

ARTICLE

Should performance-based incentives be used to motivate health care providers? Views of health sector managers in Cambodia, China and Pakistan

Mishal Khan^{1*}, Imara Roychowdhury^{2†}, Ankita Meghani^{3†}, Farah Hashmani⁴,
Josephine Borghi¹ and Marco Liverani^{1,5}

¹Faculty of Public Health and Policy, London School of Hygiene and Tropical Medicine, London, UK, ²Saw Swee Hock School of Public Health, National University of Singapore, Singapore, Singapore, ³Department of International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA, ⁴People's Primary Healthcare Initiative (PPHI) Sindh, Karachi, Pakistan and ⁵Faculty of Public Health, Mahidol University, Bangkok, Thailand

*Correspondence to: Mishal Khan, London School of Hygiene & Tropical Medicine, 15-17 Tavistock Place, London WC1H 9SH, UK. Email: mishal.khan@lshtm.ac.uk

(Received 21 December 2017; revised 23 August 2018; accepted 16 November 2018; first published online 31 January 2019)

Abstract

This study qualitatively investigates what factors apart from or in addition to financial incentives can encourage better performance of frontline health care providers. We interviewed health sector managers in Pakistan, Cambodia and China, and they highlighted many potential limitations in the applicability of financial incentives in their contexts. There was a consistent view that providers are not always primarily driven by monetary rewards and that non-monetary rewards – such as recognition from direct supervisors and career development – could have a greater influence on performance. Managers also highlighted several challenges related to the design and implementation of performance management schemes: supervisors may not have performance information necessary to determine which agents to reward; when performance information is available, organisational culture may value other attributes such as social ties or years of experience; finally, concentration of power at higher levels of the health system can reduce supervisors' ability to manage performance, rewards and accountability. Although health sector managers were enthusiastic about measures to improve performance of providers, our study indicated that specific social, cultural and health system factors may mean that non-monetary rewards and structural changes to support a more transparent and meritocratic working environment should also be considered.

Keywords: performance-based incentives; health systems; China; Cambodia; Pakistan

Introduction

A well-performing health workforce – one that is available, competent, responsive and productive – is essential for health systems to serve population needs effectively and improve health worldwide [World Health Organization (WHO), 2007a]. However, in many low- and middle-income countries (LMICs) health improvements are being hindered by provider shortages, skill mix imbalances, inequitable distribution, suboptimal work environments and a weak knowledge base to improve the situation (Chen *et al.*, 2004). Improving performance of the health workforce has been identified as a key strategy to accelerate progress on many Sustainable Development Goals (WHO, 2017a).

One strategy that has been devised to address this problem is the design of contracts with performance-based incentives (PBIs), defined as the transfer of money or other material rewards

[†]These two authors contributed equally to the work.

conditional on taking a measurable action or achieving a predetermined performance target (Eichler and Levine, 2009). Over the past two decades, PBIs have been an increasingly popular management tool used by health sector managers to improve health services delivery in LMICs (Meessen *et al.*, 2011), where salary levels are often inadequate to attract, retain and motivate the health workforce (Henderson and Tulloch, 2008; Willis-Shattuck *et al.*, 2008). As incentive payments are directly linked to measured performance, supply side PBIs can be used by managers – in addition to other performance management tools such as training and guidelines – to try and influence specific actions of health care providers (Eichler and Levine, 2009). Notably, since 2008, the Health Results Innovation Trust Fund has invested US\$ 420 million to PBI projects globally, while the International Development Association added another US\$ 2.4 billion to these funds (World Bank, 2014). As a result of these large investments, supply-side PBIs have been implemented and scaled up in many countries, especially in Africa (Fritsche *et al.*, 2014).

Several studies and evaluations have been conducted to assess these interventions, providing evidence that PBIs have had positive effects (Kandpal, 2017) – for example, increased rates of institutional deliveries and provision of neonatal services were reported in Rwanda (Basinga *et al.*, 2010). However, a recent study in the same country found that PBIs improved efficiency but not equitable access to health services (Lannes *et al.*, 2016), while unintended negative consequences were documented in another study, including the manipulation of reports to maximise results and neglect of important activities not incentivised (Kalk *et al.*, 2010). Evidence from other countries in Africa suggests that poorly designed PBI schemes may have additional negative implications for the health system (Paul *et al.*, 2018); for example, a study in Tanzania found that perceptions about unfairness in the distribution of financial bonuses reversed the motivational effect of PBI schemes (Chimhutu *et al.*, 2016). Where PBIs have been successful, the role of health managers as well as community leadership was found to be central to improving performance (Mabuchi *et al.*, 2018).

Despite these insights, knowledge gaps remain in our understanding of factors that may promote or hinder successful PBI scheme implementation. It is well recognised that a careful consideration of context is crucial to the success of PBI schemes, as in any other health intervention (Ssengooba *et al.*, 2012; Olafsdottir *et al.*, 2014). However, a recent systematic review found that only few evaluations explored in-depth the influence of contextual variables (Renmans *et al.*, 2016a). The same review also found that the majority of PBI studies were conducted in African countries, with little attention to other contexts of implementation. Lastly, most reviewed studies focussed on health care workers, but views and experiences of local managers have rarely been incorporated. In particular, we noted a dearth of evidence from Asian countries and regions such as China, India, Pakistan and the Greater Mekong Subregion – whose large and growing populations are in urgent need of more well-trained and motivated health care professionals. We propose that important insights about the appropriateness and design of performance management tools – including PBI schemes – could be gained from managers based in Asian countries, owing to the unique socio-cultural factors and health systems constraints in several Asian LMICs (Dieleman *et al.*, 2003; Henderson and Tulloch, 2008; Grundy *et al.*, 2009; Connell, 2010; Hafeez *et al.*, 2011; Tao *et al.*, 2013; Clarke *et al.*, 2016; Sun *et al.*, 2016).

Against this background, this paper reports findings from a study which aimed to investigate – from the perspective of senior health sector managers – prospects for the introduction of PBIs in their settings. Qualitative research for this project was conducted in Cambodia, China and Pakistan to complement the existing stock of knowledge, mainly based on experiences in Africa, with perspectives from three Asian countries characterised by different health systems, administrations and cultural backgrounds.

Conceptual framework

A meaningful examination of the suitability of PBIs requires engagement with the theoretical assumptions underpinning this type of intervention. As Renmans *et al.* (2016b) pointed out, PBIs

can be understood through the lens of the principal – agent relation, a classic problem in economics which focuses on issues resulting from the delegation of authority and responsibility (Stiglitz, 1989). In the health sector, this problem can be seen as one involving the manager of a health programme (who acts as a ‘principal’ and sets forth goals and performance targets) and health providers (who act as ‘agents’ of the principal and are responsible for meeting the targets). The principal relies on the actions of the agent to achieve a desired outcome, but the agent may have differing needs and wishes (or ‘utility functions’) to the principal. As a result of this tension, the agent cannot be relied upon to act entirely in the way desired by the principal. Providers often benefit from greater knowledge about the local context and activities, resulting in information asymmetry that allows the agent to evade supervision and execute a personal agenda. To address this problem, the principal can design a compensation system (a contract) with financial or other material rewards, which motivates agents to behave in the principal’s interest, even when they cannot fully monitor what an agent is doing.

Yet, evidence from the social sciences has questioned the assumption that financial gains alone are a strong motivation to produce more and better outcomes, demonstrating the multi-faceted nature of reward systems. For example, distinctions have been made between intrinsic and extrinsic sources of motivation (Ryan and Deci, 2000; Gagné and Deci, 2005; Paul and Renmans, 2018); in the context of frontline health care providers, the latter would stem from rewards or sanctions coming from an external source and the former would be driven, in part, by the satisfaction derived from providing care to patients. The literature has also highlighted the importance of other non-material rewards (Paul and Robinson, 2007), which may include social motivation (peer-pressure and recognition from the community or co-workers) and internal motivation (including moral and intrinsic). Thus, both principals and agents, in reality, do not always function as actors motivated only by self-interest and material rewards (Cuevas-Rodriguez *et al.*, 2012), as the paradigm of the ‘homo economicus’ would imply.

Furthermore, meaningful implementation of schemes based on financial incentives requires a local system of institutions, organisational structures and capacities which can enable both principals and agents to act in accordance with the stipulated performance contract. In practice, however, the ideal set of conditions for optimal programme implementation is difficult to achieve, especially in LMICs. For example, the presence of multiple principals – who may have conflicting goals, needs and demands – is likely to dilute the impact of incentives compared to situations in which there is a single principal (Shapiro, 2005; Renmans *et al.*, 2016b); in LMICs, where providers often work on multiple programmes funded by different donors, this is a common situation. Other contextual factors – such as weak local accountability mechanisms, limited bureaucratic capacities, gaps in information systems and wider issues of organisational culture – have also been shown to affect the implementation of PBIs (Paul *et al.*, 2018).

In consideration of these points, we designed a conceptual framework integrating two analytical domains (Figure 1). First, we aimed to explore in practice the fundamental assumptions of PBIs, with particular attention to the value of monetary vs non-monetary incentives and other sources of health worker motivation. Second, we examined practical challenges related to the design or implementation of PBIs, including the extent to which local institutions have systems in place to monitor performance and provide fair distribution of incentives. Based on insights from previous studies (Paul *et al.*, 2018), we summarised and grouped the variety of design and implementation challenges into four inter-linked categories, as illustrated in the rectangular boxes in Figure 1: (1) the availability of sufficient resources to deliver relevant health services by agents (and thus meet the performance targets); (2) a well-functioning monitoring systems to link performance with rewards; (3) organisational and cultural norms that support merit and fair performance management; and (4) sufficient authority of principals to dispense rewards based on performance information.

Details of our methodology and our criteria for country and interviewee selection are provided in the next sections.

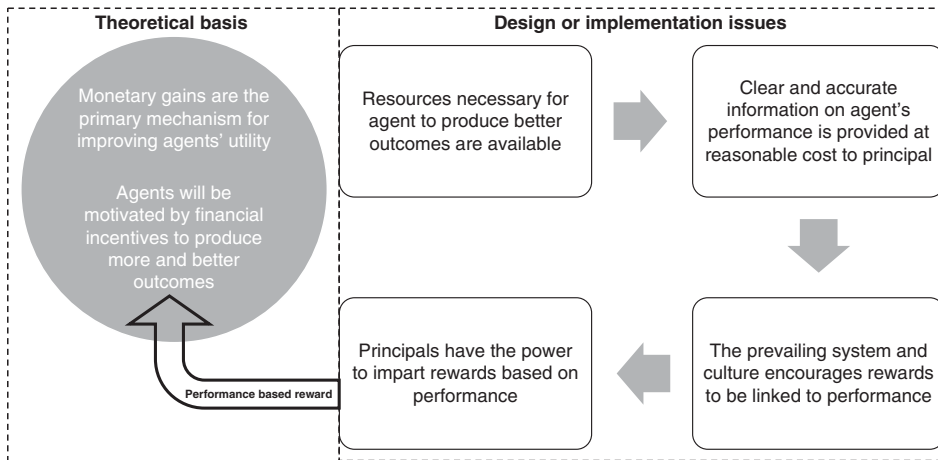


Figure 1. Conceptual framework summarising the theoretical basis of performance-based incentives and elements that are critical for appropriate design and implementation.

Methods

Study setting

Three Asian LMICs were purposively selected from among those where the research team had strong relationships from ongoing work, to act as case studies representing diversity in terms of GNI per capita (US\$ 1140 in Cambodia, US\$ 8260 in China and US\$ 1510 in Pakistan) (The World Bank, 2016), the availability of human resources for health (as indicated by nursing and midwifery personnel: 1/1000 in Cambodia, 1.7/1000 in China and 0.6/1000 in Pakistan) (WHO, 2017b), as well as different administrative systems. A summary of each country's income-level and extent of health system decentralisation, along with examples of PBI schemes implemented is provided in Table 1. In Pakistan, health services strategic planning and delivery are devolved to the provinces, whereas in Cambodia there is an ongoing move towards decentralisation and in China there is a greater degree of centralisation of decision-making (WHO, 2007b, 2015a). In all three study countries, different types of PBI schemes have been implemented, scaled-up and are likely to be expanded in the near future (see e.g. Witter *et al.*, 2011; Tao *et al.*, 2013; Matsuoka *et al.*, 2014; Ir *et al.*, 2015; Sun *et al.*, 2016).

Data collection

Data collection for this study involved semi-structured qualitative interviews with senior managers (principals) responsible for resource allocation and performance management in publicly and privately funded health programmes, implemented in numerous primary health facilities or in charge of large tertiary health facilities. We decided to focus on this group because perspectives of managers can be very important for success and ownership of PBI schemes, but are rarely studied in LMICs (Olafsdottir *et al.*, 2014; Paul *et al.*, 2014; Paul *et al.*, 2018). Given the prospective nature of this research project and our primary focus on pre-implementation issues, we only include participants who had not yet been involved directly in PBI schemes and thus could provide more neutral, unbiased views on the questions under investigation.

In each country, three to five health sector managers working in vertical programmes, such as HIV and tuberculosis, as well as hospitals and primary health care were purposively selected as the 'seed' group for initial interviews. Following interviews with the first group, snowball sampling was used to identify additional interviewees with the aim of achieving saturation in the analysis of the research domains in the conceptual framework. Interviews were conducted both in the capital cities and at least one provincial city in each country. Overall, 13, 10 and nine interviews were conducted

Table 1. Overview of country characteristics

	Cambodia	Pakistan	China
Income classification	Lower-middle	Lower-middle	Middle
Decision-making within health system	Current reforms aim to increase decentralisation and the autonomy of local health managers, although decision-making and strategic planning remain concentrated within the Ministry of Health (WHO, 2015b)	Public health management responsibilities are devolved to the provincial authorities, who are responsible for developing their own strategies in consultation with the Office of the Provincial Secretary of Health (WHO, 2007b)	Public health management and primary decision-making lies with the central government, with the local governments acting as implementers carrying out the strategies or programmes devised by the central government (WHO, 2015a)
Examples of existing PBI schemes	Cash incentive provided to midwives for each live birth at public health centres or hospital (Ir <i>et al.</i> , 2015)	Government-employed health facility workers in Battagram district entitled to 20–35% additional pay if performance targets are met (Witter <i>et al.</i> , 2011)	Cash incentives for direct observation of TB treatment given to health workers in rural areas (Tao <i>et al.</i> , 2013; Sun <i>et al.</i> , 2016)

Note: PBI = performance-based incentive.

Table 2. Summary of interviews conducted

	Cambodia	Pakistan	China
Provincial interview site	Siem Reap	Sindh	Hebei
Capital interview site	Phnom Penh	Islamabad	Beijing
Number of interviews	9	13	10
Types of positions held by key informants	Government disease control programme managers, tertiary hospital managers, primary care NGO managers, technical advisers to health policymakers	Government disease control programme managers, tertiary hospital managers, managers of primary care organisation contracted by government, technical advisers to health policymakers	Government disease control programme managers, tertiary hospital managers, technical advisers to health policymakers

in Pakistan, China and Cambodia, respectively (Table 2). The 32 health sector managers interviewed consisted of 14 government health department officials, two technical advisors to high level government policymakers on performance management, eight tertiary government hospital managers and eight non-profit health service delivery organisation representatives.

Following informed consent, semi-structured interviews lasting between 30 and 90 minutes were conducted face-to-face in English or the local language according to the interviewee's preference. Interviews were conducted by researchers (M.S.K., M.L. and S.W.) with expertise in qualitative methods, all of whom had worked in the countries and were familiar with the local context. Based on the set of concepts discussed above, a semi-structured interview guide was used to explore managers' perceptions about the suitability of PBIs in the country or the organisational context where the interviewee worked in. Interview schedules were tailored to the specific expertise each participant could bring. Interviewees were given space to express their own

opinions and ideas, and in many cases, their responses shaped the flow of the interviews. Interviews were recorded and transcribed verbatim, with the exception of four instances when the participants preferred extensive handwritten notes.

Analysis

We used a combination of deductive and inductive thematic analysis, based on an interpretive approach (Rice and Ezzy, 1999). In order to organise the data and identify salient themes, we coded each anonymised transcript line by line. A preliminary coding frame was devised by I.R. comprising the broad themes described in the conceptual framework and additional sub-themes emerging from the data. The themes were independently reviewed by M.S.K. to ensure agreement on the coding frame. M.S.K. and I.R. compared initial categories with subsequent codes to refine the analytical framework, until all the data were sorted in line with the constant comparison technique (Glaser and Strauss, 1967). In the presentation of results, themes and sub-themes are illustrated with excerpts from the interviews.

Ethical approval was granted by the National University of Singapore research ethics committee and written informed consent was provided by each interviewee.

Results

Taken together, our results illustrate many potential limitations in the applicability of PBIs within the institutions and cultural contexts they worked in. Many health sector managers (principals) believed that health care providers are not always primarily driven by monetary rewards and that non-monetary rewards – such as recognition from direct supervisors, career development and greater involvement in decisionmaking – could have a greater influence on performance. They also highlighted several factors related to the design and implementation of PBIs that they felt would influence the impact of PBIs on provider performance, as we will detail in the sections below. Following the structure of our conceptual framework, we first present interviewees' perspectives about issues related to the theoretical foundations of PBIs as a means to improve performance and

Table 3. Summary of assumptions and contextual requirements underlying use of performance-based incentives (PBIs) and examples of how these were not fully met in our study settings

Assumption/contextual requirement	Study findings
Agents are primarily motivated by financial incentives to produce more and better outcomes	Non-monetary incentives that serve other interests, including power and position, also matter Agent's buy in to achieving goals set by the principal is influenced not only by financial incentives but also by perceptions of the principal's motivations and the agent's relationship with direct supervisors
Resources and capacity necessary for agent to produce better outcomes are available	Targets are not always supported by adequate materials, training or other resources in order for health care providers to deliver outcomes
Principals have the information systems necessary to fairly disperse financial incentives, and it is transparent to agents how the incentive system works	There is often lack a of objective performance-related information When incentive calculations are complex it is not transparent to agents how performance information is used
The prevailing institutional system and culture encourages rewards to be linked to performance	Meritocracy is not necessarily the norm and use of rational penalties was suggested by some managers
Principals have the power to provide PBIs or impose rational penalties	Centralisation of power and decision-making in some settings limits principals' ability to implement rewards or penalties

then we present findings related to the design or implementation of PBIs. Our key findings in relation to the conceptual framework presented in Figure 1 are summarised in Table 3.

Issues raised with respect to the theoretical basis of PBIs (agents are primarily motivated by financial rewards)

Incentives that serve other interests, including gains in social status and professional development, may matter to providers more than monetary rewards

Diverse respondents – including private sector primary health services managers in Pakistan, private hospital managers and government public health officials in China and an international non-governmental organisation manager in Cambodia – explained that an incentive system based solely on monetary gains would be ineffective in their context as providers have additional concerns and expectations. Particularly in Cambodia and Pakistan, actions that could strengthen or weaken the reputation of agents within their community – such as feedback of patients on social media outlets – were seen as more important than incentive payments (Cambodia – 1, 3, 4 and Pakistan – 2, 8, 11). Other respondents believed that non-monetary rewards that contribute to professional development or improve work experience – including career advancement through promotion, training opportunities and access to safer work environments – may be more effective motivators than small financial incentives. For example, one manager in China explained:

‘At the end of June, we will have an annual conference in Nanchang, about 1700 doctors will participate in the conference. For the best ones, we will cover their fees for participating in the conference, including transportation, registration, and accommodation (...) Additionally, we will select the best research papers. We will reward them with a certificate of best paper. Sometimes we will give them a monetary prize, but it is very rare. Usually we will just give them recognition and moral encouragement’ (China – 1).

Similarly, one informant in Pakistan was in favour of social recognition and ‘film award’ style ceremonies (Pakistan – 7), adding that failure of managers to publicly acknowledge deserving providers can lead to demotivation. Our results also indicated that non-monetary rewards were perceived by some decision-makers in Pakistan and Cambodia as being more sustainable than PBIs, with PBIs associated with short term gains that are truncated when the financial incentive funding source dries up.

Effective management of human resources and alignment of values between supervisors and employees can be more important than financial incentives

Participants in each country (Pakistan – 1, 6, 8; Cambodia – 3, 4, 5; China – 7) felt strongly that performance could be improved without monetary incentives owing to sound management and supervision of human resources. Some respondents stressed that a good manager should be supportive, understand providers’ needs, and establish a constructive dialogue with them to agree on targets and approaches (Cambodia – 9, Pakistan – 2, 3). For example, a public-sector manager in Pakistan explained that better ownership of targets by providers can be achieved through a process of dialogue and feedback between those involved in the delivery of services:

‘Let us sit together. Let us see what you can actually achieve and what you need from us. Let me give you all those things. Certain things you will always not be able to give but then you negotiate. You come to a negotiated target... That’s how I think ownership comes in’ (Pakistan – 2).

By contrast, other respondents believed that penalties are necessary to improve performance where a sense of duty and governance structures are weak:

'I gave you the example of Dr. xxx... she did some great work. She was really the stick. She really made the District TB Coordinators, she made the National Programme Officers, the District Health Officers work... So I think she was very instrumental...' (Pakistan – 6).

'In places where the governance is very good and people work in any case, stick may not be necessary. But in places where governance is an issue, stick has to be there. If there is only carrot then it will go to people who are influential and not necessarily deserving. In our case, people will not work if the stick is not there' (Pakistan – 3).

A health sector manager (Cambodia – 4) further stated that they needed: 'the carrot, the stick, and scissors'. The scissors, he explained, are needed to cut up contracts of poorly performing workers who have been retained in positions for which they are unqualified. This sentiment was shared by some interviewees in Pakistan (Pakistan – 6, Pakistan – 8, Pakistan – 13) and China:

'(Low wage) does not influence their motivation or efficiency very much. For example, if they feel they are not paid well and don't work hard, then they will get fired. So it does not have much direct influence' (China – 2).

Finally, analysis of views of health sector managers in Cambodia and Pakistan revealed a belief that providers' perception of the managers' values and vision can have a large impact on their desire to work with them towards performance goals. Some respondents (Cambodia – 9, Pakistan – 2, 3) felt strongly that providers did not accept monetary incentives and performance goals blindly, but rather questioned values of the manager as well as the manager's understanding of the local context and needs. Alignment of providers' values with those of the payer or implementation manager were also considered important in China, but mismatches were perceived to be less prominent as respondents (China – 1, 3) felt that policies were generally considered reasonable by providers.

Issues raised with respect to PBI design and implementation

Lack of adequate resources and skills may prevent agents from achieving performance targets

Health sector managers in all countries suggested that failures to meet the targets set by the organisation (not linked to incentives) were often due to lack of adequate resources – including training, equipment and funds – rather than shortcomings in individual behaviour:

'Is it because our doctors lack motivation? Or other factors? For example, we need to diagnose some patients, but the equipment for diagnosis is broken, which results in not achieving the targets. This is not caused by individual's behaviour' (China – 1).

'So when we set policy targets, often what is ignored in Pakistan, from my experience of course, is that your capacity is not enhanced accordingly....' (Pakistan – 2).

Specifically, managers in China (China – 1, 5, 9) expressed concerns with gaps in the infrastructure and the availability of essential equipment, whereas in Pakistan and Cambodia (Pakistan – 2, 3, 6, 12, 13; Cambodia – 3, 4, 9) a lack of skills was identified as a common barrier to the delivery of quality care.

A well-functioning monitoring and evaluation system is crucial to enable performance management; however, reliable and unbiased information is often lacking

Health sector managers in all three countries (Pakistan – 3, 11, 12; China – 10; Cambodia – 3) noted that a well-functioning information system and other monitoring exercises can serve as effective and sustainable performance management tool by itself. As one manager in Pakistan, who strongly associated PBIs with a risk of early truncation owing to dependence on external funding, explained:

'I do not think that only incentives are a good way to improve performance, especially in a country such as Pakistan. When the donor will go, incentives will go away too. There should be a sustainable solution through motivation... I am strongly against this incentive based system. Government should improve the monitoring mechanism at the district level and they should be accountable' (Pakistan – 11).

Informants also pointed out that, in order to make accurate judgements on performance, monitoring systems must be useful, information must be reported to the principal accurately and the principal must then fairly use that information as the basis of calculation of rewards. However, many health sector managers noted that reliable assessments of provider performance are often lacking, when information systems are not available at a cost that is feasible for their context, preventing effective implementation of PBI schemes. The information gap was related to both incomplete record keeping and deliberate falsification of records to inflate progress towards targets.

'His record keeping is not complete [and] if he is writing lies (in the records) even that is not proper so how can I use this information?' (Pakistan- – 7).

Finally, it was stressed that the way in which performance is tracked and rewarded should be simple and clear for providers to understand. Yet, concerns with the complexity of remuneration schemes emerged. For example, one informant in Cambodia noted:

'45% of health workers' pay is made up from various different allowances. They get it in one lump, but they don't know what these are for. It's incredibly complicated to try and work out these tiny sums of money' (Cambodia – 11).

Meritocracy is not always at work in organisations, limiting the extent to which PBIs can be implemented

While managers recognised the importance of monitoring and evaluation systems, some of them cautioned that the lack of meritocracy in the work place may limit the effectiveness of monitoring systems as performance management tools (Cambodia – 2, Pakistan – 3, 12). For example, managers in Pakistan and Cambodia explained that providers are often being rewarded on the basis of factors other than performance, such as political affiliations, family ties or seniority, as the following quotations illustrate:

'You need a whole reform of public administration, performance based, from a patronage system moving to a more meritocratic system' (Cambodia – 2).

'... performance appraisal will be because of political issues, context, and political background. As you know, governance is an issue... those who have not worked for the whole year also have good appraisal and get the same appraisal as the ones who have worked well round the year...' (Pakistan – 3).

'I have noticed this in a lot of cases, when somebody stayed there for a long time we don't really fire that person. We condone a lot of non-achieving of targets because somebody has been there for a long time' (Pakistan – 2).

Concentration of power and decision-making in some settings may limit ability of health facility managers to action rewards or penalties

Hierarchies, concentration of power or contractual obligations were seen as additional barriers to implement a fair and effective performance management system (Pakistan – 3,12; Cambodia – 4; China – 2):

'If the director of that hospital wants to discipline any of the people working there they have to get permission from the MOH in Phnom Penh...' (Cambodia – 4).

'It's a little bit hard to improve their motivation or working efficiently, because it depends on the national policies. You cannot just [decide to] give more stipend to TB doctors' (China – 2).

Although Pakistan implemented a Devolution Plan in 2011 (WHO, 2017a), which led to decentralisation of public health management responsibilities from national entities to the provinces, some respondents noted that authority for performance management has not been devolved enough. At the district level, which comes under provincial authority, a manager who has worked in the public and NGO sectors highlighted that concentration of power constitutes a barrier to implementation of performance management schemes.

'Unfortunately, for the DHOs (government district health officers), they did not have so many powers for decision-making. For example, they can make decisions about transferring individuals across the facilities, but performance – for example saying that she's not performing – is not with the DHO' (Pakistan – 3).

Discussion

This study investigated – from the perspective of senior health sector managers responsible for decisions on human resources and resource allocation – factors apart from or in addition to financial incentives that could encourage better health care provider performance within the health systems contexts and institutions of three countries in Asia.

While a strength of this study is that it adds to the limited literature investigating perspectives of decisionmakers responsible for implementing performance management interventions in LMICs, we recognise that our findings are based solely on the perspective of health sector managers and additional investigation of views of health care providers for triangulation would be useful. In addition, qualitative evaluations of factors associated with the success or failure of PBI schemes in these contexts – although challenging and resource-intensive to conduct – would also provide important information about whether perceptions of health sector managers are in line with actual behaviour of providers. In Cambodia, for example, there is some evidence that the introduction of a financial incentive for midwives to promote institutional deliveries at public health centres and hospitals contributed to a significant reduction in maternal mortality (Ir *et al.*, 2015). Yet, in all study countries, gaps remain in our understanding of what matters, and why, in the design and implementation of such interventions and this is certainly an important area for future research. We should also note we cannot say with certainty that saturation was achieved, given the complexity of the health sectors in the study countries and the multiplicity of actors involved.

Despite these limitations, our findings provide novel insights about the theoretical assumptions underpinning financial incentives in the health sector as well as potential challenges which should be given consideration when designing and implementing PBI schemes, as summarised in Table 2. First, as described earlier, PBIs are based on the premise that providers respond rationally to, and are primarily driven by, monetary rewards (Laffont and Martimort 2009; Cuevas-Rodriguez *et al.*, 2012; Renmans *et al.*, 2016b; Paul and Renmans, 2018). However, there was a consistent view among managers from different countries, settings and seniority that monetary incentives alone may not be optimal drivers of performance, although alternative rewards favoured – such as recognition from direct supervisors and career development support – varied between settings and interviewees. In relation to the social science and public health literature on incentives, this finding not only reiterates that materialistic sources of motivation apart from monetary rewards and non-materialistic sources of motivation play an important role, but also indicates that the balance between different sources of motivation is context specific. Consistent with views held by managers in our study settings, the important role of non-monetary incentives in influencing performance,

including cultural and community values, has been demonstrated in other LMICs (Dieleman *et al.*, 2003; Mathauer and Imhoff, 2006; Chimhutu *et al.*, 2016) and is in line with literature and conceptual frameworks on health care provider motivation (Deci and Ryan, 1985; Franco *et al.*, 2002; Paul and Robinson, 2007); these alternative rewards include gains in social or professional status, receiving recognition of performance in front of colleagues or the wider community, and benefiting from career advancement opportunities. Failing to appreciate the value placed on monetary and non-monetary rewards in different cultural and social settings could hinder the success of a performance management programme; a study of PBIs to support rehabilitation of the health care system following the 2005 earthquake in Pakistan illustrates this (Witter *et al.*, 2011).

Furthermore, a striking theme that emerged from some interviews, particularly in Pakistan, was that managers believed that providers' motivation to perform is influenced by perceptions about the source of funding and how closely the principal's objectives aligned with the agent's values. Another example of these factors coming together can be found in the case of female polio immunisation workers in Pakistan, where threats to safety and socio-cultural barriers to participation in polio vaccination campaigns-related to beliefs that these were driven by devious foreign interests – can outweigh utility gained by small incentive payments (Closser and Jooma, 2013). In this respect, our findings could be interpreted in light of the work of Deci and Ryan, who found that agents undertake a cognitive evaluation of the reward, and if they perceive it to be a form of control by principals, the reward is not as effective at motivating them (Deci and Ryan, 1985). In line with their self-determination theory (Deci and Ryan, 2000), we suggest that the impact of PBIs on motivation of agents may be influenced not only by the amount of incentive payment but also the 'goal content', which in our study was related mainly to alignment of agents' values with the principal's perceived goals.

Second, our study provides novel insights into the range of contextual variables which may affect, in practice, design and implementation of PBI schemes. Importantly, the idea that performance towards specific work-related targets, rather than years of service or social networks, should be the basis on which rewards are determined, appeared to be inconsistent with cultural and organisational norms according to some interviewees; indeed, it was felt that it would be culturally inappropriate to impose penalties or provide lower rewards to people who had served the organisation for a long time even if their performance was suboptimal. This finding contributes knowledge to other studies which have also highlighted that local culture plays a large part in the conceptualisation of compensation norms (Yeganeh and Su, 2011; Magrath and Nichter, 2012; Closser, 2015) and that perceived 'fairness' around who receives most incentive payments is an important determinant of PBI scheme success (Chimhutu *et al.*, 2016).

In terms of the health system 'readiness', our study indicates that concentration of power and weaknesses in governance and information systems can leave PBI schemes at risk of breakdown at several stages: principals may not have performance information necessary (at reasonable cost) to determine which agents to reward; when performance information is available it may be ignored in favour of factors such as social ties or years of job experience when deciding on which agents to reward; finally, even when decisions to reward deserving agents are made on the basis of performance information, concentration of power can result in delays to, or overriding of, reward delivery. A breakdown at any of these stages means that performance of agents is not linked directly to monetary incentives, and the motivating impact of the potential to receive PBIs is hindered from acting as intended (Mathauer and Imhoff, 2006). Notably, structures for governance and the collection of relevant information to support PBIs were considered essential in all settings, but found to be weak in Pakistan and Cambodia.

In addition, a critical consideration for the use of PBIs is concentration of power within the health system and at what level a system of rewards can be implemented. Ideally, PBIs should be implemented concurrently with reforms in health system financing that allow for greater autonomy at less central levels of government, providing more decision-making power to direct local managers as well as higher level of accountability (Basinga *et al.*, 2010). Recognising these challenges,

Cambodia is currently implementing reforms that increase administrative devolution. One example is the recent conversion of one quarter of Operational Districts and Provincial Hospitals to the status of Special Operating Agency. This is a new administrative approach which provides local health managers with greater autonomy in decisionmaking and more flexibility in budget allocation, including discretion over the allocation of funding for staff incentives through internal contracting arrangements (WHO, 2015b). As our study and others indicate (Mabuchi *et al.*, 2018), empowerment of local managers is crucial to improving health workers performance.

Last but not least, some managers pointed to the lack of adequate infrastructure, resources or funds as important drivers of poor performance. Again, this finding resounds with studies in Cambodia and other LMICs, which found a strong correlation between basic income and performance, in addition to the well-known issue that low salary is a major barrier to attract and retain qualified health workers in the public sector (Henderson and Tulloch, 2008; Chhea *et al.*, 2010); as a number of previous studies documented, low salary levels can also encourage predatory practices, such as pilfering supplies from health facilities, charging informal fees or engaging in dual practice (Jan *et al.*, 2005; Akwataghibe *et al.*, 2013). In such contexts, the award of financial or other incentives may provide a temporary fix to the problem, but is not going to address the key structural drivers. Rather, policy reforms designed to provide an acceptable salary retribution at all levels in the health sector, from senior managers to community nurses, would constitute a more effective and long-term solution to improve health workers performance and the quality of care. If countries with limited finances for health sector development, such as Cambodia, will continue to experience high rates of economic growth as in recent years, there may be increasing prospects to support the health workforce with an acceptable level of regular retributions.

Conclusion

In many LMICs countries, basic salaries in the public sector are still inadequate to motivate health workers. In such contexts, PBIs often account for a significant fraction of the monthly salary (Khim, 2016), and remain a popular approach to address wider structural gaps, with some evidence of positive outcomes. Yet, the introduction, design and implementation of health care provider performance management schemes requires careful consideration of the range of social, cultural and health system factors which may affect appropriateness of interventions and policy outcomes. Our study contributes new evidence on some of these critical issues – such as the relative importance of monetary and non-monetary rewards, the availability of objective information to determine reward allocation, and decision-making power held by health system managers; as described, these practical and theoretical issues may influence not only the successful functioning of PBI schemes in the study contexts and elsewhere, but also challenge fundamental assumptions about the value of financial incentives, and, ultimately, what drives human behaviour. Most strikingly, our study indicates that managers in our three study countries felt that that PBIs are not an adequate means to motivate health workers on their own, and therefore continued research on alternative approaches to improve performance of health care professionals remains an urgent need.

Acknowledgements. We are grateful to the interviewees for their participation in this study.

References

- Akwataghibe N, Samaranayake D, Lemiere C and Dieleman M (2013) Assessing health workers' revenues and coping strategies in Nigeria – a mixed-methods study. *BMC Health Services Research* 13, 387. <https://doi.org/10.1186/1472-6963-13-387>.
- Basinga P, Gertler PJ, Binagwaho A, Soucat AL, Sturdy JR and Vermeersch C (2010) Paying primary health care centers for performance in Rwanda. Policy Research Working Paper 5190, Washington, DC: The World Bank.
- Chen L, Evans T, Anand S, Boufford JL, Brown H, Chowdhury M, Cueto M, Dare L, Dussault G and Elzinga G (2004) Human resources for health: overcoming the crisis. *The Lancet* 364, 1984–1990.
- Chhea C, Warren N and Manderson L (2010) Health worker effectiveness and retention in rural Cambodia. *Rural Remote Health* 10, 1391.

- Chimhutu V, Songstad NG, Tjomsland M, Mrisho M and Moland KM** (2016) The inescapable question of fairness in pay-for-performance bonus distribution: a qualitative study of health workers' experiences in Tanzania. *Globalization and Health* 12, 77.
- Clarke D, Duke J, Wuliji T, Smith A, Phuong K and San U** (2016) Strengthening health professions regulation in Cambodia: a rapid assessment. *Human Resources for Health* 14(1): 9.
- Closser S** (2015) Pakistan's lady health worker labor movement and the moral economy of heroism. *Annals of Anthropological Practice* 39(1): 16–28.
- Closser S and Jooma R** (2013) Why we must provide better support for Pakistan's female frontline health workers. *PLoS Medicine* 10, e1001528.
- Connell J** (2010) Migration of Health Workers in the Asia Pacific Region. Human Resources for Health Knowledge Hub, School of Public Health and Community Medicine, University of New South Wales, Sydney.
- Cuevas-Rodríguez G, Gomez-Mejia LR and Wiseman RM** (2012) Has agency theory run its course? Making the theory more flexible to inform the management of reward systems. *Corporate Governance: An International Review* 20, 526–546.
- Deci EL and Ryan RM** (1985) *Intrinsic Motivation and Self-Determination in Human Behavior*. New York: Springer Science & Business Media.
- Deci EL and Ryan RM** (2000) The 'what' and 'why' of goal pursuits: human needs and the self-determination of behavior. *Psychological Inquiry* 11, 227–268.
- Dieleman M, Cuong PV, Anh LV and Martineau T** (2003) Identifying factors for job motivation of rural health workers in North Vietnam. *Human Resources for Health* 1(1): 10.
- Eichler R and Levine R** (2009) Performance incentives for global health: potential and pitfalls. Washington, DC: CGD Books.
- Franco LM, Bennett S and Kanfer R** (2002) Health sector reform and public sector health worker motivation: a conceptual framework. *Social Science and Medicine* 54, 1255–1266.
- Fritsche GB, Soeters R and Meessen B** (2014) *Performance-Based Financing Toolkit*. Washington, DC: The World Bank.
- Glaser BG and Strauss AL** (1967) *The Discovery of Grounded Theory: Strategies for Qualitative Theory*. New Brunswick: Aldine Transaction.
- Gagné M and Deci EL** (2005) Self-determination theory and work motivation. *Journal of Organizational Behavior* 26, 331–362.
- Grundy J, Khut QY, Oum S, Annear P and Ky V** (2009) Health system strengthening in Cambodia – a case study of health policy response to social transition. *Health Policy* 92(2–3): 107–115.
- Hafeez A, Mohamud BK, Shiekh MR, Shah SAI and Jooma R** (2011) Lady health workers programme in Pakistan: challenges, achievements and the way forward. *JPMA: Journal of the Pakistan Medical Association* 61(3): 210.
- Henderson LN and Tulloch J** (2008) Incentives for retaining and motivating health workers in Pacific and Asian countries. *Human Resources for Health* 6, 18.
- Ir P, Korachais C, Chheng K, Horemans D, Van Damme W and Meessen B** (2015) Boosting facility deliveries with results-based financing: a mixed-methods evaluation of the government midwifery incentive scheme in Cambodia. *BMC Pregnancy and Childbirth* 15(1): 170.
- Jan S, Bian Y, Jumpa M, Meng Q, Nyazema N, Prakongsai P and Mills A** (2005) Dual job holding by public sector health professionals in highly resource-constrained settings: problem or solution? *Bulletin of World Health Organisation* 83, 771–776.
- Kalk A, Paul FA and Grabosch E** (2010) 'Paying for performance' in Rwanda: does it pay off? *Tropical Medicine and International Health* 15, 182–190.
- Kandpal E** (2017) *Completed Impact Evaluations and Emerging Lessons from the Health Results Innovation Trust Fund Learning Portfolio*. Washington, DC: World Bank Group.
- Khim K** (2016) Are health workers motivated by income? Job motivation of Cambodian primary health workers implementing performance-based financing. *Global Health Action* 9(1): 31068.
- Laffont JJ and Martimort D** (2009) *The Theory of Incentives: The Principal-Agent Model*. New Jersey: Princeton University Press.
- Lannes L, Meessen B, Soucat A and Basinga P** (2016) Can performance-based financing help reaching the poor with maternal and child health services? The experience of rural Rwanda. *The International Journal of Health Planning and Management* 31, 309–48.
- Mabuchi S, Sesan T and Bennett SC** (2018) Pathways to high and low performance: factors differentiating primary care facilities under performance-based financing in Nigeria. *Health Policy Plan* 33, 41–58.
- Magrath P and Nichter M** (2012) Payment for performance and the social relations of health care provision: an anthropological perspective. *Social Science and Medicine* 75, 1778–1785.
- Mathauer I and Imhoff I** (2006) Health worker motivation in Africa: the role of non-financial incentives and human resource management tools. *Human Resources for Health* 4, 24.
- Matsuoka S, Obara H, Nagai M, Murakami H and Chan Lon R** (2014) Performance-based financing with GAVI health system strengthening funding in rural Cambodia: a brief assessment of the impact. *Health Policy Planning* 29, 456–465.
- Meessen B, Soucat A and Sekabaraga C** (2011) Performance-based financing: just a donor fad or a catalyst towards comprehensive health-care reform? *Bulletin of the World Health Organization* 89, 153–156.

- Olafsdottir AE, Mayumana I, Mashasi I, Njau I, Mamdani M, Patouillard E, Binyaruka P, Abdulla S and Borghi J** (2014) Pay for performance: an analysis of the context of implementation in a pilot project in Tanzania. *BMC Health Services Research* **14**, 392.
- Paul E and Robinson M** (2007) Performance budgeting, motivation and incentives. In Robinson M (ed.) *Performance Budgeting: Linking Funding and Results*. Basingstoke: Palgrave Macmillan, 330–375.
- Paul E and Renmans D** (2018) Performance-based financing in the health sector in low- and middle-income countries: is there anything whereof it may be said, see, this is new? *The International Journal of Health Planning and Management* **33**, 51–66.
- Paul E, Sossouhounto N and Eclou DS** (2014) Local stakeholders' perceptions about the introduction of performance-based financing in Benin: a case study in two health districts. *International Journal of Health Policy and Management* **3**(4): 207–214.
- Paul E, Albert L, Bisala BN, Bodson O, Bonnet E, Bossyns P, Colombo S, De Brouwere V, Dumont A, Eclou DS, Gyselincx K, Hane F, Marchal B, Meloni R, Noirhomme M, Noterman JP, Ooms G, Samb OM, Ssengooba F, Touré L, Turcotte-Tremblay AM, Van Belle S, Vinard P and Ridde V** (2018) Performance-based financing in low-income and middle-income countries: isn't it time for a rethink? *BMJ Global Health* **3**, e00064.
- Renmans D, Paul E and Dujardin B** (2016b) Analysing performance-based financing through the lenses of the principal-agent theory. IOB Working Papers. Antwerp: University of Antwerp.
- Renmans D, Holvoet N, Orach CG and Criel B** (2016a) Opening the 'black box' of performance-based financing in low-and lower middle-income countries: a review of the literature. *Health Policy Plan* **31**, 1297–1309.
- Rice PL and Ezzy D** (1999) *Qualitative Research Methods: A Health Focus*. Melbourne, Australia: Oxford University Press.
- Ryan RM and Deci EL** (2000) Intrinsic and extrinsic motivations: classic definitions and new directions. *Contemporary Educational Psychology* **25**(1): 54–67.
- Shapiro SP** (2005) Agency theory. *Annual Review of Sociology* **31**, 263–284.
- Ssengooba F, McPake B and Palmer N** (2012) Why performance-based contracting failed in Uganda – an 'open-box' evaluation of a complex health system intervention. *Social Science and Medicine* **75**, 377–383.
- Stiglitz JE** (1989) Principal and agent. In Eatwell J, Milgate M, Newman P (eds), *Allocation, Information and Markets*. The New Palgrave. London: Palgrave Macmillan, 241–253.
- Sun X, Liu X, Sun Q, Yip W, Wagstaff A and Meng Q** (2016) The impact of a pay-for-performance scheme on prescription quality in rural China. *Health Economics* **25**, 706–722.
- Tao T, Zhao Q, Jiang S, Ma L, Wan L, Ma Y and Xu B** (2013) Motivating health workers for the provision of directly observed treatment to TB patients in rural China: does cash incentive work? A qualitative study. *The International Journal of Health Planning and Management* **28**(4): e310–e324.
- The World Bank Group** (2016) GNI per capita ranking. Atlas method and PPP based | Data, <https://data.worldbank.org/data-catalog/GNI-per-capita-Atlas-and-PPP-table> [12 June 2017].
- Willis-Shattuck M, Bidwell P, Thomas S, Wyness L, Blaauw D and Ditlopo P** (2008) Motivation and retention of health workers in developing countries: a systematic review. *BMC Health Services Research* **8**, 247.
- Witter S, Zulfiqur T, Javeed S, Khan A and Bari A** (2011) Paying health workers for performance in Battagram district, Pakistan. *Human Resources for Health* **9**, 23.
- World Bank** (2014) *HRITF Annual Report 2014: RBF a Smarter Approach to Delivering More and Better Reproductive, Maternal, Newborn, and Childhealth Services*. Washington, DC: The World Bank. <http://documents.worldbank.org/curated/en/149531468320933539/pdf/938710AR0Box380F020140Annual0Report.pdf>.
- World Health Organization (WHO)** (2007a) *Everybody's Business—Strengthening Health Systems to Improve Health Outcomes* Geneva: World Health Organization.
- World Health Organization (WHO)** (2007b) Health System Profile – Pakistan. Cairo: World Health Organization Eastern Mediterranean Region, <http://apps.who.int/medicinedocs/en/d/Js17305e/> [12 June 2017].
- World Health Organization (WHO)** (2015a) *People's Republic of China Health System Review*. Manila: WHO Regional Office for the Western Pacific.
- World Health Organization (WHO)** (2015b) *The Kingdom of Cambodia Health System Review*. Manila: WHO Regional Office for the Western Pacific.
- World Health Organization (WHO)** (2017a) Framing the health workforce agenda for the sustainable development goals. Biennium Report 2016–2017. Geneva: World Health Organization <http://www.who.int/hrh/BienniumReportRevised2017.pdf>.
- World Health Organization (WHO)** (2017b) GHO | By category | Density per 1000 – Data by country. WHO, <http://apps.who.int/gho/data/node.main.A1444?lang=en&showonly=HWF> [12 June 2017].
- Yeganeh H and Su Z** (2011) The effects of cultural orientations on preferred compensation policies. *The International Journal of Human Resource Management* **22**, 2609–2628.

Cite this article: Khan, M. *et al.* 2020. Should performance-based incentives be used to motivate health care providers? Views of health sector managers in Cambodia, China and Pakistan. *Health Economics, Policy and Law* **15**: 247–260. doi:10.1017/S1744133118000506