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# **In Brief: Creating Stronger Incentives for High-Quality Health Care in Low- and Middle-Income Countries**

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This brief is based upon the authors' full report *Creating Stronger Incentives for High-Quality Health Care in Low- and Middle-Income Countries*.

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This brief was made possible by the generous support of the American people through the United States Agency for International Development (USAID), under the terms of the Leader with Associates Cooperative Agreement GHS-A-00-08-00002-000. The contents are the responsibility of the Maternal and Child Health Integrated Program (MCHIP) and do not necessarily reflect the views of USAID or the United States Government.

The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health flagship maternal, neonatal and child health (MNCH) program. MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria and HIV/AIDS, and strongly encourages opportunities for integration. Cross-cutting technical areas include water, sanitation, hygiene, urban health and health systems strengthening.

March 2012

## BACKGROUND

Performance-based incentive (PBI) schemes are rapidly gaining traction throughout developing world health systems. Also sometimes referred to as results-based financing, pay for performance or performance-based financing, PBI schemes consist of “any program that rewards the delivery of one or more outputs or outcomes by one or more incentives, financial or otherwise, upon verification that the agreed-upon result has actually been delivered” [1]. Incentives that support the achievement of a health system’s goals are recognized as a critical aspect of a well-functioning system. PBI schemes can range from supply side to demand side interventions, and are often a combination of both. On the supply side, the incentive payments are conditional on increased health outputs (e.g., increased immunization coverage) or improved health outcomes (e.g., at least x% of the diabetes patients in a program maintain blood pressure below 130/80mmHg). On the demand side, incentive payments are made to individuals, households or communities, conditional on their engaging in previously agreed-upon healthy behaviors. Conditional cash transfers, such as those in Brazil, Mexico, Nicaragua and Colombia, fall into this category [2], and so do schemes in which incentives are provided to a patient conditional on his or her adherence to a prescribed treatment (e.g., for tuberculosis) or behavior change (e.g., tobacco cessation). Voucher schemes incentivize both the demand and the supply of services. Vouchers are either given for free or sold at a highly subsidized price to individuals who can then redeem them for well-defined services at accredited health facilities [3].

As PBI schemes spread and evolve across low- and middle-income countries (LMICs), the focus on improving quality of care (See Box 1) is naturally increasing. High-income countries (HICs), where overutilization and high costs of care are often the greatest concerns, have been designing PBI schemes with both health care quality improvement and enhanced efficiency at their core for several years. Given that many LMICs struggle with low utilization of critical services, the primary objective of their PBI schemes has been to boost service use, linked to the achievement of the health-related Millennium Development Goals. Health care quality in LMICs has not yet received the same emphasis.

### Box 1. What is quality of care?

Quality of care can be defined as “...the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge...”[4]. The different aspects of quality that may be considered include:

- Inputs/structure—linking performance payments to physical inputs to care (e.g., adequate staffing levels, running water, essential drugs and equipment)
- Process—linking performance payments to compliance with evidence-based guidelines for care (e.g., health workers follow the correct treatment protocols) or patient satisfaction (e.g., perceived quality and overall satisfaction with the services used)
- Outcomes—linking performance payments to mortality and morbidity indicators relevant to the health areas incentivized [5–9].

This brief provides an overview of schemes linking quality improvement and PBIs and provides guidance on how this link could be further strengthened in LMICs. Although both demand- and supply-side PBI schemes are recognized, the brief focuses mostly on the supply side. The first part describes current efforts to improve quality of care in existing PBI schemes in LMICs. The second part provides an overview of the various approaches to incentivizing quality of care in HICs. Reflecting on what is currently being done in LMICs and on how some of the HIC experiences could potentially be adapted to developing country settings, the final part proposes key lessons for the future design of PBI schemes in LMICs.

## **PART I. INCENTIVIZING QUALITY OF CARE IN LOW- AND MIDDLE-INCOME COUNTRIES**

LMICs are experimenting with incentivizing quality of care through PBIs, using a combination of the following:

- Making participation in a PBI scheme dependent on accreditation or linking incentive payments to the achievement or maintenance of accreditation level
- Linking performance indicators to clinical guidelines
- Assessing provider performance through the use of a quality checklist or a Balanced Scorecard, either inflating or deflating performance payment.

### **A. Incentivizing Quality of Care through Accreditation**

Accreditation is the procedure by which an authoritative body provides formal recognition that an individual or organization has met certain predetermined criteria and is competent to carry out specific tasks. In this context, accreditation involves an assessment of the health facility's level of performance in relation to established standards. The purpose of accreditation is twofold. On one hand, it enables governments or recognized bodies to assure consumer safety. On the other, it provides confidence to service users. Accreditation can also facilitate the implementation and maintenance of an effective quality system. National or sub-national accreditation bodies guide the development and adaptation of accreditation and certification standards. In most cases, these standards relate to basic conditions and inputs, such as health workers' qualifications, staffing ratios, and basic hygiene and safety conditions, but they rarely include outcome standards. Accreditation of a health facility is usually reassessed periodically for renewal, and can be revoked if a facility fails to meet accreditation criteria.

Incentives to maintain one's accreditation can take various forms, including financial rewards, the stimulation of community demand for quality services, and the public dissemination of accreditation results. For example, voucher programs such as the Janani Suraksha Yojana voucher program in India [10–11] or the Greenstar Social Marketing program in Pakistan [12–13] mandate accreditation for participating private providers. Accreditation has also been used in conjunction with supply-side PBIs. For example, in Brazil, UNIMED-Belo Horizonte (UBH), a private, non-profit health care organization, which operates both as a health insurer and a medical cooperative, has linked financial incentives (funded with insurance premium revenues) to the achievement or maintenance of hospital accreditation. This approach is part of efforts to improve the quality and efficiency of health services in UBH's network of providers [14].

While accreditation appears to be an effective way of engaging with the private sector and ensuring that participating service providers meet basic quality criteria, it also creates a long-term quality improvement incentive via competition with other accredited providers to attract voucher clients [15]. This additional incentive may be rather weak, however, in more remote and underserved areas where providers are scarce and competition is limited. Furthermore, verification of quality after accreditation is obtained also varies in rigor and frequency from setting to setting, and competition alone may not be sufficient to ensure the provision of care according to evidence-based guidelines.

### **B. Incentivizing Quality of Care by Linking Performance Indicators with Clinical Guidelines**

Most PBI schemes in LMICs make a large share of the performance payments conditional on progress of indicators capturing the quantity of units of a number of priority health services delivered (e.g., the number of antenatal visits or the number of attended deliveries). While these indicators are relatively easy to measure and verify, they provide insights on whether care was

delivered, and not on whether it was delivered well. Linking performance payments, to the extent possible, to specific actions in the evidence-based clinical treatment guidelines represents one approach to promoting better quality in essential services (see Box 2).

The advantage of using this approach is that these indicators are relatively easy to collect and are straightforward for clinical staff to understand. However, using these indicators as the sole indication of quality of care would be incomplete. The challenges with this approach include the fact that it is difficult to monitor overall quality of care provided at the facility. Because of their narrow focus, only a small number of indicators can be used in this fashion, and the PBI scheme might not contribute to the overall development of a quality improvement culture. Furthermore, the development of additional, parallel reporting systems might be necessary to extract indicators from health facility registers or from other sources, which may not be included in the national Health Management Information System (HMIS) database.

### C. Incentivizing Quality of Care through the Use of a Quality Checklist or Scorecard

Several countries use quality checklists or scorecards to monitor quality of care.

**Rwanda** was one of the first countries to incorporate a quality checklist for health centers in its nationwide PBI scheme. Health centers complete the quality checklist monthly. Each quarter, these checklists are validated through unannounced visits by a team of evaluators carefully selected by the District Health Management Team. The visits include direct observations of a predetermined number of service delivery visits and

the verification of the quality checklist items. The verification team's recommendations serve as the basis for the quality improvement plans that PBI recipients are mandated to have. The quality score obtained quarterly is then used to deflate the amount a recipient can obtain through the achievement of quantitative performance targets [19]. Other countries that use quality checklists in their PBI schemes include **Benin**, **Burundi** and **Senegal** [16–17, 20].

The quality checklist could potentially facilitate linkages to national quality improvement programs. Additionally, the monthly reports and quarterly evaluations allow for frequent feedback to facilities on performance. However, quality levels are not uniform among all facilities. Therefore, local stakeholders must agree on how to encourage and reward progressive quality improvement for all types of facilities. For example, in Senegal, the quality deflation is applied to only 25% of the performance bonus in the first quarter. This fraction is then gradually increased as facilities begin to improve their infrastructure and processes. The Senegal design team preferred the stepped approach to developing a comprehensive quality checklist for quality deflation over the selection of fewer indicators that could be achieved more quickly by recipients. The team wanted to send a clear message from the beginning about continuous quality improvement.

#### Box 2: Sample of Performance Indicators Linked to Quality

- Benin's nationwide PBI scheme:
  - Adequate referral: Number of women with obstetric complication referred to higher-level facility
  - Postnatal care: Number of women who have had a postnatal checkup by a qualified health worker within eight weeks of delivery
- Tanzania's Coast Region of Pwani Pilot:
  - Focused antenatal care: Percent of ANC clients who received IPT2 (malaria prophylaxis coverage)
  - Deliveries by skilled attendants: percent of completely and properly filled partographs that are appropriately used
- Senegal's PBI pilot:
  - Postnatal care: Percent of mothers who received one dose of vitamin A during the postnatal visit
  - Vitamin supplementation: Percent of children 6–59 months who received two doses of vitamin A

*Source:* Unpublished project documents [16–18].

The Balanced Scorecard approach is a strategic planning and management tool adapted from business and industry to health to facilitate the engagement of stakeholders in performance benchmarking [21]. **Rwanda** uses the Balanced Scorecard approach to monitor the performance of district hospitals [22–24]. **Afghanistan** provides another example of linking the Balanced Scorecard and PBI (See Box 3).

One of the principal advantages of the balanced scorecard is its role in the design of locally relevant performance benchmarks, including that of an overall vision (in Afghanistan, for example, a vision of gender balance in service provision and equity [18]). The design of these performance measures and associated benchmarks is often a participatory and iterative process. A drawback to this approach is that, although it captures vast amounts of data, it is not designed to reflect contextual differences, such as security or economic discrepancies among the different units of analysis, such as hospitals in Rwanda or provinces in Afghanistan. Furthermore, because the balanced scorecard contains several complex indices, it might not be implemented as frequently as a checklist might be.

### **Box 3. Linking PBI to the Balanced Scorecard in Afghanistan**

**Afghanistan** has implemented contracts with NGOs for national scale-up of its Basic Package of Health Services. The performance contracts are implemented through the World Bank’s program. Facility performance is assessed annually using the Balanced Scorecard approach. The major components of the scorecard include patients and community (measuring patient perceptions of quality and satisfaction with care received), health workforce availability, capacity for service provision, actual delivery of services, finances and overall vision—which includes equity components. Afghanistan’s Balanced Scorecard contains 29 indicators that are used to rate facilities on a scale of 0–100. This approach is complemented by HMIS data and unannounced visits to households and facilities [5–7, 18].

In summary, while we presented three relatively distinct approaches to incentivizing quality of care in LMICs, none of the ongoing country programs implement them in isolation. On the contrary, it is more common for countries to use a combination of these three elements in their design. Nevertheless, PBI schemes in LMICs remain primarily focused on structural and process elements of quality of care. To date, none of the PBI schemes in LMICs are designed to measure or reward improvements in mortality or morbidity, although outcome measures are key to the rigorous impact evaluations that are currently under way in several settings.

## PART II. HOW IS QUALITY OF CARE BEING INCENTIVIZED IN HIGH-INCOME COUNTRIES

The approaches to incentivizing health care in HICs have evolved from each particular health system structure in response to the need to simultaneously improve quality and control the escalation of costs. For example, in some HICs, private health care delivery and insurance markets are highly developed and organized. Public payers also exert considerable influence on how services are delivered by conditioning payment on elements of quality. Furthermore, HICs typically have stronger accountability and oversight mechanisms than LMICs. Additionally, most HIC efforts to incentivize quality of care have been a part of broader health system reforms. This section summarizes major PBI schemes in the United States, the United Kingdom, Australia and Taiwan.

### A. United States

While performance-based contracts have been implemented in various fields for some time, the push for PBI in health has grown since the early 2000s. In the United States, a significant amount of the energy behind PBIs is credited to the Institute of Medicine's report "Crossing the Quality Chasm," and its proposal that effective health care reform could come from influencing provider payment mechanisms [4, 25–27]. That report, as well as ongoing discussions about health care reform, fueled the development of both public and private sector PBI schemes. This brief presents government-initiated PBI schemes and a summary of private sector ones.

Among *government-initiated PBI schemes*, several demonstrations or pilots were implemented through the U.S. Centers for Medicare & Medicaid Services, the largest being the **U.S. Premier Hospital Quality Incentive Demonstration (PQHID)** [28]. Since 2003, the PQHID focused on improving the quality and efficiency of patient care in hospitals funded by Medicare. Because of its hospital focus, the main areas incentivized were surgical procedures, with the area of surgical care improvement added in more recent years. One of PHQID's distinguishing factors is its composite scoring approach, which promotes attainment of targets and overall improvement. The program is also one of the few to implement penalties for a participant's failure to achieve benchmarks (See Box 4). Other demonstrations spearheaded by the Centers for Medicare and Medicaid Services include: the **Physician Group Practice Demonstration** [32]; the **Medicare Care Management Performance Demonstration** [33]; the **Nursing Home Value-Based Payment Demonstration** [34]; the **Home Health P4P Demonstration** [35]; and **Medicaid PBI programs** in more than half of states, as of 2006 [36].

In addition, the latest government efforts to incentivize quality of care include organizational and payment system reforms. The **Patient-Centered Medical Home** model provides

#### Box 4. Summary of Key Features of the Premier Hospital Quality Improvement Demonstration

**Composite scoring concept:** All incentive payments are made annually in a lump sum. Forty percent of the budgeted dollars are allocated to the Attainment Award and 60% are allocated to the Top Performer and Top Improver Awards.

- **Attainment award:** hospitals that attain or exceed the median-level composite quality score from two years prior receive an incentive payment.
- **Top performer award:** the top 20% of hospitals in each clinical area receive an additional incentive payment, in addition to the attainment award.
- **Improvement award:** hospitals that attain median-level performance and are among the top 20% of hospitals with the largest percentage of quality improvements in each clinical area receive an additional incentive payment.

**Penalties:** Hospitals for which the composite quality score falls in the bottom 20 percentile of the threshold are assessed a penalty of up to 2% of that hospital's basic Medicare reimbursement in a specific clinical area [29–31].

incentives for physician practices to take responsibility for providing and coordinating care [37]. Under the guidance of the National Committee for Quality Assurance, there are 27 pilots currently running in the country [38]. The **Accountable Care Organization** is a new model of care and a new form of provider under Medicare, which promotes joint responsibility among providers for quality and cost of care through shared savings and losses [39]. Furthermore, it is thought to contribute to the replacement of fee-for-service payment mechanisms through a gradual move toward a mix between capitation and a bundled payment system [40]. The United States also has several *private-sector-initiated PBI schemes*. In 2007, it was estimated that there were more than 100 PBI programs through health plans and employer groups [41]. In addition to health plans, these schemes have been funded by private foundations (e.g., Robert Wood Johnson Foundation) or other non-profit associations or by insurance plans. Table 1 provides a summary of major private sector initiatives.

**Table 1. Summary of Private-Sector-Initiated PBI Schemes in the U.S.**

PBI Scheme	Summary
<b>Rewarding Results Initiative</b>	Competitive grants for seven local quality improvement demonstrations across four U.S. states for implementation and evaluation of PBI. The demonstrations tested different incentive levels, which ranged from enhanced fee schedules to making a portion of provider claims contingent on their achievement of specific goals. The Rewarding Results Initiative also provided grant opportunities, technical assistance and research materials for their participants to design and implement the PBI schemes. Of the seven demonstrations, six continued even after the grant period ended in 2006 [42].
<b>Integrated Health Care Association</b>	The largest non-profit physician group incentive program in the United States. It includes eight health plans, representing 10 million insured persons and 35,000 physicians in over 220 physician groups [43]. Promotes a collaborative and iterative approach to the design and evaluation of the performance incentives and addresses a variety of domains in addition to clinical quality (e.g., patient experience, meaningful use of IT, coordinated diabetes care and resource use) [44].
<b>Leapfrog Recognition Program</b>	The Hospital Recognition Program rewards hospitals for attaining and improving patient safety, quality of care and resource utilization. A yearly survey evaluates hospitals using a standardized, national measure set, which is aligned with the measures and procedures of the Center for Medicare and Medicaid Services and which can differ between urban and rural hospitals. The performance measures emphasize both quality (65%) and resource use (35%) in the calculation of a “value” score, which determines a hospital’s performance [45].
<b>Geisinger Health Care System ProvenCare</b>	The ProvenCare program from the Geisinger Health Care System in Pennsylvania is a provider-initiated PBI scheme, which experiments with reforming provider payment from fee-for-service to evidence-based bundles or modified capitation-style payments, covering all aspects of care (e.g., preadmission, inpatient and follow-up care) [46–47].
<b>Prometheus Payment</b>	Prometheus Payment translates clinical practice guidelines into “evidence-based case rates” (ECRs)—which are bundled to take into account all care by all of the providers who will treat the patient for the conditions (e.g., hospitals, physicians, laboratories, etc.). ECRs have been developed for 21 conditions to date [48]. Providers are rewarded for coordinating care, avoiding complications, and providing of high-quality and efficient care [49–50].
<b>Alternative Quality Contracts</b>	Alternative Quality Contracts are multi-year global payment contracts signed between providers and Blue Cross Blue Shield of Massachusetts. Global payments are calculated for a predetermined duration of a patient’s time in care, initially based on historical health care cost expenditure levels. In addition, providers can increase their total payment by up to 10%, based on their achievement of clinical performance measures (process, outcomes, patient care experience) [51–52].

## B. United Kingdom

In the United Kingdom, the General Medical Services Contract first introduced the **Quality and Outcomes Framework (QOF)** for general practitioners in 2004, in an effort to improve the measurement of quality of care, reduce variations in service delivery, and improve quality of services [53]. The QOF is a voluntary program through which practices earn points depending on their achievements on a set of indicators related to the provision of quality primary care. Summaries of practice performance are published every year [54]. A notable element in the evolution of the QOF is its increasingly transparent and participatory design process, which currently features public consultations with a wide range of stakeholders—from patients to health professionals. Additionally, participating practices received “preparation” payments during the first three years of the QOF program to assist them in preparing for QOF implementation. Finally, the QOF stimulates provider innovation and practice advancement by providing practices with the opportunity to develop a vision for quality improvement at the beginning of each year. A quarter of the total performance-based payment is linked to QOF performance. At the beginning of each year, a portion of this is provided for the implementation of their vision (aspiration payment) and the remainder is received upon successful achievement of targets (achievement payment) [55].

## C. Australia

In the 1990s, the Australian government led the development of the **Practice Incentive Program (PIP)** and the **General Practice Immunization Incentive** in response to concerns about quality and coordination of care, as well as about the incentives produced by a fee-for-service provider payment system [56]. The Australian government built upon these schemes in the mid-2000s by incentivizing hospital quality achievement through the **Clinical Practice Improvement Payment System** in Queensland and increasing dispensing of generic drugs by community pharmacies.

The distinguishing factors of this system are its focus on quality and capacity building and its approach for incentivizing quality in rural areas. For each incentive type, practices are given a sign-on payment (for notifying the Australian government that the practice is eligible for that particular incentive), an outcomes payment (for those practices that complete certain tasks for a proportion of their patient population), and a service incentive payment (for each patient who receives the designated service) [57].

## D. Taiwan

Taiwan, a country in which service provision is almost exclusively led by the private sector, has been experimenting with PBI in health care since the early 2000s in order to shift the focus from access and coverage to incentivizing quality of care. **PBI pilots** for asthma, diabetes, breast cancer, cervical cancer and tuberculosis were launched in 2001 for general practice providers [58]. Additional pilots for depression and hypertension were launched in 2006 [59]. All these pilots, as well as their national scale-up are driven by a single government agency and Taiwan’s dominant public payer, the Bureau of National Health Insurance. Common elements include voluntary participation of providers based on their adherence to a set of qualification/certification requirements, following national treatment guidelines, and the establishment of electronic medical records. However, each of the pilots was designed independently to cater to the unique manifestations of each disease, as well as to experiment with different approaches to incentivizing quality. For example, while the pilot for tuberculosis rewards performance through the calculation of a process-based score for pre-defined stages of tuberculosis and bonus payments to supplement the fee-for-service payment model [59], the breast cancer program rewards for outcome measures (i.e., the attainment of a specified survival rate) while also providing participating providers with bundled payments for each patient [60].

## **PART III. THE WAY FORWARD FOR LOW- AND MIDDLE-INCOME COUNTRIES**

As the approaches to incentivizing quality of care in HICs have evolved over the years and were a product of contextualized factors and health system reforms, they cannot be replicated exactly in LMIC settings. Nevertheless, there are several important lessons that can be drawn from the current HIC experiences and the processes through which they developed.

### **A. The Design of PBI Programs**

**Coordination and collaboration in care**—Incentives are necessary for promoting teamwork among providers and among different points of care to ensure quality in the continuum of care. Most of the schemes in LMICs already reward teams, which can then decide locally how to use the funds. In the PBI pilots in Senegal and Tanzania, District Health Management Teams are also rewarded based on the district’s overall performance. Future schemes could streamline this approach and perhaps extend it to include multiple facilities.

**Public recognition and community awareness of health facility performance**—Online rankings are frequently used in HICs. In LMICs, while online rankings will also be important, recognition in the local community, as well as with the local district authorities should be just as high of a priority. Rwanda has a very comprehensive online portal through which it shares most up-to-date performance data. However, the extent to which consumers use this resource is unclear. Traditional community outreach, the use of simple mobile technology tools and the involvement of civil society and the media could be employed to increase community awareness of health facility performance. Innovative combinations of PBI with accreditation might be another approach to emphasizing health facility public recognition in LMICs.

**Voluntary participation**—The vast majority of HIC PBI schemes did not mandate provider or health organization participation. The feasibility of such participation in LMICs may vary by context and also depend on whether the dominant force behind PBI efforts is public or private. In settings where voluntary participation is not practical, provider buy-in to the quality improvement approaches and allowing flexibility for providers to “customize” their participation will be important. Currently, LMIC government-initiated schemes usually are negotiated at the district or regional levels and the health facilities in those regions are mandated to participate. PBI schemes, either initiated by or targeting the private sector, such as those linked to accreditation, are usually voluntary. The feasibility and relevance of voluntary participation in LMICs would be a useful topic to explore through implementation research.

**Standardized quality measurement**—A common set of measures, usually in line with the indicators supported by the national quality improvement institutions, has been key in the development of large-scale quality improvement efforts in HICs. In LMICs, this implies the development and use of clinical standards to which providers must adhere. While there is a movement in HICs to make quality measurement more complex (i.e., composite scores), LMICs should focus on choosing not only the easiest to implement measures, but also those that can be gradually built upon and that providers can comprehend. In countries like Senegal, the quality checklist is developed in conjunction with representatives from the national quality assurance program. In Afghanistan, the balanced scorecard indicators are developed through wide stakeholder consultation. In settings where a standardized list of quality measurements does not exist, PBI efforts and consultations can facilitate discussions around context-relevant quality of care measures. Approaches such as the Standards-Based Management and Recognition (SBM-R®), which are based on the development of a set of locally relevant quality indicators, are now discussed in the context of PBIs in Malawi and Pakistan [61].

**Size of bonus**—It is well-recognized in research and practice that the size of bonus must be sufficient to motivate providers—although 10% of total earnings appears to be the average incentive size in the U.S., it is about 25% in the U.K.—and what works depends on the context [62–63]. In LMICs, health worker salaries may be so low that 10% or even 25% may be inadequate. In Rwanda, for example, a recent World Bank evaluation found that the PBI scheme supplemented health worker salaries by almost 40% in some health facilities [64–65]. In the case of Rwanda, the decision to supplement health worker salaries and by how much was decided at the facility level. More broadly, clear guidance on the size of bonus necessary to adequately motivate health providers does not exist. Furthermore, given that LMIC health providers might have both public and private sector sources of income (e.g., for provision of services in the private sector, per diems for attending workshops, unofficial payments), all financial incentives should be considered when discussing the size of the PBI bonus.

**Rewarding both attainment and improvement**—In HICs, the latest PBI designs include rewards for both attainment and improvement relative to set targets. In LMICs, this could be achieved by creating different levels of accreditation. This approach is similar to the three levels of incentive payments in the design of Brazil’s PBI scheme. Rewarding both attainment and improvement could also be accomplished by increasing the amount of the reward that is subject to quality deflation. This approach has been adopted in Senegal, as mentioned previously. Finally, countries could consider the quality scores as standalone performance indicators, for which performance targets can be set.

**Incentivizing the development of a quality improvement culture**—In LMICs, this approach might involve linking PBI efforts to other ongoing government efforts to monitor quality of care; bringing in national stakeholders to the development of quality measures; and linking with other national and donor-funded quality improvement efforts, such as quality collaborative and supportive supervision. It also could involve setting up incentives for provider participation in training, license renewals and the accreditation of health facilities. For example, Malawi has institutionalized the SBM-R quality improvement approach [61]. At the core of the SBM-R approach lies the development of locally relevant, evidence-based performance standards that not only present providers with an explanation of what they should do for a particular health service, but also how to do it. Quality collaboratives are already active in several LMICs (e.g., Benin, Uganda) and could be linked more systematically with existing or upcoming PBI schemes. Linkages between already institutionalized quality improvement approaches and PBIs are highly synergistic for both PBI and quality improvement.

**Leveraging mobile technology innovations**—Mobile technology can be key for data collection, as well as for monitoring and evaluation of PBI activities. Information and communication technology is spreading at a rapid pace throughout LMICs and can be leveraged more intensively to facilitate the implementation of PBIs. Rwanda, for example, has an elaborate electronic data entering and reporting mechanism. In addition, Malawi is testing the use of tablets for data entry and the generation of dashboards as part of SBM-R, which, as mentioned above, might eventually be linked to the PBI scheme. Other technologies currently being tested, although not yet in the context of PBI, include rapid patient satisfaction surveys using mobile phones or citizen report cards, which could include cell phone messages about the absence of health workers or on drug stock-outs.

**Integrating the patient perspective**—Examining user perspectives, both in the design and in the monitoring of the intervention, is key to creating a culture of consumer oversight. Consumer organizations are weak or non-existent in LMICs. Local consultations on design could, in addition to community leaders, include a sample of patients from a facility’s catchment area. Some schemes, such as those in Burundi and Senegal, already survey patients through their verification processes to understand their satisfaction with services.

**Engaging the private sector**—The private sector features prominently in the PBI schemes of many HICs. As it plays an increasing role in LMIC service delivery, private providers could be included in PBI schemes through contracting, based on relevant eligibility (e.g., practice size, licensing and registration, services provided, capacity to develop transparent reporting and willingness to share data). This approach might increase competition and also help to better understand the private sector and the incentives at play in service delivery in that context. In addition, in countries where government health providers also deliver services in the private sector (e.g., dual practice, moonlighting), after hours incentives could address some of the negative consequences. Brazil provides a good example of a private-sector-led incentive scheme for accreditation and chronic disease management. Pakistan’s Greenstar is also a private sector voucher program and social franchise scheme.

**Fostering local innovation**—In HICs, several of the schemes were developed based on calls for applications and use of small grants. Small grant schemes in LMICs could be provided to providers/practices that are not part of the PBI scheme, but also to providers/practices within the PBI scheme. This might be a feasible approach to testing different combinations and calibrations of key PBI and quality improvement elements. Accompanied by evaluation efforts, this could create innovation labs.

## **B. The Implementation of PBI Programs**

**Participatory and collaborative design**—The experience in HICs underscores the importance of participatory and collaborative design. For example, the design and refinement of the Prometheus payment took about two years. Consultations with scheme beneficiaries as well as with service users not only allow multiple perspectives to contribute to the design, but also promotes stakeholder buy-in. Related to this aspect is the notion of provider-led quality improvement. In several of the U.S. schemes, providers have the opportunity to design the scheme or choose the elements that work best with their practice. In addition to buy-in, this approach provides an opportunity to preserve provider autonomy and local decision-making. Steering committees in Rwanda, Benin, Senegal and Tanzania, for example, have strived to include a variety of government actors and have organized periodic consultations. LMICs should explore broader consultations, with engagement of local and regional experts and academicians. The Community of Practice for results-based financing, launched in early 2010 with financial support from various institutions including the World Bank, is one example of a pan-African approach for sharing of best practices, cultivating expertise and creating regional networks.

**Minimizing administrative burden**—Minimizing both the cost and the time burden of the administration of PBI schemes by providers was another implicit focus of HIC schemes. If additional data collection is necessary or new systems are installed (e.g., electronic medical records), the schemes provided administrative support to providers, incentives to develop this capacity, or attempts to minimize the data collected. To date, LMIC evaluations have not focused on this aspect of implementation. However, all the PBI schemes in LMICs have also worked on making the HMIS more efficient and minimizing the need to set up parallel reporting systems.

**Iterative design and adaptation of quality measures**—Regular revision and adaptation was key to fostering continuous quality improvement in HICs, by adding more areas to be incentivized; moving from process to outcome within each area; acknowledging that different providers need different incentives (e.g., rural vs. urban hospital; primary care provider vs. surgeon); acknowledging that provider performance varies (e.g., developing variety in awards—top performance, top attainment, etc.). To some extent, this is present in LMICs with regular revisions to the design being built into the regular PBI cycle.

**Enabling factors**—Successful implementation of PBI schemes in HICs was also credited to context-specific enabling factors, such as senior leadership buy-in and engagement in the quality improvement scheme; engaging local, multi-disciplinary experts in the design of the program; finding the mix of financial and non-financial incentives that could increase consumer/patient engagement; and ongoing health system reforms. Rwanda’s focus on performance-based contracts in all areas of government is one example of a factor that enabled the rapid scale-up of its PBI scheme. Local leadership and experts would be best placed to identify similar catalytic opportunities for quality improvement in other countries as well.

**Monitoring and evaluations**—Rigorous monitoring and evaluation were important elements of HIC schemes, both to determine the effects of these schemes on health, but also to instill a culture of daily data use for improving service delivery. Monthly or quarterly dashboards could provide digestible data for health providers and health facility leadership. Evaluation is important not only for health outcomes, but also for measures of equity and unintended consequences for other services. Rigorous, prospective evaluations are currently under way in several countries as part of efforts funded through the Health Results Innovation Trust Fund administered by the World Bank [66]. Engaging local researchers and research organizations in monitoring and evaluation would be key to the iterative design and scale-up of PBI in LMICs.

## CONCLUSION

In conclusion, we are experiencing a paradigm shift in the design of PBI schemes in developing countries. Whereas the first PBI schemes developed in LMICs were focused primarily on improving access to care by incentivizing the volume of essential services, many PBI schemes are now putting more emphasis on also incentivizing the quality of the care provided. Additionally, these schemes are becoming increasingly sophisticated, both in terms of the breadth of conditions for which quality of care is now monitored and in terms of how quality is defined and measured. While the evolution of these schemes is dependent on key contextual factors, such as the development of a local health care quality culture, tools and approaches that work are adapted and spread regionally and internationally. Countries across regions are sharing and adapting tools, such as quality checklists and verification protocols, in addition to learning about each other’s best practices.

In addition to learning from their peers, developing countries can also gain important insights from HIC experiences of large-scale PBI schemes specifically focused on improving quality of care. These experiences highlight the importance of iterative, participatory design; adoption of standardized performance measures; the use of information and communication technology; efficiency; and investment in rigorous monitoring and evaluation, particularly for health outcomes, as well as in experimentation with various elements of PBI (e.g., bonus size). HIC experiences also highlight the significance of having strong organizations to define and monitor health care quality. While these organizations are very strong in the United States and in the United Kingdom, for example, they are either weak or non-existent in many LMICs (although some countries are demonstrating how to institutionalize quality improvement initiatives, e.g., through their nationwide focus on the SBM-R methodology).

By creating strong linkages between PBI schemes and quality improvement, LMICs can develop their national quality improvement culture in several ways. Beyond increasing motivation through better-aligned incentives, a well-designed and carefully implemented PBI scheme has the potential to catalyze changes that strengthen health systems functions. Given the critical role of information in the measurement of performance, PBIs can help build a stronger data culture and reinforce a country’s HMIS. If the performance indicators are carefully selected, PBIs can also stimulate better management and supervision, and strengthen the referral system. The focus on verified results can introduce greater accountability and transparency throughout the system. The long-term visions of PBI designers in developing countries can

include transformative reforms in the underlying system of incentives created by provider payment structures and contracting mechanisms. While it is evident that PBIs will continue to play an important role in health system development, linkages with robust, evidence-based quality improvement approaches will be key to achieving health system goals and good health outcomes for the population.

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