


# Financial Provider Incentives:

## Evidence on pro-equity interventions to improve immunization coverage for zero-dose children and missed communities

*Part of a series, this evidence brief presents results from a **rapid review** of the literature to understand the effectiveness and implementation considerations for selected interventions, including financial provider incentives, that could help achieve more equitable immunization coverage, specifically helping to increase coverage and better reach zero-dose children and missed communities.*

EVIDENCE SUMMARY	
<p><b>What are financial provider incentives?</b></p>	<p>Financial provider incentives are monetary forms of support supplied to health care workers to compensate them for their work. Providing incentives can potentially increase health care worker motivation, retention, satisfaction, and performance, thus potentially affecting overall quality of care and expanding health care services to reach more people, including zero-dose children and missed communities.</p>
<p><b>How effective are provider incentives in reaching zero-dose children and missed communities?</b></p> <div style="text-align: center;">  <p>INCONCLUSIVE EVIDENCE</p> </div>	<p>Based on findings from a review of reviews, <b>evidence is inconclusive regarding whether financial provider incentives, specifically in the form of performance-based initiatives, are effective for reaching zero-dose children and missed communities.</b> Much evidence exists, but <b>variations in approaches and outcomes</b> limit the ability to determine effectiveness. Overall <b>results from reviews were often mixed, conflicting, or uncertain.</b> Evidence is lacking for impact on equity.</p> <p>Evidence suggests differences in <b>context and programmatic characteristics</b> are critical in determining effectiveness. Financial incentives appear less likely to be effective when suboptimal quality and performance are driven by <b>structural and health system constraints.</b> Impact is more likely when improvements are within the <b>control of providers and/or health facilities.</b> Studies assessing financial incentive effectiveness have typically taken place within <b>public health care systems.</b></p>
<p><b>What are the main barriers and facilitators to implementation?</b></p>	<ul style="list-style-type: none"> <li>• <b>Major facilitators</b> to implementation include <b>context-specific incentive schemes that are comprehensive, equitable, and simple,</b> and implemented in <b>health systems</b> where issues pertaining to <b>quality and performance</b> are mostly within the <b>control of providers and facilities.</b></li> <li>• <b>Major barriers</b> to implementation include <b>fragmented systems</b> that consist of multiple incentive schemes and funding streams, <b>systemic constraints</b> (i.e., lack of technical capacity, lack of worker knowledge) that are unlikely to change through incentivization, and <b>lack of clarity regarding costs.</b></li> </ul>
<p><b>What are the key gaps?</b></p>	<p><b>Keys gaps</b> include a lack of financial provider incentive initiatives that specifically address <b>equity</b> or are targeted to areas prioritized by <b>the Equity Reference Group (ERG),</b> including those that explicitly address <b>gender-related barriers, and</b> a lack of clarity regarding <b>mechanisms</b> through which financial incentives <b>work to affect change.</b></p>

Additional gaps are a general <b>lack of rigorous evidence regarding effectiveness</b> tied to outcomes of interest, an absence of full <b>economic evaluations</b> , and limited variation in terms of <b>settings and types of financial incentive interventions</b> .
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## INTRODUCTION

### What are financial provider incentives?

**Financial provider incentives refer to the use of monetary inducements or rewards for staff involved in health care programs to increase the coverage of essential health services to vulnerable populations.** Financial performance incentives consist of paying health care workers for meeting pre-specified targets or paying health care workers for services provided. They are often used in health systems in low and middle-income countries (LMICs) to improve both the quality and quantity of health care services (1, 2). Several types of financial provider incentive programs exist. Although not comprehensive, below are definitions of commonly used types relevant to this evidence brief (3):

- **Results-based financing (RBF)** is an umbrella term defined as: “a cash payment or non-monetary transfer made to a national or sub-national government, manager, provider, payer, or consumer of health services after predefined results have been attained and verified. Payment is conditional on measurable actions being undertaken” (3).
- **Performance-based initiatives (PBIs) or pay for performance (P4P)** are terms used to describe RBF initiatives. In practice, these terms are all generally synonymous, although there is confusion in the literature regarding specific definitions and distinctions (3).
- **Fee for service (FFS)** is defined as “payments for specific tasks or procedures such as a patient consultation, an immunization, or a surgical procedure.” Sometimes payments are bundled for services that are interrelated, often referred to as a “diagnostic reference group” (DRG) (3). Notably, FFS involves a retrospective payment system in which payments are made after service provision (ex-post). **Prospective payment systems (PPS)** can involve capitation, DRG case-based payment, and salaries. They involve payment before services are received (ex-ante) (4).
- **Performance-based financing (PBF)** is a subset of RBF and refers to payments made to health care workers (at the individual- or facility-level) for “delivering specific services, provided the services follow explicit protocols, with a system of inspection and auditing to assure compliance and to raise quality where necessary.” The focus on quality, which can be defined through adherence to protocols, processes, or outcomes, distinguishes it from FFS (3).
- **Direct facility financing (DFF):** Unlike the other types of incentives mentioned, DFF involves an unconditional payment made directly to facilities from national funds: “As with PBF, these funds are commonly used to finance smaller non-salary recurrent operating expenditures, such as facility operating costs and supplies, with the bulk of facility input costs (salaries, capital expenditure, and medicines) being funded separately or provided in kind” (5).

Notably, incentives included in these terms can be financial or nonfinancial, although provision of monetary incentives is typical. Use of nonfinancial incentives to improve health worker performance are covered in a separate evidence brief. To improve utilization of health care services, financial and nonfinancial incentives can also be provided to users to increase demand. User incentives are covered in another evidence brief.

## Why are financial provider incentives relevant for reaching zero-dose children and missed communities?

Financial incentives have the potential to directly affect the performance, motivation, satisfaction, and/or retention of health workers, ultimately affecting the quality of care provided and health care coverage (6). Poor performance, high rates of attrition of health workers, and insufficient numbers of health care providers are barriers to achieving many public health goals, including immunization, especially in the case of vulnerable populations (7). By improving these outcomes in underserved areas in LMICs, more zero-dose children and missed communities may be reached with health care services, including immunization services, by providers.

## Why was this rapid evidence synthesis on financial provider incentives undertaken?

**The overall goal of this activity was to synthesize existing evidence on the effectiveness and implementation of financial incentives for staff involved in health care programs to reach vulnerable, underserved, or missed communities.** Through a comprehensive review of peer-reviewed and grey literature, this work aimed to:

1. Assess the effectiveness of interventions involving the use of financial provider incentives for health workers in reaching vulnerable communities with essential health services.
2. Identify what types of financial provider incentive interventions are being used and demonstrate effectiveness or promising results related to these vulnerable communities.
3. Identify the main implementation considerations for utilizing financial incentives for staff involved in health services, specific to reaching vulnerable communities.

Much literature has been published on the topic of financial provider incentives, including many randomized controlled trials. Due to the multitude of evidence, this review consisted of a review of existing reviews of financial incentives for health care workers from 2010 through 2022. This review was restricted to reviews that included mention of vulnerable communities and focused on the use of financial provider incentives within the delivery of health care services in LMICs but was not limited to immunization activities. Therefore, the analysis highlights how provider incentives are used both inside and outside the immunization sector, which offers increased evidence regarding effectiveness and implementation across health areas. More information on the review methods is presented in Appendix A.


## RESULTS: What is known about provider incentives?

The review included 25 existing reviews relevant to financial health care provider incentives in LMICs, 22 of which focused primarily on effectiveness whereas three focused solely on implementation. Of the reviews relevant to effectiveness, 18 analyzed performance-based financial incentives, including P4P, PBF, and PBIs (2, 6, 8-23). Three reviewed provider payment systems/reforms (24-26) and one looked at financial provider incentives not tied to performance (27).

### Overall categorization of effectiveness

To help program planners assess whether an intervention, such as financial provider incentives, should be considered for reaching zero-dose children and missed communities, a categorization scheme is used below to rate interventions as: potentially ineffective, inconclusive, promising, and proven. A more

detailed description of this categorization can be found in the general methodology for reviews in this series [linked on the evidence map website].

Categorization	Rationale
 <p data-bbox="227 651 381 714">INCONCLUSIVE EVIDENCE</p>	<p data-bbox="435 331 1404 609">Results from the reviews on financial incentives are mixed and evidence was often of low certainty. Most called for further evidence on the impact of provider financial incentives on health care service utilization, quality of service provision, and health outcomes. For these reasons, this intervention was categorized as “inconclusive.” Notably, a vast literature on financial incentives exists, yet the diversity of approaches and the context-specific nature of their implementation limits the ability to make overarching conclusions as to whether this intervention “works.”</p> <p data-bbox="435 651 1404 882">Evidence suggests differences in context and programmatic characteristics are critical in determining effectiveness. Financial incentives appear less likely to be effective when suboptimal quality and performance are driven by structural and health system constraints. Impact is more likely when improvements are within the control of providers and/or health facilities. Studies assessing financial incentive effectiveness have typically taken place within public health care systems.</p>

Specific evidence for deriving this categorization is presented below.

### What evidence has been synthesized previously on the effectiveness of financial provider incentives?

**Many reviews found mixed and even uncertain results in terms of the impact of performance incentives on specific indicators, including related to service utilization, quality, and health outcomes** (6, 8, 9, 11, 13, 14, 16, 17, 20, 22). The effects of PBIs were not universal, either across settings or indicators. PBI interventions were associated with improvements in some health-related outcomes and not others, and there were high levels of uncertainty in terms of actual effects and low study rigor. **Overall results from reviews found stronger evidence that PBI interventions resulted in increased service utilization in some areas and less evidence that PBI interventions increased quality of service provision or substantially impacted health outcomes**, although results varied. A table containing examples of health indicators and synthesized effects from reviews is included in Appendix B. Outside of PBIs, several studies found that payment systems themselves have an influence on provider motivation and performance. One review sought to assess whether interventions were effective at incentivizing health care workers to work in certain facilities, such as those serving underserved communities, or in certain sectors (public versus private), but found no eligible studies (27). Further details are provided below for the two main types of incentive interventions identified, including PBIs (inclusive of P4P and PBF initiatives) and provider payment systems.

#### Performance-based incentives (PBIs)

As noted above, results on the effectiveness of PBI interventions on service utilization, quality of care, and health outcomes were mixed. One recent review noted that PBI interventions are more likely to affect change when there is a high “know-can-do” gap (2, 6). If technical capacity or worker knowledge

is lacking, incentivizing performance is unlikely to affect change (2, 6). Relatedly, another comprehensive review concluded that PBI interventions tended to be more effective in health care systems that are decentralized, well-resourced, and allow for high levels of facility autonomy (23). PBI interventions are less effective in situations where existing constraints are systemic and affecting change is beyond the control of providers or facilities (2, 6, 23).

Some limitations exist within the current body of evidence. Despite widespread implementation of PBI, most interventions are concentrated within relatively few LMICs (8-15, 17-19, 27). Additionally, included reviews found little evidence that PBI interventions impacted equity as equity was infrequently discussed (13). In general, presentation of clear pathways through which PBIs were hypothesized to work were also lacking (23). Most reviews included studies that occurred within public health care facilities. Two reviews noted that future work should focus on the relationship between PBF and quality of care (14, 21). Two other reviews called for further research on the long-term impact of financial incentives (15, 17). Gadsden et al. noted that the sustainability of large financial incentives, despite being more effective in terms of impact on performance than smaller incentives, is unknown (15). Similarly, Stanton et al. cited a gap of studies that look at impact measures, as they are infeasible in short time frames and among the limited study populations that currently exist in the literature (17). Another review concluded there is a need for long-term studies to assess the sustainability and health outcomes of financial incentives that cannot be measured in short-term studies (17).

### **Provider payment systems**

Outside of PBIs, three reviews looked at provider payment systems more broadly. Kabia et al. found provider payment reforms in Kenya made funds more accessible to health facilities that positively affected outcomes including provider motivation and performance, but delays in and provider dissatisfaction with payment led to decreased access to care and increased patient expense. The review concluded that payments should be predictable and in amounts sufficient for efficient and high quality care to avoid negative consequences (24). Si Ying et al. determined that prospective payment system reforms in LMICs since the 1990s have generally contributed to improved quality of care by reducing prescription of unnecessary drugs or diagnostics, and length of stay and readmission rates have also decreased (though other outcomes, such as patient volumes, remained the same) (25). Sieleunou et al. described how provider payment approaches in Cameroon are currently fragmented, consisting of salaries (fixed, non-performance-related wages), non-wage compensation (for example, per diems for working groups), voucher and PBF schemes, fee-for-service, and others. This patchwork system, largely due to a variety of funding streams and vertical disease programs, presents a barrier to maximizing efficiency and performance. The authors argue that provider payment needs to be aligned in a coherent system to support gains in coverage and increase efficiency and equity (26).

### [What evidence has been synthesized previously on the effectiveness of financial provider incentives specific to immunization?](#)

Of the 22 identified reviews relevant to effectiveness, seven included findings related to the impact of financial provider incentives on immunization outcomes. **Like overall findings from this review, results were mixed. Many, but not all, reviews found evidence that financial provider incentives improved childhood vaccination, although evidence was generally of low certainty.** Specific findings from each review are detailed below.

- Asadi-Aliabadi et al. reviewed the effectiveness of P4P for non-physician health care providers (excluding community health workers [CHWs]) and found that P4P had a positive effect on child immunization, with one study cited (8).
- Turcotte-Tremblay et al. included one study that found PBF had no effects on vaccinations at health centers in Rwanda (18).
- Witter et al. found the impact of PBF on vaccination rates varied across four studies and the evidence was inconclusive regarding whether PBF leads to increased utilization of children’s preventive health care services (19). However, in an update of Witter et al.’s review, Diaconu et al. found that the evidence base on P4P had increased significantly, including improvements in study rigor (13). Appendix C contains a summary of the review’s findings, which generally indicate the impact of P4P on vaccine coverage varied by vaccine, comparator, program indicator, and type of study, and that the certainty of evidence was often low (13).
- Wiysonge et al. found that the impacts of provider incentives on quality of care, recruitment and retention in remote areas, utilization of services, and patient outcomes varied, with very low-certainty evidence (20).
- Neelsen et al. synthesized effects from two relevant outcomes: pregnant women receiving tetanus vaccination and children receiving the full course of vaccinations recommended for the first year of life. The review found that across 14 studies assessing maternal tetanus vaccination, there was moderate heterogeneity and an insignificant effect for PBF programs. Across 22 studies assessing childhood vaccination status, the review found a mean effect size of 3.9 percentage points, thus showing a significant improvement in vaccination, with low effect size heterogeneity. Overall, the review noted small effect sizes for PBF programs across outcomes (22).
- Zeng et al. included two studies that discussed immunization outcomes in their systematic review of the cost-effectiveness of health systems strengthening interventions to improve maternal and child health. One found that financial incentives for health providers for maternal and child health services increased postpartum tetanus vaccinations by 20% in Zimbabwe, while another found the same intervention increased utilization of Haemophilus influenzae type b (Hib) vaccination by 15% in Zambia (21).

### What evidence has been synthesized previously on the effectiveness of financial provider incentives specific to reaching zero-dose children and missed communities?

No reviews focused on zero-dose children and missed communities. While many studies assessed the impact of provider incentives on health care worker retention in rural areas, few focused on other Equity Reference Group (ERG) settings or areas that might have high numbers of zero-dose children. One exception is a review that focused on implementation of PBF within fragile and conflict-affected settings (FCAS) (28), described in the implementation section below.

## IMPLEMENTATION: What is known about “how” financial provider incentives work?

### Barriers and facilitators to implementation by ERG setting

Many reviews identified discussed implementation considerations as well as effectiveness. Three additional reviews focused solely on the implementation of financial incentives (28-30). A realist review published by Singh et al. differentiated and outlined contextual and programmatic factors relevant to P4P interventions (23). Findings from this review, in addition to other major barriers and facilitators identified across reviews, are included in Table 1.

**Table 1.** Barriers and facilitators to implementation of financial provider incentives

Setting	Major facilitators	Major barriers
General (ERG setting not specified)	<ul style="list-style-type: none"> <li>• Incentivize wide range of indicators</li> <li>• Ensure bonuses are available to every cadre of staff involved in service delivery, including those involved in auditing and monitoring (e.g., district managers and governing committees)</li> <li>• Fair and transparent incentive structures</li> <li>• Devising rigorous monitoring and auditing systems that are not overly burdensome or costly</li> <li>• Using funds for facility improvement</li> <li>• Contextual factors facilitating success: decentralized health system, facilities with higher levels of autonomy, efficient banking systems, adequately trained staff and strong infrastructure quality</li> </ul>	<ul style="list-style-type: none"> <li>• Narrow incentivization of indicators, leading staff to deprioritize non-incentivized tasks</li> <li>• Confusing payment structures, delays in transfer of bonuses</li> <li>• Lack of transparency and equity in incentive structures</li> <li>• Use of retrospective payment systems</li> <li>• Contextual factors as potential barriers: insufficient staffing and lack of necessary resources; inaccessible facilities (e.g., geographic barriers) and community norms around care-seeking</li> </ul>
Conflict-affected settings	<ul style="list-style-type: none"> <li>• Developing financial incentive schemes within newly formed institutions due to little resistance and an openness to new ideas (30)</li> </ul>	<ul style="list-style-type: none"> <li>• Outsized role of external actors in funding and development of incentive schemes (30)</li> </ul>
Remote rural	Not reported*	Not reported*
Gender-related barriers	Not reported	Not reported

\*While no review disaggregated findings by remote rural settings, many studies included in the reviews took place in remote rural settings. Therefore, many of the characteristics and contextual factors included in the “general” settings most likely apply to remote rural settings.

### Implementation outcomes

Below are more specific implementation outcomes identified across reviews. Overall, **results indicate the PBIs are mostly acceptable to beneficiaries and stakeholders. PBIs were also feasible to implementation, although implementation was highly dependent on context and program characteristics.** Few studies focused on the extent to which PBIs have been adopted, although one review noted their prominence in fragile and conflict-affected settings (FCAS). Evidence on cost and



cost-effectiveness varied, with reviews generally noting a dearth of economic evaluations on PBF interventions. Evidence on the appropriateness of PBIs suggests that impact of provider incentive programs might be limited when changes needed are outside a facility's or provider's control. Concerns over sustainability of provider incentive interventions were prevalent.

### Acceptability

Renmans et al. assessed 35 articles to understand implementation of PBF interventions in LMICs (30). This review found that health care workers were generally supportive of PBF schemes due to their real and perceived benefits (i.e., salary increases and perceptions in changes to motivation, respectively). Points of dissatisfaction included concerns of payment level and methods for allocation, concerns over nepotism, and feelings of unfairness. Other points of criticism included skepticism of using PBF as a control mechanism, the perceived arbitrary selection of indicators, tensions between targeted and nontargeted tasks, and reliance on donor funding. The review noted a lack of evidence on the acceptability of PBF from clients' perspectives (30). From stakeholders' perspectives, a review by Manitu et al. highlighted that in some cases national actors see PBF schemes as complementary to existing national policies, and cited examples from Zimbabwe, Cameroon, and Burundi, thus increasing acceptability (29). However, this review also noted that PBF schemes often originate from "exogenous actors," and that the outsized role of external actors impacts acceptability and sustainability (29).

### Feasibility

Several reviews commented on factors contributing to PBI feasibility, including an acknowledgement that these interventions are not implemented in a vacuum and their success and/or failure is dependent upon context, the existing health system, the political economy, and other structural factors (6, 28, 30). Several reviews highlighted the importance of autonomy and decentralization as factors that improve PBI feasibility (6, 29). Another review noted simpler schemes tended to be more implementable and successful than complex ones (10). Some studies noted PBF can lead to unintended negative consequences (15, 17, 26). PBIs can draw attention away from non-incentivized tasks as health workers reallocate efforts to incentivized activities (23).

### Adoption/penetration

The review specific to understanding PBF interventions in FCAS specifically highlighted these settings tended to be early adopters of PBF, and the article examines several hypotheses as to why. Hypotheses included examples such as the potential outsized role of external actors (e.g., donors and international nongovernmental organizations) in FCAS, the favor of PBF among certain external actors involved in FCAS, and the fact that new institutions—often born from conflict—were fertile ground for setting up new systems with little pushback (28). Few other reviews commented on the extent of adoption and/or penetration of financial incentive interventions.

### Cost

Many studies looked at the cost or cost-effectiveness of P4P interventions, and results were varied. Blacklock et al. found that investments in P4P ranged from US\$0.20 to US\$2 per capita of population covered with services per year. Turcotte-Tremblay et al. attempted to assess whether PBF is cost-effective in LMICs and found weak existing evidence. The review identified a dearth of full economic evaluations and overall found a lack of clarity regarding connections between PBF costs and its effects, suggesting stronger empirical evidence is needed to determine if PBF is "good value for money" in LMICs (18). Zeng et al. demonstrated that PBF is costly but cost effective whether analyzed in terms of



intermediate outcomes or maternal/neonatal mortality rates. Among the three PBF studies included in the review, the cost per disability-adjusted life year (DALY) or quality-adjusted life year (QALY) averted ranged from US\$662 to US\$1350, and their relative value to GDP per capita ranged from 0.158 to 0.734. The authors compared PBF interventions to other studies that reported DALYs or QALYs and found that while other interventions had lower relative cost-effectiveness ratios, they were conducted on smaller scales, indicating the cost-effectiveness ratio may increase with scale-up (21).

On the other hand, de Walque et al. determined that paying providers directly from facilities can be more cost-effective and easier to implement than using PBF (6). Finally, Si Ying et al. found that prospective payment systems led to cost containment; prospective payment system reforms significantly reduced both supply and demand-side health expenditures (25).

### Appropriateness

Several reviews included findings related to appropriateness, or the perceived fit or relevance of the intervention. Specifically, studies mentioned potential inappropriateness of using PBF or other health care worker financial incentive interventions when systemic and structural constraints were at the root of poor-quality service provision, including lack of technical capacity or inadequacies in worker knowledge at facilities (6, 30). More specifically, in a review of health care financing interventions, De Walque et al. found that two-thirds of performance issues were attributable to factors not under the control of health care workers (6).

### Sustainability

The role of external actors in championing and supporting PBF interventions was noted as a sustainability concern across several reviews (28-30). However, one review suggested this concern was exaggerated and discounted critical innovations and adaptations made by local stakeholders (29). This article concludes that positioning of a PBF unit at the national level where it can serve a role in coordinating health sector activities can help facilitate sustainability and ownership (29). Another review noted that evidence on sustainability was generally lacking, although evidence of failed “start-stop” approaches have been documented where externally funded PBF interventions could not be sustained over time (28). However, the same review identified several examples of sustained PBF programming, specifically noting programs in Rwanda and Burundi, highlighting that implementing PBF as part of a package of health system reforms with a results-focused orientation seems more sustainable (28).

## Existing evidence gaps and areas for future research

Despite the substantial existing evidence base on financial provider incentives, many gaps exist in understanding how and when financial incentives should be used to improve health outcomes, especially when used as part of a pro-equity approach. Gaps identified include:

- **Lack of focus on how PBI addresses equity.** Despite the depth of coverage overall, no studies specific to using provider incentives to improve vaccination coverage for zero-dose children and missed communities were found. Improving equitable coverage has been identified as a potential objective of PBF (31), yet no reviews identified focused on how PBF interventions improved equity, which echoes findings from a previous review (32).
- **Lack of in-depth examination of heterogeneity across approaches and change mechanisms.** The diversity of approaches to providing financial incentives and the context-dependent nature of their implementation limits the ability to draw overarching conclusions on their effectiveness

and implementation. Several reviews highlighted the general lack of theoretical basis for detailing how PBF interventions were hypothesized to affect change (13, 23, 28, 30), although one realist review attempted to identify common pathways through which P4P interventions worked, such as improved community outreach, adherence to clinical guidelines, patient trust, facility improvements, access to drugs and equipment, and lower user fees (23).

- **Concentration of evidence within public health care systems.** Most reviews identified studies that took place within public health care systems. Results of a recent large-scale PBF program in Afghanistan among nongovernment organizations suggest these systems respond well to such incentives and can lead to improvements in health care delivery in FCAS (33). More research is needed to understand whether these results are generalizable.
- **Limited evidence from rigorous studies.** Despite not reviewing individual articles, it was clear from the review of reviews that there is a dearth of studies with valid comparator arms on financial incentives (8). This limitation might speak to the complexity of implementing these types of interventions and challenges with developing rigorous study design to test their effectiveness. However, reviews noted study rigor has improved over time.
- **Lack of evidence on sustainability.** Few studies looked at the sustainability of financial incentive initiatives. There is a need for long-term studies on PBIs to assess impact on outcomes of interest, as well as on program sustainability more generally.
- **Few types of financial incentives identified.** This review was broad in scope and covered all types of financial provider incentives; however, most reviews identified focused on PBIs, including P4P and PBF. Therefore, less is known about how other types of financial provider incentives can be used to address equity, such as the provision of incentives not tied to performance, such as DFF, or other means of RBF.

## Limitations

Despite undertaking a comprehensive search strategy, this synthesis involved a rapid literature review; it is possible that relevant citations were missed. Additionally, only reviews were included in the search, so it is possible more detailed evidence exists in individual publications. Also, despite the use of standardized forms and trained staff members, data interpretation is somewhat subjective, especially given that formal, quantitative synthesis of outcomes was infeasible. Quality assessments for reviews were not conducted. Finally, given the breadth of literature on this topic, inclusion criteria had to be relatively restrictive, potentially excluding citations that may have contained relevant information.

## Conclusions

### How should pro-equity programming shift based on findings?

To help grow the evidence base related to financial provider incentives and equity in immunization, more research is needed to understand how provider incentive interventions can be targeted to help achieve equity in vaccination coverage. More specifically, it is imperative that communities with a high prevalence of zero-dose children and missed communities be identified, and health care workers within these communities be targeted for intervention. It will also be important to tailor interventions to provider and facility needs and consider how the intervention fits within the existing health system. A

streamlined system for providing incentives, with clear funding streams and mechanisms, is required to ensure efficiency and equity, and maximize potential benefits of providing incentives.

The following are ways that financial incentives for providers can be shifted to inform a pro-equity approach:

- Test financial provider incentive interventions that specifically focus on increasing reach of health services to disadvantaged populations, such as by targeting initiatives among facilities and providers located in remote areas and/or serving disadvantaged populations (32).
- Set specific equity-focused targets for performance-based initiatives (32). This might be especially important in contexts where equity gaps are substantial (34).
- Consider using a rights-based approach to inform development of financial provider incentive schemes. This could be accomplished by focusing not only on improvements to quality but also improvements to the accessibility, availability, and acceptability of health care services (35).
- Ensure incentive schemes are transparent and equitable. Include those tasked with monitoring and governance in incentive schemes as well, which might include community members themselves (32).
- Within monitoring and evaluation data, disaggregate data in such a way that equity-focused results are clear.
- Evaluate the health system, facility, and community context where financial provider incentive interventions are being considered to identify relevant contextual factors as this will help determine whether implementing a PBI scheme is appropriate. For example, if facilities lack trained staff or equipment, consider simpler alternative approaches such as DFF (6).
- Consider testing PBI interventions in nongovernmental health care systems (33), assuming these systems are targeting zero-dose children and missed communities.

### Based on the findings, should financial incentive interventions with an equity perspective be brought to scale?

Evidence in this review suggests it is possible for financial incentive interventions for health care workers to be brought to scale, especially for performance-based financing interventions; however, there was notable variability in the success of such scale-up efforts, with results likely dependent on context, characteristics of the intervention, degree of local ownership and accountability, and overall fit within the existing health system. Costs also varied widely, which is an important consideration for scalability. Overall, the diversity of approaches to providing health care worker incentives and heterogeneity of effectiveness and implementation outcomes make it challenging to provide overall recommendations on scalability. Additionally, the review identified little evidence of financial provider incentives focused on improving equity. For scale-up considerations, learning agendas should be developed—tailored to specific contexts—followed by implementation research to better understand how incentive-based interventions can impact equity.

## Appendix A. Review methods

### How was this evidence synthesis conducted?

**SEARCHING, DATA EXTRACTION, AND ANALYSIS:** The review followed a general methodology for all topics in this series. In brief, the methodology involved comprehensively searching electronic databases from January 2010 through November 2022, conducting a grey literature search, screening through all citations, and developing topic-specific inclusion criteria. Data were extracted into standardized forms, and results were synthesized narratively.

**INCLUSION CRITERIA:** We included reviews with studies that took place in low- or middle-income countries (LMICs) and described an intervention that used financial incentives for health care workers to improve the provision of essential health services in vulnerable communities. We included reviews that assessed the effectiveness or implementation of these interventions in LMICs.

### SEARCH RESULTS:

- 982 reviews were identified in the published literature search.
  - 857 reviews identified were excluded during title and abstract screening for irrelevance, leaving a total of 125 reviews for the full-text review.
  - 106 articles were excluded during full-text review leaving a total of 19 reviews.
    - 19 reviews contained information relevant to effectiveness and implementation.
- 4 potential articles were identified in the grey literature.
  - 1 review on effectiveness was identified as eligible based on inclusion criteria.
- 5 reviews relevant to effectiveness were identified through other means, including:
  - 3 reviews relevant to implementation
  - 2 review relevant to effectiveness
- In total, 25 reviews were included:
  - 22 reviews related to effectiveness
  - 3 reviews related to implementation

## Appendix B. Selected health indicators from reviews regarding P4P effectiveness

Many studies attempted to quantify the impact of financial provider incentives on specific health outcomes of interest. Examples in the table below demonstrate how the effects of financial incentives are often varied and uncertain. Green demonstrates a positive impact, yellow no impact, grey uncertain, and red a negative impact.

Example indicators	Review	Results	Level of evidence certainty
Child immunizations*	Diaconu et al. (13)	P4P may have mixed effects on child immunizations	Low certainty
		P4P has a neutral impact on the percentage of children with at least 1 vaccine	Low certainty
		P4P has an inconclusive impact on the percentage of children fully vaccinated	Low certainty
		P4P has a negative impact on the percentage of children receiving DTP	Low certainty
		P4P has a positive impact on the percentage of children receiving BCG	Low certainty
Institutional deliveries	Eichler et al. (14)	PBF can lead to increased institutional deliveries	Some evidence
	Zeng et al. (21)	PBF had a positive impact on institutional deliveries	Not reported
Neonatal health	Eichler et al. (14)	No direct evidence of an impact of PBF on neonatal health services or neonatal health	None
Maternal health	Negero et al. (16)	Results-based financing (RBF) (along with many human resource for health interventions) led to increased quality of targeted maternity services	Not reported
	Eichler et al. (14)	No direct evidence of an impact of PBF on maternal health	None
	Eichler et al. (14)	PBF may lead to improved antenatal care	Some evidence
Quality of care	Negero et al. (16)	RBF (along with many human resource for health interventions) led to improved quality of care continuum	Not reported
	Wiysonge et al. (20)	Impact of provider incentives is uncertain on quality of care provided by primary care physicians or outpatient referrals from primary to secondary care	Very low certainty
	Stanton et al. (17)	Not clear if financial incentives improved the quality of maternal health care due to a lack of standardization of quality-of-care metrics	Not reported
	Zeng et al. (21)	PBF had a positive impact on quality and coverage of maternal and child health services, including prenatal and postnatal care	Not reported

	Bucagu et al. (12)	Higher salaries and performance incentives contributed to improved health service delivery quality	Not reported
Patient satisfaction	Negero et al. (16)	RBF had no impact on patient satisfaction	Not reported
Availability of health care workers, drugs and other commodities, and functioning equipment	Diaconu et al. (13)	P4P likely increases the availability of these resources	Moderate certainty
Recruiting and retaining health professionals to serve in remote areas	Wiysonge et al. (20)	Impact of provider incentives is uncertain	Very low certainty
Provider performance	Wiysonge et al. (20)	Impact of P4P is uncertain	Very low certainty
	Gadsden et al. (15)	The size of financial PBIs influenced performance; larger financial incentives were more effective than smaller ones	Not reported
Utilization of services	Wiysonge et al. (20)	Impact of P4P is uncertain	Very low certainty
Patient outcomes	Wiysonge et al. (20)	Impact of P4P is uncertain	Very low certainty
Resource use	Wiysonge et al. (20)	Impact of P4P is uncertain	Very low certainty
Use of modern family planning	Bucagu et al. (12)	PBF was associated with more women using modern family planning methods (in conjunction with increased health workforce and skills, community-based health insurance, and good governance)	Not reported

\*Diaconu et al. looked at studies that compared P4P to a status quo control and to other strategies. They mostly found very low- or low-certainty evidence for the impacts of P4P compared to a status quo control, other than that P4P “probably increases the availability of health workers, medicines and well-functioning infrastructure and equipment” (moderate certainty evidence). Similarly, for P4P compared to other strategies, they found very low- to low-certainty evidence. They concluded that while the evidence base and study quality for the effectiveness of P4P has increased, their impacts appear to be mixed and there is much variation in terms of type of payment method and evaluation. More examples of the effects of P4P on specific vaccine coverage are included in Appendix C (13).

Appendix C. Immunization-specific indicators synthesized in Diaconu et al., review (13)

<b>Indicator</b>	<b>Direction of impact of P4P</b>	<b>Level of evidence</b>	<b>Comparator</b>
Percentage of children with at least one vaccine	Neutral	Low	Control
Percentage of children with at least one vaccine	Neutral	Moderate	Control (across RCT studies only)
Likelihood of child being vaccinated	Uncertain	Low	Comparator intervention
Percentage of children fully vaccinated	Uncertain	Low	Control
Percentage of children fully vaccinated	Positive impact	Low	Control (across RCT studies only)
Percentage of children fully vaccinated	Uncertain	Low	Comparator intervention
Percentage of children receiving BCG	Positive impact	Low	Control
Percentage of children receiving BCG	Positive impact	Low	Control (across RCT studies only)
Percentage of children receiving BCG	Neutral	Low	Comparator intervention
Percentage of children receiving DTP	Negative impact	Low	Control
Percentage of children receiving DTP	Positive	Low	Control (across RCT studies only)
Percentage of children receiving DTP	Neutral	Low	Comparator intervention
Percentage of children receiving measles vaccine	Positive impact	Low	Control
Percentage of children receiving measles vaccine	Neutral	Low	Control (across RCT studies only)
Percentage of children receiving polio vaccine	Positive impact	Low	Control
Percentage of children receiving polio vaccine	Positive impact	Low	Control (across RCT studies only)
Percentage of children receiving pentavalent vaccine	Neutral	Low	Control
Percentage of children receiving pentavalent vaccine	Negative impact	Moderate	Control (across RCT studies only)



## REFERENCES

1. Kovacs RJ, Powell-Jackson T, Kristensen SR, Singh N, Borghi J. How are pay-for-performance schemes in healthcare designed in low- and middle-income countries? Typology and systematic literature review. *BMC Health Services Research*. 2020;20(1):291.
2. de Walque D, Kandpal E, Wagstaff A, Friedman J, Piatti-Fünfkirchen M, Sautmann A, et al. *Improving Effective Coverage in Health: Do Financial Incentives Work?: World Bank Publications; 2022.*
3. Musgrove P, editor *Financial and Other Rewards for Good Performance or Results: A Guided Tour of Concepts and Terms and a Short Glossary\*2011.*
4. Tan SY, Melendez-Torres GJ. Do prospective payment systems (PPSs) lead to desirable providers' incentives and patients' outcomes? A systematic review of evidence from developing countries. *Health Policy Plan*. 2018;33(1):137-53.
5. Witter S, Bertone MP, Diaconu K, Bornemisza O. Performance-based Financing versus “Unconditional” Direct Facility Financing - False Dichotomy? *Health Systems & Reform*. 2021;7(1):e2006121.
6. de Walque D, Kandpal E. Reviewing the evidence on health financing for effective coverage: do financial incentives work? *BMJ Glob Health*. 2022;7(9).
7. Castro Lopes S, Guerra-Arias M, Buchan J, Pozo-Martin F, Nove A. A rapid review of the rate of attrition from the health workforce. *Human Resources for Health*. 2017;15(1):21.
8. Asadi-Aliabadi M, Karimi SM, Tehrani-Banihashemi A, Mirbaha-Hashemi F, Janani L, Babaee E, et al. Effectiveness of pay for performance to non-physician health care providers: a systematic review. *Health Policy*. 2022;126(7):592-602.
9. Ashis D, Gopalan SS, Chandramohan D. Effect of Pay for Performance to improve quality of maternal and child care in low and middle-income countries: a systematic review. *BMC Public Health*. 2016;16(321):(14 April 2016).
10. Bellows NM, Askew I, Bellows B. Review of performance-based incentives in community-based family planning programmes. *J Fam Plann Reprod Health Care*. 2015;41(2):146-51.
11. Blacklock C, MacPepple E, Kunutsor S, Witter S. Paying for Performance to Improve the Delivery and Uptake of Family Planning in Low and Middle Income Countries: A Systematic Review. *Stud Fam Plann*. 2016;47(4):309-24.
12. Bucagu M, Kagubare JM, Basinga P, Ngabo F, Timmons BK, Lee AC. Impact of health systems strengthening on coverage of maternal health services in Rwanda, 2000–2010: a systematic review. *Reproductive Health Matters*. 2012;20(39):50-61.
13. Diaconu K, Falconer J, Verbel A, Fretheim A, Witter S. Paying for performance to improve the delivery of health interventions in low- and middle-income countries. *Cochrane Database of Systematic Reviews*. 2021(5).
14. Eichler R, Agarwal K, Askew I, Iriarte E, Morgan L, Watson J, et al. Performance-based incentives to improve health status of mothers and newborns: what does the evidence show? *2013;31:S36-S47.*
15. Gadsden T, Mabunda SA, Palagyi A, Maharani A, Sujarwoto S, Baddeley M, et al. Performance-based incentives and community health workers' outputs, a systematic review. *Bulletin of the World Health Organization*. 2021;99(11):805-18.
16. Negero MG, Sibbritt D, Dawson A. How can human resources for health interventions contribute to sexual, reproductive, maternal, and newborn healthcare quality across the continuum in low- and lower-middle-income countries? A systematic review. *Human Resources for Health*. 2021;19(1):1-28.

17. Stanton ME, Higgs ES, Koblinsky M. Investigating financial incentives for maternal health: an introduction. *J Health Popul Nutr.* 2013;31(4 Suppl 2):1-7.
18. Turcotte-Tremblay A-M, Spagnolo J, De Allegri M, Ridde V. Does performance-based financing increase value for money in low- and middle- income countries? A systematic review. *Health Economics Review.* 2016;6(1):30.
19. Witter S, Fretheim A, Kessy FL, Lindahl AK. Paying for performance to improve the delivery of health interventions in low- and middle-income countries. *Cochrane Database of Systematic Reviews.* 2012(2):N.PAG-N.PAG.
20. Wiysonge CS, Paulsen E, Lewin S, Ciapponi A, Herrera CA, Opiyo N, et al. Financial arrangements for health systems in low-income countries: an overview of systematic reviews. *Cochrane Database Syst Rev.* 2017;9(9):Cd011084.
21. Zeng W, Li G, Ahn H, Nguyen HTH, Shepard DS, Nair D. Cost-effectiveness of health systems strengthening interventions in improving maternal and child health in low- and middle-income countries: a systematic review. *Health Policy Plan.* 2018;33(2):283-97.
22. Neelsen S, de Walque D, Friedman J, Wagstaff A. Financial Incentives to Increase Utilization of Reproductive, Maternal, and Child Health Services in Low-and Middle-Income Countries. 2021.
23. Singh NS, Kovacs RJ, Cassidy R, Kristensen SR, Borghi J, Brown GW. A realist review to assess for whom, under what conditions and how pay for performance programmes work in low- and middle-income countries. *Soc Sci Med.* 2021;270:113624.
24. Kabia E, Kazungu J, Barasa E. The Effects of Health Purchasing Reforms on Equity, Access, Quality of Care, and Financial Protection in Kenya: A Narrative Review. *Health Syst Reform.* 2022;8(2):2114173.
25. Si Ying T, Melendez-Torres GJ, Tan SY. Do prospective payment systems (PPSs) lead to desirable providers' incentives and patients' outcomes? A systematic review of evidence from developing countries. *Health Policy & Planning.* 2018;33(1):137-53.
26. Sieleunou I, Tamga DDM, Maabo Tankwa J, Aseh Munteh P, Longang Tchatchouang EV. Strategic Health Purchasing Progress Mapping in Cameroon: A Scoping Review. *Health Syst Reform.* 2021;7(1):e1909311.
27. Rutebemberwa E, Kinengyere AA, Ssengooba F, Pariyo GW, Kiwanuka SN. Financial interventions and movement restrictions for managing the movement of health workers between public and private organizations in low- and middle-income countries. *Cochrane Database Syst Rev.* 2014;2014(2):Cd009845.
28. Bertone MP, Falisse J-B, Russo G, Witter S. Context matters (but how and why?) A hypothesis-led literature review of performance based financing in fragile and conflict-affected health systems. *PLOS ONE.* 2018;13(4):e0195301.
29. Mayaka Ma-Nitu S, Tembey L, Bigirimana E, Dossouvi CY, Basenya O, Mago E, et al. Towards constructive rethinking of PBF: perspectives of implementers in sub-Saharan Africa. *BMJ Global Health.* 2018;3(5):e001036.
30. Renmans D, Holvoet N, Criel B, Meessen B. Opening the 'black box' of performance-based financing in low- and lower middle-income countries: a review of the literature. *Health Policy and Planning.* 2016;31(9):1297–309.
31. Witter S, Toonen J, Meessen B, Kagubare J, Fritsche G, Vaughan K. Performance-based financing as a health system reform: mapping the key dimensions for monitoring and evaluation. *BMC Health Services Research.* 2013;13(1):367.
32. Ridde V, Gautier L, Turcotte-Tremblay A-M, Sieleunou I, Paul E. Performance-based Financing in Africa: Time to Test Measures for Equity. *International Journal of Health Services.* 2018;48(3):549-61.

33. Samad D, Hamid B, Sayed GD, Liu Y, Zeng W, Rowe AK, et al. The effectiveness of pay-for-performance contracts with non-governmental organizations in Afghanistan – results of a controlled interrupted time series analysis. *BMC Health Services Research*. 2023;23(1):122.
34. Priedeman Skiles M, Curtis SL, Basinga P, Angeles G. An equity analysis of performance-based financing in Rwanda: are services reaching the poorest women? *Health Policy and Planning*. 2013;28(8):825-37.
35. Cole MS, Boydell V, Hardee K, Bellows B. The Extent to Which Performance-Based Financing Programs' Operations Manuals Reflect Rights-Based Principles: Implications for Family Planning Services. *Glob Health Sci Pract*. 2019;7(2):329-39.

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