



**USAID**  
FROM THE AMERICAN PEOPLE

TRANSLATING  
RESEARCH  
INTO ACTION



# RESULTS-BASED FINANCING IN MALAWI

## BRIEF 2: EFFECT OF THE RBF4MNH INITIATIVE ON THE QUALITY OF MATERNAL AND NEONATAL HEALTH CARE SERVICES

### OBJECTIVE

Results-based financing (RBF) ties health provider payments to the quantity or quality of services that they provide. The underlying theory of RBF is that health services improve when providers are incentivized to meet clear targets while exercising a greater level of autonomy in aligning both “process” and “input” factors related to service provision. Process factors largely refer to behaviors and practices undertaken by providers during interactions with clients. Input factors largely refer to the availability of drugs and supplies.

Malawi’s RBF4MNH program awards incentives based on the performance to both health facilities and district health management teams (DHMTs). The aim of RBF4MNH was to improve the quality of maternal health service inputs and processes. Box 1 provides an illustrative list of some of the indicators that were incentivized by the RBF4MNH initiative.

The objective of this brief is to describe the effect RBF4MNH had on a selection of clinical performance indicators incentivized by the initiative.

### THE RBF4MNH INITIATIVE

The Results-Based Financing for Maternal and Neonatal Health (RBF4MNH) Initiative was designed to increase uptake and improve quality of care during childbirth in Malawi. Implemented in 18 facilities in 2013 and expanded to 28 facilities in 2014 across Balaka, Dedza, Mchinji and Ntcheu districts, RBF4MNH entailed investments in infrastructure and equipment; the provision of financial incentives (based on achievement of pre-defined targets) for health providers in RBF facilities; and conditional cash transfers to pregnant women residing in catchment areas of intervention facilities for recovery of expenses directly related to accessing and staying at target facilities during and at least 48 hours after childbirth.

This series of briefs is meant to serve as a resource for decision makers as they craft results-based financing programs and policies in Malawi and similar settings. The briefs stem from a two-year impact evaluation conducted jointly by Heidelberg University in Germany and the College of Medicine in Malawi.



**ROYAL NORWEGIAN EMBASSY**

*Lilongwe*



UniversitätsKlinikum Heidelberg



July 2016

This study was funded by the United States Agency for International Development under Translating Research into Action, Cooperative Agreement No. GHS-A-00-09-00015-00, and by the Norwegian Agency for Development Cooperation (NORAD) and the Royal Norwegian Embassy in Malawi. The project team includes prime recipient, University Research Co., LLC (URC), Harvard University School of Public Health (HSPH), and sub-recipient research organizations.

## POLICY RECOMMENDATIONS

In the light of the findings presented in this brief, we recommend the following when devising or modifying RBF programs in this and similar contexts:

1. In order to prevent essential drug stock-outs and ensure equipment is functional, policy makers should allow for more autonomous procurement systems that allow facilities and service managers to independently purchase needed inputs. The RBF4MNH initiative allowed facilities to autonomously spend financial rewards on facility improvements, which increased the availability of essential drugs and equipment in the context of a nation-wide shortage of medicines and materials.
2. Before developing an RBF program, health authorities should consider the challenges facing the health system that RBF programs cannot address, and which if not addressed, will limit the success of any RBF program. Low staffing levels and inadequate infrastructure emerged as important limitations to the provision of high quality obstetric care services in Malawi. The extent to which RBF can address these through decentralized fiscal and decision-making autonomy at district and facility levels is promising, but limited. Complementary improvements in central-level hiring and deployment of personnel as well as the allocation of budgets for structural facility maintenance would likely augment RBF successes.
3. RBF programs must carefully select which performance indicators to incentivize. Certain indicators, while central to the provision of high quality care, may be impossible for providers to achieve due to human resource shortages. For example, achieving high quality labor monitoring through accurate use of partographs is currently challenged by a disproportionate ratio of patients to providers. These types of indicators are often out of the control of providers and must be addressed by broader health systems interventions prior to the launch of an RBF program.
4. It is also ineffective to incentivize performance indicators that are consistently high at baseline. For example, the RBF4MNH initiative incentivized oxytocin administration during Active Management of the Third Stage of Labor (AMTSL), which was already widely practiced by providers in Malawi before the intervention. However, the initiative did not incentivize controlled cord traction or the assessment of blood loss, which are also vital components of AMTSL. Therefore, programs should target indicators that are low at baseline with much room for improvement.
5. Providing high quality care relies on adherence to protocols and application of clinical standards. RBF programs should assess providers on quality indicators directly linked to national quality protocols and standards. For example, the RBF4MNH initiative increased infection prevention supplies and behaviors by directly incentivizing international guidelines on infection prevention.

### BOX 1: QUALITY INDICATORS INCENTIVIZED BY THE RBF4MNH INTERVENTION

CATEGORY	INPUT INDICATOR	PROCESS INDICATOR
HIV status assessment and PMTCT	Increase availability of PMTCT medications at all facilities.	Increase proportion of pregnant women with unknown HIV status tested and treated with PMTCT medications during labor.
Labor monitoring and equipment	Increase availability of functional essential equipment in labor units	Increase proportion of partographs completely and appropriately filled for all women delivering in the facility.
Active Management of the Third Stage of Labor	Increase availability of oxytocin in all facilities	Increase proportion of women who receive oxytocin during the third stage of labor
Infection Prevention	Increase functionality of essential equipment related to infection prevention and availability of supplies related to infection prevention	Each facility takes at least two actions to improve infection prevention processes during each reporting period.

## SUMMARY OF METHODS

Three rounds of data were collected in 2013, 2014, and 2015. Assessments of 33 facilities and direct observations of 401 clinical encounters in these facilities across three time points were collected. To complement the facility assessments and direct observations, 60 maternal care providers participated in in-depth interviews. The RBF4MNH intervention incentivized DHMTs, which oversaw both RBF4MNH facilities and comparison facilities within each district. Therefore, the intervention may have influenced outcomes in both RBF4MNH and comparison facilities, which may explain why some indicators improved in both facility types. The fact that control facilities in non-RBF4MNH districts were not able to be included in the study is an important limitation.

## FINDINGS

### RBF4MNH INCREASED INTRAPARTUM HIV STATUS ASSESSMENT AND AVAILABILITY OF PMTCT MEDICATIONS

There was a 12 percentage point increase in the proportion of laboring women with intrapartum verification of their HIV status in RBF4MNH facilities compared to no change in comparison facilities (see Figure 1). Similarly, there was a 27 percentage point increase in the availability of prevention of mother-to-child transmission (PMTCT) of HIV anti-retroviral medications in RBF4MNH facilities compared to no change in comparison facilities (see Figure 2).

Before the start of RBF4MNH, most pregnant women attended antenatal care (ANC) clinics and received testing and treatment for HIV. Nevertheless, some pregnant women did not attend ANC, or attended ANC but were not tested. Birth attendants working in RBF4MNH facilities were therefore incentivized to review HIV status at the time of delivery, and to identify women who were not previously screened and in immediate need of PMTCT. In RBF4MNH facilities, birth attendants more frequently integrated this process into their routine patient assessment.

RBF4MNH also addressed essential drug availability in two major ways. First, the program incentivized RBF4MNH facilities to regularly report drug stocks to the district level. Secondly, the program incentivized DHMTs to ensure timely drug availability at all health facilities through centrally organized procurement structures. While periodic drug and supply shortages at centralized medical stores

### MEDICINES AND SUPPLIES

*“We have seen facilities becoming less reliant on the DHMT, because when they get the rewards and facility portions they can buy cleaning supplies, medicines, and the like.”*

— Skilled birth attendant at a hospital

Figure 1: RBF4MNH impact on intrapartum HIV status assessment among laboring women

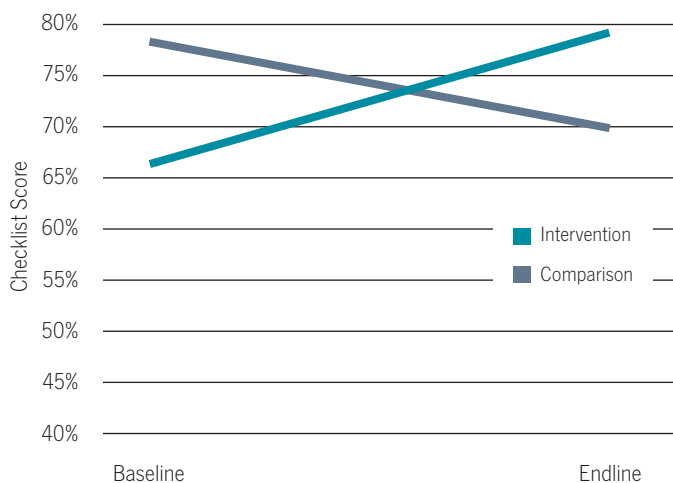
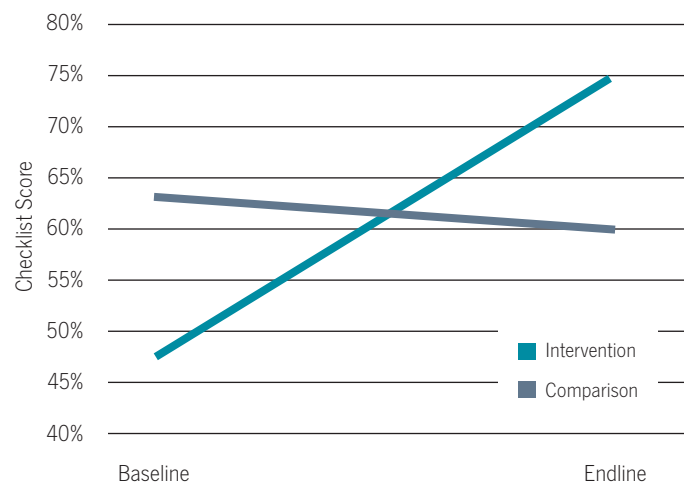


Figure 2: RBF4MNH impact on availability of PMTCT medications



hampered the availability of essential goods in non-RBF facilities, RBF4MNH facilities withstood such shortages. In fact, providers in intervention facilities reported that their enhanced autonomy and relative financial independence allowed them to purchase needed drugs through alternative pathways including independent stores and pharmacies (see Box: Medicines and Supplies).

### INCENTIVES TO MONITOR LABOR BY PARTOGRAPH WERE NOT SUFFICIENT TO OVERCOME STAFFING SHORTAGES AND OTHER CHALLENGES

In RBF4MNH facilities, there was no change in the proportion of women monitored by partograph during the first stage of labor. Unexpectedly, there was a 20 percentage point increase in the proportion of partograph monitored women in comparison facilities while this proportion remained relatively unchanged in RBF facilities, perhaps due to increased workload in RBF facilities over the course of the study. When providers did monitor by partograph, completeness of partograph documentation increased in both RBF4MNH and non-RBF4MNH facilities. Therefore, these results are not attributable to the RBF4MNH initiative. Similarly, there was no significant change in the availability of functional equipment (i.e. blood pressure machines, fetoscopes, labor beds) in either RBF or non-RBF facilities.

DHMTs and RBF4MNH facilities were incentivized to improve equipment repair processes in order to improve maintenance of essential service inputs in RBF4MNH facilities only. However, the availability of equipment essential to labor monitoring did not decrease in either RBF4MNH or comparison facilities. These findings suggest that there was no effect of the intervention on monitoring equipment, and any observed improvements in availability are likely the result of a secular trend.

The RBF4MNH initiative incentivized DHMTs to ensure routine care processes, such as partograph monitoring, increased in all district facilities. However, the proportion of cases monitored by partograph increased only in comparison facilities. In-depth interviews revealed a higher perceived caseload by birth attendants in almost all RBF4MNH facilities. The increased workload in combination with prevailing staff shortages prevented the provision of adequate care processes to all patients in RBF4MNH

facilities. As correct partograph use is time-consuming and requires close monitoring of a laboring woman in a 1:1 or 1:2 provider-patient ratio, fewer women were monitored with this tool in RBF4MNH facilities (see Box: Partograph Use).

### PARTOGRAPH USE

*“Sometimes our labour ward is too busy and you can find only two nurses managing almost nine patients in labour and two or more in second stage. It prevents us from managing them properly.”*

— Skilled birth attendant at a hospital

Still, partograph documentation improved in both RBF and non-RBF facilities, which might be a result of improved supervisory support by DHMT staff across all facilities. Nevertheless, birth attendants pointed out that in spite of available inputs and knowledge, the most limiting factor towards completing partograph monitoring and documentation according to national standards remains manpower (see Box: Partograph Documentation). To ensure meeting the RBF performance targets for complete partograph documentation, some birth attendants in RBF4MNH facilities even filled out partograph forms after the end of their shifts for cases attended during the day. This delayed partograph documentation represents an unintended consequence of the intervention and could be considered a form of ‘gaming’ the system.

### PARTOGRAPH DOCUMENTATION

*“We face critical shortage of staff. So it becomes tiresome to move from one bed to the other without having time to rest. Greatest challenge is the shortage of staff and the rate of admissions that we are having. The ratio of patient to staff is too high.”*

— Skilled birth attendant at a hospital

A pharmacist examines available medicines in Malawi

Photo credit: Photoshare



## RBF4MNH WAS ONLY PARTIALLY EFFECTIVE IN IMPROVING QUALITY OF THE ACTIVE MANAGEMENT OF THE THIRD STAGE OF LABOR

Active Management of the Third Stage of Labor (AMTSL) is a clinical intervention to reduce the risk of postpartum bleeding and consists of three critical processes: 1) administration of oxytocin to increase uterine contractions; 2) controlled cord traction to prevent prolonged delivery of the placenta and to reduce risk of retained products of conception; and 3) verification of success through assessment of blood loss and completeness of placenta delivery. Only one of these processes—routine oxytocin administration—improved, as it was directly incentivized by RBF4MNH. Other components of AMTSL, such as controlled cord traction and the assessment of blood loss at the end of the third stage of labor, were not incentivized by RBF4MNH and did not improve.

According to interviews with providers, compliance with routine oxytocin administration is mainly dependent on its availability at a facility. Oxytocin was available in most facilities prior to the RBF4MNH start. Availability of this essential drug decreased by 33 percentage points in comparison facilities, yet it remained available in RBF4MNH facilities over the

same time period as measured through facility assessments. While comparison facilities suffered from oxytocin shortages during the study period, the RBF4MNH initiative ensured its availability in intervention facilities. The combination of improved drug stock reporting and timely drug procurement processes, coupled with the autonomy of RBF facilities to independently purchase service inputs, such as medications, from outside traditional centralized procurement systems, prevented oxytocin stock-outs.

### OXYTOCIN ADMINISTRATION

*“In Malawi it is a standard (...) that each and every client receives oxytocin before you actually remove the placenta, being a recommendation which has been put in black and white. People can easily follow that, looking at the benefit to the client, and most people are willing to do that.”*

— Skilled birth attendant at a hospital

Observed routine oxytocin administration during the third stage of labor increased in both RBF4MNH and comparison facilities (in spite of the decrease in oxytocin availability in comparison facilities), but the increase was significantly higher in RBF4MNH facilities. According to provider interviews, routine oxytocin administration during AMTSL had been programmed for quite some time in Malawi and providers felt familiar with this process (see box: Oxytocin Administration). However, interviews revealed that compliance with protocols for the other AMTSL-processes vary greatly among providers and facilities. Not surprisingly, the evaluation detected no changes in controlled cord traction or blood loss assessment in RBF4MNH or comparison facilities. This finding demonstrates the importance of incentivizing all critical components of a clinical process in order to improve its quality, rather than incentivizing only one of the components.

### RBF4MNH IMPROVED INFECTION PREVENTION EQUIPMENT, SUPPLIES, AND PROCESSES

The RBF4MNH initiative increased the correct application of most infection prevention procedures during labor and delivery in RBF4MNH facilities compared to no change in comparison facilities. The procedures that improved included hand washing (increased by 4 percentage points), use of sterile gloves (increased by 25 percentage points), skin disinfection prior to vaginal examinations and during delivery of the newborn (increased by 20 percentage points), and setup of sterile childbirth equipment (delivery kits, instruments) prior to the second stage of labor (increased by 30 percentage points).

In addition, service inputs, such as the functionality of a sterilizing machine, or the availability of sterile delivery kits and gloves increased between 20-30 percentage points in RBF4MNH facilities, but remained relatively unchanged in comparison facilities (see Box: Infection Prevention Supplies). Figures 3, 4, and 5 shows the improvement in service inputs at RBF4MNH facilities, compared to decreases or no change at comparison facilities. Availability of topical antiseptics for skin disinfection improved in both RBF4MNH and comparison facilities. While access to a water source and soap for hand-washing remained limited in RBF4MNH facilities, it declined even further in comparison facilities during the same time period.

Figure 3: Availability of sterile gloves

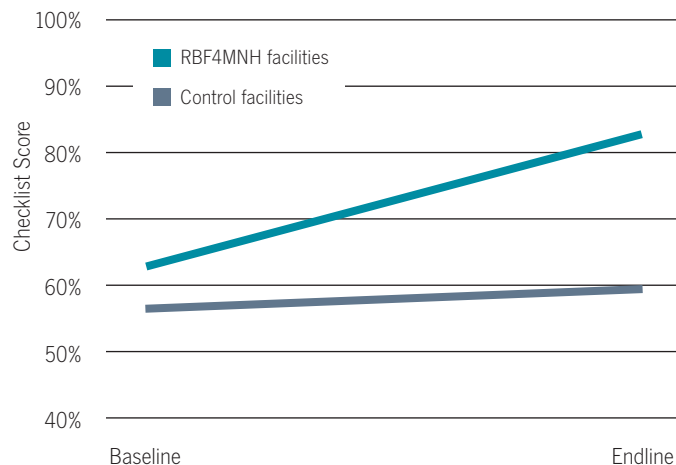


Figure 4: Availability of operational sterilization machine

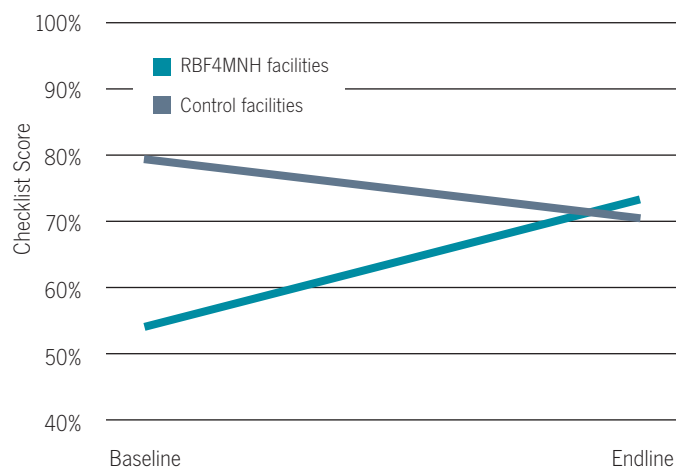
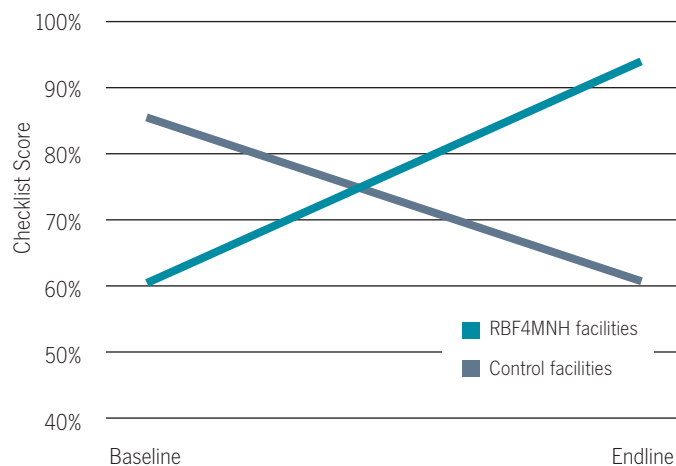


Figure 5: Availability of sterile delivery kits





A health worker cares for a newborn at Kochirira Health Centre in Mchinji District  
 Photo credit: Uchembere Wangwiro Program

Facilities in Malawi face challenges to following routine infection prevention protocols, including stock-outs, insufficient procurement of essential inputs, and weak infrastructure. Incentives to facilities and DHMTs helped to streamline maintenance processes and supported the functionality of sterilizing equipment and water sources in RBF4MNH facilities. In addition, RBF4MNH facilities' ability to independently use reward payments to purchase additional supplies improved the availability of disposables such as gloves or gauze.

The RBF4MNH incentives to review and improve infection prevention protocols induced some infection prevention behavioral changes among providers. The RBF4MNH initiative provided more clearly stated infection prevention quality priorities in combination with close performance supervision, which created a stronger sense of responsibility and responsiveness among providers and facilities (see Box: Infection Prevention Performance).

### INFECTION PREVENTION SUPPLIES

*"We lack chlorhexidine and use normal saline instead. Sometimes we use plain water at the health centers. There is no gauze, no cotton wool. So we clean the perineum at first time and subsequently we just do the vaginal examination without cleaning again."*

— Skilled birth attendant at comparison facility

### INFECTION PREVENTION PERFORMANCE

*"...other skills—like maintaining the standards of infection prevention—we are also giving pressure ourselves to clean up the labor wards, to maintain all the hygiene standards, so that whoever comes to supervise us should give us credit. So it's like a habit now. We are still doing that and we abide that to be done on daily basis."*

— Skilled birth attendant at RBF4MNH facility

**Study Contact:**

Dr. Manuela De Allegri, Principal Investigator of the RBF4MNH Evaluation  
manuela.de.allegri@urz.uni-heidelberg.de

**TRACTION PROJECT OVERVIEW**

The Translating Research Into Action (TRAction) Project, funded by the U.S. Agency for International Development, focuses on implementation and delivery science—which seeks to develop, test, and compare approaches to more effectively deliver health interventions, increase utilization, achieve coverage, and scale-up evidence-based interventions. TRAction supports implementation research to provide critically-needed evidence to program implementers and policy-makers addressing maternal and child health issues.

For more information on the TRAction Project:  
[www.tractionproject.org](http://www.tractionproject.org) ► [tracinfo@urc-chs.com](mailto:tracinfo@urc-chs.com)

**RBF4MNH IMPLEMENTING PARTNERS**

RBF4MNH is implemented by the Malawian Ministry of Health with funding from the Governments of Germany and Norway through KfW. Technical assistance to the Ministry of Health is provided through Options Consultancy Ltd. Additional information on the program can be found at:

[www.options.co.uk](http://www.options.co.uk)