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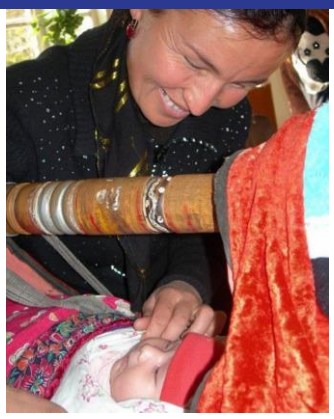
THE LINK BETWEEN PROVIDER PAYMENT AND QUALITY OF MATERNAL HEALTH SERVICES

CASE STUDIES ON PROVIDER PAYMENT MECHANISMS IN KYRGYZ REPUBLIC, NIGERIA, AND ZAMBIA



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DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development (USAID) or the United States Government.

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ACRONYMS

DMO	District Medical Officer
DRG	Diagnosis-related Group
EmOC	Emergency Obstetric Care
FFS	Fee-for-service
HFG	Health Finance and Governance Project
HMIS	Health Management Information System
HRITF	Health Results Innovation Trust Fund
LGA	Local Government Area
MHIF	Mandatory Health Insurance Funds
MoH	Ministry of Health
NPHCDA	National Primary Health Care Development Agency
NSHIP	Nigerian State Health Investment Project
P4P	Pay for Performance
PBF	Performance-based Financing
PMNCH	Partnership for Maternal, Newborn, and Child Health
RBF	Results-based Financing
SPHCDA	State Primary Health Care Development Agency
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

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EXECUTIVE SUMMARY

It is increasingly evident that improving maternal health service quality at the point of care can save the lives of many women and newborns (Tunçalp et al. 2015). Interventions to improve quality of care sometimes overlook how the provider payment mechanism might influence the quality of service provision. Purchasers of health services, such as a government, can consider reforming provider payment as a strategy for encouraging high quality at the point of care.

This paper aims to encourage policymakers and the quality of care community to consider provider payment mechanisms as part of their policy toolkit for improving quality of maternal health service delivery. We review provider payment systems in the Kyrgyz Republic, Nigeria, and Zambia that link a quality improvement initiative with provider payment, and document these programs' experience with design and implementation. In each case study country, improving quality at the point of care was one of the main motivators for redesigning the provider payment mechanism.

In the **Kyrgyz Republic**, hospitals are paid through diagnosis-related groups (i.e., case-based payments), which inherently reward quantity but ignore quality. Under an innovative results-based financing program, hospitals that perform well on quality assessments can receive increased payments. A technical working group led by the government and involving development partners was formed to oversee provider payment design and implementation. Following a pre-pilot in one hospital, the *Health and Social Protection Project* launched in late 2013. A National Steering Committee oversees the project and is the policy decision-making body. The Mandatory Health Insurance Fund is responsible for purchasing health services from providers through signed contracts and specifying fund disbursements based on provider performance. The technical working group adapted a balanced score card tool to measure quality of care in hospitals on a quarterly basis. This process involved a year or more of debate to reach consensus among stakeholders. A large part of the tool development process involved identifying and reaching consensus on the root causes of poor quality that could be addressed by the hospital. The hospital payment project is highly regarded, and the Kyrgyz government is planning to implement a similar payment reform at lower tiers of care.

In **Nigeria**, the government and development partners found that poor quality was a main driver of low utilization of primary health care at public facilities. Households would seek care at private facilities or secondary and tertiary care public facilities. Prior to introduction of a performance-based provider payment, health workers in Nigeria were paid solely by salary. An additional provider payment mechanism was introduced to motivate health worker behavior to encourage improvements in both quantity and quality. Health facility quantitative outputs with unit fees are reported by hospital and health facilities and verified monthly. Quality is assessed quarterly. At the health center level, local government health authorities apply a quality checklist; at hospitals, quality is measured through a peer-evaluation mechanism where technical and administrative staff from other hospitals peer-evaluate each other's performance. Initial findings revealed that structural indicators improved quickly as facilities used bonus funding to rapidly fill gaps in equipment, to purchase medicines and other supplies, and to make repairs to infrastructure. The quality checklist has thus already been twice modified along the way, to include more clinical process indicators. Currently 60 percent of indicators are structural, while 40 percent are related to content of care. The project also rewards local government authorities for performing management responsibilities for the payment initiative, such as performing quarterly quality assessments and reviewing health facility business plans.

In **Zambia**, health facilities are financed through a monthly operational grant to cover recurrent operations, outreach, and purchase of goods and services. Grants are allocated on the basis of the health facility's catchment population. Facilities receive the grants regardless of the quality or actual quantity of services actually delivered. The government also finances provision of health services in the form of health worker salaries. In 2009, the government and development partners launched a project to provide performance-based payments to facilities, health workers, and District Medical Offices in addition to existing financing. The project aimed to motivate frontline health workers to work at full capacity and improve health service quality, as well as motivate District Medical Offices to fulfill critical supervisory and management functions. As a first step, the Government of Zambia and the World Bank implemented a pre-pilot in Katete district in the Eastern province, which allowed policymakers and program managers to develop and field test a quality assessment tool and other programmatic operations. Originally designed as a deflation factor, early program experience showed that final individual-level bonuses earned under the original design were too low to be truly motivating to health workers. Consultations between the government and the World Bank resulted in changing the quality deflator into a bonus. Through the project, the government has gained experience with active purchasing principles and operations, and is now seeking to implement those principles in other government financing.

There are multiple ways to design and implement provider payment systems that align incentives so as to encourage high quality of maternal health services. The architects of future provider payment programs should consider how certain design features of the system will or will not incentivize providers in the specific context to deliver high-quality health services. Considering what is feasible to implement in the immediate to medium term will also guide mechanism selection. The experiences of the Kyrgyz Republic, Nigeria, and Zambia demonstrate ways to use financial incentives to motivate health workers and managers to each do their part to improve quality at the point of care. Frequent quality measurement, with results tied to a provider payment, was a design feature common to all three cases. While financial incentives in the provider payment mechanism was the element that gave the quality improvement initiative "teeth," a number of system changes occurred in the process of implementing payment mechanisms that are linked to high quality. Redesigning the conventional provider payment system can better align payment with the types of health system outputs and outcomes that policymakers and quality of care advocates desire. However, poor program management can easily become a bottleneck and needs close monitoring.

1. INTRODUCTION

In 2015, complications in childbirth and during pregnancy caused approximately 830 maternal deaths per day worldwide.[1] The majority of these deaths took place in low-income settings, and most were preventable.[2] Although maternal mortality has fallen globally by almost 50 percent since 1990, maternal mortality ratios – the proportion of mothers who do not survive childbirth compared to those who do – in developing regions remain 14 times higher than in developed regions.[3]

Sustainable Development Goal #3 calls for nations to reduce the global maternal mortality ratio from 216 in 2015 to less than 70 per 100,000 live births by 2030, as well as to end preventable deaths of newborns.[4,5] This will take considerable investment and commitment – both from countries and from the donor community – in financing, in human resources, and in health systems. While having a sufficient amount of health infrastructure, staff, equipment, and medicines is essential to improving maternal health outcomes, so too is an often-overlooked factor: quality at the point of care.

Indeed, it is increasingly evident that improving maternal health service quality at the point of care can save the lives of many women and newborns (Tunçalp et al. 2015). Efforts to improve quality of care sometimes overlook how the provider payment mechanism might influence that care: for example, when a government is an important purchaser of health in a country, the government can consider reforming the way it pays providers in order to encourage those providers to improve quality. Service quality improvements are not only likely to result in better patient outcomes, but also may lead to increased demand for services by the community.

As demonstrated through a growing body of evidence, more and more purchasers of health care services in low- and middle-income countries – such as local, regional, and national governments – are using provider payment mechanisms to incentivize providers to continually improve the quality of maternal health services at the point of care. Increasingly, those who pay for health services are moving from being passive payers to active purchasers of quality health services.

Between 2015 and 2016, the USAID-supported Health Financing and Governance (HFG) Project performed a literature review (Wright 2016) to further explore the link between provider payment and maternal health service quality in low- and middle-income countries. The review analyzed 17 cases in which provider payment was employed as a mechanism for incentivizing providers to improve maternal as well as other health service quality. HFG found that the existing provider payment literature provides few details as to how the provider payment mechanism promotes better quality for maternal health services at the point of care. How well provider payment changes are implemented may be a critical factor in raising the bar on quality.

The main purpose of this paper is to encourage policymakers and the quality of care community to consider provider payment mechanisms as part of their policy toolkit for improving quality of maternal

[1] http://www.who.int/gho/maternal_health/mortality/maternal_mortality_text/en/
[2] http://www.who.int/gho/maternal_health/mortality/maternal_mortality_text/en/
[3] http://www.un.org/sustainabledevelopment/health/
[4] http://data.worldbank.org/indicator/SH.STA.MMRT
[5] http://www.un.org/sustainabledevelopment/health/

health service delivery. To do so, it draws from practical experiences of programs in three countries – the Kyrgyz Republic, Nigeria, and Zambia. In each country, improving quality at the point of care was one of the main motivators for redesigning the provider payment mechanism. The paper documents these programs' experiences with provider payment change design and implementation, and describes them in a way that will be helpful for policymakers in other countries and settings who seek to improve quality at the point of care to ultimately improve patient health outcomes. Each country case study draws from a pre-established framework developed by Eichler and De (2011) to highlight important steps in how these three countries designed and implemented provider payment incentives. While much of the provider payment literature speaks to health financing experts, quality experts are increasingly interested in learning how the incentives inherent in different provider payment mechanisms can further the quality agenda.

The next section (Section 2) defines quality within the context of global health – and specifically maternal health – service delivery. It also sets out a conceptual framework that highlights links between provider behavior and service quality, and explains how provider payment changes may be used to try and incentivize provider behavior that positively impacts maternal health service quality. Section 3 summarizes Eichler and De's (2011) provider payment design framework. Section 4 delves into the details of provider payment mechanism design and implementation in the Kyrgyz Republic, Nigeria, and Zambia. The final section (5) discusses key findings around provider payment design and implementation from the case study experiences, draws lessons for countries embarking on similar programs, raises study limitations, and concludes.

2. BACKGROUND

2.1 How do we define high-quality maternal health care?

Wright (2016) explores commonly used definitions of quality, three of which (Hulton et al. 2000; WHO and PMNCH 2014; and Austin et al. 2014) best fit this analysis. The authors feel strongly that quality must include an equity component, as per Hulton et al. (2000): quality maternal health services are "the degree to which maternal health services for individuals and populations increase the likelihood of timely and appropriate treatment for the purpose of achieving desired outcomes that are both consistent with current professional knowledge and uphold basic reproductive rights." As per WHO and PMNCH (2014) "high quality services" also are only considered so when they effectively address both input- and process-related aspects of care. Finally, services can only be considered high quality if, as per Austin et al. (2014), inputs are present at all levels of the system: from community, to district, to facility.

2.2 Provider behavior and quality service delivery

How providers behave and the actions they take are critical elements of high-quality service delivery (WHO and PMNCH 2014, Austin et al. 2014). Indeed, many quality improvement models are based on the premise that improving quality depends on provider actions (Dayal and Hort 2015). To ensure quality, health workers should be enabled and incentivized to adhere to evidence-based practices for routine care and management of complications, to refer to higher levels of care appropriately, and to provide patient-centered care. Other critical elements, such as leadership and supervision, are influenced directly by the behavior of health facility managers. Managers may also exercise influence over other contributors to service quality, such as health sector infrastructure or commodity availability, by appropriately managing the facility's budget and procurement activities.

2.3 Seeking improvements in provider behavior can be crucial

Given the strong links between many elements of quality and provider behavior, optimizing health care provider performance is a key strategy for improving quality. A review by Miller and Babiarz (2013) found examples where suboptimal provider performance contributed to lower quality of care; these include absenteeism, the "know-do gap" (failure to actually do what a provider knows he/she should be doing), providing unnecessary or incorrect services, failing to provide recommended prevention and outreach, and not referring to higher levels of care that have the ability to manage emergencies when needed. Although providers in resource-poor settings certainly face immense challenges and barriers, there often is room for improvement that is feasible within current resource constraints.

2.4 How might provider payment be changed to try to improve service quality?

In many settings, health service purchasers (e.g., local or national governments) may have an opportunity to influence provider behavior to incentivize quality improvement by adjusting payment mechanisms. Performance-based payments – in this case, for providers – are "monetary payments or other material rewards that are provided on the condition that one or more indicators of performance change, that predetermined targets are met, or both" (Eichler and Levine 2009). These payments might be made to a health care facility (for use by the health manager) or to health care workers directly to motivate them to improve the quality of their services in order to reach performance targets and to attract and retain more patients. The financial incentive can take various forms, such as paying the provider a bonus above the guaranteed salary, withholding payment when unnecessary or inappropriate services are rendered, or assessing a penalty on fee-for-service (FFS) or capitation payments. It could also take the form of an opportunity for more business, such as getting accredited to participate in a health insurance scheme or voucher program if the provider meets quality standards.

2.5 Using provider payment to improve service quality: A review of the evidence

In a recent literature review, Wright (2016) identified and described 17 programs in which the major objective of the provider payment initiative was to incentivize providers to improve quality of care, including maternal health care. As part of these initiatives, health systems managers regularly measured quality of health services, and based all or part of the provider's payment on quality measurements.

Wright's review found that quarterly bonuses are a common mechanism for incentivizing provider quality: 13 of the 17 initiatives used such bonuses. Most initiatives calculated the bonus using a quality score to either inflate or deflate the potential bonus, which was derived from a FFS model. That is, a health facility could receive a fee (beyond the provider salary and other input-based funding it received) for each service output, plus or minus a penalty or additional bonus based on the facility's quality score. Other initiatives calculated the bonus on a payment model other than FFS, such as achievement of a target (Senegal), or an inflation factor on a global prospective budget (Rwanda). Quality scores could be based on 1) preconditions for delivering quality care, that is, structural measures such as health worker and drug availability, 2) clinical care processes and patient interactions, or 3) some combination of both structural and process measures.

While the low-income country initiatives identified by the review primarily used a quarterly bonus provider payment mechanism, some middle-income country initiatives combined quality measurement with different types of payment mechanisms. For example, in Argentina's Plan Nacer, provinces were purchasers of quality health services. These provinces received payments based on the province's facilities' performance on tracer indicators that depended heavily on quality of care delivery. The provinces then paid facilities on a FFS basis for providing services. The provinces were incentivized to ensure that the facilities provided high-quality services that would improve the province's performance on the quality of care tracer indicators (Gertler et al. 2014). In another program, hospitals in China received part or all of a withheld portion of their fixed budget on the basis of the findings from a year-end quality assessment. In a program in India, private obstetric providers could receive an annual bonus based on their having met quality targets (Miller and Mohanan 2013). As will be discussed in more detail in later sections, in the Kyrgyz Republic, results from periodic quality assessments modify diagnosis-related group (DRG) claims reimbursed to hospitals.

Programs identified by the review assessed a variety of quality domains across several health areas. Common domains represented structural and process indicators such as infrastructure, medical technology, and commodity inputs; patient-centeredness; content of care; appropriate referral; and human resource-related issues, such as appropriate level of staff performing more complex procedures. Most programs relied on a combination of the following methodologies: direct observation of clinical encounters, direct observation of structural inputs, and review of patient records. Five of the 17 cases identified (China, India, Tanzania, Uganda, Zimbabwe) also used patient surveys.

Impact evaluations from several cases found evidence that basing provider payment on quality promoted better management and governance, thereby encouraging quality at the point of care (Toonen et al. 2009; Janssen et al. 2014; Health Partners International 2015; Friedman et al. 2015). Evaluations also found evidence that basing provider payment on quality promoted better care processes, which further contributed to better quality at the point of care (Gertler et al. 2014; Basinga et al. 2011; Bonfrer et al. 2014; Sherry et al. 2013; Toonen et al. 2009). Findings from the review also suggest that quality improvements linked to provider payments may be most effective for encouraging better delivery of care once the patient is already at the facility (Gertler and Vermeersch 2012).

3. THINKING THROUGH, DESIGNING, AND IMPLEMENTING PROVIDER PAYMENT CHANGES: A PATHWAY FORWARD

As overseers of the health system, policymakers are responsible for identifying and addressing problems in the health system. This paper discusses how policymakers might address poor quality of care by reforming the provider payment mechanism to align the incentives inherent in the system with the desired output of high-quality service delivery. It reviews initiatives where the main problem is low point-of-care maternal health service quality. As previously discussed, this low quality at the point of care can lead to poor outcomes for patients and simultaneously discourage health-seeking behavior in the population. Health-seeking behavior is particularly important for maternal and newborn health because many services that contribute to better outcomes are preventive in nature.

This section proposes a pathway for governments and program managers to take, as well as key program design features to consider, when building or reforming a provider payment mechanism. This pathway incorporates practical steps identified by Eichler and De in their 2011 framework for setting up a performance-based financing system. It goes on to briefly discuss key program design features that that policymakers might consider: first, how problem identification can inform provider payment mechanism changes, and second, how to design the roll-out of provider payment reforms. The real-life experiences of the Kyrgyz Republic, Nigeria, and Zambia with these critical steps are shared in Section 4.

3.1 Identifying problem to inform a redesigned provider payment mechanism

When considering service quality and how it might be strengthened to improve health outcomes, policymakers need to 1) analyze available evidence and root causes of poor service quality, 2) examine how providers are currently being paid to explore whether shortcomings from the current payment mechanism are contributing to poor service quality, and 3) determine whether an alternative payment mechanism might be appropriate to resolve the root causes of poor quality – and be feasible to implement (Box 1).

Box 1: Behaviors that May or May Not Change with Payment Change

Incentives have been shown to improve the provider know-do gap, decrease absenteeism, and decrease under-investment of available funds by facilities. However, while some provider behaviors can be improved through a better incentive environment, tying quality measurement to provider payment will not solve all systemic issues. Lack of health worker knowledge, lack of health provider autonomy to use funds for upgrading facilities, and certain systemic supply chain issues, human resource shortages, or demand-side barriers to health care utilization and access may be outside of the providers' control and therefore would not be addressed through behavior change motivated by financial incentives.

3.2 Designing the provider payment initiative: Six important steps

Once policymakers have decided to introduce a new provider payment mechanism or simply to modify the existing one, Eichler and De (2011) suggest six key steps they should follow to ensure they design a realistic provider payment initiative:

1. Determine payment recipients and how to select them.
2. Determine indicators and targets, and how to measure them.
3. Determine payment mechanisms, sources of funding, and funding flows.
4. Determine the entity(ies) that will manage the initiative and how to make it operational.
5. Develop an advocacy strategy and identify immediate next steps.
6. Design the initiative to be dynamic, not static. Build processes to allow for future changes and refinements.

3.3 Implementing the initiative: Elements to consider

To ensure buy-in and successful implementation of the new provider payment design, policymakers leading the initiative must identify important stakeholders and engage them early on to inform them, seek agreement, and address concerns head-on. They also must determine how the initiative best fits within the country's current legal and regulatory framework, and if any regulatory changes are necessary prior to initiative implementation. One design step laid out above was to make the payment mechanism a dynamic, not static, process. Even when designers have done everything "correctly" – engaged technical experts, brought a variety of stakeholders on board early in the process, and so forth – unanticipated circumstances may arise during implementation. It is helpful if the initiative has built-in processes that expedite future modifications.

The following section provides an overview of how the three case study countries grappled with design and implementation issues once they opted for changes in provider payment with the aim of incentivizing behaviors to improve the quality of maternal health services.

4. CASE STUDY METHODOLOGY, RATIONALE, AND FINDINGS

4.1 Methodology

The study team conducted detailed case studies[6] with the goal of exploring in more depth two provider payment mechanisms: 1) DRG payment levels modified by quality in the Kyrgyz Republic, and 2) FFS-derived bonus with an inflation factor based on quality in Nigeria and Zambia. Sources of information for each case study were of two main types: publicly available materials, such as program reports, evaluation reports, meeting minutes, presentations, news articles, and other formal and gray literature in the public domain, and semi-structured interviews[7] with five key informants who were managers and designers of each quality-linked payment system. Some of the people involved in the early design and implementation phases were not available to consult, so the team relied heavily on written information in the public domain. Another unforeseen limitation of the study was that Zambia's initial bonus that was modeled around a quality deflation factor ended up being revised to an inflation factor. Although Nigeria and Zambia's cases share some design similarities, at least for now, there are few examples of large-scale quality improvement initiatives closely linked with a provider payment mechanism. These three cases still provide a diverse set of experience of how countries are trying to move the bar on improving quality of maternal health services at the point of care.

All three case studies addressed in this paper represent programs aiming to improve health care provision, including the quality of service delivery, through implementation of innovative provider payment mechanisms. The execution of these programs was funded through the Health Results Innovation Trust Fund (HRITF), created in 2007, supported by the Governments of Norway and United Kingdom, and administered by the World Bank.[8] As part of the HRITF, each program included a rigorous impact evaluation including intervention arm(s) and control arm(s) to help measure the effect of the provider payment intervention, so that in the near future the world will learn whether these types of design have had the intended impact. This paper focuses on describing the provider payment intervention and does not describe the results of impact evaluations. Those results are or will be made available through other channels.[9]

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[6] Selection criteria used to choose the three country examples were as follows: 1) at least two of the cases are set in countries that USAID targets as part of the "Ending Preventable Child and Maternal Deaths" program, 2) each case represents a different payment design type, 3) the payment system is currently being implemented in all three countries, and 4) each case has interesting or unique lessons to share related to maternal health service delivery quality.

[7] One limitation of this work is that some individuals involved in the initial design and early implementation were not available to interview. Attempts to capture these early lessons were made but, in some cases, it was not possible to capture this institutional memory.

[8] https://www.rbfhealth.org/mission

[9] Impact evaluations carried out to date are available at https://www.rbfhealth.org/impact.

4.2 Case study rationale

The case study analysis sought to understand three main issues better, namely:

1. What was the rationale behind introduction of the quality-based provider payment model in each country?
2. How did countries go about design and implementation? What challenges arose and how were they overcome? What factors positively or negatively affected implementation of the payment model?
3. What practical lessons are there for policymakers and donors for potential replication or adaptation of provider payment mechanisms in other settings?

4.3 Case study findings

Table 1 provides a snapshot of the new provider payment mechanisms in the Kyrgyz Republic, Nigeria, and Zambia. This snapshot is followed by succinct descriptions of provider payment change design and implementation in the three case study countries.

Section 5 will discuss key takeaways from the three case studies with the aim of providing practical lessons and tips for policymakers and program managers seeking to ensure that large payers in the health system purchase high quality services.

Table I: Features of Provider Payment Mechanisms in Case Study Countries

Country	Program Time Period	Program Funders and/or Implementers	Payment Type	Who Approves Payment?	Who Receives Payment?	Process for Determining Whether Quality is Met and Payment Made	Quality Review Frequency	Do Payment Recipients have Autonomy for Use?
Kyrgyz Republic	Pilot since 2012: RBF project approved 4/13; Parliament ratified in 2014, closing 6/17	World Bank HRITF	Modified DRG payment	MHIF, as authorized by Extended RBF Operational Team	Rayon hospitals	Balanced score card approach (29 indicators) by peers from similar hospitals	Quarterly	Yes
Nigeria	Pilots began in 2011; scale-up within three states in 2015; ongoing, impact evaluation	Nigerian MoH, State MoH in three states: Adamawa, Nasarawa, and Ondo; World Bank HRITF	FFS-derived bonus with quality-linked inflation factor	LGA RBF Steering Committees	State hospitals and health centers	Local gov. authorities apply checklist to health centers Peer mechanism for hospitals Direct observations; record & register review	Quarterly review (quarterly payment to facilities; monthly to individuals)	Yes. 50% of payment to providers/50% to facility for maintenance, equipment and drugs
Zambia	Pre-pilot in Katete district (2008-2010); then roll-out to 10 pilot districts (2012-2014)	Zambian MoH; World Bank HRITF	FFS-derived bonus with quality-linked inflation factor	Provincial RBF Steering Committee	District hospitals and rural health centers	DMO applies checklist to health centers Quality audit conducted by peers from referral hospitals contracted by DMO	Quarterly	Yes

Note: RBF=results-based financing, MHIF= Mandatory Health Insurance Funds, MoH=Ministry of Health, LGA=Local Government Area, DMO=district medical office

4.3.1 Kyrgyz Republic case study overview

Poor quality of maternal health services and consideration of payment change

In the Kyrgyz Republic, while the maternal mortality ratio is much lower than in the two other case study countries, it remained stubbornly within the 54-57/100,000 range in the 2006-2011 timeframe,[10] despite the fact that the country performed exceptionally well with regard to the percentage of live births who received antenatal care from a skilled provider (97 percent), and the percentage of live births delivered in a health facility (98.8 percent).[11] More than 80 percent of maternal deaths resulted from direct obstetric complications, such as hemorrhage, eclampsia, or sepsis, and, in the majority of cases the cause of death was "inadequate, untimely or improper emergency obstetric care, not in line with the national clinical protocols" (Francis 2015).

The country prioritized improvements in maternal health through the 2006-2011 Manas Taalimi Health Programme that focused on Millennium Development Goals 4 and 5, and that significantly improved health service utilization and equity and decreased out-of-pocket payments (Francis 2015). Prioritization of maternal health continued under the 2012-2016 Den Sooluk Health Programme, which has four areas of core emphasis, including maternal health. However, despite this prioritization, in 2015, the Kyrgyz Republic had the highest maternal mortality ratio in the Eastern Europe and Central Asia region (Francis 2015). Given this situation, and that root causes of poor service quality included provider-related issues (one interviewee pointed out that the workforce was not sufficiently trained, and lacked both sufficient knowledge and skills), the Government of the Kyrgyz Republic began to consider innovative financing as a mechanism to incentivize behaviors to improve maternal health outcomes (Box 2). In 2012, a three-year US $11 million maternal and child health pilot project began. In 2014, Parliament ratified the country's health sector results-based financing (RBF) project that was explicitly meant to motivate improvements in quality and, ultimately, reduce Kyrgyz's persistently high maternal and neonatal death rates.[12]

Box 2: Deciding to Implement Provider Payment Changes

"The World Bank had discussions with the government. They identified that most mothers who go to a health facility to give birth choose to go to the oblast hospital, which is at the frontline within the health system. That's where most maternal and neonatal care is being delivered. And that's the level where improvements in [quality of care] were most needed. Yet there were hardly any quality of care initiatives other than supervision, which itself was not at all consistent and which focused more on administrative matters." (Key informant interview)

[10] See detailed analysis in http://documents.worldbank.org/curated/en/144551468272049269/MDG5-MDG-acceleration-framework-for-the-Kyrgyz-Republic-progress-update-and-policy-recommendations

[11] Percentages, from the Demographic and Health Survey 2012 (NSC et al. 2013), apply to the five years preceding the survey.

[12] http://programs.jointlearningnetwork.org/content/mandatory-health-insurance-fund-mhif

Payment to rayons: Before performance component introduction, and after

Prior to the introduction of quality-linked payments, *rayon* (district-level administrative unit) hospitals had traditionally been financed through DRG case-based payments.[13] The payment mechanism was not linked to quality. The technical working group decided to incorporate the quality payment into the pre-existing DRG payment system, so that no new payment system needed to be created. Instead, hospitals that perform well on quality assessments therefore receive increased quarterly DRG payments. These bonuses are funded through the World Bank-administered project and channeled through the Mandatory Health Insurance Funds (MHIF) acting as a single payer.

Rayon hospital bonus allocation

Initially, rayon hospital facility management did not have decision-making autonomy over use of performance-based payments, but that has changed over time. Currently, facilities can spend up to 25 percent of the bonus for staff incentives, in accordance with guidelines. Facilities are not allowed to use more than 40 percent of the payment for infrastructure improvements. Other than that, how the payment is spent is to a large degree up the facility.

Getting the pilot off the ground

A technical working group led by the government and involving all donors was formed early on in the pilot process to oversee provider payment design and implementation. Following a pre-pilot in one hospital that lasted approximately a year and a half, through which program architects and policymakers developed and tested the tools and procedures, the Health and Social Protection Project launched in late 2013. The project allocated 63 rayon hospitals to one of three study groups as part of a prospective, robust impact evaluation. Twenty-one rayon hospital pilot payment recipients were selected via a lottery (personal communication, Son Nam Nguyen). Data have been collected on a quarterly basis since July 2014.

Roles and responsibilities

A National Steering Committee, whose membership includes representatives from the Ministry of Health (MoH), Ministry of Finance, and MHIF, oversees the project and is the policy decision-making body over all provider payment mechanism matters. More specifically, the MoH is responsible for the policy decision-making process and overall coordination of the project. The MHIF is responsible for purchasing health services from providers through signed contracts, and specifying fund disbursements based on provider performance, as authorized by an Extended Results-Based Financing (RBF) Operational Team, whose members include: the Kyrgyz RBF Secretariat, an implementation team, and a representative of the impact evaluation team.

The RBF Secretariat is housed within the MoH and is responsible for day-to-day project implementation. The Implementation Team (members: MoH, MHIF, professional associations, NGOs, and development partners) works with the RBF Secretariat, meets on a monthly basis to coordinate project implementation, acts as the observer during quarterly peer reviews, and participates directly in the counter-verification team. The Impact Evaluation team is responsible for generating evidence for decision-making by the MoH and MHIF.

[13] DRGs are one type of hospital payment mechanism. DRGs classify cases according to: principal and secondary diagnoses, patient age and sex, the presence of co-morbidities and complications and the procedures performed. Once a hospital inpatient receives a diagnosis and care affiliated with treating and managing the diagnosis, the hospital submits a claim for reimbursement for the amount of the appropriate DRG reimbursement rate (Mathauer and Wittenbecher 2013).

Developing a tool to measure and monitor quality

Over time, and after much discussion, the technical working group adapted a balanced score card to measure quality of care in hospitals on a quarterly basis. The quality-related bonus is tied to the DRG, so therefore it is also tied to quantity/overall care volume (e.g., the score on the balanced score card is applied to the standard DRG payment).

The balanced score card development process in the Kyrgyz Republic involved over a year of debate to reach consensus among stakeholders (Box 3). The technical working group studied examples of balanced score cards from other countries, but determining which parts were relevant for Kyrgyz hospitals was a challenge. A large part of the tool development process involved identifying the root causes of poor quality that could be addressed at the facility level. Discussions tended to get stuck at high-level issues, and quality of care experts identified a need to bring all stakeholders on board with recent developments in the quality assurance and quality improvement disciplines. Some of the stakeholders had never been involved in this kind of exercise and they came to the table with very different views. Others were unclear as to why performance indicators and weights should be periodically revised (e.g., as performance in some indicators improves, the weight given to those indicators can decrease to shift priority to other indicators for which performance had not yet improved). For indicators more difficult to change, stakeholders debated whether to take an "all or nothing" approach. Some stakeholders thought that approach might be demotivating for providers, and that indicators therefore needed to be broken down with each criterion having its own score that would then contribute to a total score. Others thought that the balanced score card included too many indicators. Another challenge was that some stakeholders joined the development process late and had difficulties accepting what had already been debated and decided. Those stakeholders who had been involved from the start were very attached to the decisions already made, which resulted in some friction.

> ***Box 3: Choosing Balanced Score Card Indicators in Kyrgyz Republic***
>
> *"The technical working group debated the experience of OECD countries where 'they do not worry too much about structural quality [e.g. they won't pay (a quality bonus) for availability of drugs or for cleanliness]. They focus on processes and outcomes. At the other extreme (e.g., Rwanda), quality indicators are mostly structural'…So a debate ensued: 'what should Kyrgyzstan do? It's a low-income country, so should it not focus on structural indicators, the way it is being done in Africa?' Others said, 'No; this country already has a DRG system! We need to play for clinical processes, for the content of care. For what the health workers actually do.'" (Key informant interview)*

Ultimately, the balanced score card implemented in rayon hospitals under the pilot program included 29 composite indicators capturing both structural dimensions and clinical processes in quality of care. Structural dimension indicators covered hospital management, quality assessment activities, availability of inputs (drugs, equipment, supplies, blood products), and hygiene/cleanliness. Clinical process indicators included criterion-based clinical audit for 1) normal and complicated deliveries, and 2) for normal and

complicated neonatal care.[14] The balanced score card had targets for some indicators; these targets were the same for all hospitals, not specific to each facility, and thus not dependent on each facility's baseline.

After a July–August 2015 peer review, new tools were added to supplement the balanced score card in a move toward motivating improvements in clinical processes; these tools included clinical vignettes to test provider knowledge (see Box 4) and knowledge, attitudes and practices (KAP) surveys to specifically assess the extent of lack of clinical skills, the attitudes of young doctors, and bottlenecks in the system.

Box 4: Supplements to the Balanced Score Card

"There is a trade-off. On one hand, you don't want to make major modifications (to the quality measurement too, in this case the balanced score card) too frequently, as providers get used to a certain instrument. At the same time, however, you discover issues in the system/tools as you implement, and there is a need to address those issues. (We) had an indicator relating to kits for EmOC (Emergency Obstetric Care). When…the project started, not all hospitals had those kits, or kits were incomplete. Over time, thanks to the fact that the availability of the kit was included in the balanced score card, all hospitals had the kit. Yet, quality had not improved. (Management) tried to find out why by introducing simplified vignettes (that revolve around a EmOC knowledge-based test)…(as a result, tests) became an extra line in the balanced score card and weights also changed (with less emphasis on hospitals having kits, and more on use of the EmOC knowledge tests)." (Key informant interview)

Who measures quality, and how?

Measurement and monitoring of rayon hospital indicator achievement took place quarterly via a peer team review process. Hospital participation in this process was mandatory, and factored into the hospital performance score. Quality measurement teams were composed of senior clinicians, the chief nurse, and chief accountant. These individuals from each of two rayon hospitals evaluated a third hospital. Teams rotated to minimize the potential for collusion. MoH officials, development partners, and MHIF officials participated regularly in the process as observers. In addition, an extended technical team conducted a semi-annual results counter-verification process. The team, composed of the MoH, the MHIF, the RBF Secretariat, and development partners, applied the same balanced score card in a random sample of facilities.

Implementation of the provider payment system and associated quality measurement process revealed that a pre-existing process in hospitals – quality improvement internal audits – had not been taking place regularly in practice. Launch of the provider payment mechanism motivated and strengthened quality improvement committees to assume their important role in the hospital's ongoing management and operations.

Regulatory adjustments may be required down the line

In the Kyrgyz Republic, the provider payment bonus was an add-on to an existing DRG payment infrastructure; thus no regulatory adjustments were necessary. Introduction of the balanced score card during the pilot phase did not require regulatory change either; however, as funding shifts from the World Bank to the government or the health insurance budget, the government will need to explore what regulatory adjustments might need to be made.

[14] For example, for a normal delivery, clinical process quality indicators are considered met when oxytocin is administered within one minute of delivery, when controlled cord traction and uterine massage take place, and when blood loss is recorded.

Additional performance-based planned interventions going forward

The new performance-linked hospital payment program helped convince the Kyrgyz government that incorporating incentives linked to quality into provider payment mechanisms can raise the bar on service quality; as a result, this experiment will soon be expanded to lower tiers of care. The government is currently planning to implement service quality (and quantity) -related provider payment changes for the primary health care level (where providers are paid by capitation). This pre-pilot will initially be implemented in one rayon.[15] This new primary health care payment will include rewards for improvements in quantity of tuberculosis and hypertension cases detected, modified by a balanced score card. A counter-verification process similar to that used in the hospital pilot will be developed for the primary health care level.

4.3.2 Nigeria case study overview

Poor quality of maternal health services and consideration of payment change

Nigeria's maternal mortality ratio is one of the highest in the world, reaching 576/100,000 according to the 2013 Demographic and Health Survey (CSO et al. 2014), and as high as 814/100,000 in 2015 according to others (WHO et al. 2015). The percentage of births attended by skilled health staff is very low, and has hardly increased since 1990: from 32 percent to 38 percent. [16] Prenatal coverage is also poor; the percentage of women receiving prenatal care actually decreased from 79 percent in 1986 to 61 percent in 2013.[17]

In Nigeria, primary health care facility service utilization was extremely low when the altered provider payment mechanism was launched in 2011. The government and donor partners suspected that poor service quality was one of the main causes for this. Poor service quality resulted from inadequate infrastructure, low availability of drugs and basic equipment, shortages of human resources, and poorly motivated health workers. As a result of poor public sector service quality, those who could afford to would seek care at private facilities, and those who could not afford to would seek care at higher-level public facilities.

Findings from a number of studies, including a comprehensive health sector review in 2011, highlighted the fact that health sector investments in Nigeria primarily supported infrastructure, supplies, and medicines. This came at a time when Nigeria was increasingly thinking about focusing on results, and considering various options. Prior to introduction of a performance-based provider payment, health workers in Nigeria were paid solely by salary. The additional provider payment mechanism was introduced to motivate behavior to incentivize both improvements in quantity and quality.

Initial decision-making

Prior to introducing provider payment changes, the Nigerian MoH and primary health care stakeholders took study tours to Rwanda to better understand the performance-based financing experiences of those two countries. As a direct result of the tours, Nigeria chose a payment mechanism similar to those in Rwanda and Burundi – a payment bonus tied to both service quantity and quality. Upon return to Nigeria, authorities commissioned a report from the Oxford Policy Management Institute on the political economy and institutional assessment in different parts of the country. The assessment revealed the importance of buy-in by all stakeholders, from the government at all levels, the trade unions, and

[15] https://www.rbfhealth.org/project/kyrgyz-republic
[16] http://data.worldbank.org/indicator/SH.STA.BRTC.ZS?locations=NG
[17] http://data.worldbank.org/indicator/SH.STA.ANVC.ZS?locations=NG

health facility workers. Possibly as a result of this finding, actors at all levels of governments – the federal-level MoH, the state-level MoHs, the State Primary Health Care Development Agencies, the Local Government Area (LGA) Primary Health Care Departments – have been given key roles in the implementation of the program.

Establishing pilots

The Nigerian State Health Investment Project (NSHIP) added a FFS-derived bonus with an inflation factor based on quality to the salaries received by health workers in state hospitals and health centers. Based on recommendations from the Oxford Policy Management Institute assessment, Nigeria initially anticipated focusing on just one state. That assessment "tested the waters… (and) asked people (about) their appetite for (a) connection with results" (key informant interview). Following design decisions and overall approval, three state-government partially-funded "proof-of-concept" pre-pilots were launched (one LGA/state in three states) in 2011, and scaled up to additional LGAs within those states in early 2015. The program currently covers regions where approximately 14 million Nigerians live. Scale-up to five additional states in the north of the country is planned for 2017.

The three states – Ondo, Nasarawa, and Adamawa – were selected based on the fact that they: 1) had strong governance capability and commitment; 2) had greater health needs; and 3) expressed a willingness to use RBF approaches. Selection of these three states also ensured geopolitical representation and filled gaps in donor support (as well as avoided duplication).

The pilot was established as a pre-post evaluation with comparison, with three types of LGAs. Facilities were chosen in line with the organization of the Nigerian health system: one primary health care facility per ward (smallest political/administrative unit); one general hospital per LGA. Over time, managers realized that some wards are quite large, so a system was developed whereby a main contractor within a ward can subcontract to other facilities, so project scale-up currently has more than one primary health care facility/ward. Thirty-six facilities in total (33 primary health care facilities and three general hospitals) are involved in the pilot.

An explicit launch took place at the time of payment mechanism change; it involved community members, religious leaders, and other stakeholders, and served as an opportunity to increase awareness among the providers and the local populations about the changes at facility level.

Roles and responsibilities

In Nigeria, the World Bank provides project funding and technical assistance. The Nigerian Federal MoH is responsible for selecting and contracting the independent evaluation firm for the periodic household and facilities surveys. It also collaborates with the National Primary Health Care Development Agency (NPHCDA) on the HMIS and operations research, and manages the project impact evaluation. The National Primary Health Care Development Agency is responsible for overseeing technical assistance to the project. Ondo, Nasarawa, and Adamawa State MoHs are responsible for planning, managing and monitoring project activities, while State Primary Health Care Development Agencies (SPHCDAs) house the State Project Implementation Units, which liaise with all implementing agencies, track and report progress on the project, verify that all project requirements are observed, serve as the focal point for communication with the World Bank, coordinate a dissemination campaign, and troubleshoot and mobilize technical assistance. LGA RBF Steering Committees are responsible for approving and making performance-based payment to facilities, monitoring the mechanism for targeting services to the poor, and providing management support to project implementation. Facility RBF Committees and General Hospital RBF Committees are responsible for monitoring service quality and delivery at health facilities, overseeing the quantity and quality performance of health centers, approving and monitoring the implementation of facility level business plans, approving the utilization of funds received, reviewing and

approving the performance appraisal of health workers, and appointing indigent committees. From state to state, there are slight differences in management, because the partners working there are different (i.e., UNICEF in one area, Bill and Melinda Gates Foundation in another, UNFPA in another).

Provider payment design

Performance-related payments are the sum of the fees for the quantitative outputs, plus the quality bonus of up to 25 percent of the quantitative output earnings. When a facility receives a quarterly quality score of 100 percent, that facility receives the full (25 percent of quantitative output earnings) payment for that quarter. When the quality score is 49 percent or less, the quality bonus is automatically 0. When the score falls between 50 and 100 percent, payment is prorated. Facilities receive penalties on future bonuses if fraud is detected. Each Ward Development Committee, alongside the officer in charge of a given facility, decides how to spend the bonuses. Up to 50 percent of the facility bonus can be shared with individual health care workers. The 50 percent amount was decided based on the fact that Nigerian health worker salaries are quite good compared with colleagues throughout Africa, and a relatively high bonus was considered necessary to motivate them. Providers receive these bonuses monthly, with adjustments quarterly after the quality assessment has been conducted.

Indicator details

Nigeria developed 15 indicator modules; some revolve around a type of intervention, others cover issues such as governance or financial management. Indicators are a mix of facility management indicators, infrastructure/ technology/ equipment indicators,[18] personnel-related indicators, clinical care process indicators,[19] and content of care indicators.[20,21]

Assessing quality

Health facility quantitative outputs with unit fees are reported by hospital and health facilities and verified monthly. Quality is assessed quarterly. At the health center level, local government health authorities apply a quality checklist[22] ; at hospitals, quality is measured through a peer-evaluation mechanism where technical and administrative staff from other hospitals peer-evaluate each other's performance. Representatives from the State MoHs, SPHCDAs, and civil society also participate in the evaluation process. Measurement methods include direct observation and reviewing patient records and registers.

[18] An example at health center level is sufficient water with antiseptic soap and liquid antiseptic in delivery room, a functioning water source, or at the least 20L of clean water.

[19] An example at health center level is availability and use of partographs: at the least 10 forms should be available for use, and evaluators should verify three randomly selected partographs to determine whether they are completed according to norms.

[20] An example at hospital level within an inpatient care ob/gyn ward is: when reviewing a systematic random sample of 5 patient files from discharged patient who have delivered from the delivery register from the last quarter, evaluators should find the following: justification of clinical diagnosis and elaborate description of obstetrical proceedings (post-partum hemorrhage; pre-eclampsia; premature birth, etc.), as well as compliance with Médecins Sans Frontières' obstetric guidelines.

[21] For the full quality checklist and scoring methodology for health centers and general hospitals, refer to: https://nphcda.thenewtechs.com/cside/contents/docs/PBF_User_Manual-_2014.pdf.

[22] See https://nphcda.thenewtechs.com for the quality checklist and scoring method used by NSHIP.

The pilots in Nigeria also had an external verification component, whereby clients were selected from health facility records (registers) for tracing into the community to: 1) confirm that services were received, and 2) measure perceived quality. NSHIP additionally uses peer evaluations to counter verify the performance of RBF facilities.

Initial findings revealed that structural indicators improved quickly as facilities used bonus funding to rapidly fill gaps in equipment, to purchase medicines and other supplies, and to make repairs to infrastructure. The quality checklist has thus already been twice modified along the way, to include more clinical process indicators (see Box 5). Currently 60 percent of indicators are structural, while 40 percent are related to process and content of care. Nigeria intends to focus further on health worker knowledge through introduction of clinical vignettes that assess how health workers handle certain illnesses.

Box 5: Reviewing and Updating the Checklist

"We see that indicators around structure very quickly improve; if [the facilities] don't have the equipment, buy it, fix things…we want to move towards process. [We have] done the review of the checklist twice now, revised each time, go along with improvements in quality. [Reviews caused modifications] which caused quality measures to go down because the checklist changed." (Key informant interview)

The Nigerian RBF project also rewards LGAs for performing management responsibilities for the payment initiative, such as performing quarterly quality assessments and reviewing health facility business plans. The SPHCDA evaluates the LGA quarterly using a performance framework of seven indicators related to fulfillment of process and management duties.

Funding bonuses

The World Bank currently funds the provider payment bonuses, yet this will likely change going forward. An upcoming mid-term review will specifically explore alternative sources of future funding. Options include state or federal lines of funding, and using insurance to cover some costs. The World Bank is helping to identify options, and some development partners are also interested in providing support.

Anticipated modifications to the program

Nigerian authorities have been actively monitoring and reviewing data related to facility performance and project implementation. Oxford Policy Management has been conducting biannual assessments. Data and assessment feedback are discussed during quarterly meetings and annual reviews, and adjustments have been made along the way. Currently the team is working toward an electronic checklist and away from the current paper-based tool.

4.3.3 Zambia case study overview

Poor quality of maternal health services and consideration of payment change

Zambia struggles with low coverage and utilization of certain high-impact maternal health services. At 398 maternal deaths per 100,000 live births, the maternal mortality ratio is unacceptably high. While nearly 95.7 percent of pregnant women received at least some antenatal care from a skilled provider in 2013/2014, only 67.4 percent delivered in a health facility (CSO et al. 2014).

At the time of provider payment change consideration, the root causes of poor maternal health service quality in Zambia were both structural and provider-behavior-related. Structurally, a lack of supplies – particularly as pertains to safe delivery – caused concern among health system managers and development partners. From a behavior standpoint, Zambia's health system was operating below capacity as a result of high levels of absenteeism and tardiness, low productivity, and poor morale among health workers in some areas. The system for district managers to mentor and supervise health care

facilities was not fully functional. Experts also reported a know-do gap among health workers that influenced the quality of care delivered at facilities – for example, a health worker might understand the purpose and use of a partograph in principle, but not put it into practice.

Health facility payment prior to introduction of performance component

Health facilities in Zambia were financed through a monthly operational grant to cover recurrent operation activities, outreach, and purchase of goods and services. The grants were allocated on the basis of the health facility's catchment population, and facilities would receive those grants regardless of the quality or actual quantity of services actually delivered. The government also financed health facilities in the form of health worker salaries. District Management Offices were responsible for overseeing service delivery at health facilities in the district.

Motivation for change

In 2009, the Government of Zambia and the World Bank partnered on a project to design and implement a provider payment system that could accelerate the country's reduction of under-five and maternal mortality. The project introduced a performance-based provider payment in addition to the existing payment system to motivate frontline health workers to work at full capacity and improve health service quality, as well as motivate District Medical Offices to fulfill critical supervisory and management functions. Prior to the project, quality monitoring focused on systemic issues such as availability of health infrastructure and supplies. A shift in payment and quality measurement intended to catalyze a larger emphasis on both clinical quality and the structural preconditions for quality.

Getting the project underway

The Government of Zambia, through consultation with the World Bank, decided to pilot a performance-based payment system for health facilities and district-level managers. As a first step, the government and World Bank implemented a pre-pilot in Katete district in the Eastern province. The pre-pilot, which began in 2009, intended to inform the design and operations adapted to the Zambian context. The pre-pilot ran for two years – longer than originally intended – due to instability in other parts of the health sector. This lengthy pre-pilot allowed policymakers and program managers to test a quality assessment tool and other program operations. This longer pre-pilot phase was ultimately helpful for informing the tools and operations rolled out under the two-year pilot project, which included 203 health centers in 10 additional districts countrywide.

One particularly significant change that took place during the second year of the Katete pre-pilot was the decision to adjust the way a facility's quality score adjusted the total payment. Originally designed as a deflation factor, early program experience showed that final individual-level bonuses earned under the original design were too low to be truly motivating to health workers. Consultations between the government and World Bank resulted in changing the quality deflator into a bonus.

Fulfilling the preconditions for quality

An important design feature of this program was the introduction of two key service readiness interventions at the start of the program. First, health workers went through capacity building and training in the delivery of reproductive health services, specifically, Emergency Obstetric and Neonatal Care (EmONC). Second, program managers sponsored the provision of a package of reproductive health commodities and equipment for all participating facilities. These features were integrated into the launch of the provider payment system in order to ensure that health facilities were prepared to provide the maternal and child health services that they would be paid to provide.

Design of the provider payment intervention

Under the project, health facilities, health workers, and district managers in 11 districts could earn financial incentives in addition to their existing salaries and operational grants. Health facilities could earn a fee for each service delivered to patients for nine priority health services. [23] On a monthly basis, health facilities reported the number of services they provided in the prior month, and total fees earned over three months were tallied and verified at the end of the quarter. The total payment to each facility was then inflated by a certain percentage if the health facility scored more than 61 percent on a quality assessment. [24]

To develop the health facility quality assessment tool, a technical working group adapted a tool applied in Rwanda as a model. Experience gained during the Katete pre-pilot phase led the group to revise the tool to better reflect the reality of health facility readiness in Zambia before the program scaled up to 10 additional districts. The quality tool assessed facility management, existence of critical infrastructure, technology, and equipment, human resources, and clinical care processes using direct observation and documentation review. [25] Specific to maternal health, the tool assessed adherence to antenatal care clinical standards and delivery room readiness. [26]

District Medical Offices, which play an important management role in Zambia's decentralized health system, also had the opportunity to earn bonuses for fulfilling critical supervisory and management responsibilities as part of the system. The offices were evaluated using a checklist to ensure that they were adhering to their management responsibilities.

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[23] Six of the nine services related to maternal health: Institutional delivery by a skilled birth attendant; antenatal care (prenatal and follow-up visits); postnatal visit; pregnant woman receipt of 3 doses of intermittent preventive therapy for malaria; pregnant woman counseled and tested for HIV; and HIV-positive pregnant woman given anti-retroviral therapy prophylaxis (Niverapine and AZT).

[24] The facility earned a 15% bonus for a score of 61%–69%, a 25% bonus for a score of 70%–79%, and a 50% bonus for a score of 80%–100%.

[25] The facility earned a 15% bonus for a score of 61%–69%, a 25% bonus for a score of 70%–79%, and a 50% bonus for a score of 80%–100%.

[26] An antenatal care visit example: evaluators review five cases from patient records and directly observe two patients (ensures that provider conducts obstetric examination: height of uterus, presentation (from 36 weeks) and fetal heartbeat (from 20 weeks)). A delivery room structural indicator example: privacy exists: curtains or painted windows, room divider (if shared room), doors that close, running water (tap or bucket with tap), 3 buckets for infection prevention, labeled. A delivery room process indicator example: analysis of 10 randomly selected partograms to determine whether they are filled out according to the rules, decision made/documented if alert line is passed within one hour, delivery by qualified staff (at least a nurse, midwife, clinical officer, doctor).

Throughout the pilot – considered "the most important aspect of the project" by one interviewee – meetings were held with stakeholders at all geographic levels. Countrywide project leaders implemented an advocacy and training outreach strategy for hospitals, districts, community members, and health center staff to explain the change in provider payment mechanism.

Allocating bonuses

To promote fiscal decentralization and support autonomy of resources, health facilities received their financial earnings directly into their bank accounts from the national government fund holder. The health facilities could then use at least 40 percent of the money for operational activities to increase the number of services being delivered (including purchase of safe delivery kits, upkeep of the health facility, community outreach, and contracting of retired nurses and midwives) or improve quality of care. A maximum of 60 percent of the money could be used for staff motivation bonuses. Individual staff bonuses were based on the employees' individual salary and the percentage score from an individual performance evaluation. [27]

Roles and responsibilities

The performance-based provider payment system in Zambia leveraged existing health systems operations to the extent possible. For example, District Medical Offices were contracted to verify the data reported by health centers. District hospitals were contracted to implement the quarterly quality assessment of facilities. Provincial RBF Steering Committees, composed of provincial government officials, approved payment invoices. District RBF Steering Committees, composed of community members, government, donors, and civil society organizations, acted as external regulators, verified that services are provided, monitored quality of services provided, and ensured compliance with standards and the overall proper functioning of the system.

The Government of Zambia was particularly interested in using "contracting-in" to strengthen aspects of the public health system as part of the provider payment project. The contracting-in approach involved the government signing contracts with various levels of government involved in implementation of the system, such as the District Medical Offices responsible for internal verification, or with health facilities eligible to participate in the payment system. Government sought to leverage the public structures that were left behind when the Central Board of Health (the purchasing agency at that time) was abolished in 2006.

Box 6: Making Strides Toward Active Purchasing

"Results-based financing requires active purchasing functions which one might ignore in an input based system. Because of that, you have to make sure that all stakeholders are involved. In Zambia, the government has been making steps in moving from budgeting at the national level to output-based budgeting. It was a huge step forward and they learned a lot from the health sector." (Key informant interview)

Through the project, the Government of Zambia gained experience with active purchasing principles and operations, and is now seeking to implement those principles in other government budgeting (see Box 6).

External verification process

The Government of Zambia performed external verification to counter-verify the internal verification led by District Medical Offices and contracted hospitals. During the course of the two-year project, two

[27] The individual bonus amount is the product of the staff salary index times the total amount available for staff performance incentives at the facility times the individual evaluation quality deflation.

external verification exercises were conducted aimed at independently assessing the completeness, accuracy, and validity of self-reported and internally verified data at the health facilities. The external verification also included certain qualitative research questions about service delivery in order to document the context surrounding service delivery at the given facility. The external verification also included client tracer surveys, as in Nigeria.

Revisions and refinements to the payment system

Program managers and the Government of Zambia were in frequent communication about potential process and design refinements to the payment system. Certain refinements were considered and implemented over the course of the project, such as the decision to move from a quality-based deflation to a quality-based inflation. That said, due to the rigorous impact evaluation, design changes were constrained so as not to skew results.

In the next phase of the provider payment initiative, program managers expect to introduce targets to ensure that the provider payment mechanism pays for services that are additional. For example, if a health facility's target is 20 deliveries per month, then the facility will only receive the incentive payment for the 21st delivery and beyond. In this way, the provider payment mechanism will shift from a mechanism for paying for outputs to a mechanism for paying for extra effort and improvement.

5. DISCUSSION: PROVIDER PAYMENT DESIGN AND IMPLEMENTATION LESSONS

There are multiple ways to design and implement provider payment systems that align incentives so as to encourage high quality of maternal health services. What works well in one context may not be appropriate in another. The architects of future provider payment programs should consider how certain design features of the system will or will not incentivize providers in the specific context to deliver high-quality health services. Considering what is feasible to implement in the immediate to medium term will also guide mechanism selection.

This study has three main limitations to note. First, there were many similarities between the provider payment systems in the study, which limited discussion of the diverse approaches to provider payment as a way of improving quality. All three cases were funded through the HRITF managed by the World Bank, and the World Bank was influential in their design. The Nigeria and Zambia payment systems in particular share many design features. For example, they both calculate performance payments based on quantity of outputs, then provide an additional bonus payment based on performance on a quarterly quality assessment. These three cases were selected for the study because, at least for now, there are few examples of large-scale quality improvement initiatives closely linked with a provider payment mechanism. Second, this study does not report the results of impact evaluations of the provider payment system – therefore, the study cannot conclude that a given provider payment system was ultimately effective at impacting quality at the point of care. Third, while the study team interviewed five informants closely involved with the three cases, some of the people involved in the early design and implementation phase were not available for consultation, and the team thus drew significantly from documents in the public domain.

Despite these limitations, the cases provide a rich set of experience on how countries are trying to move the bar on improving maternal health quality. This paper contributes to a global discussion on ways to improve quality of care through redesigned provider payment systems. It documents actual experience from countries that have implemented payment mechanisms alongside significant quality improvement initiatives. Following are key takeaways from the cases and lessons that can be considered when designing provider payment systems elsewhere.

Governments are designing and refining provider payment mechanisms as policy tools for encouraging high quality at the point of care

The experiences of the Kyrgyz Republic, Nigeria, and Zambia demonstrate ways to use financial incentives to motivate health workers and managers to each do their part to improve quality at the point of care. Frequent quality measurement, with results tied to a provider payment, was a design feature common to all three cases. While financial incentives in the payment mechanism was the element that gave the quality improvement initiative "teeth," a number of system changes occurred in the process of implementing provider payment mechanisms that are linked to high quality. These beneficial system improvements included: accountability at all levels throughout the service delivery system, clear communication of priorities, better reporting and results measurement, and more focus on proactively overcoming obstacles (such as ensuring essential inputs are in place at the point of care).

In each case studied, complementary health systems strengthening interventions accompanied the roll-out of the provider payment mechanism, which served to further reinforce quality improvement at facilities. In the Kyrgyz Republic, the program reinforced and strengthened the role of formerly ineffective quality improvement committees in hospitals. In Nigeria, newly formed facility RBF committees became involved in approving and monitoring facility-level business plans, which helped facilities develop strategies and concrete plans for improving quality at the point of care and reaching more people. Introduction of the provider payment mechanism in Zambia was preceded by an initiative to improve facility readiness to deliver high-quality services.

Redesigning the conventional provider payment system might not be a "magic bullet" to address all of the root causes of poor quality, but it can help to better align payment with the types of health system outputs and outcomes that policymakers and quality of care advocates desire. For example, the use of the FFS models in Nigeria was designed to incentivize health workers to increase their productivity – such as through reduction in absenteeism and tardiness – which is one way to reduce supply-side barriers for women delivering in facilities, receiving the correct number of antenatal visits, and so forth. The mechanism of payments flowing directly to health facility bank accounts was designed to increase the autonomy of health facility managers and enable them to take action to improve quality at the point of care.

Payment mechanisms can be applied to different actors in the service delivery system

Because different actors in the health system (health workers, facility in-charges, district health officers, etc.) contribute to health service provision in different ways, policymakers can consider introducing financial rewards at multiple levels of the system. In Nigeria and Zambia, district-level managers were rewarded for performing various functions, such as monitoring and supervision of health facilities, that many experts would consider critical to any quality improvement effort and to delivery of high-quality services. In Nigeria, although the provider incentive program was initially designed to be for health workers in primary care facilities, general hospitals were ultimately included as referral centers as well to ensure that targeted services, such as management of delivery complications, could be incentivized through the provider payment mechanism.

A pilot (also known as "proof-of-concept" or "demonstration") phase can help the government and program managers identify key design and implementation refinements prior to scale-up

All three cases in this study were pilot programs that served to generate early experience with the initial design, and provide the government and program managers the opportunity to use early experience to refine the program prior to significant scale-up. The case of Zambia is a good example of how program refinements can be identified during a pilot phase and then integrated into the program design prior to scale-up. Implementation of the quality assessment tool during the pre-pilot in Katete helped program managers refine the tool to improve its applicability and appropriateness for the Zambian context. Experience gained during this phase also informed the decision to use the quality assessment score as an *inflator* rather than a *deflator* (effectively increasing the amount of money going to individual health workers to ensure the financial incentive was truly motivating).

In Nigeria, initially the change was only going to be for payments to providers working in primary health care facilities; however, it was decided to include general hospitals as referral centers as well, once program designers realized that the primary care level would not be able to provide all targeted services.

As with any new health system strengthening initiative, the government and program managers might learn that the introduction or reform of provider payment mechanisms is having a different influence on

the health system than the design intended. If this is the case, learning that lesson prior to scale-up is preferable.

Quality-related indicators require regular monitoring and adjustment

When selecting indicators, countries must consider how feasible it is to measure them. Often countries begin by pursuing a mix of indicators that address both structural quality and clinical process quality. Based on the experience from the Kyrgyz Republic, identifying the "right" clinical process indicators can be a challenge, and countries may need to regularly monitor and adjust. However, while indicators need to be context-specific, it may also be helpful to regularly consult and review the indicators that other countries use to measure quality at the point of care.[28]

Box 7: Tips from an Implementer

1. *"(Be prepared for) initial hesitance from people about P4P [pay for performance] because it is so different from what they are used to."*
2. *"(Be adaptable with regards to piloting)…people are tired of it, (have) pilotitis, (might need to quickly) scale things up so it can have a significant impact on population."*
3. *"Need a good communications program so people whose interests might be threatened by the program are brought on board. Have as part of design. People do not want to change…always (have) entrenched interests."*
4. *"Get ready to train a lot of people because P4P is a new system."*
5. *"You want to review your quality checklist from time to time. To improve on it."*

(Key informant interview)

Poor program management can easily become a bottleneck and needs close monitoring

Financial incentives can be powerful motivators for the types of behavior change that can ensure quality at the point of care. However, poor communication, inadequate training, poor data quality, late payments, and other program dysfunction can result in uncertainly about whether the behavior change will be rewarded. This uncertainty can become a demotivating factor as opposed to a motivating one. A recent study in Nigeria found that "uncertainty of earning the incentive and inadequate infrastructure reduced health worker motivation and performance results; whilst adequate health worker understanding of the scheme and good managerial skills…improved motivation and performance" (Ogundeji et al. 2016).

As in the cases of the Kyrgyz Republic, Nigeria, and Zambia, the implementation of a provider payment mechanism linked to regular quality assessments can be a major undertaking for a government. Before rolling out a new provider payment model, health care purchasers will need to determine the feasibility of implementing the scheme in the specific context and with available resources. Leveraging existing institutional arrangements, as Zambia did, may improve the success of the program.

[28] A database of quality of care indicators is available on the USAID/TRAction website: http://www.tractionproject.org/resources/results-based-management-performance-based-incentives-quality-care/multi-country

5.1 Conclusion

Altering provider payment mechanisms to incentivize behavior is an increasingly used mechanism to motivate providers to deliver high-quality maternal health services. Designing, establishing, and implementing these mechanisms can be challenging, but has been done in many settings. This paper documents the experience of three country experiences and provides practical tips and considerations for payers of health services in other settings looking to use payment design to ensure purchased services are of high quality. When providers are enabled and motivated to deliver high-quality health services, preventable maternal and child deaths may be avoided.

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