
- Chiefs, headmen, and community members
- Women and newborns
- All other local stakeholders who have supported this project
- The funders for this study: MSD for Mothers, the Bill & Melinda Gates Foundation, and The ELMA Foundation
- MSD fellows (6!) and students (countless!)

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