Webinar Series
4 of 5

Can midwife-led birthing centres be cost effective?

Credit: UNFPA Madagascar
Welcome and introductions

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International Confederation of Midwives
Today’s session

1. Welcome
2. Recap of earlier sessions in the series and where this economic analysis fits within the wider project
3. Introducing the speakers
4. Economic analysis – background and methodology
5. Economic analysis - findings
6. Q&A
Brief recap of sessions 1-3

- MLBCs exist in many LMICs, and can provide quality care when part of a well-functioning network of care.
- To be successful, MLBCs need to be tailored to the context, and to have:
  - an effective financing model
  - supportive and enabling leadership and governance
  - quality midwifery care, recognised by the community
  - interdisciplinary and interfacility collaboration, coordination and functional referral systems
Thank you for your active engagement and good feedback! We will analyse it and produce a FAQ document to share with you.

It is clear that you need resources and guidance to establish or strengthen MLBCs.

WHO supports midwife-led care in settings with strong midwifery programmes. Global guidance is forthcoming from WHO (STAGE).

Advocacy matters – and this economic analysis will support advocacy.
Why do we need an economic analysis?

- Evidence from HICs shows that MLBCs are cost-effective, but we don’t know as much about LMICs
- Over the last 2 weeks, we presented research findings from four case study countries: Bangladesh, Pakistan, South Africa, Uganda
- Country selection criteria: (i) LMIC, (ii) 4+ MLBCs, (iii) MLBCs either in the public sector or well-integrated in the national health system, (iv) the midwives’ association reported that data would be available and accessible for this economic analysis
- In addition to the qualitative findings reported over the last two weeks, we collected quantitative data about costs and outcomes at the selected MLBCs in these four countries. We will share these findings with you today
Poll questions
Poll – Question 1

1. How expensive do you think midwife-led birth centres are compared to hospital settings?

À quel point pensez-vous que les centres de naissance dirigés par des sages-femmes sont coûteux par rapport aux établissements hospitaliers ?

¿Qué tan caros crees que son los centros de parto dirigidos por matronas en comparación con los entornos hospitalarios?
2. What do you think the most expensive part of a midwife-led birth centre is?

Quelle partie pensez-vous être la plus coûteuse d'un centre de naissance dirigé par des sages-femmes ?

¿Qué piensas que es la parte más cara de un centro de parto dirigido por matronas?
Using the chat and Q+A boxes

- Use the chat box to:
  - Introduce yourself and chat to other participants
  - Comment on what you are hearing
  - Share your own experiences
- Use the Q+A box to:
  - Ask specific questions relating to the presentation
  - Ask questions in English if you can, but if you ask in a different language we will try to translate for the presenters
Today’s speakers

Dr Vanessa Scarf
Burnet Institute

Professor Emily Callander
University of Technology Sydney
Economic analysis: background

Dr Vanessa Scarf
Burnet Institute

Credit: UNFPA ESARO
In high-income countries, where an increasingly medicalised approach is common, MLBCs have been shown to be cost-effective.

With SDG targets that focus on reducing maternal and perinatal morbidity and mortality, access to quality maternity care is essential.

Facility-based birth in LMICs has been the main strategy to improving these outcomes, and MLBCs could be an option.

Maternity service challenges related to funding and resources (including staffing and training) can be significant barriers to upscaling access to high quality maternity care.
There is little evidence about the costs associated with the establishment and operation of MLBCs and the cost-effectiveness compared to standard care. Our economic evaluation aimed to identify the operational costs for MLBCs in real-world LMIC settings and to estimate their cost-effectiveness relative to current standard maternal care pathways in-country. We gathered primary data for costs and health outcomes from 12 MLBCs in three countries: Uganda, Pakistan and Bangladesh. Gathering financial cost data proved challenging in all countries. In South Africa we were unable to separate the specific MLBCs costs from the general health system costs, so these sites are not included in our analysis.
Most MLBCs (8 of 12 sites) in our study were in the private sector (including for-profit and not-for-profit).

Two sites were public-private partnerships, i.e. public-sector facilities supported by NGOs

Two sites were in the public sector
Methodology and findings

Professor Emily Callander
University of Technology Sydney

Credit: UNFPA Madagascar
Our research aimed to identify the costs and outcomes of MLBCs compared to standard care in each country.

We wanted to identify:

• The costs of running an MLBC – staff costs, facilities costs, transport costs
• The costs of births in hospital facilities – for both women who transferred out of an MLBC during labour, and also as a part of identifying the costs of standard care
• The outcomes of women giving birth in MLBCs and in standard care.
We initially worked closely with the national research teams to identify what types of costs they thought were relevant. We then designed a survey to be completed with the participating facilities to identify:

- midwife salaries
- other clinical staff salaries
- other staff salaries (cleaners, security, administration)
- training
- facility rent/purchase
- operation (electricity, water, etc)
- equipment and consumables
- transport
Huge thanks to the national research teams who then worked hard to gather **typical annual operating costs in each of these categories** from each MLBC.

Annual costs were divided by the number of births in each MLBC to present a cost per birth.

We did not collect start-up costs.
Methodology – costs for hospital births

• We needed to identify costs of hospital births for women who were transferred out of MLBCs during labour, and also for our comparison group: women giving birth with “standard care”

• Costs of vaginal birth and caesarean section births were identified from previous studies that were published in the peer-reviewed literature for the study countries.
We collected data on health outcomes at each facility. Health outcomes included haemorrhage, 3rd or 4th degree tears or other serious morbidities, maternal mortality, stillbirth, and neonatal mortality.

In order to combine these outcome measures into a single metric, we applied disability adjusted life year (DALYs) weights to each outcome. DALYs are a score between 0 and 1, which measure of the amount of disability associated with a health state. With a score of 1 being equivalent to death, and 0 being disability-free in perfect health.
Incremental cost & health outcome comparison

This scatter plot shows how each MLBC compares with standard care in each country. There is a lot of information in the chart, so we’ll explain each element separately.
Incremental cost & health outcome comparison

The Y axis in red shows difference in cost per woman between the MLBC and standard care in country.

If the MLBC is more expensive than standard care, it will be above the green line.

MLBCs below the line are less costly than standard care.
Incremental cost & health outcome comparison

The X axis in green compares health outcomes, in terms of DALYS lost.

DALYS = Disability Adjusted Life Years.

MLBCs to the right have better health outcomes.
Incremental cost & health outcome comparison

MLBCs in the top left, Quadrant ①, are more costly with poorer health outcomes.

MLBCs in the top right, Quadrant ②, are more costly with better health outcomes – this is quite common in health care, for services to cost a bit more, but produce better health outcomes for that cost.
Incremental cost & health outcome comparison

MLBCs in the bottom left, Quadrant ③, are less costly with poorer health outcomes.

The best performing MLBCs, in terms of better health outcomes at lower cost are in the bottom right quadrant ④ which is shaded green. This is relatively unusual in health care, but is an optimal situation.
Incremental cost & health outcome comparison

Each MLBC is entered on the chart and identified by colour and shape:

- Bangladesh: Triangle (Private)
- Pakistan: Diamond (Public)
- Uganda: Circle (Public-private Partnership)

Incremental cost (compared to standard care)
- Less costly than standard care
- More costly than standard care

Incremental DALYs lost (compared to standard care)
- Worse health outcomes
- Same
- Better health outcomes

DALYS = Disability Adjusted Life Years
The four MLBCs studied in Uganda are shown as circles. All four sites were Private, so are coloured blue.
So, for example, Uganda Site 3, achieved better health outcomes at about the same cost as standard care. Uganda Site 1 produce better health outcomes at lower cost than standard care.
Incremental cost & health outcome comparison

Bangladesh’s MLBCs are shown as triangles.

Bangladesh site 4 was Private, so is also coloured blue. It achieved the same health outcomes, but was more costly than standard care.
Incremental cost & health outcome comparison

Bangladesh sites 1 & 2 were Public, so are coloured orange.

Bangladesh Site 3 was a Public-private partnership, so is coloured grey.

Each of these sites is in the green Quadrant 4 – achieving better outcomes at lower cost than standard.

**DALYS = Disability Adjusted Life Years**
Incremental cost & health outcome comparison

Pakistan’s sites are shown as diamonds.

Overall, half of the sites studied are in the green quadrant, achieving better health outcomes at lower cost than standard care in country. Pakistan site 1 also produced better health outcomes, but at a higher cost than standard care.

DALYS = Disability Adjusted Life Years
Cost drivers in MLBCs

This slide shows the breakdown of total costs into:

- Facility costs – shown in dark blue
- Midwife salaries – shown in orange
- Other staff salaries – shown in yellow
- Recruitment and training costs – shown in light blue
Cost drivers in MLBCs

Annual operating costs per woman varied greatly, but midwife salaries and facility operation costs were consistent cost drivers in all countries.

There was no pattern between facility size and cost per birth.
Cost drivers in MLBCs

Picking a few examples to walk through:

In Uganda site 4, just over 40% of the costs were made up of facility running costs, around 30% were made up of midwife salaries, and around 25% were made up of other staff salaries.

In Pakistan site 1, facility costs made up almost 80% of the total costs of operating the MLBC.

In Bangladesh site 2, Midwife salaries made up around 60% of the total operating costs.
MLBCs can offer better outcomes at lower cost

- 10 of 12 MLBCs (83%) demonstrated better health outcomes – in terms of DALYs lost – compared with standard care in that country.

- 7 of 12 MLBCs (58%) demonstrated lower operating costs – facility costs, staffing, training & recruitment – compared with the country standard.

- 6 of 12 MLBCs (50%) demonstrated both better health outcomes and lower operating costs.
MLBCs can be cost effective in any context

We identified MLBCs with lower costs and better health outcomes than country standard ...

- in all 3 countries studied
- in private, public and public-private partnerships
- in rural and urban settings
- in large facilities (>5,000 births pa) and in smaller facilities (≈100 births pa)
- in freestanding MLBCs and in those onsite / alongside referral facilities
MLBCs can be cost effective in any context

However, this study has a small sample size, and more research is needed to better understand the financing.

Data collection is challenging but really important to allow us to do this type of analysis which supports advocacy.
Q&A

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Coming up **IN TWO WEEKS** ...

- The final session in our webinar series: Scaling up the MLBC model of care in low- and middle-income countries
- Overview of the findings: success factors and challenges
- An aspirational MLBC definition
- A pathway to change to support scaling
- We look forward to seeing you!
Our modelling took the form of a decision analysis tree:
1,000 hypothetical women giving birth were run through the model, for each MLBC and also for country ‘standard’ care as a comparison.
Costs and morbidities for each branch of the decision tree were estimated and collated.
Comparison with country standard

Because exchange rates vary, this chart shows the same data as a percentage of standard care in country. MLBCs in the bottom left quadrant have better health outcomes at lower cost.