

EVALUATING THE COST-EFFECTIVENESS OF MAMA KITS FOR INCREASING FACILITY DELIVERIES:

EVIDENCE FROM A 3DE EVALUATION IN RURAL CHADIZA AND SERENJE DISTRICTS



INTRODUCTION

Improving institutional delivery rates is a strategic priority of the Zambian government. In Zambia only 67 percent of total births and 56 percent of rural births take place in health facilities.¹ Barriers such as procrastination, embarrassment over lack of proper clothes or baby supplies, and lack of immediate tangible payoff continue to keep facility delivery rates low. The government has also established the goal of increasing the national facility delivery rate to 80 percent by 2016.² 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 in Zambia. However, stakeholders have lacked rigorous evidence concerning: 1) ideal Mama Kit contents and operations and 2) the impact and value for money of providing Mama Kits. Thus, an evaluation of the impact and cost-effectiveness of Mama Kits was commissioned by Zambia's Ministry of Community Development and Maternal Child Health (MCDMCH) and Ministry of Health (MOH), and conducted by the 3DE program in collaboration with the H4+ partnership. The evaluation was designed to determine if Mama Kits can cost-effectively increase rural institutional delivery rates and to inform and optimize national policy and programs providing Mama Kits.

INTERVENTION TESTED

Cost-effectiveness modeling, stakeholder consultation, and semi-structured interviews with rural women to assess the desirability of potential Mama Kit items were used to establish that a Mama Kit valued at around 20 ZMW/US\$4 containing a chitenge (cloth), nappy, and blanket was a potentially cost-effective Mama Kit package. The intervention also included community and antenatal clinic (ANC) awareness activities to inform pregnant women about the incentives available at intervention facilities.

EVALUATION DESIGN

The study was conducted in 30 health facilities in rural parts of Chadiza and Serenje Districts in Zambia's Eastern and Central Provinces respectively. Facilities were randomly assigned into intervention and comparison groups of 15 facilities each. The intervention group facilities received Mama Kits for three months from June 1 - August 31, 2013 while the comparison groups did not receive Mama Kits and continued business as usual. Mama Kit operations were documented, and facility records verified by household surveys used to assess impact on institutional delivery rates. Monitoring and data collection at intervention sites ended August 31, 2013, with focus groups in randomly selected villages were conducted in September 2013.



Sources:

1. Zambia Demographic and Health Survey, 2013-2014.

2. MCDMCH Strategic Plan and the National Roadmap for Accelerating the Attainment of the Millennium Development Goals Related to Maternal, Newborn and Child Health in Zambia, 2013-2016

RESULTS

The final sample included 2,159 women. Logistic regression analysis showed that that Mama Kits increased institutional deliveries by 9.9 percentage points, which is equal to a 42.3 percent increase in facility deliveries (p value < 0.01) (Figure 1). This model controlled for individual variables (age, number of ANC visits, prior pregnancies, ratio of prior pregnancies to deliveries) and facility characteristics (distance from district headquarters, staff gender, ratio of population to staff, catchment population, other MCH activities, and outreach activities). These results yield a cost-effectiveness of US\$5,183 per death averted, which is comparable to many other commonly scaled public health interventions such as bed net distribution, antiretroviral drugs for HIV, and other established maternal and child health interventions.

Focus groups, including 109 mothers, were also held to explore influences on choices about place of delivery. Women indicated that distance to health facility, unexpected labor, male staff at facilities, and lack of baby supplies to take to the facility prevent women from delivering in facilities.

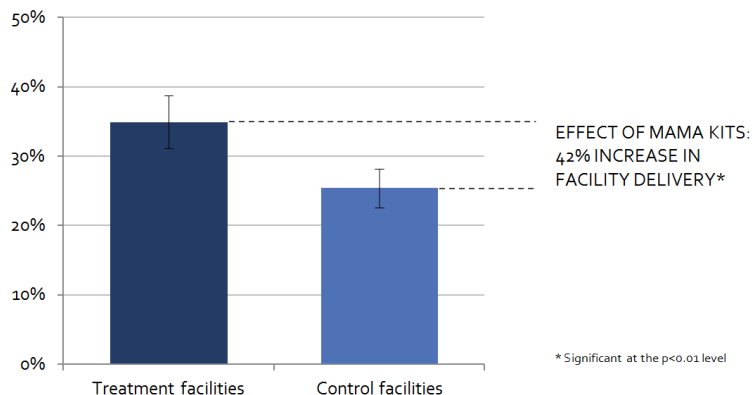
DISCUSSION AND RECOMMENDATIONS

This evaluation indicates that a modestly priced Mama Kit could be a highly cost-effective approach to save lives in the rural Zambian context when embedded in larger maternal and child health programs. The Mama Kit used in this evaluation cost 20 ZMW/US\$4, and based on these results Mama Kits should be valued at less than ~US\$30, since a kit more expensive than US\$30 would have to achieve mathematically impossible impacts to be equally cost-effective. This study was conducted using a rigorous randomized controlled trial design; however, some limitations should be considered. This evaluation relied on secondary and administrative data, but home spot checks indicated high levels of accuracy. Using administrative data also means that women were only included in the study if they appeared in an ANC register and had an estimated delivery date, but these exclusionary factors are not likely to have varied across treatment and control facilities. Finally, it should be noted that results could vary across Zambia and other countries based on cultural factors and baseline facility delivery rates.

The following recommendations are based on the implementation and results of this evaluation:

- Given its proven impact and cost effectiveness, implementers of maternal and child health programs should consider including the Mama Kit intervention as an integral part of such programs.
- A Mama Kit costing more than US\$30 may be less cost-effective than other health interventions.
- The cost-effectiveness of Mama Kits is likely to be higher if women value the contents. Since preferences may vary by region, interviews or focus groups in each implementation region could be useful in determining ideal Mama Kit contents.

FIGURE 1. PERCENTAGE OF WOMEN WITH CONFIRMED FACILITY DELIVERY, BY EVALUATION ARM (FULLY SPECIFIED REGRESSION)



FOR FURTHER INFORMATION:

Wang P. et al. Measuring the impact of non-monetary incentives on facility delivery in rural Zambia: A clustered randomized controlled trial. *Trop Med Int Health*. 2016 Feb 5. doi: 10.1111/tmi.12678.

<http://onlinelibrary.wiley.com/doi/10.1111/tmi.12678/abstract>

ABOUT THE 3DE PROGRAM

The Demand-Driven Evaluations for Decisions (3DE) program is a pioneering approach to support ministries active in the health sector with evidence-based decision-making by using rigorous impact evaluations in a demand-driven, rapid and efficient way. It seeks to generate reliable impact evidence that meets the ministries' needs and is used to catalyze implementation of cost effective action.