Paying health workers for performance in a fragmented, fragile state: reflections from Katanga Province, Democratic Republic of Congo

Sarah Fox, Sophie Witter, Emily Wylde, Eric Mafuta and Tomas Lievens

1Oxford Policy Management, 6 St Aldate’s Courtyard, 38 St Aldates, Oxford OX1 1BN, UK, 2ReBUILD Programme, Queen Margaret University, Edinburgh, UK, 3Wilde Consulting, 12A Ashley Road, London N19 3AE, UK and 4Ecole de Santé Publique, Université de Kinshasa, Po Box 11850 Kinshasa 1, Democratic Republic of Congo

*Corresponding author. ReBUILD Programme, Queen Margaret University, Edinburgh, UK. E-mail: sophiewitter@blueyonder.co.uk

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The health financing system in the Democratic Republic of Congo (DRC) presents an extreme example of low government investment, high dependency on user fees and poor harmonization across donors. Within this context, performance-based financing mechanisms are being implemented by various donors in the expectation that they will improve health worker motivation and service delivery performance. Drawing on qualitative and quantitative data at different levels of the health system, this study focuses on one such programme in Katanga Province, which combines paying for performance (P4P) with a reduction in fees to users. Despite adding considerably to facility resources (providing the majority of the resources in the case study facilities), there was no evidence of benefits in terms of any of the service inputs, processes or outputs measured. The findings suggest that the positive effects on health worker motivation cannot be taken as a given, particularly, when staff are often expected to increase their workload to achieve the performance objectives and when another source of income, the income from user fees, may be reduced due to a fall in the prices of services. Moreover, in a context where health workers were already almost entirely dependent on users for their remuneration before the donor programme was introduced, the incentive effects of a performance contract may be muted. In addition, other income sources have particular value for staff, it seems—even though salaries and government allowances were low, and frequently delayed, health workers were highly dissatisfied at not receiving them. Salaries were seen as a more assured and long-term source of funding and an important recognition of their role as agents of the state. The authors conclude that while there may be a role for P4P in fragile contexts such as the DRC, to be effective it needs to be rooted in wider financing and human resource policy reforms.

Keywords Results-based financing, tracking health financing flows, health worker pay and motivation, fragile states
Introduction

The need for rapid and sustained improvements to the health system in the Democratic Republic of Congo (DRC) is very clear. Although there have been some signs of improvements in the maternal mortality rate in recent years, infant and child mortality rates remain high, at 92 and 148 per 1000 live births, respectively (Macro International 2007). Access to health care is limited, particularly in rural areas, where over two-thirds of the population does not rely on the formal healthcare system (Ministère de la Santé Publique 2006). The DRC presents classic features of a fragile state, and in parts of it, a post-conflict country. Donors play a particularly important role in service delivery in the DRC, mainly through off-budget programmes. During the years of the conflict, most donor and non-governmental organization (NGO) activity in the war zones was, unsurprisingly, focused largely on humanitarian efforts. While there was a reasonable amount of coordination to ensure that donors minimized geographical overlap, the focus was not on harmonizing approaches. This may well have been appropriate in the context of the conflict, or in areas where the State was completely absent; however, it meant that the post-conflict situation is now characterized by an extreme level of fragmentation and heterogeneity. As a result, flows of funds in the health sector are extremely complex and include a range of actors: central, deconcentrated and decentralized government as well as donors, their implementing partners, health facilities, staff and users.

This article is based on a public expenditure tracking study of health financing flows and service outputs in the DRC, and especially Katanga province. Set within the wider health financing system, it aims to shed light on the functioning of a pay-for-performance (P4P) scheme and in particular how it affects health worker pay and motivation. P4P refers to the transfer of money or material goods conditional on taking a measurable action or achieving a predetermined performance target (Eichler 2006). The article’s aim is to inform the debate on the preconditions for P4P to be effective, particularly in fragile states.

Methods

The study was cross-sectional, combining quantitative methods and qualitative approaches. Secondary data were used to track government and partners’ expenditures and service delivery through the national health information system. A number of quantitative and qualitative approaches were used to get information about funding mechanisms, implementing strategies, funding flows and health providers’ perceptions. Data were collected from a number of levels, from national level to province, zone, facility and health workers, from October to December 2010, in Kinshasa for the central level and in Katanga Province.

Table 1 links the main research questions with each of the research tools, and summarizes samples and limitations encountered.

The following data sources were used:

(a) **Government expenditure data**: For the analysis of national government expenditure, data from the Ministry of Budget were used, and data provided from International Monetary Fund reports. At the provincial level, budgeted (though not actual expenditure) amounts were available from the provincial budget. Further details on salary expenditure were gathered from both the Ministry of Health (MoH) and the Katanga Provincial Health Inspectorate.

(b) **Data on donor activities**: A national donor mapping exercise was undertaken. Results were compared with information from the National Health Accounts (NHA) exercise, carried out for 2008 and 2009.

(c) **Quantitative and qualitative fieldwork**: Seven health zones were included in the sample in Katanga, covering three types of donor implementation modality in three districts: three zones covered by the World Bank Health Sector Rehabilitation Support Project (HSRSP, or PARSS, in French) in Haut Katanga District, implemented by International Rescue Committee (IRC); two by the World Bank HSRSP in Lualaba District, implemented by Gesellschaft für Internationale Zusammenarbeit (GIZ); and two in the zones formerly covered by the EU-funded MDM programme in Tanganyika District. The selection of
zones was based on a combination of accessibility and the need for variation in the levels of utilization. Utilization was measured using routine health management information data on curative services and ante-natal care. Within each of these zones, four facilities were sampled per zone (totalling 28).

Interview guides and checklists were used to investigate the different sources of revenue for the health zone and facilities and to map salaries and other sources of income for health workers. A facility survey and health worker survey, both with structured and open questions, investigated the bottlenecks and constraints at zone and facility level and looked further into issues around health worker motivation and payment. Although we aimed to interview three health workers per facility, the actual number of staff interviewed amounted to only 80% of the desired sample (67 compared with 84). Qualitative interviews were recorded on audio files and financial and non-financial records were captured through photographs. Representative of funding and implementing partners and MoH were interviewed using semi-structured interview guides. Financial and project management documents were reviewed to understand the trends and to triangulate information.

(d) Quantitative service delivery survey: This study also drew on a quantitative service delivery survey (QSDS) carried out in Haut Katanga district from October to November 2009.

Table 1  Summary of research questions and methods

<table>
<thead>
<tr>
<th>Research questions</th>
<th>Research tools used</th>
<th>Geographic area</th>
<th>Sample size</th>
<th>Sampling rationale</th>
<th>Limitations</th>
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</thead>
<tbody>
<tr>
<td>What are the levels and shares of spending on health and how are funds allocated across priorities within the sector? How accurately do payroll lists from central level match with those held at the provincial level?</td>
<td>Analysis of government expenditure and payroll data</td>
<td>National level and Katanga Province</td>
<td>For payroll: eight health zones and four offices</td>
<td>Provincial inspectorate, district office, four health zones in Lubumbashi and four in Haut Katanga</td>
<td>Salary data unavailable, used ‘primes de risque’ instead</td>
</tr>
<tr>
<td>What is the volume of financing from donor sources? What implementation modalities are used by each donor?</td>
<td>Donor mapping</td>
<td>National level</td>
<td>20 donors</td>
<td>Top 80% of funding in the health sector</td>
<td>Difficulty obtaining data</td>
</tr>
<tr>
<td>How do the implementation modalities operate? How do volumes of funds vary across facilities, health zones and implementation modalities? How do the total earnings of health workers vary across implementation modalities? How does each source of earning compare in terms of volume, regularity and consistency? How does HW motivation vary across implementation modalities? What are the main bottlenecks at zone and facility level?</td>
<td>Facility and health worker survey Checklists and interview guides for zone and facility level</td>
<td>Haut Katanga, Lualaba and Tanganyika districts</td>
<td>Seven health zones across three districts; 28 facilities; 67 health workers</td>
<td>Two intervention zones and one control; four facilities per zone; three health workers per facility</td>
<td>Only 80% of desired sample of health workers sampled</td>
</tr>
<tr>
<td>What are the sources and levels of funds across facilities? What are the patterns of user charges across facilities? How does the availability of inputs vary across facilities? How does staff satisfaction, motivation and absenteeism vary across facility types? How does perceived quality of care vary across facilities? What factors determine the facility’s ‘readiness to serve’?</td>
<td>Analysis of the SNIS data</td>
<td>Haut Katanga District</td>
<td>152 facilities; 552 staff; 872 patients</td>
<td>All lower level facilities in the district; all staff present at time of visit; 10 patients or total number available</td>
<td>Data collected from October to November 2009</td>
</tr>
<tr>
<td>What are the patterns of uptake of care across implementation modalities (utilization rates, bed occupancy and attendance)?</td>
<td>Analysis of the SNIS data</td>
<td>Haut Katanga District</td>
<td>Seven health zones (increased to eight in 2010)</td>
<td>All available data for Haut Katanga were used</td>
<td>Data only available at the zone level and for 2006, 2009 and 2010</td>
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</table>
The QSDS covered 152 facilities across all seven health zones in the district, roughly half of which were supported by the HSRSP programme. This included all lower level health facilities that are recognized as part of the government health system in the district, including health posts, health centres and referral health centres that do not provide the full complementary package. All medical staff present at the time of the survey were interviewed as well as 10 patients, or the total number available on the day. This resulted in the collection of data from 522 medical staff and 872 patients. In an effort to establish the determinants of output effectiveness of health facilities, simple health output production functions were estimated, using the QSDS data. They relate a set of health output measures with health facility inputs (characteristics), particularly physical infrastructure, medical inputs (such as drugs and medical equipment), human resources and management and supervision arrangements. Characteristics of the financing modalities of health facilities, as well as the structure of incentives for health workers (allowances), were also considered as determinants of output effectiveness. All models were estimated using a linear specification and standard errors were corrected for heteroscedasticity.

(e) Routine data [Système National d’Information Sanitaire (SNIS)]: The study team also collected data from the routine health information system for output data relating to utilization rates, bed occupancy and attendance. Data were collected from the provincial level for Katanga for the years 2009 and 2010 and for Haut Katanga for 2006.

Data limitations

There were a number of major challenges in accessing complete and reliable data, as is common in such settings. They included:

- Fieldwork in Katanga: There was a large variation in financial data, in terms of accounting practices and completeness, across facilities. In addition, routine data on attendance, bed occupancy and other measures of performance were not disaggregated below the zone level. In general, the health information system in DRC is recognized to be fragile: facilities face mixed incentives in relation to utilization data (downward incentives in relation to sharing of user fees with higher levels, and upward incentives in relation to receiving P4P payments).

- QSDS survey: We encountered some difficulties in relation to the accuracy and reliability of the QSDS datasets. The lack of identity codes made it difficult to link datasets and there were a large number of outliers in the financial data. The data were collected in 2009 when the HSRSP programme was not yet fully operational (though financial and other incentives were being paid).

- Donor mapping: We experienced considerable difficulty in obtaining programme documentation, reports or interviews from a number of donors and the NHA data, which was an alternative source, appeared to be unreliable in some instances.

- Trends in government expenditure: Data obtained from the Ministry of Budget and data from IMF reports were not always consistent, and information on actual expenditures on health in Katanga was not available.

Results

Setting the scene: national health financing

National health financing in the DRC presents a number of challenging features, which are summarized here. They set the context for the strategies adopted by facilities and workers at lower levels of the system. The findings in this section stem from data collected and interviews with the Ministry of Budget and the Provincial MoH.

First, overall public investment in health is low: the share of public expenditure going to the health sector has oscillated around 4% during the period 2006–10 (Ministry of Budget 2011).

Second, allocation of resources at the national level is skewed to central and administrative spending: the General Secretariat received 54% of public health expenditure in 2006, 34% in 2007 and 39% in 2010 (Ministry of Budget 2011).

Third, funds are unpredictable and therefore unplanned. Budget execution has been varied for all sectors, including health, with expenditure which ranged from 164% of the budget in 2007 to 45% in 2010. Budget credibility is therefore extremely limited.

Finally, very little donor spending is included in the budget, and it is therefore difficult to obtain a holistic assessment of whether spending decisions are consistent with policy.

In addition to the spending on health recorded by the Ministry of Budget, provincial ministries of health also develop their own budgets, which are based on the block (i.e. discretionary) transfers which provinces are meant to receive from the government. The Constitution stipulates that 40% of domestic fiscal revenues are meant to be transferred to the provinces. In reality, however, only a very small fraction of these amounts, if any, reach the provincial level (World Bank 2008).

As a consequence of all these features, very little funding flows down the system towards the zones and facilities. In practice, government generally provides only salaries to health workers below the central level, with flows of in-kind or cash transfers very limited either from the Ministry of Public Health or the provincial ministries of health. The majority of recurrent inputs at facility level come from either donors (via implementing partners) or from own resources from user fees. Vertical programmes also provide irregular in-kind transfers. Health financing in the DRC operates in the reverse direction from that experienced in most countries: resources flow up, not down, in what is known as ‘a pompe’, with funds from facilities channelled upwards to fund the functioning of higher levels of the pyramid.

The role of aid financing

Aid plays a very significant role in the health sector of DRC. If the NHA estimates are correct, donor expenditures for 2008 and
2009 were equivalent to roughly 320 and 290% of total
government spending on health for those years (Health Systems 20/20 2011). However, to reduce financial risks,
donors rely on project-based aid, the bulk of which is
off-budget. Some support vertical, disease-specific programmes.
A second approach focuses on capacity building and
technical support for central health ministry. Finally, a number
of donors provide Health Systems Strengthening (HSS) support
aimed at decentralized levels. Of the HSS group, almost all
involve a similar type of activity, such as provision of equip-
ment and supplies (often in-kind), capacity-building support to
management structures, support for drugs procurement and
drug funds, and—most important—support for the remuner-
ation of health workers. Most incorporate some performance-
based elements, including payments to health workers. Support
in these systems-strengthening programmes is generally
centred around health zones, with support provided to the
zone management team and to facilities. There are a variety
of implementation models, but the most common is to fund an
NGO to implement programmes at local level.

Findings from the donor interviews and reports (such as Carlson et al. 2009) indicate a number of general concerns in relation to
performance-based financing (PBF) for healthcare staff:

- Conflicts sometimes arise between different incentive sys-
tems—e.g. between general performance incentives and
those paid by vertical programmes, which dictate different
priorities for staff.
- Current staffing arrangements at health facility and central
level challenge the performance-based payments system, as
there are often more staff in place than required. This leads
to a dilution of the performance-based payments to each
individual, which limits the extent to which staff are
motivated by the payments. This problem of over-staffing
is reported mainly in general referral hospitals, rather than
in primary health facilities.
- There is a heavy burden of monitoring required, and it is
difficult to detect fraud without robust supervision.
- While most of the major HSS programmes apply a
performance-based approach to health worker remunera-
tion, this is by no means consistent. Approaches and levels
of payment are not co-ordinated across donors.
- So far there is limited effort across donors to discuss the
longer-term implications of this system of payment of
‘primes’ (fixed top-up payments) and performance-based
payments to health workers and facilities, in terms of
broader efforts that will be required by government on
public service reform or medium-term financial
sustainability. Nor is there a debate on the effects on the
quantity and quality of service delivery more widely.

Moving to meso: P4P in Katanga Province

This section draws on data collected from two key sources. It
begins with a presentation of findings from the qualitative and
quantitative fieldwork at the zone, facility and health worker
level carried out in 2010. Moving on to the section on ‘effects of
service delivery’ it then presents the findings of the QSDS
survey carried out in late 2009. The final section again provides
some findings from the qualitative and quantitative fieldwork,
focusing on the facility level service data.

As part of its HSRSP programme, the World Bank has been
implementing a P4P approach to supporting health service
delivery in Haut Katanga and Lualaba districts of Katanga
Province. Comparing health financing from these two districts
with a third district without significant donor support
(Tanganyika) allowed for some analysis of the impact of
donor funding (of which the HSRSP project was the most
significant component in this area). Some contextual differ-
ences should be noted. In particular, Haut Katanga (IRC) is
adjacent to Lubumbashi, the provincial capital, and is therefore
significantly more accessible than the other two districts.
Tanganyika is the hardest to reach and has the most difficult
terrain, with some parts only accessible by boat. It receives
limited fixed salary top-ups and other non-salary support for
selected facilities from Humanitarian Action for Africa (AHA).

In each of the two HSRSP-supported districts, organizations
were contracted through the MoH to implement the
performance-based financing mechanism. These purchasers
were international NGOs with a strong local presence in the
health sector. They were responsible for verifying the reported
results, calculating the bonus and processing the payments. In
Haut Katanga, the IRC was the contracted NGO, whereas in
Lualaba, GIZ (formerly GTZ) was contracted to manage and
distribute the funds. Oversight responsibilities were shared by
the provincial health inspectorate and the provincial ministry of
public health.

According to the project design, all workers in primary
healthcare facilities, referral hospitals, referral health centres
and health zone teams in the selected districts were to receive a
cash bonus. This bonus was divided into two parts: 70% paid
monthly as a fixed amount depending on the grade of the
worker and 30% performance-related and paid quarterly based
on facility performance, and allocated across workers based on
their grade. The performance score was calculated based on the
achievement of targets that are set at the level of the health
facility or health zone. Indicators related to both outputs and
process (see Box 1). Some were based on fixed targets and
others on number of outputs delivered.

The allowance paid to staff was designed to compensate staff
for the loss of earnings as a result of the reduction in user fees
which was negotiated with funders. While it was initially
planned to implement a uniform tariff across all supported
facilities, several faith-based organizations and private facilities
objected on the grounds that their cost structure was higher, so
rather than exclude them for the support, user fee reductions
were negotiated on a facility by facility basis.

Effects on financing of zones

From the financial data gathered from selected health zones, it is
evident that the HSRSP programme has a major impact on
the level and allocation of spending. In zones where there is
minimal donor support, like Kansimba in Tanganyika, revenues
are exclusively derived from user fees (part of which are
transferred to the zone from health facilities). Over 2 years, this
zone received around USD 2000 in cash (equivalent to $0.01 per
capita), while Kipushi zone, in Haut Katanga, which is
supported by HSRSP (IRC), received USD 80,000 (just under $1 per capita), to fund allowances, training and campaigns.

Box 1. HSRSP performance indicators, health centres, Katanga Province

Output indicators
(1) Number of new consultations for curative care: 10% of total maximum payment
(2) Number of facility-based deliveries: 10%
(3) Number of patients referred to the hospital or referral health centre: 10%
(4) Number of pregnant woman vaccinated against tetanus toxoid (2-5): 10%
(5) Number of children correctly treated for fever, diarrhoea and acute respiratory infections: 10%
(6) Targets reached for all immunization objectives in the preceding month: 10%

Process indicators
(1) Implementation of 80% or more of all activities planned in the previous community health management meeting: 5%
(2) Implementation of 80% or more of the recommendations made during the previous supervision visit: 5%
(3) Availability of the cash report of the previous month in accordance with the financial management tools of the health centre: 10%
(4) Timeliness and completion of the health information system report: 10%
(5) Match between actual and planned drug stocks at the health centre’s pharmacy: 10%

Effects on financing at facility level
As there are so few facilities for which there was complete financial information, the approach here was more akin to a series of case studies, with one facility selected from each of the three districts included in our study.

There was considerable monthly variation in net receipts not only from user fees but also from HSRSP incentive payments (‘primes’) and government salaries in the facilities for which data were provided. In one health centre in Lualaba district, HSRSP (GIZ) primes and government salaries were paid only 3 months of 10. In terms of the relative contribution over the year from January to October, user fees contributed 36% of the total facility revenues, HSRSP contributed 52% and government salaries and primes contributed the remaining 12%. In another health centre in Haut Katanga district, the HSRSP (IRC) primes added resources of between 1.6 and 4.25 times the net user fees generated by the facility per month.

The facilities appeared to use formulae for allocating total net receipts each month, although the formulae varied across districts and to some extent across months. In the Haut Katanga health centre, e.g. 60% was used to pay ‘local’ allowances for health workers, 20% was used for operational costs and 20% was transferred to higher levels (3% to the zone, 3% to the district, 4% to the provincial health inspectorate and 10% to the MoH).

Effects on service delivery
The QSDS survey in Haut Katanga districts allows for some insights into the relationship between financing modalities and service delivery. In general, HSRSP (IRC)-supported facilities fared worse in relation to a number of indicators than unsupported facilities (though information on their performance prior to the project was not available). The survey found, e.g. that:

- The availability of equipment was poor, and only one item (a stethoscope) was available in more than 90% of facilities. However, public facilities that were not supported by HSRSP fared better in terms of an index of nine medical items than those supported by HSRSP and than private and NGO facilities.
- The 11 drugs and medical supplies listed in the questionnaire were found to be widely available, though private facilities fared worse than public in terms of stock outs and deficiencies in certain items, such as malarial drugs, syringes and antibiotic ointment. It was found that public facilities that received salary and non-salary support from HSRSP had more stock outs than other facilities. The availability of vaccines across all facility types was remarkably low.
- Absenteeism (unapproved absences) across all facility types averaged 9.7% of staff. This was higher among staff working in public sector facilities supported by HSRSP compared with those working in other public sector facilities (10.8% compared with 7.1%). About one-third of health workers were engaged in other activities outside the health facility, though what these activities are is largely unknown. The survey collected information on the prices charged to patients across a range of services in each facility. To control for differences in treatment we calculated the mean prices of 14 common health interventions. Within the public sector, facilities supported by HSRSP had a lower fee but this difference was not statistically significant. Public facilities that were not supported by HSRSP provided more services free of charge, but when they did charge, the fee was higher.
- A readiness to serve index was constructed based on the provision of 14 common interventions. On average, health centres were found to provide nine of these services, whereas health posts provided seven. Although some conditions, such as malaria, Acute Respiratory Infection (ARI) and diarrhoea are widely treated; others, such as cholera, TB, HIV and complicated child delivery are not treated in 50% of facilities. In general, the range of services offered was higher among non-HSRSP facilities.
- Clients reported that friendliness of health personnel was the most important determinant of their choice of health facility (72%) while quality of care and proximity came next (69% and 61%, respectively). Comparing across the public and private facilities, the former was reportedly chosen more frequently for proximity ($P < 0.05$), quality of care ($P < 0.01$), availability and price of drugs ($P < 0.05$) or friendliness ($P < 0.1$), while the private sector performed
significantly better in terms of speciality of care. Within the public sector, facilities supported by HSRSP performed worse in terms of perceived quality and speciality of care, prices and availability of drugs.

- The average waiting time reported by patients before being attended by a doctor or a nurse was 23 minutes. Average waiting time did not differ greatly across the different ownership types or across facilities that were or were not supported by HSRSP.
- The survey did not find a large variation in clients’ reports of health worker attitudes. There was a marked difference, however, in their level of understanding of the symptoms of their illness, with HSRSP-supported facilities faring worse than those that were not supported.
- In terms of overall satisfaction, the results show very little variation across facilities, with most facilities scoring reasonably high (four of five) in index of overall satisfaction.

Multivariate modelling of QSDS data suggested that while the volume of remuneration and its distribution across health worker types was not associated by itself to changes in output mix, the source of the remuneration and particularly the link between the remuneration and user fees did affect the output mix. In health facilities where an allowance in the form of an apportionment of the user fees taken in by the facility was in place, the service mix offered was broader ($P < 0.05$). The model also showed that health facilities that received any kind of external support, or HSRPS external support in particular, did not show a significantly broader output mix. Together with medical doctors, the availability of equipment and medicines was the input characteristic most strongly associated with the range of services offered by health facilities. Together these three dimensions accounted for 66% of the variation in output mix explained by the model (the overall $R^2$ was 0.39).

**Trends in utilization**

Contrary to the qualitative reports from health workers, the routine facility-based data or SNIS did not indicate a pronounced increase in utilization rates over the period in which the HSRSP programme was introduced. In fact, the trend in utilization rates of curative services in Haut Katanga has been very mixed, some facilities showing an overall decline, some increasing and then falling and one showing a stepwise increase.

**Micro level: health worker remuneration and motivation**

Health workers in the DRC are paid from a range of sources, some of which cover most staff in a given facility, while others such as government salaries are limited to a select few. Below is an overview of each of the sources of revenue, based on the interviews with 67 workers carried out in three districts, Haut Katanga (IRC supported), Lualaba (GTZ supported) and Tanganyika (no support). This section draws entirely from the quantitative and qualitative fieldwork carried out in 2010.

**Performance-based payments**

Thirty-nine (58%) of those interviewed received an HSRSP allowance, contrasting with the programme design which intended for all health workers in the supported districts to be given an allowance.

A marked difference in the amount received was noted between the two districts, with the fixed allowances received in the IRC implementation area (Haut Katanga) considerably higher than those in the district where GIZ operates (Lualaba). In some cases, health workers paid by IRC received more than double those of the same cadre paid by GIZ (e.g. a grade A2 nurse-in-charge was paid $135 by IRC compared with $58 by GIZ).

Staff paid by GIZ were grouped into three categories according to their cadre, each one receiving $29, $49 or $58 per month. There was much more variation in amounts paid by IRC and the way in which these amounts were assigned across cadres of staff was not clear, with some staff of lower grades receiving more than their more senior colleagues.

**Government salaries**

Only a very small percentage of health staff received a salary from the government. To be listed on the government payroll, health workers must have been assigned a matriculation number (thereby becoming ‘mechanized’), though even among those who had, few had been paid a salary from the government. Among the respondents, only four received a salary from the government (6%), which was far fewer than the number mechanized (36%). All four reported that their salary rarely came on time and each reported to have missed between 1 and 3 months of their salary since the beginning of the year.

**Risk allowances**

In addition to salaries, the government also provided a payment to health workers in the form of a monthly allowance known as ‘prime de risque’ or risk allowance. This is paid to a wider number of staff than those who receive a salary and does not require staff to be mechanized. Among those interviewed across the three districts, just under half (49%) of respondents received a risk allowance, and the average amount received was 8307 CDF (US$9).

A manual exercise matching the central MoH list of health staff with zonal and provincial lists found 21% of health workers not matched, indicating a substantial number of people who are working at local level but not being paid. The reverse (people who are listed but not working at local level) is also likely to be an issue, though this was not checked.

**Local allowance**

The majority of health workers in Katanga (88% in our study) received an additional source of income in the form of an apportionment of the user fees taken in by the facility. The amount received varies each month according to the total receipts of the health facility and the manner in which it is shared among staff, which is usually agreed locally. In most cases, this allowance was divided among the staff according to their level of qualification, responsibilities or other criteria, though there were cases where all staff were given an equal portion. Comparing the local allowance across the three districts in our study we found that, on average, health workers in Lualaba received considerably less than the other
two districts, with the variation much more pronounced among higher cadres of staff.

**Total remuneration of health workers**

There was a huge variation in the total amounts received by the health workers within and across the three districts, and this was only partially accounted for by the different qualification and cadres of staff. While 49% of respondents received risk allowances and 20% a gift from patients, the relative size of these payments was generally low in comparison with other sources of income. Government salaries were comparably higher but are only received by four people in the sample. Overall, across the three districts, the health workers in this sample relied mostly on the ‘local allowance’ or payments from partners for their income.

Generally speaking, health workers were best remunerated in Haut Katanga district, and this was primarily due to the payment of the HSRSP allowances through IRC, which were higher than the amount paid in Lualaba through GIZ (Figure 1). Health workers in Tanganyika, on the other hand, relied mostly on the fees collected from patients for their income, though some did receive substantial proportions of their salary from another donor, AHA. However, there were also major differences in the number of hours worked across districts. Adjusting remuneration for the number of hours worked reduces the differential for lower grades, though not the higher ones.

**Perceptions of health workers**

The qualitative interviews revealed that many respondents who received an allowance from partners did not feel that they were adequately compensated for the work that they were expected to carry out. Another major source of dissatisfaction is that, as agents of the state, health workers feel that they are entitled to a salary that is paid by the government in recognition for the work that they do. In relation to the risk allowances, one of the main constraints revealed during discussions were the costs and time taken to travel to collect the allowances, and the level and irregularity of the allowance. In some cases, a portion of the allowance was kept to cover the transport costs of the accountant, further reducing the amount received by health staff. For the local allowance, overall satisfaction was high. While the amount might be small, it was seen as a regular source of income on which staff could depend. There were, however, some concerns, including about variation in the amounts received each month and that the allocation of the allowance across staff was not fair.

Some issues relating to the allowances from donors which served to demotivate staff included:
- **Irregularity of payment**: Almost all respondents interviewed claimed that they never receive their allowance on time and these delays appear to be more pronounced for the performance-based component of the allowance, where this exists.
- **Lack of clarity on the rules of the game**: Among the 38 respondents who received the allowance from the World Bank project, 18 (46%) indicated they did not know how the amounts were determined, though some were aware that they were linked to some kind of indictors.
- **Perceived inequity in distribution**: Of the health workers who received a performance-based incentive in Haut Katanga and Lualaba, a significant portion of those interviewed claimed that the method of allocating the allowances was not fair.

**Discussion**

The study faced a number of challenges accessing full datasets, which are highlighted earlier. It also faced design challenges: the facilities supported by the HSRSP were meant to be selected randomly, but without ‘before’ data for these facilities, it is not possible to attribute current results to particular funding modalities—there may have been pre-existing differences, compared with unsupported facilities. The study is primarily cross-sectional. Associations can also run in both directions—for the multivariate modelling, e.g. the distribution of user fees can encourage broader service provision, but equally, the range of services can support fees for distribution. In addition, all the local data came from a few districts of Katanga Province; given the diverse nature of the DRC, they cannot be assumed to be general. Some of the data (the QSDS survey) were also collected at an early stage of the HSRSP, when not all elements were fully operational. Nevertheless, by combining results from a number of research methods, both qualitative and
quantitative, at national level and lower levels, the study has been able to generate some useful insights on overall health financing and design and implementation issues in relation to P4P, in particular in this part of the DRC.

The context in the DRC presents an extreme example of a fragile state—in particular, in relation to its low public investment in health, its dependence on donor support and, even more, on user fees, and the degree to which its donors operate in an uncoordinated way, commonly bypassing public systems. The total annual health expenditure per person was estimated at $13 in 2009, of which public investment was just 12% (under 5% of the total budget) (World Bank 2008). This presents a challenge for health system strengthening and for research: the country is a patchwork in which each area receives different funds and in different modalities. Even within the same province and project, different implementing NGOs were found to be paying widely different incentive payments, for example.

It might be expected that injecting resources at local level which are intended to motivate health staff to perform better and to reduce the financial burden on users could only be a positive contribution. However, this study has found mixed results. It suggests that the positive effect on health worker motivation cannot be taken as a given, particularly, when staff are often expected to increase their workload to achieve the performance objectives and when another source of income, the income from user fees, may be reduced due to a fall in the prices of services. Moreover, in a context where health workers were already almost entirely dependent on users for their remuneration before the donor programme was introduced, the incentive effects of a donor-funded performance contract may be muted. Staff were already paid per act, in effect, and this is one of the reasons why in the DRC, excessive and sometimes unqualified personnel are found in the health facilities.

In addition, other income sources have particular value for staff, it seems—even though salaries and government ‘primes’ were low, and frequently delayed, health workers were highly dissatisfied at not receiving them. Salaries were seen as an important recognition of their role as agents of the state and as a more reliable form of pay in the longer term.

A number of other reflections on design and implementation arise, many of which are shared with previous studies of P4P schemes (Toonen et al. 2009; Witter et al. 2011; Witter 2012). First, without solid information on the full costs of service delivery and the impact of price and volume changes on health worker pay levels, it is difficult to calibrate the incentive payments to have the desired effects. Indeed, where they are not well calibrated, there may be some negative incentive effects, where workers feel they are not adequately compensated for increases in workload. As with a number of other PBF projects, the payments made in this project did not cover the full costs of production of services, functioning more as a marginal top-up, but with variations across staff and areas, which generated feelings of unfairness. It should also be emphasized that only 58% of staff received project incentive payments (which should have been universal), and payments were limited and irregular.

Second, in order for a P4P approach to have an effect on service delivery, health workers must fully understand what is expected of them, how they will be assessed and to what degree of certainty they will actually reap the reward if they do perform—conditions that were not fulfilled in this case, and are hard to fulfil if the performance assessment is too complex. The performance criteria also need to be under the control of health workers, which was not true in this setting.

Given all these constraints, it is not surprising that despite adding considerably to facility resources (providing the majority of the resources in the case study facilities), there was no evidence of benefits in terms of any of the service inputs, processes or outputs measured. Supported facilities performed worse in relation to availability of equipment, drugs and supplies, as well as in relation to staff absenteeism, perceived quality of care and patient understanding of symptoms. No clear trends in utilization were found. The output mix was equivalent to non-supported facilities, as were satisfaction rates, waiting times and charges for patients.

A recent review of experiences (Bertone et al. 2011) highlighted the variety of approaches and implementation of P4P programmes in the DRC, and some of the ongoing operational challenges and lessons learned. Concerns about systems effects and how to sustain the patchwork of donor programmes emerge from programme reviews (Carlson et al. 2009). It is clear that the debate about how to develop and implement PBF effectively in the DRC, specifically, and in fragile states more generally is still very much alive.

**Conclusions**

Overall resources for the public healthcare system in DRC are inadequate and are not managed in a strategic way. From the government side, there is an urgent need for increased national investment. Getting public sector staff mechanized and on salary should take a high priority, as should improving staff record keeping, rationalization and payroll management. In addition, there should be a focus on reversing the upward flow of resources, whereby users pay not only for care but also for the running costs of higher levels of the public system. From donors, greater harmonization of approaches is required, in line with government policies and systems. Within the framework, P4P may play a role, but only after careful consideration of wider health financing and human resource policy reforms. It should be based on a clear understanding of context, and starting from the lessons learned from earlier projects.

While fragile state settings may offer greater opportunities for introducing P4P—such as fewer entrenched interests and greater scope for donor innovation—this study highlights some important lessons on how it should be designed and implemented if it is to operate effectively in these contexts.

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