From public to private and back again: sustaining a high service-delivery level during transition of management authority: a Cambodia case study

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Accepted 12 August 2009

Contracting non-governmental organizations (NGOs) has been shown to increase health service delivery output considerably over relatively short time frames in low-income countries, especially when applying performance-related pay as a stimulus. A key concern is how to manage the transition back to government-operated systems while maintaining health service delivery output levels. In this paper we describe and analyse the transition from NGO-managed to government-managed health services over a 3-year period in a health district in Cambodia with a focus on the level of health service delivery. Data are derived from four sources, including cross-sectional surveys and health management and financial information systems. The transition was achieved by focusing on all the building blocks of the health care system and ensuring an acceptable financial remuneration for the staff members of contracted health facilities. The latter was attained through performance subsidies derived from financial commitment by the central government, and revenue from user fees. Performance management had a crucial role in the gradual handover of responsibilities. Not all responsibilities were handed back to government over the case study period—notably the development of performance indicators and targets and the performance monitoring.

Keywords Health systems, contracting, user fees, service delivery, performance management

KEY MESSAGES

- The transition from NGO contracting to a government-operated health system, while maintaining the same level of service delivery, is feasible provided certain key factors are addressed.

- In Cambodia, the transition was achieved by focusing on all the main aspects of the health care system, not simply service delivery, and ensuring acceptable financial remuneration for staff of contracted health facilities through performance subsidies and user fee revenue.

- Performance management, of both health care providers and administrators, can play a crucial role in the gradual handover of responsibilities.
Introduction

Concerns have been expressed that many low-income countries, especially those with already poor health indicators, are unlikely to reach the Millennium Development Goals (Travis et al. 2004). One means to improve the delivery of essential health services, and as such increase the likelihood of reaching those key goals related to reducing child mortality and improving maternal health, is for governments to contract non-state agencies such as non-governmental organizations (NGOs) (Loevinsohn and Harding 2005; Palmer et al. 2006). Experiences to date with contracting indicate that health service delivery can be considerably improved in a relatively short time (Soeters and Griffith 2003; Meessen et al. 2006; Soeters et al. 2006; Meessen et al. 2007). The increase in health service output has been found to be especially pronounced when contractors apply performance-related pay as a stimulus (Liu et al. 2007). Contracting and performance management have their roots in the new public management approach, whereby the government uses inter alia output-based contracts and incentive payments to improve productivity (Khaleghian and Das Gupta 2005).

While a focus on health system development is considered by many to be a prerequisite for attaining the Millennium Development Goals (Freedman 2005), the effects of contracting on the functioning and sustainability of health systems remain uncertain (Loevinsohn and Harding 2005; Palmer et al. 2006; Liu et al. 2007; Sabri et al. 2007). Sabri et al. (2007) report that contracted NGOs in Afghanistan lack a long-term vision due to the short duration of their contracts with donors and government. A study by Bloom et al. (2006) on the performance of contracted NGOs in Cambodia found that their focus on attaining contractual targets did not result in the diversion of efforts and resources away from non-targeted interventions. They also found that contractors performed no better than the control health districts with regards to non-targeted interventions, suggesting that contractors had been pre-occupied with reaching contractual targets at the expense of building durable health care delivery systems. A key concern with contracting revolves also around how to ensure that service output levels can be maintained in the shift back to a government-operated system (Sabri et al. 2007), especially since the managerial requirements of the transition are considerable (Palmer 2000).

In Cambodia, where the contracting pilot has been well documented (Bushan et al. 2002; Schwartz and Bushan 2004; Loevinsohn and Harding 2005; Schwartz and Bushan 2005; Bloom et al. 2006), the Ministry of Health clearly demonstrated from 2006 onwards its desire to shift away from contracting-out to contracting-in terms of delivery of outputs and the cost-effectiveness of those outputs. The Cambodian MoH subsequently introduced a single, modified, contracting model for the next tender which was initiated in mid-2003. This single contracting model, covering 12 OHDs, required contractors to work within government supply chains, budgets and infrastructure, while having partial responsibility for the management of seconded health staff (including the right to fire staff). Due to these characteristics the new model of contracting constituted a hybrid of contracting-in and contracting-out. The new model commenced in May 2004. This paper concerns the period from May 2004 through December 2007 (hereafter termed Phase II). In Phase II all contractors were required to introduce performance management as an additional means to increase service delivery levels.

Operational health districts are health service delivery entities covering populations of 100 000–200 000. An OHD comprises an administrative centre, a referral hospital delivering a complementary package of activities, including surgery and obstetrics, and health centres that deliver a (mainly preventive) minimum package of services for a catchment population of 8000–12 000 people. At non-contracted OHDs, overall management is the responsibility of the district health technical advisory team (DHTAT) that consists of the directorate (director and two deputies for health centres and hospital), line managers for maternal and child health, vaccination, pharmacy and the administration.

Study setting

Kirivong Operational Health District (KOD) is located in southeast Cambodia. It consists of four administrative districts with 31 communes and 290 villages, and has a population of 201 870 people (1998 census). Public sector health services are provided from 20 health centres and an 80-bed referral hospital. The two administrative districts located within the Tonle-Bassac delta are flooded for 4 to 5 months of each year. These difficult living conditions constrain the government’s ability to assign the more experienced and qualified staff to the districts’ eight

Background

During the period January 1999–April 2003 (hereinafter termed Phase I), the Ministry of Health (MoH) awarded competitive contracts to NGOs to manage five operational health districts (OHDs) (Bushan et al. 2002; Schwartz and Bushan 2004; Bloom et al. 2006). Contracts were developed along two delivery models:

- Contracting-in (three OHDs), in which the contractor worked within the government structure, using government budgets, supply systems, staff and infrastructure. The contractor was required to adhere strictly to government guidelines and regulations and had no authority to hire or fire staff members.
- Contracting-out (two OHDs), in which the contractor had overall management responsibility, including the right to hire and fire staff, managing the supply of drugs and other consumables.

An evaluation was undertaken 30 months after the commencement of both contracting models (Bushan et al. 2002). This indicated that contracting-out outperformed contracting-in in terms of delivery of outputs and the cost-effectiveness of those outputs. The Cambodian MoH subsequently introduced a single, modified, contracting model for the next tender which was initiated in mid-2003. This single contracting model, covering 12 OHDs, required contractors to work within government supply chains, budgets and infrastructure, while having partial responsibility for the management of seconded health staff (including the right to fire staff). Due to these characteristics the new model of contracting constituted a hybrid of contracting-in and contracting-out. The new model commenced in May 2004. This paper concerns the period from May 2004 through December 2007 (hereafter termed Phase II). In Phase II all contractors were required to introduce performance management as an additional means to increase service delivery levels.

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health centres. The average population per health centre is 8532. The other two administrative districts are less prone to flooding and have a higher population density, with the average catchment population for each of the 12 health centres being 13 013. KOD was managed by the French NGO Enfants et Développement along the contracting-in model between January 1999 and April 2004. Thereafter, management was officially assigned to the Swiss Red Cross (hereafter termed contractor), under the single contracting model, which required the Swiss Red Cross (SRC) to introduce a performance-based health staff remuneration system, as mentioned. The contractual targets and their respective definitions for KOD for Phase II are provided in Table 1. These were set by the MoH, based on the evaluation results in 2001. As most targets had already been attained by the completion of Phase I, the Swiss Red Cross was able to focus its efforts on sustainable handover.

User fees were initiated in KOD in November 2001 (Jacobs and Price 2004). During Phase I, community participation in health was strengthened through the 91 Buddhist pagodas and the five Cham Muslim mosques (Jacobs and Price 2003). Representatives of the pagodas and mosques, along with representatives of the commune councils, constituted the Health Centre Management Committees (HCMC). These representatives of pagodas and mosques and the respective Village Chiefs were also part of the Village Health Support Groups (VHSG), who participated in the monthly outreach services provided by health centre staff. Outreach services comprised antenatal care, contraceptive provision, postnatal care and vaccination. The HCMC and VHSG were supplemented by an advisory board consisting of the Deputy Governors in charge for Health and the District Chief Monks, and formed the basis for the creation of health equity funds—third party mechanisms that pay health providers for services rendered to the poor (see Jacobs et al. 2007 for more information). The main aim of the health equity funds was to enable financial access to health services for the pre-identified poor. These funds were continued during Phase II. In May 2005 community-based health insurance was introduced in Kirivong Administrative District and covered about 3000 of the total population of around 100,000. The average number of health staff during the study period was eight for the DHTAT, 120 for health centres, and 42 for the hospital. Of these staff, only six were medical doctors.

**Approach to delegation of authority**

To sustain the level of service output attained during Phase I, the contractor deemed it necessary to work at the health system level, which covers four basic functions: financing, stewardship, resource generation and provision of services (Murray and Frenk 2000). To identify the key system-related issues and formulate locally appropriate interventions, in addition to fostering ownership, a workshop was held at the beginning of Phase II with representatives of central, provincial and district health authorities as well as district administrative authorities. This was followed by a mid-term review that incorporated: all dimensions and related elements pertaining to sustainability as proposed by Sarriot et al. (2004); elements of selected inputs, processes and outputs to define the degree of capacity as mapped by LaFond et al. (2002); and quality standards for health care delivery and management outlined along 10 principles by Unger et al. (2003). Based on this review additional interventions were formulated.

**Steps to initiate performance management**

Being an essential part of human resources management, performance management could not be introduced in isolation from other related essential developments. Box 1 provides an overview of additional measures that were taken to ensure an enabling context for performance management. Two initiatives were introduced from the start: the reinforcement of a Conflict Resolution Committee in tandem with the introduction of Working Rules and Regulations that were signed by all staff members of KOD. Job descriptions were reviewed for all staff members and provided to all new staff on appointment. Agreement was sought from staff members as to how performance bonuses should be distributed, which resulted in a formula based on employee position, qualification and place of work.

<table>
<thead>
<tr>
<th>Target</th>
<th>Definition</th>
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<tbody>
<tr>
<td>50% antenatal care (ANC)</td>
<td>Women who delivered in the last 11 months and had ≥2 ANC attendances and had their blood pressure checked at least once.</td>
</tr>
<tr>
<td>40% of deliveries by trained attendant</td>
<td>Women who delivered in the last 11 months and delivery was attended by a doctor, medical assistant, nurse or trained midwife.</td>
</tr>
<tr>
<td>Utilization of district health facility for curative care by the lower 50% socio-economic stratum ≥33%</td>
<td>When illness or injury occurred in the 30 days prior to survey the individual sought treatment at any stage from the referral hospital or a health centre.</td>
</tr>
<tr>
<td>20% of deliveries in a health facility</td>
<td>Women who delivered in last 11 months and delivered in a hospital, health centre or clinic.</td>
</tr>
<tr>
<td>Child immunization ≥75%</td>
<td>Children 12–23 months fully vaccinated.</td>
</tr>
<tr>
<td>Child vitamin A coverage ≥75%</td>
<td>Children 6–59 months who received vitamin A in the 6 months prior to interview.</td>
</tr>
<tr>
<td>Early breastfeeding after delivery ≥25%</td>
<td>Women who delivered in last 11 months and put baby to the breast within 2 hours of delivery.</td>
</tr>
<tr>
<td>Provision of colostrum ≥45%</td>
<td>Mothers who gave colostrum.</td>
</tr>
<tr>
<td>Married women using contraceptives ≥40%</td>
<td>Married women aged 15–49 years using a contraceptive.</td>
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*Concerns the performance by the contractor against targets to be assessed by the MoH by use of a cross-sectional survey near the end of the contract period.*
Training was provided by a local NGO—in addition to training developed and facilitated by the MoH—to further optimize the skills of the KOD staff members; and included team building, communication and relationship skills, leadership, motivation and empowerment, community participation, community organizing, and financial management. In addition, ongoing capacity building for technical issues was provided by resident local and international advisers to the DHTAT.

(Sub)conract, indicators and targets
Contracts were initially developed by the contractor on a quarterly basis per facility. The contracts stipulated the indicators and associated financial rewards, means of verification (including monitoring), deadlines for submission of deliverables and acceptability level of performance. They were signed by each representative of the facilities. Because units were treated as teams, the potential financial remuneration from the performance bonus provided an opportunity for staff to encourage each other to perform optimally. Staff members decided internally how to allocate the bonus based on performance such as number of hours worked, punctuality etc. Money that was allocated quarterly to performance management but not awarded to the contracted facilities (including DHTAT), due to inadequate level of performance, was distributed according to an agreed formula among the best-performing facilities as an incentive to perform well. Contracts and related indicators/targets were always discussed with the DHTAT and facility representatives prior to endorsement.

To ensure that the DHTAT would exert its managerial responsibilities, part of their financial reward was based on the performance of health facilities from the third quarter of 2006 onwards. Initially these facilities on which the DHTAT’s remuneration was partially based constituted the nine worst performing and accounted for 45% of the performance bonus. By the end of 2007, 75% of the DHTAT’s remuneration was based on the performance of all 21 health facilities. From the third year onwards, when most facilities functioned satisfactorily in terms of service delivery and when interventions formulated during the initial workshop and mid-term evaluation were implemented, responsibility for the management was officially and gradually delegated from the contractor to the DHTAT; that is, the DHTAT was subcontracted by the contractor.

Table 2 provides an overview of responsibilities that were delegated to the DHTAT over the study period. A complete delegation of managerial responsibilities to the DHTAT was not feasible because the MoH held the contractor accountable. Most responsibilities were delegated throughout the last year of Phase II, except for the development of indicators and targets and the management of performance contracts for the DHTAT. Similarly, monitoring and decisions on budget allocation were not fully delegated, although they took place through a consultative and participatory process. The contractual hierarchy was thus in descending order: Ministry of Health, Swiss Red Cross, DHTAT, health facilities, individual staff members.

For the health centres, five quantitative targets for performance management were chosen: curative care consultations, antenatal care consultations, deliveries at facilities, contraceptive use, and immunization. The contractual MoH-SRC targets—vitamin A coverage, initiation of breastfeeding and provision of colostrum—were not considered for performance management, as vitamin A coverage was dealt with by use of six-monthly campaigns in collaboration with authorities, and breastfeeding practices were addressed by separate health education interventions through the community participation structures and by the MoH and development partners through

**Box 1 Measures taken prior to introducing performance management**

- Reinforcement of a Conflict Resolution Committee
- Elaboration and implementation of working Rules and Regulations
- Development of factors for distributing performance bonus among staff based on qualification, position and place of work
- Formulating criteria to distribute performance bonus over facilities
- Formulation of mission and objectives
- Development of contracts for each facility
- Establishment of a monitoring team and development of monitoring forms
- Reintroduce updated job descriptions
television campaigns. For the selected quantitative targets a weighting system was used to reward improvements in areas where there was poor performance—more financial incentives were allocated to services with minimal output. Annual cross-sectional surveys were conducted to get an accurate picture of health centre performance: the health management information system (HMIS) data did not necessarily allow for correct calculation of service uptake, due to difficulties in determining the exact number of newborns, pregnant women or children.

All facilities involved were rewarded for reaching up to 120% of the quantitative targets. Payment for quantitative targets was based on the number of respective services reported in the HMIS reports. No financial remuneration was provided for a target if respective records were found to be falsified. For health centres, the proportion of performance bonus that was allocated to quantitative indicators increased from 30% initially to 90% during the third year.

Formulating quantitative indicators for the hospital needed careful planning; poorly conceived targets could encourage provider-induced demand, potentially hurting patients financially. In order to integrate the hospital into the district health system, it was decided to use two key indicators: number of outpatient consultations and number of referrals by health centres to the hospital. These indicators forced the hospital management to be more concerned about activities by health centre personnel, including quality of diagnosis and treatment and appropriateness of referrals and accompanying documents. These indicators came into effect from the second quarter of 2006 onwards and accounted for 50% of the performance bonus.

Annex 1 provides an overview of the indicators and targets used during Phase II against the four basic health system functions.

Financial objectives and approach
US$362,000 was provided for salary supplementation and subsidies for extra hired staff members during 3 years of performance management. This was added to the staff income, which consisted of official salary, user fee income, overtime and night duty, and per diem allowances for outreach work. The objective was to gradually phase out the performance bonus, so that it accounted for no more than 20% of the total income (government remuneration, user fees and performance bonus) by the end of 2007. It was assumed that the potential for user fee generation was considerable and could provide a living wage, provided that 98% of user fees could be retained at the facility level and used for staff remuneration. Health equity funds were operational for all facilities to enable financial access for the poor to health services (see Jacobs et al. 2007). User fees were initially charged for curative services only and were reviewed in 2005 and 2007 in consultation with community representatives. As DHTAT members were not directly affiliated with health facilities they were unable to generate additional remuneration from user fees, so health centres and the hospital were instructed to contribute 5% and 8%, respectively, from their user fee revenue to the DHTAT members.

Initially 60% of the performance bonus was automatically provided to the contracted facilities, since it was assumed that this proportion of the contractual targets could be reached without major efforts. The remaining 40% of the supplement was subject to performance by the respective facilities. After 1 year of operations it was clear that this amount was insufficient to induce the required stimulus to attain the targets; the whole performance bonus became subject to performance from the second quarter of 2006 onwards, while the 60% monthly payment of the performance bonus was maintained. In the event that the contracted entity did not reach 60% of the targets, the remaining amount was deducted from the next quarterly performance bonus. All financial remunerations were initially paid separately as they came from different budgets. To allow the staff an overview of their monthly income, all these amounts were merged in a single payment, with the contractor advancing remunerations that were not paid on time by the MoH. Salary, night duty, income from user fees and per diem allowances were not subjected to performance contracting as the senior KOD management and staff members refused to accept this proposal.

The performance bonus was initially presented as a 100% lump sum against which facilities could earn a proportion or the complete amount, depending on performance. Following the advice of the directorate, this arrangement was reviewed and the amount was divided by the expected quantitative output, whereupon facilities were paid per service provided. For example, where a facility would have been paid R100,000 to assist 10 deliveries and earned R80,000 if 8 deliveries were effectively assisted, the new system would remunerate each assisted delivery to the amount of R10,000. This came into effect from the second quarter of 2006.

Methods
The research question for this paper is whether the high level of service delivery attained under NGO management can be sustained during the handover to government of management responsibility and authority. The objective of the paper is to assess any changes in the level of service delivery, to analyse the underlying reasons for such changes, and to describe the processes used during transition to sustain the level of service delivery output.

Four sources of data were used for documenting the process of the handover of responsibilities from the contractor to the senior management, and consequent impact on performance by facilities: cross-sectional surveys, monthly HMIS reports, quarterly performance results based on data collected by the contractor for performance management and salary supplement payment, and financial reports from the facilities.

Cross-sectional surveys
Three cross-sectional surveys were conducted in December 2004, December 2005 and December 2006. These surveys were intended to guide the contractor in the setting of quantitative targets for each health centre, and thus included villages within the catchment area of each such facility. Sample size was not determined according to expected differences over time but was simply based on the potential number of women within a typical Cambodian rural village who could be expected
to deliver in the 18 months prior to interview. The results of the surveys are used here to indicate a trend in service delivery over time and as a verification of the level of health services delivery stated in the HMIS reports.

Four interviewers were trained in applying a piloted, pre-tested structured questionnaire. For each health centre, one village within 5 km and one village further than 5 km from the facility were randomly selected. Attention was paid to ensure that only villages which did not have a health centre were selected. The respondents were women who delivered during the 18 months prior to interview and whose newborn was still alive. At each village 20 such women were interviewed, except for four health centres that had a catchment population of less than 7000 people, for which 15 women per village were interviewed. Interviewees were identified by questioning villagers about which women had delivered during the 18 months prior to interview.

Data were collected on vaccination status of the last-born child and whether that child received vitamin A during the previous 6 months. These data were derived from the child’s vaccination card; when the card was unavailable the mother was questioned regarding the number of vaccinations. Interviewers would show the respondent a vitamin A capsule when questioning about vitamin A provision. Mothers were further questioned regarding attendance for antenatal care, quality of this care (whether blood pressure had been measured), place of delivery and person assisting the delivery, initiation of breastfeeding, provision of colostrum to the newborn, and use of contraceptives.

Quality of antenatal care was considered appropriate if the interviewee had at least two consultations during her most recent pregnancy and if her blood pressure was measured at least once. Differentiation was made between women who delivered by use of public sector health staff and those who received assistance from private sector qualified staff.

Data were entered and analysed using the statistical software package Epi-Info version 6.04. Responses were stratified according to age of newborn. Proportions were compared using the Chi-square test ($\chi^2$) and significance was determined at 5% ($P < 0.05$).

Health management information system reports

Data from the monthly HMIS reports for the selected performance indicators were collated by NGO staff per facility and per type of facility (health centre and hospital) and are provided for the period 2004–07. The monitoring team consisted of four staff members from the contracted NGO, who verified health centre service provision as reported in the HMIS on a quarterly basis. From the health centre records, the monitors would obtain the names and coordinates of people who were recorded as having received services, such as antenatal care and vaccination. For each of the quantitative targets (except for deliveries, for which the number was sometimes low) they would select five persons belonging to randomly selected villages and visit them at their homes to ascertain that the claims by the health centres were correct. At the hospital, monitors would confirm staff compliance with the contractual performance indicators, including qualitative ones, and targets through verification of reports. Monitors also visited a sample of registered hospital patients to ascertain that they received services, as well as their perception of staff attitudes. The DHTAT was either observed for contracted activities or was expected to produce deliverables in the form of reports or signed agreements with other institutes such as non-health departments, NGOs or religious institutes. The number of monitors was kept to a minimum to avoid consuming a disproportionate amount of the budget that could be allocated as performance bonus.

Performance management results

Targets for each indicator were set by the contractor who also undertook the evaluation of the respective performance by the contracted facilities (including DHTAT). Each target was worth a certain proportion of the amount that the facility could earn and the final financial remuneration was based on the sum of the individual scores for the contractual targets. In this document, scores are aggregated for the health centres while those of the hospital and DHTAT are provided separately.

Quarterly financial reports

All health facilities have to complete financial reports on a quarterly basis for the MoH, with information on income from user fees (including health equity funds) and government budgets. The contractor, together with government staff, conducted quarterly audits to verify the accuracy of the reported data. An external consultant analysed the financial performance by the operational district biannually, which included tracking income from households (health insurance, user fees, health equity fund), money allocated by the government for staff remuneration and running costs, and contractor-shouldered costs (funding used to fill gaps due to insufficient government budget, to pay non-government staff employed to fill vacancies, and to pay the performance bonus).

Results

Table 3 provides results from the cross-sectional surveys and indicates that during the first year of performance management the proportion of fully vaccinated children decreased significantly from 97% to 90%. A similar trend was observed for children receiving vitamin A in the 6 months prior to interview: from 93% to 86%, respectively. During the second year of performance management the proportions of fully vaccinated children and children receiving vitamin A returned to their initial level. The proportion of women who attended two or more antenatal sessions and had their blood pressure measured at least once remained the same at about 83%. The proportion of women who had qualified assistance during delivery or who delivered at a public health facility remained statistically similar in the first year of performance management but increased significantly during the second year: from 44% to 66% and from 39% to 59%, respectively. Contraceptive use remained similar during the three surveys at about 35%. Initiating breastfeeding within 1 hour of delivery increased significantly during the first year from 43% to 70% and remained constant thereafter. The proportion of women who gave colostrum increased significantly during the initial 2 years of performance management.
As can be seen from Figure 1, the reported number of people referred from the health centre decreased during the first year of performance management and increased again from the third quarter of 2006. The number of hospitalizations followed a similar trend but started to increase from the second quarter of 2006. Assisted deliveries indicated an increasing trend throughout the period 2004–07, although the increase was most pronounced from the fourth quarter of 2006 onwards. The trend for two antenatal care consultations (ANC2) is similar to that of assisted deliveries but most marked from the third quarter of 2006. The number of fully vaccinated children remains similar throughout the study period.

Figure 2 provides an overview of the results of performance management for the hospital, DHTAT and (aggregated) health centres. A downward trend is observed for the facilities until the second quarter of 2006, when quantitative indicators were introduced for the hospital. The DHTAT’s performance deteriorated until the third quarter of 2006, when 45% of their performance bonus was based on the results by the nine worst performing health centres, whereupon it improved considerably. From the fourth quarter of 2006, all facilities appeared to perform at a high and stable level.

Figure 3 indicates the annual per capita health care financing for KOD for the period 2004–07, which increased from US$3.22 to US$5.99. The income from user fees (including health equity fund and capitation payment by the community-based health insurance) increased from US$65,407 in 2004 to US$154,544 in 2007. Of the total revenue for KOD in 2007, government budget accounted for 56% (US$757,684), user fees—including health equity fund and health insurance—for 11%, and external funds for 33% (US$446,439). Performance incentives were US$151,659 during 2005 and decreased to US$86,496 during 2007. As can be seen from Figure 4, the total income per staff member rose from US$85 in 2004 to US$159 in 2007. It was lowest for health centres (US$136) and highest for DHTAT members (US$229). Performance subsidies constituted 53% of the total staff remuneration during 2005 and decreased to 18% (10% for the hospital, 21% for health centres and 31% for DHTAT). External support, including technical assistance by the NGO and the performance bonus, accounted for 45% of the total revenue of KOD in 2005 (US$434,524/964,908) and for 33% in 2007 (US$446,439/1,358,667).

Discussion

A limitation of this study is the absence of controls or randomization, as a result of which it is difficult to ascribe causality. The paper is therefore descriptive of a process that
may be appropriate in other settings where Ministries of Health have regained sufficient capacity to reclaim their responsibility in the direct provision of services. Studies from Cambodia and Rwanda have indicated that performance-related pay can have a dramatic impact on service output (Soeters and Griffith 2003; Meessen et al. 2006; Soeters et al. 2006). While service delivery level by the facilities in these studies was low when performance management was introduced, in KOD service delivery output by the health facilities was already considerable, with performance-related pay mainly used as a tool to enable transition from private to public sector management while maintaining the level of service delivery. Further, our case study considered all the main building blocks of the health system, not simply service delivery, and took into account all service delivery levels of the operational health district, instead of solely focusing on health centres.

During the first year of performance management in KOD, the output of most services decreased or stagnated. Health management information system data and results from the cross-sectional survey correlate. This lack of progress may have been due to an emphasis on strengthening three basic functions of the health system at the expense of the fourth—service delivery output. An additional factor may have been the fact that only 40% of the performance bonus was subject to achievement of targets. Insufficient support by the DHTAT may also have contributed to suboptimal performance. The observed increase in breastfeeding practices during the first year appears to have happened in isolation from activities by the local public health sector and instead coincided with a considerable education campaign on television by the MoH and international development assistance donors.

Most increases in service delivery are observed to have occurred from the second or third quarter of 2006 onwards. This was the period during which the bonus system was modified (Q2, 2006), the total amount of performance bonus was subjected to output-based evaluation (Q2, 2006), and the DHTAT’s remuneration became increasingly linked to the performance by the health facilities (Q3, 2006). This makes it difficult to isolate the most influential factors behind the increased performance. Initially the performance bonus was presented as a possible-to-reach amount, of which only a proportion was earned. This was later modified to a pay...
per service. Thrall (2004) terms the former the ‘at-risk’ financial model, whereby contractors withhold part of the expected pay for each delivered service and providers can earn the money at risk by reaching performance targets. The at-risk approach was halted at the request of the DHTAT members who saw it as de-motivating to service providers who were almost never able to attain the full pay as presented in the contract. The amount of performance bonus initially subjected to actual performance still constituted a considerable proportion of total income (≈21%). It may be that this was too low to instigate the required motivation, or that managers took time to adjust to working with the new contractor. However, Soeters and Griffith (2003) report dramatic increases in service delivery from Cambodia when employing a strategy that promotes individualism at the expense of team building, which suggests that the lack of support by the senior management was unlikely to be the cause of the decrease in service delivery. Our results do, however, indicate a considerable improvement in aggregated performance by all health facilities from the moment that the DHTAT became more actively involved in supporting the poorly functioning nine (out of 21) facilities, suggesting a need for support by the senior management, especially for sub-optimally performing facilities. The DHTAT’s active involvement may also be the result of its members’ sense of increased ownership.

Behaviour change has been shown to be easier for services such as immunisation, but to be more difficult to achieve for assisted deliveries, as the behaviour modifications are considerable (Loevinsohn and Harding 2005; Baqui et al. 2008). It is therefore positive to note the significant increase in assisted deliveries from the second year of performance management, a trend that was sustained thereafter as the HMIS data indicate. It also strongly suggests that pregnant women were relatively well acquainted with the staff of the health centres, as a study in Cambodia found that the major reasons for delivering at home were fear of staff who were not known to the women, and uncertainty that the facility would be open (Skinner and Rathavy 2008). Our findings suggest that to increase the number of deliveries in public facilities, a 24-hour service needs to be guaranteed, and that the facility health staff should be exposed to the community through outreach activities and community participation. The observed increase in assisted deliveries from 44% to 66% is likely to be due to more equitable access to health care, as the ‘inverse equity hypothesis’ suggests that when the non-poor have reached saturation in a service’s uptake then the poor start to benefit (Victora et al. 2000). It has been shown at Kirivong that in 2005, the first year of performance management, the likelihood of assisted deliveries for the poorest was less than half that for the better-off (Jacobs et al. 2007).

Civil servant salaries in Cambodia are well below the requirements to sustain a living (Godfrey et al. 2002). Therefore a major emphasis was on increasing staff income as a means to ensure that they presented for work. User fees contributed to this objective, in line with findings from other studies in Cambodia that found positive outcomes in staff behaviour, quality of care and staff income with user fees and associated transparency (Akashi et al. 2004; Barber et al. 2004). However, the introduction of user fees tends to deter the poorest and to create a medical poverty trap whereby the poor are unable to adequately access health care (Jacobs and Price 2004). Two strategies were therefore emphasized: health equity funds that covered health centre and hospital services to enable financial access to curative care for the poor (Jacobs et al. 2007), and the maintaining of a high level of preventive service delivery, in line with the inverse equity hypothesis (Victora et al. 2000).

User fees have limitations as a health financing mechanism. The DHTAT was not able to benefit directly from user fees since its staff members were not affiliated with a facility. Furthermore, the hospital, with less than a quarter of total staff in KOD, generated about half the revenue for the operational health district. This difference in revenue-generating ability is reflected in the considerably lower income levels attained by health centre staff members compared with hospital employees. Alternative strategies could include the pooling of all facilities’ user fee revenue and then distributing this equally to all staff members of the operational health district. In practice this is unlikely to happen because of historical developments with the introduction of user fees at KOD, whereby user fee income remained with the facility. Capitation payment would overcome this inequity in staff remuneration, but would require considerably higher community-based health insurance coverage, which is difficult to achieve (Carrin et al. 2005).

Employment of user fee revenue for increasing staff remuneration was only possible because the government allocated sufficient budget to shoulder the recurrent costs of drugs, salaries and running costs. When the budget allocation was delayed, the contractor provided financial advances. It is therefore essential that the Ministry of Finance makes timely allocation of the budgeted amount of money to the MoH which in turn provides the required quantity of drugs and other supplies. As external funds still accounted for 33% of KOD’s budget during 2007, this suggests that the approach documented in our case study may only be feasible elsewhere in Cambodia if sufficient external financial support is provided; that is, in OHDs currently subjected to contracting.

The average monthly remuneration per staff member increased from US$85 in 2004 to US$159 by the year 2007. The introduction of performance bonus contributed greatly to the observed increase to US$139 (from US$85) in total remuneration during the first year of contracting as the bonus accounted for 54%. This reduced to 18% of average total income by the end of 2007, while the total remuneration rose to US$159. The figure of 18% is probably an underestimate as the vertical programmes for tuberculosis and HIV control were unable to pool their monthly allowance of US$30–60 for selected staff members with the contractor’s performance bonus, which might mean that the total income for staff members is actually higher than the figures presented here. For reasons of sustainability such pooling should be pursued as it allows a gradual decrease of performance subsidies to an acceptable level that is high enough to motivate staff members to perform. However, using financial incentives only is an insufficient strategy to realise public health policies (Chaix-Couturier et al. 2000), or to ensure quality, efficiency and effectiveness, indicating the need for additional, multifaceted strategies (Rowe et al. 2005). For example, using an alternative...
financing approach for pregnant women in Mauritania, health facilities saw their workload and (official) remuneration package increase considerably, but this occurred at the expense of quality of care (Renaudin et al. 2007). Similarly, with contracting in Afghanistan, nearly all indicators associated with quantity of services improved, but mixed results were observed for quality of care (Hansen et al. 2008).

In Rwanda, the performance management initiative involved several parties and institutions, including the purchasers of services, fund holders and monitors (Meessen et al. 2006; Soeters et al. 2006). The Rwanda contractual arrangements focus mainly on the accountability of service providers. This was established at KOD to a considerable extent via the elaborated community participation structures that encompassed and integrated local authorities and representatives of all religious institutions from village to district level (Jacobs and Price 2003; Jacobs et al. 2007). District representatives of the health, religious and political authorities are also members of the Board of Directors of Buddhism for Health, a local NGO that operates the health equity fund for the hospital, and which implements the community-based health insurance. The KOD arrangements result in a higher degree of accountability to communities than in Rwanda as not only health workers but also policy makers are held accountable to the public and those higher up in the hierarchy (Murthy and Klugman 2004). This should enable a relatively smooth transfer from contracting through NGOs to internal contracting by government structures. However, means for financing participation in health care must be identified, be it from donors or government, to enable representation of the poor by shouldering opportunity costs (Jacobs et al. 2007), or to avoid attrition by community representatives (Kironde and Klaasen 2002).

Monitoring should be done by an external and independent agency, an issue for which an NGO may be considered. To ensure that internally contracted districts not only focus on quantitative outputs but also on inputs and process, the use of a balanced score card approach for monitoring performance, as happens in Afghanistan, could be considered (Hansen et al. 2008). Following formulation of mission and vision, indicators for measuring progress (and associated targets) should be developed in close collaboration with local authorities and provincial health officials, as the involvement of the former should promote political support and may foster sustainability of the approach (Sarriot et al. 2004). Involvement of local authorities is also in line with the Cambodian government’s emphasis on decentralization and deconcentration (Ministry of Health 2008). Besides monitoring, NGOs could also provide secretarial support to facilitate the demanding administration associated with performance management.

The success of internal contracting is dependent upon central government meeting its financial commitments (Perrot 2004). It is therefore encouraging to note that budget allocation by vertical programmes for performance-related pay could also be high on the political agenda: those enrolling contracts should have authority over the contracted health facilities, and above all there must be a demand for health services by the population. The absence of these factors led to an early failure of an initiative in India that attempted to ensure the presence of government nurses in public health facilities by use of a performance management system that employed potential deductions in salary for absenteeism (Banarjee et al. 2007). Our findings further suggest that financial incentives to administrators need to be linked to a considerable extent to the performance of contracted health facilities.

In-depth documentation and analysis of internal contracting is much needed in and of its own right, but also as a follow-up to this case study to assess whether the high level of service delivery is sustained in the longer term. We describe only a transitional period in which responsibilities for managing operational health districts through a contractual arrangement with an NGO are partly handed back to public sector managers. At the end of this transition, overall responsibility remained in private hands due to contractual agreements with the MoH. Hence, projections on future levels of service delivery are speculative at best and would benefit from additional surveys. However, in order to maintain service output levels, it is recommended that those functions that were not delegated—notably the development of indicators and targets, management of DHAT performance contracts, and monitoring—should continue to remain so, since there may be a tendency by the DHAT to set targets low or to perform monitoring subjectively in order to obtain the performance bonus with a minimum of effort. This leads to the recommendation for ongoing technical assistance by an independent agency.

Conclusion

A gradual shift in delegation of responsibilities from NGO contracting to a government-operated system, while maintaining the same level of service delivery output, is feasible provided that a number of key factors are addressed: employing performance management as a transition tool, focusing on all actors and building blocks that make up the operational health district system, addressing quality of care, and linking administrators’ performance-related income to achievements by contractual facilities. User fees—in tandem with health equity funds to enable financial access to health services for the poor—are a useful means to progressively phase out the amount spent on staff performance bonuses while concurrently increasing salaries, and as such improving the likelihood of sustaining service delivery levels. Pooling of staff incentives by vertical programmes for performance-related pay could also contribute to this aim. For internal contracting to succeed it may be necessary to focus on accountability by health care providers and by local policy makers. The government should maintain its financial commitments, while external financial support should continue as long as necessary. Since not all management responsibilities were entirely delegated to the district management or other government institutes, follow-up surveys during the internal contracting period would shed more light on the appropriateness of the approach we described. However, support by an independent agency is likely to be required for the development of performance indicators and targets, and for objective monitoring.
Acknowledgements
We thank the Cambodian Ministry of Health for the permission to publish this document. Special thanks to Magnus Lindelow for valuable comments on an earlier draft and to two anonymous reviewers. The usual disclaimer applies: the opinions expressed herein are those of the authors and do not necessarily reflect the views of their affiliated agencies, donors or the Cambodian government.

References
Kironde S, Klaasen S. 2002. What motivates lay volunteers in high burden but resource-limited tuberculosis control programmes?
Appendix

Annex 1 Performance indicators against the four basic functions of health systems

<table>
<thead>
<tr>
<th>Entity</th>
<th>Financing</th>
<th>Stewardship</th>
<th>Resource generation</th>
<th>Service delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHTAT</td>
<td>– Revise user fees through consultative process with community representatives&lt;br&gt;– Attract donor funds for health equity fund&lt;br&gt;– Promotion of community-based health insurance</td>
<td>– Development of monthly and quarterly operational plans&lt;br&gt;– Integration of auditing in quarterly supervision&lt;br&gt;– Develop staff appraisal format and appraise staff every 6 months&lt;br&gt;– Directorate participation at District Integration Workshops&lt;br&gt;– Meeting with NGOs and grassroots organizations at all administrative districts to introduce community participation structures&lt;br&gt;– Creation of reward system for best-performing health centres</td>
<td>– Quarterly supervision of all facilities and services&lt;br&gt;– Radio monitoring for staff presence&lt;br&gt;– Ensuring permanent essential drug stock</td>
<td>– Development of tools and strategies to target preventive services to health equity fund beneficiaries&lt;br&gt;– Development of tools and strategy to monitor postpartum vitamin A provision&lt;br&gt;– Community meetings to demystify public health services&lt;br&gt;– Subcontracting&lt;br&gt;– Introduction of birth and death surveillance system</td>
</tr>
<tr>
<td>Hospital</td>
<td>– Promotion of community-based health insurance</td>
<td>– Death reviews*&lt;br&gt;– Discussion of two complicated cases per month&lt;br&gt;– Revision of job descriptions for medical and technical staff&lt;br&gt;– Establishment/integration of Committee for Quality of Care&lt;br&gt;– Hygiene protocols elaborated and implemented</td>
<td>– Ensure 24-hour availability of medical doctors and ambulance services&lt;br&gt;– Availability of all necessary drugs</td>
<td>– Friendliness of staff&lt;br&gt;– Counselling on treatment and drugs to patients&lt;br&gt;– Increase referrals by health centres&lt;br&gt;– Increase consultations&lt;br&gt;– Provision of feedback on referred cases to health centres</td>
</tr>
<tr>
<td>Health centres</td>
<td>– Obtain money for health equity funds from private donors</td>
<td>– Health centre chiefs’ participation in local planning process&lt;br&gt;– Staff appraisal&lt;br&gt;– Development of quarterly and monthly plans&lt;br&gt;– Attendance at monthly hospital management meetings</td>
<td>– 24-hour staff presence&lt;br&gt;– Radio functioning 24 hours&lt;br&gt;– No drug stock outs and correct drug stock&lt;br&gt;– Timely submission of monthly and quarterly reports</td>
<td>– Friendliness to patients&lt;br&gt;– Counselling patients regarding drugs and treatment&lt;br&gt;– Assessment of vital signs&lt;br&gt;– Quantitative targets&lt;br&gt;– Health education</td>
</tr>
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</table>

* A death review is a formal appraisal by hospital staff to assess whether any professional or technical errors caused or contributed to a hospital-based death.