JUSTIFICATION OF INNOVATION

Access to facility-level delivery by pregnant women in Zambia has stagnated in the past two decades averaging about 47 per cent despite significant investment and numerous interventions. Therefore, the Ministry of Community Development Mother and Child Health (MoCDMCH) supported the implementation of non-monetary incentives, such as Mama Kits, to increase institutional delivery in Zambia\(^1\). These kits generally contain nappies, chitenge (cloth), a blanket, a baby vest, baby booties, vaseline, a baby hat and soap, and are provided to pregnant mothers on the condition that they deliver in a health facility.

BACKGROUND

In Zambia, important strides have been made to advance maternal and child health, but room for improvement remains. Under the leadership of Zambia’s MoH and MoCDMCH, Zambia has piloted a number of interventions to improve its facility delivery rates. However, the relative impacts and cost-effectiveness of these interventions remain largely unknown, and Zambia’s facility delivery rates still remain low at 43 per cent nationally, with even lower rates in rural areas.

\(^{1}\) Mama Kits Technical Report, 2013
Evidence shows that improving institutional delivery rates is essential for reducing maternal and neonatal morbidity and mortality\(^2\). There is evidence that incentives can be effective in encouraging the utilization of available health services\(^3\). Non-randomized evaluations of schemes that provide cash incentives in India and Nepal have been shown to increase facility delivery rates\(^4\). In Zambia, non-monetary Mama Kit gifts, provided to pregnant mothers conditional on delivering in a health facility, have been used by several actors to incentivize institutional delivery. However, conclusive evidence of the actual impact is limited.

**OBJECTIVE**

The main objective of this innovative intervention is to inform maternal and child health policy and practice throughout Zambia, and to contribute to the global knowledge base on the use of incentives to increase facility delivery and the use of public health services. Specifically, this intervention aims to provide operational insight into how Mama Kits can be implemented on a national scale.

**STRATEGY/IMPLEMENTATION**

In 2013, a clustered, randomized, controlled trial design was utilized to measure the impact of Mama Kits on facility delivery rates in rural Chadiza District in Eastern Province and rural Serenje District in Central Province. Thirty health facilities were stratified by district and paired based on historical institutional delivery rates. Within each pair, one facility was randomly allocated to receive Mama Kits, and the other allocated to a comparison group (no intervention). This process yielded 10 treatment and 10 control facilities in Serenje, and five treatment and five control facilities in Chadiza.

The innovative approaches included:

a. **Cost-effectiveness modelling to determine an appropriate cost for the Mama Kit and policy relevant effect size**

   A model was built to calculate the facility delivery impact sizes required for Mama Kits of different values to be cost-effective. This model determined that a Mama Kit valued at 20 ZMW (4 USD) would be ideal since (1) that value exceeded the potential cost of transport to a facility for most women, (2) a plausible effect (such as a 50 per cent increase in facility delivery rates) could make a kit of that value as or more cost-effective than other MCH interventions, and (3) more expensive Mama Kits would have to be implemented by larger effect sizes to be comparably cost-effective (e.g., an $8 Mama Kit would have to have an effect twice that of a $4 Mama Kit).

b. **The Mama Kit contents were determined based on desirability rating by local women**

   Semi-structured interviews were conducted to assess potential Mama Kit contents according to desirability. Twenty-six women in Chongwe (a peri-urban setting) were asked to rank-order potential Mama Kit contents.

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http://shodhganga.inflibnet.ac.in/bitstream/10603/4196/7/07_chapter%202.pdf
Mama Kit items in terms of desirability, with three points assigned to the top choice, two points for the second choice, and one point for the third choice. The outcome of this exercise was as follows (desirability score in parentheses): nappy (64), chitenge (39), blanket (31), baby vest (15), baby booties (4), Vaseline (2), baby hat (1), soap (0). These interviews—coupled with a survey of local wholesale prices—were used to determine that a Mama Kit containing a nappy, chitenge (cloth), and blanket would be highly desirable and fall within the 20 ZMW / 4 USD price range. These recommended contents were then presented before and discussed with stakeholders who confirmed that such a Mama Kit was context-appropriate and had good potential to be a cost-effective intervention.

c. Provision of Mama kits and recording impact on the rate of child births at health facilities

Mama Kits were given to all women in the treatment facilities who either delivered at that facility between June 1, 2013 and August 31, 2013, or who resided in the facility catchment area, but upon arrival at the facility, was referred to another facility due to medical reasons. Mothers who delivered stillbirths were still provided with a Mama Kit as they fulfilled the criteria of delivering at the health facility. One kit for each baby was given in case of twins. Mama Kit operations were documented, and facility records verified by household surveys used to assess the impact on institutional delivery rates.

d. Post-evaluation focus group discussions

Analysis of records was conducted to assess the impact of the intervention. Logistic regression modelling of odds ratios and percent increase of facility deliveries was calculated.

Focus group discussions were conducted to capture other considerations including women’s perceptions on how to further improve the programme. Nearly all of the mothers knew about the Mama Kit programme and the items contained in the kits, having heard about it through Safe Motherhood Action Groups or ANC counselling. While many had positive things to say about the Mama Kit, many of the mothers had trouble vocalizing whether it would be an influential factor in their decision about where to deliver. Of those that suggested that it could influence their decision, many saw it as a way to mitigate some of the challenges around delivering at a facility. These also helped shed light on some factors that negatively influence a mother’s choice around where to deliver, such as distance to the health facility, delivery before the due date; male staff at the health facility and lack of baby supplies to bring to facility.

PROGRESS AND RESULTS

The final sample included 2,219 eligible women who attended antenatal care (ANC) at 15 intervention facilities (n=993) and 15 control facilities (n=1226). Higher facility delivery rates were observed for intervention facilities than for the control group. The table below shows that the odds ratio of delivering in a facility was 1.61 [95 per cent CI: 1.03, 2.51], with 25.4 per cent of women who attended ANC delivering at a facility in the control group, compared to 34.9 per cent in the intervention group. After adjusting for individual and facility-level covariates, women in the intervention group had a statistically significant 1.68 higher odds [95 per cent CI: 1.27, 2.21] of delivering at a facility compared to those in the control group. Our primary analysis estimated a $4 Mama Kit increased facility deliveries by 44.1 per cent (95 per cent CI: 29.9 per cent, 60.2 per cent) in poor, remote areas of Zambia.
Using a base cohort of 413,147—the estimated number of rural deliveries in a year in Zambia—the Mama Kits intervention would avert 31 annual maternal deaths and 426 annual neonatal deaths, resulting in 457 annual deaths averted.

**LESSONS LEARNT**

- Low-cost Mama Kits are a promising intervention to cost effectively increase facility delivery rates in rural, sub-Saharan African settings.
- Low-cost Mama Kits are unlikely to provide a complete solution to safe delivery challenges, but can be embedded in larger maternal and child health programmes.
- Any large-scale implementation of a Mama Kits intervention should have proper stock controls and logistics planning similar to other public health commodities.

**CONCLUSIONS**

Low-cost Mama Kits are unlikely to provide a complete solution to safe delivery challenges, but can be embedded in larger maternal and child health programmes. The evaluation did not test Mama Kits of different contents or monetary values, making it impossible to draw strong conclusions about the most cost-effective Mama Kit package. Despite these limitations, we feel that the impact estimates that were found in this evaluation are generalizable to other rural African settings that are facing comparable barriers to promote facility deliveries.

The government, through the MoCDMCH, has issued a policy statement instructing all district medical offices to plan and budget for procurement of Mama Kits as non-monetary incentives to improve access to facility-level delivery.

Potential for wider application: The strategy could be applied as an intervention to cost effectively increase facility delivery rates in rural, sub-Saharan African settings.

**FOR MORE INFORMATION:** www.mwangaza-action.org

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