

‘Paying for performance’ in Rwanda: does it pay off?

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Summary

The study analyses strengths and weaknesses of the ‘Paying For Performance’ (P4P) approach rolled out in the Rwandan health sector since 2002. It uses three research methods: a cross-sectoral literature review on P4P, its history and its context; 69 mostly semi-structured interviews conducted in Rwanda; and an analysis of factors eventually confounding the impact evaluation of the Rwandan P4P approach. It is argued that P4P approaches can be traced backed in written form over four millennia and that considerable negative effects are reported throughout history. All side effects were found again in various forms in the Rwandan health sector. One particular side effect – ‘gaming’ – seriously threatens to affect the quality of health services. It is argued that P4P implicitly (and unintentionally) promotes a questionable concept of human ‘labour’ and that its focus on improving indicators rather than systemic changes can be regarded as vertical and counter-productive. Two alternatives to the current P4P system are briefly depicted, and further research on the described challenges is recommended.

keywords paying for performance, performance-based financing, results-based financing, output-based aid, Rwanda, Africa

It is clear that it is not a magic bullet. But is it a bullet?

Marcel Tanner, Director, Swiss Tropical Institute, December 2008

Introduction

It is widely recognised that many countries are ‘off track’ in implementing appropriate health policies (Hanson *et al.* 2009) and achieving the Millennium Development Goals (World Bank 2008). In consequence, a wide range of measures are scrutinised and promoted to enhance the effectiveness of rising financial resources. The question ‘how to pay’ health services receives increasing attention (Langenbrunner & Liu 2004). Respective measures include the introduction of ‘paying for performance’ (P4P), also labelled ‘performance-based financing’ or ‘results-based financing’. This approach targets either the demand or the supply side of health service provision. If the latter is the case, it implies the transfer of financial incentives to health institutions and their staff according to an established ‘performance contract’ with a set of specific ‘performance indicators’. The approach is related to the principal agent theory and its understanding of the interaction between ‘economic subjects’ (Jensen & Meckling 1976).

Evidence suggests (Loevinsohn & Harding 2005) that it might yield remarkable results with limited financial resources and within a short time period. The Rwandan example has been frequently portrayed as particularly successful (Meessen *et al.* 2006; Soeters *et al.* 2006). It is increasingly recommended because it seems to offer ‘greatest marginal impact on the poor’ and ‘better value for money spent’ (Gottret & Schieber 2006). In 2008, the initiative gained additional technical support through the initial meeting of an *Inter-Agency Working Group on Results-Based Financing* affiliated to the *International Health Partnership* where the World Bank, WHO and other institutions developed the topic further. It received additional financial support through the instalment of the *Health Results Innovation Trust Fund* under the auspices of the World Bank. So far, the Government of Norway allocated USD 105 million to this fund for a certain range of countries.

In this context, a systematic review (Oxman & Fretheim 2008) of evidence was conducted. The report criticised the lack of such evidence concerning any long-term benefits of P4P. This criticism is backed up by other reviews (OECD 2005; Liu *et al.* 2008) underpinning the need to embark upon continuous research. Nonetheless, the potential of P4P continues to be in the focus of the international discussion with the Rwandan example being regularly

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quoted as a model case (OMS 2008, Logie *et al.* 2008). This study tries to elucidate progress made and problems encountered while implementing P4P in the Rwandan health sector, and thus to partially cover the evidence gap.

Methods

Our study relied on three methods for data collection: First, we reviewed available literature on performance-related payment across times and sectors. The literature sample was identified through references in current publications on P4P and through internet search using such key terms as P4P and 'performance-based financing'. It proved to be difficult to find the most efficient research parameters for the topic in question – e.g. *Medline* providing 2600 hits for 'performance-based financing' with most of them related either to clinical research or, very specifically the US approach to performance payment. In consequence, more specialised websites (such as the ones of WHO, World Bank and OECD) as well as more generic sites (including commercial ones) were included, and the hits were further screened by an additional 'manual' review. In any case, the review does not claim to be exhaustive, but it intends to shed light from different angles on the P4P approach, and thus to contribute to the triangulation of evidence.

The second empirical evidence base was constituted by two interview sessions conducted in two phases (June and November 2008) in Rwanda. These comprised 69 interviews with high-ranking MoH staff, other key informants, hospital management and administrative staff, doctors and nurses in a district hospital, and patients. For patients, structured questionnaires were used, to gain an additional perspective of the processes observed. In all other cases, data collection was based on semi-structured interviews

including open and closed questions. The distribution of interviewees as well as data collection and sampling methods are depicted in Table 1.

Data were analysed for recurrent themes, underlying concepts, and minority views according to the principles of qualitative data analysis. Quantitative data were submitted to a basic descriptive statistical analysis supported by SPSS 15.0 software. It is evident that the small sample of 15 patients interviewed and selected on purpose did not allow any inferential analysis.

Lastly, progress attributable to the introduction of P4P and the potential role of confounding factors were scrutinised. Four such factors are discussed.

Results

Paying for performance across times and sectors

Following Hopkins and Mawhinney (1992), the first written reference to P4P can be traced back to the Hammurabi Code in 18th century BC. Throughout human history, approaches to pay 'for results' instead of just for the working time spent were tested, e.g. the output-based payment of weavers under Nebuchadnezzar (604 BC) or the payment by piecework at Boulton & Watt (UK) since 1778 AD. Groundbreaking, however, was the Hawthorne studies (Roethlisberger & Dickson 1939) because of the so-called 'Hawthorne effect', the improvement of performance through the introduction of an observer. The studies described in detail the potential of a variety of incentives to increase industrial production.

As old as P4P approaches are, so is resistance to them (Hopkins & Mawhinney 1992). Roman society, as the Christian Church throughout the Middle Ages, defended the 'true value' (*verum pretium*) of work, i.e. a payment

Table 1 Categories of interviewees, number of interviews, data collection and sampling methods

Category	No. of interviews	Data collection method	Sampling method
High-level staff MoH	4	Semi-structured interviews with variations of the structure	Sampling on purpose focusing on persons and institutions mostly involved into developing and implementing paying for performance (P4P)
Other key informants	16		
District hospital, management and administration	9	Semi-structured interviews based on a standardised format	Focus on staff of hospitals already practising P4P, further choice based on individual knowledge level, availability and willingness to talk
District hospital Medical doctors	9		
Nurses	16		
Patients	15	Structured questionnaires	Selection by medical staff, one in-ward case per department, at least one previous in-ward stay
Total	69		

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based on time invested. This position was equally the basis of the 19th century's struggle of trade unions for time-based payment. Recent criticism around performance-based payment focuses on boni for bank managers, sometimes labelled 'paying without performance' (Bebchuk & Fried 2004).

Two major constraints encountered when implementing P4P have been termed the 'crowding-out' effect and 'gaming'. Deci and Ryan (1985) distinguish between intrinsic and extrinsic motivation, and they argue that the introduction of external rewards for an actor driven by intrinsic motivation can lower or even erase intrinsic motivation. This phenomenon was labelled 'crowding out'. It might be explained both by a worker's perception of dwindling self-determination (and rising external control) and by the impairment of his self-esteem by the perceived external disregard for his – intrinsic – motivation. Thus, 'hidden costs of rewards' (Lepper & Green 1978) and 'hidden costs of control' (Falk & Kosfeld 2004) are arising. As far as health staff is concerned, its intrinsic motivation is understood as crucial for a health system's performance and as highly complex (Franco *et al.* 2002); thus it is highly sensitive to crowding out.

The payment of staff in P4P is based on the evaluation of measurable indicators. These indicators form a central part of any performance contract. Hence, health workers tend to focus on these indicators and simultaneously neglect activities not remunerated (Roberts *et al.* 2004). Or they may be tempted to distort information to maximise reported results (Custers *et al.* 2008). Both phenomena are known as 'gaming'. Taking into consideration, the complexity and multiplicity of possible indicators related to the quantity and quality of clinical activities, any chosen indicator set might be understood as biased (Armstrong 2000). This challenge is aggravated by the fact that the monitoring of comprehensive performance matrices – sometimes seen as the solution to this dilemma – is extremely time-consuming.

Ferrinho and Van Lerberghe (2000) argue that a focus on performance in settings characterised by the lack of infrastructure, equipment and institutional as well as technical capacity risks controlling and exploiting health staff rather than supporting it. Altogether, evidence gained over decades describes considerable secondary effects of P4P systems in a large variety of settings.

P4P implementation in Rwanda

The P4P approach in Rwanda was initiated in the form of pilot projects in 2002 and was rolled out throughout the country from 2006 onwards. Its core elements consist of the quarterly remuneration of a given set of indicators for

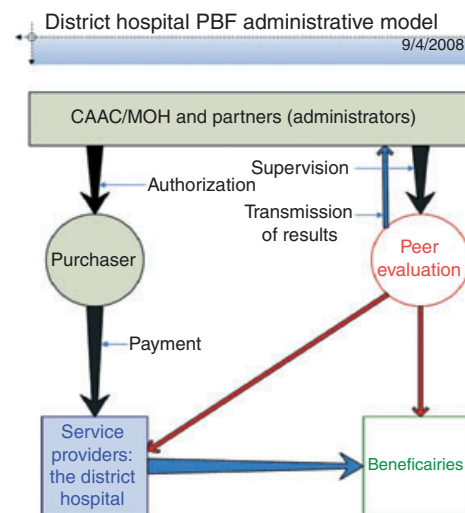


Figure 1 Principal stakeholders and their interaction in the Rwandan P4P system (source: MoH Rwanda).

each health centre and for each district hospital, and of several mechanisms assuring the quality of the service delivered (MoH Rwanda 2008a,b). Such mechanisms range from including 'composite criteria' into the measurement (frequently the proper documentation of conducted activities), to conducting peer evaluations between hospitals. P4P in Rwanda receives financial contributions from the World Bank, the Global Fund Against Aids, Tuberculosis and Malaria (GFATM), from bilateral cooperation, and others. Funds made available to health facilities are used for incentive payments for staff as well as for running costs; the ratio is very roughly 2:1 (Figure 1).

Hence, a considerable part of these funds serves the personal benefit of health workers. Workers can increase their salary by USD 75–750 per month depending on their function – a sum more or less equal to their basic salary. However, in most cases, the allocation is based on the performance of entire service units to avoid individual competition. The sanction of individuals through exclusion from the scheme can be practised, though such exclusion is rarely – if ever – practised.

Interviews conducted in Rwanda

When interpreting the data from Rwanda, it is important to realise that the introduction of P4P went hand in hand with impressive progress towards the MDGs and related indicators (Figure 2).

The vast majority of health staff declared to be motivated through the wish to serve individuals suffering.

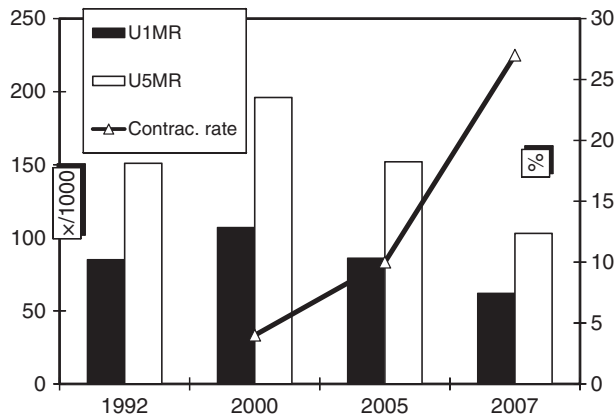
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Figure 2 Trends in U1 mortality, U5 mortality, and the utilization of modern family planning methods in Rwanda.

They feel that the medical profession is a noble one, and 76% instantly agreed that saving lives is more important to them than having a high salary. Some interviewees pointed out that the medical profession is not just a job, it is a dedication to life, *'If we were looking for money we would have gone into business'*.

Eighty per cent declared that respect and appreciation by patients were the most precious remuneration to be received. Yet, most people interviewed agreed that in broad terms, staff motivation and performance had improved under the P4P scheme. Fifty-six of the health workers stated that P4P gives them a feeling that their work is appreciated more and that the salary increase is motivating. Dysfunctional behaviour (such as absenteeism) became rare. Though responsibilities and procedures were regulated beforehand, these features received more attention because of the incentives attached to them. Health staff declared to feel an 'increasing responsibility' for their work.

A minority among key informants emphasised the fact that supervision and quality improvement measures played a decisive role for the success of the scheme. Health staff acknowledged that the interest in performance went far beyond paying for a set of pre-established results and that it dealt, in the end, with quality issues. P4P established a feedback loop which informed the managerial level about the needs on the ground, and which assured that rewards encouraging entrepreneurship were made available. Simultaneously, the management was seen as more supportive by most staff.

Several people working at management and administrative level reported that the institutional funds were utilised for infrastructure and equipment, thus addressing a major constraint to performance. It was regularly

emphasised that patients were seen more as 'clients' and that the interaction with them improved. This finding was confirmed by patients interviewed. The fact that the remuneration went to entire service units fostered the team spirit within these units. Overall, both communication and participation were seen as improving. A major breakthrough was the regular availability of documentation on activities conducted (e.g. the medical history of patients and counter-reference letters). The number of services offered increased, and it was claimed that the additional financial support allowed to a certain degree to hire more staff.

Nevertheless, a certain range of problems arising with the introduction of the P4P system was reported. Half of the health workers saw it more as a control mechanism than as a supportive system. Only 24% believed that P4P had improved the management. Thirty-two per cent denied altogether the usefulness of P4P and proposed to just trust medical staff instead. In addition, 64% of staff felt that management support to their professional, personal and psychological needs was insufficient. Given the fact that only about a third of all positions within the Rwandan health sector is actually filled, the P4P approach was frequently described as putting additional stress on a system already overstretched. Seventy-two per cent of medical staff reported to regularly work supplementary hours and to feel constantly tired because of the workload. Some interviewees spoke about an ethical conflict created by the rewards: The limited availability of working time forced them to choose between activities seen as necessary (e.g. in intensive care) and those required for the rewards (filling out the forms). Quite a few interviewees declared to feel 'frustrated' because of this conflict. It was argued that clinical work, meetings introduced for P4P supervision and the filling of all – new and old – forms would require more or less 12 working hours daily (*sic!*) for each nurse and medical doctor.

Nearly all agreed that the infrastructure of the health institution they were working at was, despite some progress, completely inadequate.

Many concerns of health staff dealt with the standardised selection of evaluation indicators, with the 'unfair' distribution of rewards within a rewarded service unit (medical doctors seen as more privileged than anybody else) and with delays of the monthly payment (jeopardising the establishment of a mental link between a certain performance and rewards received). The 'indicators' were understood as imposed from outside without knowledge about local contexts and needs.

Neglect of essential activities as a result of additional workload created by the P4P system (in the sense of 'gaming') was regularly reported. It was emphasised that

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such neglect included potentially life-preserving activities in the intensive care unit of hospitals. Furthermore, it included counter-productive behaviour such as not distributing the last drug box of the pharmacy to avoid a stock-out.

Despite the sensitivity of the topic, quite a few interviewees confirmed during the discussions that information was regularly distorted. Such distortion included the arbitrary and retrospective filling of forms. Most staff felt justified to do so because of the perceived inappropriateness of some indicators, and because of the lack of time to do the job properly. Some people defended the view that such behaviour was incompatible with medical ethics, though it was fostered by the P4P approach.

Most interviewees endorsed the idea that 'gaming by the provider' was actually caused by 'gaming by the purchaser', i. e. the institution financing performance: it was emphasised that indicators are nothing but indicators, and they are supposed to inform about 'a bigger issue behind' which is more difficult to measure. By offering an incentive very precisely for such an indicator, the indicator becomes somehow 'dissociated' from its very meaning and loses its rationale. The existence of a partogram correctly filled can be completely disconnected from anything like a successful delivery. By selecting such indicators as a basis for payment, it is actually the purchaser who is initiating the 'gaming' process. Some interviewees made the additional point that the value attachable to indicators in health is quite ambiguous and that an unnecessary clinical intervention (be it a simple vaccination or a Caesarean section) represents a physical injury instead of a medical act.

Several interviewees doubted the 'client-provider' concept linked to the P4P approach. They emphasised that the

patients are actually a physical part of the health service 'consumption process'. Their capacity to control and negotiate the quality of service consumed can only be limited. They might lose trust if properly informed about the fact that the decision making of health staff was influenced by incentives remunerating certain activities and thus the decision patterns. Table 2 summarises the strengths and weaknesses of P4P.

Confounding factors

The remarkable success of Rwanda's health sector was demonstrated through the drop in infant and under-five mortality and through the growing use of modern family planning methods. However, this cannot be attributed to P4P only and has to be understood in a much wider context of changes in the Rwandan health sector. The most important factor might be the four-fold increase of the health expenditure (THE) between 2000 and 2006 (Figure 3).

The health expenditure rose in these 6 years (in nominal terms) from USD 73 million to 301.6 million (MoH 2008c). Increasing financial contributions from the GFATM and the President's Emergency Plan for Aids Relief (PEPFAR) played a major role in this context. Simultaneously, the P4P budget in Rwanda grew from USD 200 000 in 2002 to USD 5.7 million in 2006 (unpublished data) and USD 9.3 million in 2007 (Rusa 2007). Health staff salaries increased simultaneously: A nurse earned, depending on the qualification, USD 25–50 per month in 2003 (Kalk *et al.* 2005), but USD 250–450 in 2007 (Ministry of Public Service and Labour 2008).

Table 2 Strengths and weaknesses of the paying for performance (P4P) system in the Rwandan health sector as reported by the interviewees

Strengths	Weaknesses
Improved performance as measured by indicators	Perception of P4P as unnecessary control mechanism
Increased number of activities	Performance documentation seen as extremely time-consuming
Improved staff motivation	Conflict between time requirements for documentation and those for patient care
Decreased absenteeism	Lack of infrastructure and equipment only partially tackled by P4P
Decreased dysfunctional staff behavior (other forms)	Indicators seen as 'imposed from outside'
Respect for established procedures	Choice of indicators seen as arbitrary and favorable for medical doctors
Increased perception of responsibility	'Gaming' in all forms (neglect of non-remunerated activities, irrational behavior in order to fulfill requirements and falsification of documents)
Increased strive for quality	Misinterpretation of the essence of indicators by the purchaser creating the 'gaming' phenomenon
Increased spirit of entrepreneurship	
Improved interaction between management and staff	
Improved interaction between staff and patients	
Increased team spirit within departments	
Improved availability of all documentation	
Certain increase of staff in numbers	

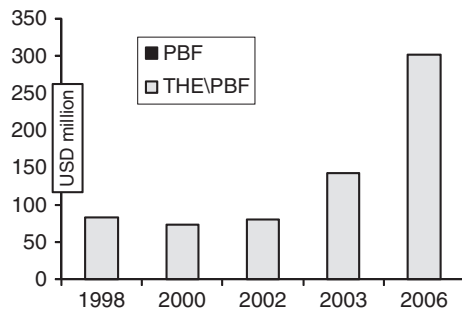
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Figure 3 Development of The Health Expenditure (THE) and funds allocated to Performance-Based Financing (PBF) in the health sector in Rwanda 1998–2006.

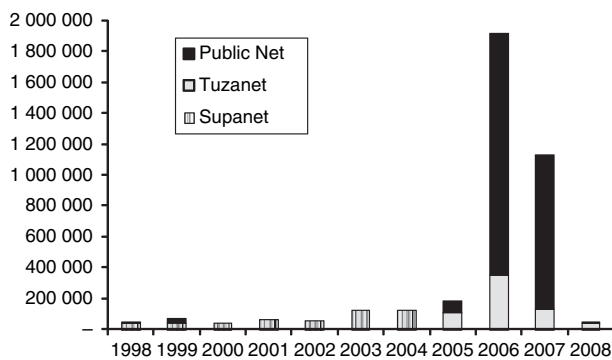


Figure 4 Overall distribution of mosquito nets in Rwanda through the public sector (Public Nets) and the private sector (Tuzanet™, Supanet™) 1998–2008.

Another confounding factor is the spread of so-called 'mutual insurance schemes' in Rwanda which covered a mere 7% in 2003, but 72% in 2006 (Kalavakonda *et al.* 2007). Though the setup of the scheme might be disputed, it focused to a certain degree on the very poor and definitely increased their financial access to basic health services.

Finally, the mosquito net distribution in Rwanda should be briefly mentioned. After lingering between 50 000 and 200 000 units annually for many years, in 2006 and 2007, nearly 3 million bednets were distributed (data from *Population Services International* in Rwanda, Figure 4).

Discussion

What did P4P really do in Rwanda?

As described elsewhere (Rusa *et al.* 2009), there is no doubt that the introduction of incentives for certain activities within the Rwandan health sector contributed to

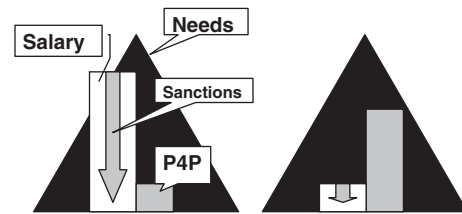


Figure 5 Pyramid of needs in comparison to basic salary, performance payment and the effect of professional sanctions in a Western European setting (left) and in Rwanda (right).

better attention being paid to these activities by health staff, but such an observation is all but surprising. The question arises whether the reasons underlying the under-performance of the past were not simply lack of qualified health staff and of adequate salaries. It remains unclear whether these challenges are thoroughly addressed through the established P4P system. The performance payment can be seen in relationship to a 'pyramid of needs' (Figure 5).

In most 'Northern' countries, the basic salary corresponds more or less to the basic needs of a health worker (left pyramid). In consequence, professional sanctions (see arrow!) in answer to deficient performance have quite disastrous consequences. In many cases, a motivating P4P scheme exists, but it has limited impact on the degree to which the basic needs of a health worker are covered. In contrast, the basic salary in Rwanda barely allows 'feeding a family' (right pyramid). In consequence, sanctions are neither feared nor frequently applied. The incentives provided in the context of P4P play a crucial role for survival in this context. It can be argued the 'Northern approach' comes closer to the ideal of 'fair pay for fair work' and of attaching dignity to the role of a health worker. This ideal is in line with the 'economics of trust' concept criticising excessive control in production processes as counter-productive (Williamson 1993).

The question arises if the promoted P4P schemes are not just second-class substitutes for such a way of appreciating labour. This question is even more valid as most of the side effects of P4P schemes (such as 'gaming') are clearly to be observed in Rwanda: overworked staff invest all their energy into the remunerated activities and their proper documentation, and tend to neglect other core tasks for the sake of the incentives. It must be emphasised that such a phenomenon threatens to seriously affect the performance quality.

The question is still more valid as confounding factors of paramount importance (dramatic increase of THE, of health staff salaries, of health insurance coverage, of mosquito net distribution etc.) impede the attribution

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of positive effects at outcome and impact level to any single approach such as P4P. In the midst of these ongoing other developments within the Rwandan health sector, the remarkable progress achieved is probably the result of a bundle of health sector reforms and interventions, not a single one.

It should be remembered that in most settings, the payment of health workers is traditionally time-based. The introduction of a piece-work system stems from experiences made in industrial production in the North, and its overall concept, its transfer to health 'production' and its transfer to low-income countries are regularly questioned (Eldridge & Palmer 2009). It is more than a technical issue; it interacts with our general understanding of work and workers. Beyond that, the sustainability of the approach has to be questioned: If the funding comes to an end, deep depression of staff motivation far below original levels might follow.

Finally, it can be stated that P4P in Rwanda successfully promoted those activities with incentives attached, brought about considerable side effects such as 'gaming' and created a new spirit of labour whose appropriateness will remain a topic of discussion.

About verticality in MDG pursuit and about possible alternatives

One of the principal arguments behind the P4P approach is the perceived necessity to come faster and closer to MDG achievement. If one agrees, as did most interviewees, that the idea to 'just buy' the indicators falls short of realising that those indicators were selected because of problems associated with measuring the 'bigger issue' behind it, then the P4P approach suddenly looks vertical and similar to other approaches combating AIDS, TB or malaria. The difference consists in addressing equally the MDGs 4 and 5, and not MDG 6 only. Yet, the approach consistently ignores other health threats and challenges such as reducing non-maternal female morbidity and mortality, let alone 'over-5' male morbidity and mortality. P4P does not see the system behind the indicators; it deals with the messenger instead of the message, and it limits itself to a certain degree to 'indicator dressing'.

To overcome some of the hurdles described, P4P – in Rwanda and elsewhere – might move into two directions: Either one agrees that within a health system, a focus on certain selected activities is useful to revitalise aspects regularly neglected (e.g. the need to control hepatitis). Then, the approach should probably retain a healthy relationship between a core salary for the core job on one hand and incentives for issues to be brought forward on the

other hand. This approach should be harmonised across public sectors, it should be adapted to local needs and probably its focus should shift regularly from one series of topics to another. Finally, the relation between institutional, departmental and individual rewards should be regulated. Otherwise, individuals might find themselves under institutional pressure to report the expected results – whether achieved or not.

Another option considered in various countries is performance payment through the whole range of activities in the health sector – often assorted by the diagnosis of a patient. Such a decision requires most definitely careful political reflection and a clear political decision-making process, as it might affect profoundly societal values attached to labour. If such a decision is made, it should envisage covering universally all health services, and it will probably come close to the 'diagnosis-related groups' approach implemented in the UK and elsewhere. Recognising the conceptual vicinity of P4P to this approach will allow including a substantial body of evidence already available in this context. It might help to discourage certain forms of gaming, e.g. 'cherry picking' of particularly lucrative activities. Given the fact that most diagnoses in the Rwandan context are educated guesses rather than results of a thorough differential diagnostic process, and given the fact that this situation is unlikely to change over the next few years, decision makers might be reluctant to embrace such an approach in the near future.

Limitations and conclusions

The validity of the results presented is limited by several constraints: our time and financial budget neither allowed exploring the literature across sectors in a comprehensive way, nor conducting interviews in a larger variety of settings. We focused on evidence gathered in a district hospital. The concepts derived from the literature review elucidate both the positive and the negative side of P4P. As these concepts were partially introduced into the interviews, they might have contributed to a more balanced, but also more ambiguous, perspective throughout the views expressed. Nonetheless, the evidence depicted here is consistent with research results recently published (Oxman & Fretheim 2008; Eldridge & Palmer 2009), and it might thus contribute to a deeper understanding of P4P and its advantages.

This study presents evidence that P4P in Rwanda was accompanied by considerable secondary effects. If such concerns arise from this case frequently depicted as a role model, there seems to exist an urgent need to follow up the questions exposed through robust additional research.

Acknowledgements

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