

LIBERIA
REBUILDING BASIC HEALTH SERVICES



DRAFT REPORT
RBHS PERFORMANCE – BASED
CONTRACT (PBC) MANAGEMENT
2009-2012

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INTRODUCTION AND BACKGROUND

Performance-based financing (PBF) is increasingly promoted in the health sector as a means of improving the utilization, quality, and efficiency of health services (Brenzel 2009), and increasing the accountability of providers (Meessen et al 2011). PBF works by linking payments to the attainment of specified targets or the performance of certain behaviors. In its fullest sense, it is seen as more than just a mechanism to pay or incentivize providers - PBF also has the potential to contribute to reform of the health system generally, as well as empowering consumers (Meessen 2011).

PBF, including various performance-based contracting models, has been widely employed in developed countries for the provision of health services (Loevinsohn and Harding 2005). It has also been explored in more than 40 developing countries, where it is seen as having the potential of advancing progress towards the Millenium Development Goals (World Bank 2011). More controversial is its potential role in post-conflict and fragile states, where concerns are expressed about government capacity to contract with non-state actors, high transaction costs, and the potential for loss of government sovereignty (OECD 2010). Recent experiences have, however, demonstrated success in increasing utilization and/or quality of primary health care services in Cambodia (Schwartz and Bhushan 2004), Afghanistan (Ameli and Newbrander 2008), Rwanda (Basinga et al 2011), and the Democratic Republic of Congo (Soeters et al 2011).

The West African country of Liberia endured brutal civil conflict from 1989 – 2003 that decimated social services, including the health sector. The Ministry of Health and Social Welfare (MOHSW), nonetheless has since established itself as one of the most effective national institutions. While the funding and delivery of health services remain largely dependent on support of international donors and non-governmental organizations (NGOs), the MOHSW has effectively asserted its leadership role in determining national priorities and developing the associated policies, strategies and plans.

The MOHSW's National Health Policy and Plan (NHPP) of 2007 specified performance-based contracting as a key strategy for delivery of the national Basic Package of Health Services (BPHS). The first performance based contracts (PBCs) to be implemented have been through the Rebuilding Basic Health Services (RBHS) project –a US government-funded initiative managed by JSI Research and Training Inc., a Boston based public health organization. The aim of this paper is to describe the design process, management, results, and lessons learned from the first two years of experience with PBCs in post-conflict Liberia.

Country Context

Few countries have experienced civil conflict, political mismanagement, and social disruption on the scale of Liberia over the past 30 years. Decades of oppression by a ruling elite culminated in a violent coup in 1980, leading to a period of severe national decline. A civil war ensued in 1989 that waxed and waned for the next 14 years, destroying infrastructure, disrupting social services, and decimating the economy. It is estimated that over 250,000 people lost their lives due to the conflict (Republic of Liberia 2009, Sheikh 2009), while the per capita Gross Domestic Product fell by a disastrous 80% between 1980 and 2010 (Republic of Liberia 2011a).

Since free elections in 2006, however, the country has made substantial progress on many fronts, including improved security, political stability, and early economic recovery. More progress has been made in the health sector than perhaps any other. The MOHSW has articulated a clear vision, developed sound policies, collaborated effectively with partners, and documented early successes. Key among these have been a reduction of the under-5 mortality rate to 114 deaths/1,000 live births, approximately half of the war-time estimates; availability of the BPHS at 82% of facilities in 2011 (up 36% from two years earlier); major increases in access to malaria prevention and treatment; and expansion of HIV testing to 145 health facilities throughout the country (Republic of Liberia 2011a, Republic of Liberia 2011b).

Nonetheless, the challenges remain daunting and the competing demands overwhelming. The maternal mortality ratio is among the highest in the world, at 994 deaths/100,000 live births (Liberia Institute of Statistics and Geo-Information Services, 2007); full immunization coverage remains low at 51% (Republic of Liberia 2011a); and significant gaps in access to some health services persist (Kruk 2010). Moreover, in spite of recent encouraging developments, Liberia still ranks 182nd out of 187 countries on the Human Development Index (UNDP 2011).

It is against this background – a currently stable post-conflict country in which a strong MOHSW is making gradual and measurable progress in a severely disrupted health sector - that the RBHS-supported PBCs were initiated in July 2009.

Policy dimension

The cornerstone of the 2007 NHPP was the BPHS. The MOHSW needed a model of service delivery that could rapidly expand access to this package in the context of limited national capacity and post-conflict transition. The decision to include performance-based contracting as a central element of this model was MOHSW-driven. A subsequent situational assessment of the potential for contracting in Liberia provided important recommendations on government leadership, capacity building, and monitoring and evaluation (John Snow Inc 2008).

The MOHSW's contracting policy of 2008 saw PBCs as a means to improve the utilization and quality of services, develop a greater mix of public/private options, extend services to underserved areas, and build the capacity of County Health Teams (CHSWTs). The policy also restated the MOHSW's objective of trialing innovative approaches that could inform other post-conflict countries (Republic of Liberia 2008a).

While these policies indicated that the MOHSW would be the main contracting entity in Liberia, an agreement was reached between the Ministry and the United States Agency for International Development (USAID), through which the RBHS project would also develop and manage PBCs. As far as possible, program objectives and approaches to contract procurement, monitoring and evaluation, and partner management would be standardized between the MOHSW and RBHS. Unfortunately, problems with management capacity within the MOHSW meant that, for the first two years, its own contracts followed an almost entirely input-financing approach and retained few of the features of true PBCs (Republic of Liberia 2011d).

PROJECT DESIGN and IMPLEMENTATION

PBCs in Liberia primarily follow a management contracting approach, in which the fund holder (RBHS) hires a private entity (NGOs) to manage existing government health services (Loevinsohn 2008, Republic of Liberia 2008b). Similar to approaches in Cambodia, the contracted NGOs provide day-to-day technical and administrative oversight of the health services (Soeters and Griffiths 2003). But a large proportion of staff remain as civil servants, the CHSWTs retain the responsibility for hiring and firing staff, and major management decisions are approved by them.

The performance-based component of the contracts employs a carrot-and-stick approach. Implementing partners earn a financial bonus ("carrot") if they meet targets for specified service-delivery indicators or incur a financial penalty ("stick") for failing to meet targets for selected administrative indicators. The threat of incurring a financial penalty for administrative under-performance encourages partners to strengthen their overall management of health services.

The objectives of the RBHS PBCs are to: i) ensure delivery of the BPHS at facility level; ii) expand availability of selected BPHS services to community level; and iii) strengthen the capacity of the CHSWTs to manage a decentralized health system. The design of the contracting model, drafting of the request for proposals, identification of indicators, procurement of contracts, and development of the

monitoring and evaluation scheme were all undertaken in close collaboration with the MOHSW.

Contract Procurement

Implementing NGO partners were identified through an open and transparent bidding and evaluation process, together with the MOHSW. In July 2009, five PBCs were signed with four international NGOs to manage services at 92 government health facilities in six counties. In 2010, the number of facilities increased to 96. In addition, a grant – rather than a PBC – was awarded to one local NGO to manage services at 16 health facilities in a seventh country, because a capacity assessment indicated that it lacked the internal systems and structures to manage a PBC at the required level. However, all aspects of the grant oversight by RBHS followed identical procedures to the PBCs, except that the local partner was not subject to financial penalties, nor eligible for performance bonuses. Hence, aggregate data presented below include results from this partner (108 health facilities for year 1; 112 for years 2 and 3).

Selection of Indicators and Target Setting

Selection of the initial project indicators was an iterative process that included extensive consultation with the MOHSW and other stakeholders (Vergeer et al 2010). Three types of indicators were identified (Table 1):

- *Service-delivery indicators* are used to measure the availability, utilization, and – in year 2 – quality of services. Results determine the performance bonus to be paid;
- *Administrative indicators* measure partner performance with respect to key management functions. Results determine any financial penalty to be applied;
- *Monitoring indicators* are not linked to bonuses or penalties, but track performance in other service-delivery areas. They permit identification of potential unintended consequences, such as an undue emphasis on services that are incentivized at the expense of those that are not.

Criteria for the selection of the RBHS indicators are described elsewhere (Vergeer et al 2010). It was important that most indicators be collected through the national health management information system (HMIS), to avoid the need for parallel monitoring systems. Indicators not obtained through the HMIS were obtained from project data (e.g. supervisory visits), the MOHSW's annual accreditation survey, and an annual survey of service quality, conducted in the first year by RBHS, and continued in Years 2 and 3 by the MOHSW.

Each year indicator targets were negotiated with partners individually, as there were significant differences in baselines and programmatic contexts e.g. mix of rural

and semi-urban settings. A dearth of credible data made estimating baselines and targets challenging at the start of the project. Year 1 baselines were derived from sources of varying reliability, e.g. regional averages from the 2007 Liberia Demographic and Health Survey, available HMIS data. At the beginning of year 2, more reliable baseline data were available and some indicators were refined based on the first year's experience. Targets increased quarterly in a manner that ensured they remained ambitious, yet achievable.

Institutional Framework and Arrangements

The MOHSW is the key regulator of the national PBF scheme. RBHS was the fund holder for the PBCs, although financing ultimately comes from USAID. This responsibility entails day-to-day management and monitoring of the contracts, including quarterly disbursement of funds to partners.

PBC implementation was undertaken at facility and community levels by the NGO partners. They were responsible for key inputs such as drugs, equipment, minor renovations, training, supervision, monitoring and evaluation, as well as the determination and distribution of performance bonuses. The NGOs were unable to hire, discipline, or dismiss health facility staff. This responsibility remained with the CHSWTs.

Facility-based staff are responsible for providing the BPHS free of charge, with user fees suspended by the MOHSW until at least 2013. A narrower range of services (e.g. health education, community case management of childhood infections, referrals) is provided by community health volunteers (CHVs) and trained traditional midwives (TTMs), who also received training, supervision and other support from the implementing NGOs.

Counter verification of quarterly data submitted by the contracting NGOs is undertaken both at field and central levels by RBHS (see below). Counter-verification by a third party was not undertaken, but will commence under new implementation arrangements for PBCs proposed by the MOHSW.

Monitoring and Evaluation (M&E)

Each health facility is required to submit monthly HMIS reports to the central MOHSW, through the CHSWTs. Partners were also required to submit quarterly narrative, aggregate data, and financial reports to RBHS, along with hard copies of all completed data collection tools, e.g. each facility's monthly HMIS reports, export files from the MOHSW's computerized HMIS system (the District Health Information System - DHIS). This comprehensive system facilitated not only close monitoring of contract implementation, also allowed for detailed data verification.

As noted, the verification process occurs at two levels –field and central. The overall process began with random selection of three facilities per NGO. At field level, RBHS county coordinators tabulated data for service-delivery indicators from the facility ledgers and cross-checked with the results documented in the NGO quarterly reports. To verify results for two administrative indicators, the coordinators also interviewed facility and CHSWT staff.

At central level, M&E staff compared quarterly data reported by the NGO with that obtained from the MOHSW's DHIS. Supervisory reports and minutes from CHDC meetings were reviewed to ensure that they met agreed standards. Staff salary receipts were reviewed and cross-checked with reported data to verify timely payment.

All NGO partners developed their own internal verification systems to ensure the quality of data prior to submission.

Any discrepancies identified by RBHS were shared with the NGO, including a request for a resolution. If problems remained following the partner's response, further clarification was requested. If the partner's reported data indicated that the target was met, but the verification process could not confirm this, the NGO may be requested to re-collect data for all facilities again. Once the verification procedure was completed, RBHS management was informed regarding the number of targets met to inform bonus distribution and/or penalty imposition.

Financial Management, Penalties and Bonuses

Following contract signing at the beginning of year 1, partners were provided with their first tranche of funds to initiate project activities. Thereafter, disbursements were made at the end of each quarter, based on the terms of the agreements.

Each quarter, five percent of the disbursements were withheld, subject to verification of results for the administrative indicators. Two of the six administrative indicators were combined into a single, composite measurement of supervisory performance, leaving five indicators for the calculation of potential penalties. For each missed target, a penalty equal to one percent of the quarterly disbursement is applied, leaving a maximum of a five percent penalty (Table 2).

Partners were also eligible for a bonus of up to six percent of the contract value, based on performance against service-delivery targets. Each performance indicator was assigned the same weight and had an equal influence on the size of the bonus.

Distribution of performance bonus initially was annual. The experience of year 1 indicated that an annual performance bonus was not sufficiently motivating for staff, which led to introduction of quarterly bonuses in year 2. Allocation of bonuses by partners to various stakeholders was not standardized. Rather, partners were

instructed to develop their bonus distribution schemes in consultation with health workers and CHSWTs, to determine what would most motivate staff working in different contexts. While this encouraged innovative thinking, some of the partners did not do justice to key stakeholders. Hence the project realized that it would be wise to build on constructive ideas of bonus allocation to have a common bonus allocation strategy for the project. RBHS, therefore, through consultative meetings developed a bonus allocation strategy and MS Excel based tools.

Communication and Feedback

Regular and frequent communications among stakeholders is essential for the success of PBF schemes (Morgan 2011) and RBHS established several forums for the review of project issues. Monthly meetings attended by partners, MOHSW, and the donor provide opportunities to assess progress, raise concerns, share lessons learned, and solve problems. One meeting per quarter was dedicated to data review at which all partner results were shared openly.

Each quarter, RBHS management held one-on-one meetings with partners to which the MOHSW and donor were also invited. Frank, individualized feedback was provided, addressing issues such as progress toward targets, collaboration with CHSWTs, and quality of reports. Partners were, in turn, encouraged to provide their own feedback to RBHS on any issue related to project management.

Quarterly meetings with M&E staff from partners, MOHSW, and CHSWTs were used to review results, build staff capacity, and review any changes to the M&E system. Additional feedback to partners and health workers was also provided through field visits by technical staff, monthly reports by RBHS county-based staff, and graphic indicator feedback tools, which document the progress of each health facility and were displayed publicly.

DATA SOURCES

Several quantitative and qualitative data sources have been used to assess the progress of the PBCs. Coverage and utilization data have been extracted from HMIS reports. Results for administrative indicators and some quality measures (e.g. adherence to treatment protocols) were obtained from project management reports. All such data have been subject to the verification process described previously.

Accreditation data were obtained from the MOHSW's 2011 BPHS accreditation survey (Republic of Liberia 2011b). This is an annual study of all government health facilities to evaluate the level to which the BPHS is being delivered and the adherence to national standards. Data on quality of care have been obtained from annual surveys of RBHS-supported facilities conducted in 2010 and 2011, which

evaluated their performance against national clinical standards (RBHS Quality Assessment Report, JSI Research and Training Institute, Inc 2011a). Additional quality data from MOHSW-supported facilities were taken from a pilot study that was conducted as a component of the 2011 accreditation survey.

Three recent evaluations that analyzed implementation of PBF in Liberia have also been reviewed for qualitative findings. These include two external evaluations (Republic of Liberia 2011d, USAID 2011) and one internal evaluation (JSI Research and Training Institute 2011b).

Progress for both service delivery and administrative indicators has been reviewed primarily through trend analysis, comparing current rates with estimated baselines. Most results for RBHS-supported catchment populations have not been compared with non-RBHS-supported areas, because of the general absence of baseline data and the less rigorous nature of the available data for these facilities.

RESULTS

Service-Delivery Indicators (see Table 3)

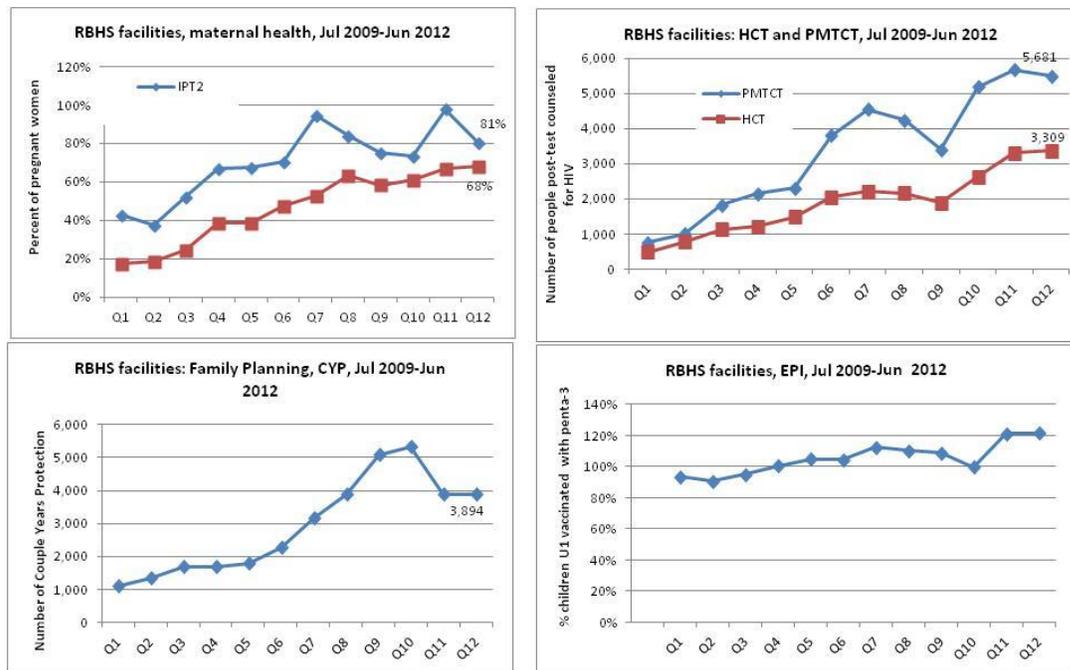
Based on the experiences of year 1, three of seven service delivery indicators were retained for year 2, two were dropped, and two were revised (Table 3). Six new indicators were added in year 2 to address the issues of prescribing practices, malaria treatment, HIV counseling and testing, family planning (couple-years of protection), and quality of care (performance against clinical standards).

Table 3 presents aggregated data for the first quarter of year 1 and of the last quarters of years 1, 2 and 3, to demonstrate progress in all indicators, including those that were dropped, revised, and added. Substantial progress was documented for most indicators during the three years of the PBCs. One exception was the percentage of children with diarrhea treated with ORS. Issues related to prescribing practices (ORS is often prescribed for other conditions) and documentation (facility staff did not make distinction between diarrhea and other diagnoses when recording ORS use) limited the utility of this indicator, which therefore was dropped for year 2.

Maternal health indicators, in particular, demonstrated dramatic improvements over the three-year period. Coverage for second dose of intermittent preventive treatment (IPT2) of malaria in pregnancy increased almost two fold from 43% in quarter one to 81% in quarter twelve, while deliveries in facilities with skilled birth attendants increased three folds from 17% in quarter 1 to 68% in quarter twelve (Figure 1). The number of facilities employing staff competent to counsel on family planning increased from two third of the facilities to all facilities, contributing to major increases in the uptake of contraception, as reflected by couple-years of

protection provided from 1,116 in quarter 1 to 3,872 in quarter 12. The number of people tested for HIV and receiving their results also rose dramatically from 1,241 in quarter 1 to over 8,800 in quarter 12. This scale-up coincided with expansions in the number of facilities providing HIV counseling and testing from 24 to 100 (87% of RBHS-supported facilities) and the number providing prevention of maternal-to-child transmission of HIV (PMTCT) from five to 92 (80%).

Figure 1



Impressive progress has been recorded in appropriate treatment of child malaria. As can be seen from figure 2, the use of ACT for treating malaria has increased significantly from 29% in quarter one to 95% in quarter twelve.

An important finding of this graph is the magnitude of declining number of malaria cases for the past two seasonal periods which is Q6-Q7 and Q10-Q11. This is the dry season (October-March) in Liberia. However, a notable finding is that the rate of decline this year is higher than last year. This could indicate that there is a real decline in malaria incidence, which could be attributed to malaria program efforts such as ITN use and providing appropriate treatment.

Figure 2

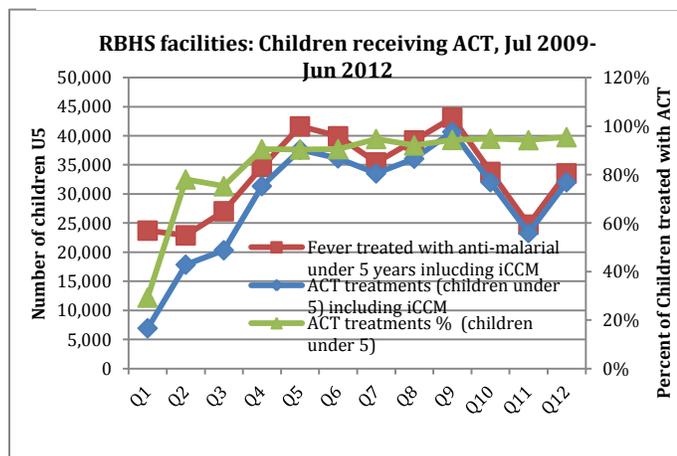
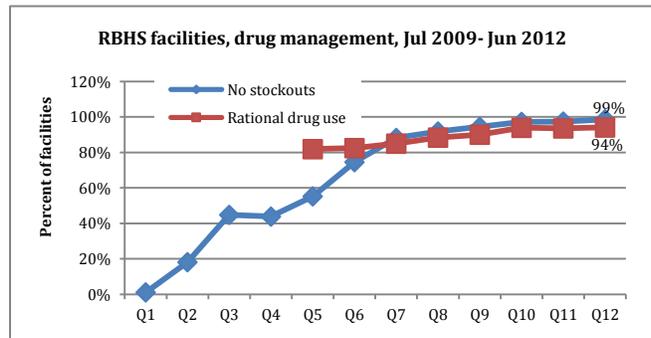


Figure 3

Figure 3 shows the number of facilities with no stock-out of one of five tracer drugs. This indicator, which was 1% for quarter 1 increased to 94%, reflecting substantial improvements in drug management. Also, the rational drug use indicator (prescribing more than 3 drugs), which was introduced in Year 2, showed an increase from 88 to 94%.



Trends in pentavalent-3 immunization coverage were positive between years 1 and 2, although the documented results for year 2 and 3 were consistently over 100%, indicating data-quality issues. An independent lot quality assurance sampling (LQAS) survey during quarter 8 in three of the counties where RBHS is operational documented significantly lower findings – although the study is unable to provide specific data for RBHS-supported catchment populations (MEASURE Evaluation 2011). Some of the reasons for the persistently over 100% Penta 3 reporting are due to 1) reporting of over 1 year children vaccinated, 2) inclusion of children from outside catchment area, 3) presence of refugee populations such as in Nimba, River Gee, and Lofa.

The MOHSW’s annual accreditation survey rates each health facility according to the extent to which it provides the national BPHS. The study primarily looks at inputs (e.g. staffing, drugs, infrastructure, services available), but does not assess coverage nor quality of services (see below). Each facility is given a percentage score – 75% equates to half-star performance and indicates that the facility is providing the BPHS; 85% equates to a 1-star performance, and 95% to 2-star. Public recognition and awards are associated with the results of the accreditation process.

For the January 2011 survey, RBHS partners documented an average score of 88%, representing an increase of 4% from January 2010. The national average was 84%, which also represents a 4% increase from the 2010 survey. Seventy-eight percent of RBHS facilities received either 1- or 2-star ratings, compared with a national rate of 61.4%.

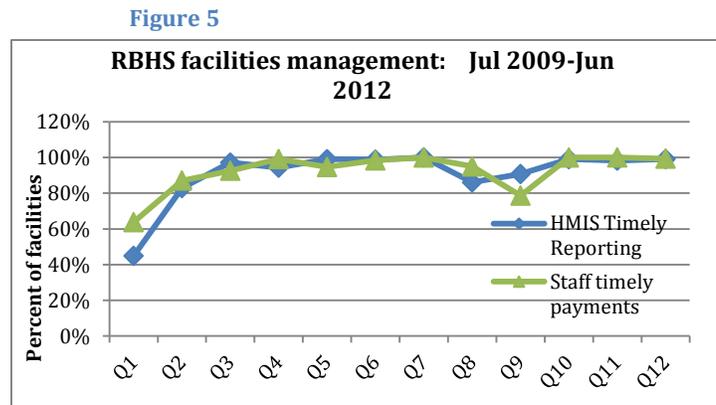
In early 2010, RBHS collaborated with the MOHSW to develop clinical standards that were adopted nationally. Annual surveys of RBHS facilities rated quality of care against those standards and documented that, on average, partners met 39% of the standards in June 2010 and 45% in July 2011.

In 2012 MOHSW adopted new set of accreditation data collection tools which was developed by revisiting older accreditation tools and adopting quality assessment tools for health service assessment. The quality assessment tools were pilot tested

and were being used by RBHS. Figure 4 shows the findings of current MOHSW accreditation. RBHS facilities scored average of 82% in health infrastructure and support system which is 7% point higher than nonRBHS facilities in the country. On the health service quality, RBHS facility score average of 48% which is 14% point higher than nonRBHS facilities. On the overall score as well, RBHS scored 11% points higher than nonRBHS facilities. This indicates that RBHS PBC has definitely an impact on health service performance.



Timeliness and quality of HMIS reports submitted to the CHSWTs also improved. Except for the first two quarters, over 90% of reports were submitted on time. This percentage dipped to 86% in quarter 8, due to competing demands posed by the influx of Ivorian refugees.



Service delivery performance against targets (table 4).

In year 1, partners met 55% of service delivery targets; 51% if the local NGO is excluded from the analysis. In year 2, up to 78% of targets were met. In year 3, it further improved to 89% in quarter 11. This figures resulted in an average bonus of 3.1% of the annual budget to those with PBCs in year 1, 4.3% in year 2 and 5% in year 3. Overall percentages varied by partner, although all NGOs demonstrated increases in quarterly targets met during 3 years.

Administrative indicators (table 5)

Changes were also made to the administrative indicators following year 1 experience. Three of six indicators were retained, while the other three were revised.

All partners documented good progress in each of the administrative indicators. Among the most significant results were the increase in the percentage of facility staff who were paid on time. From 64% in quarter one, consistently 95% or more of facility-based staff received timely wage payments during year 2. Both external and internal evaluations indicated that these timely payments were important in motivating health workers (JSI Research and Training Institute 2011, USAID 2011).

Definitions for supervisory visits evolved and became stricter during years 2 and 3. Joint visits were by the NGO partner together with the CHSWT. Total visits refer to the number conducted by the NGO alone plus the number of joint visits. By year 2, total visits were no longer incentivized, with the focus on clinical supervision, which was often inadequate in year 1. A supportive clinical supervision visit required that there must be concrete evidence of clinical mentoring, training, or skills development. The number and quality of supervisory visits improved in the last two years. By the end of June 2011, 95% of facilities were receiving at least two joint visits per quarter and 99% were receiving a minimum of three supportive clinical visits (Table 5). The external evaluation observed “Monthly supportive supervision ... and quarterly joint supervision ... are notable achievements in enhancing service delivery and improving outcomes” (USAID, 2011).

Administrative performance against targets (table 6)

Targets for administrative indicators generally increased each quarter in years 1, 2 and 3. Annual targets were set for service delivery indicators in year 1, with increasing quarterly targets introduced in year 2 and 3, coinciding with the shift from annual to quarterly bonuses.

In spite of the regular increase in administrative targets, partners continued to improve their performance in meeting those targets. Whereas in quarter 1 only 58% of targets were met, it improved over time 75% of the targets met in quarter 4. Quarter 5, the beginning of year 2, was marked by change in PBC bonus scheme from yearly to quarterly and high targets were pursued. As expected only two thirds of targets were met in quarter 5 which improved rapidly attaining over 90% in the rest of the quarters. In year 3, in two of four quarters all targets were met.

All of these figures include results for the local NGO that received a grant from RBHS (not a PBC), as it was subject to the same management, communications, support, and resources as the others. This partner met 71% of targets over the three years. If the local NGO is omitted from the analysis, 71% of targets were met in year 1, 85% in year 2 and 94% in year 3. These figures translate into an average penalty of 1.5% per NGO per quarter in year 1 and 0.8% in year 2 and 3.

Monitoring non incentivized indicators (Table 7)

Monitoring non incentivized indicators helps to understand if focus is only given to incentivized indicators at the cost of overall health program. Overall, partners did well in increasing utilization and coverage of other services for which indicators were not incentivized. For example, the number of children receiving Vitamin A increased steadily; antenatal and tetanus vaccination coverage for pregnant women improved rapidly, although there were several instances of data quality issues resulting in some rates of over 100% in year 2 (see discussion). Outpatient utilization rates increased from 0.9 to over 1.0 new consultations/person/year. Family planning counseling drastically increased. Health facility hygiene and infection control measures improved and were well maintained over time.

The main exception was the percentage of pregnant women testing positive for HIV receiving a complete course of anti-retroviral (ARV) prophylaxis. In spite of the substantial increases in HIV testing, especially through PMTCT, only 51% of women received their ART drugs in quarter 8. Field visits indicated that, while staff were energized to increase HIV testing, far less priority was given to initiating the ART regimen for those testing positive. This indicator was incentivized in year 3 in an attempt to address the low coverage. There was some improvement in enrolling more patients in AR, but the problem remained as to the denial by positive cases to the results.

Distribution of bonuses

As noted, NGOs were instructed to develop their bonus distribution plans in consultation with facility staff, CHSWTs, and their own team members. Various stakeholders were considered as influencing the results and their relative contributions were to be rewarded or not, based on these consultations. At the end of year 1, distribution of bonuses varied significantly among the NGOs. The percentage of the bonus distributed to facility-based staff ranged from 19%-70%. One NGO, which received contracts for two counties from RBHS (NGOs 3 and 4), committed most of the bonus to upgrades of the facilities, including purchase of motorbikes. Another partner (NGO 5) used a large proportion of the bonus for the upgrades of both the CHSWT and NGO offices.

In year 2, bonus distributions were more similar among the partners. All partners committed at least 60% of the bonus to facility-based staff, with varying percentages going to CHSWT members, NGO staff, and CHVs/CHDCs. Distributions to individual facilities were calculated according to their own contributions to the documented results. Performance bonuses for individual staff were pro-rated according to their salaries and proportional to the number of days that they worked during the quarter.

The evaluations were all positive about the PBC design and implementation, including the approach to bonus distribution (JSI Research and Training 2011, Republic of Liberia 2011d, USAID 2011). The joint MOHSW-World Bank evaluation commented, “RBHS is flexible in changing indicators, targets, and bonus payments, with a dynamism that is required of the Liberian context and demands” (Republic of Liberia 2011d). The internal evaluation noted that the flexibility given to partners “had real merit”, but that “in retrospect NGOs could have benefitted from more guidance by RBHS to ensure greater consistency across the organizations” (JSI Research and Training 2011).

In year 3, RBHS brought all partners and MOHSW together to review existing bonus allocation strategies so that a harmonized common strategy could be developed. Through series of consultative meetings, RBHS developed a bonus allocation strategy and MS Excel based tools to facilitate allocation of bonus for use by partners. The strategy identifies key health service supply and demand side players for successful PBC implementation to be eligible for bonus including the staff of implementing partners. Attempts were also made as to prescribe what proportion of bonus earned should be allocated to various actors. It also entails that part of bonus earned is used for facility improvements. The tool is being used by RBHS and MOHSW PBF partners at present.

DISCUSSION

In post-conflict Liberia, the RBHS-supported PBCs documented substantial increases in access to, utilization of, and quality of health services during the three years of implementation. The largest improvements were in the areas of maternal health, child health, family planning, and HIV testing. Documented improvements in staff salary payments, staff supervision, and reporting likely contributed to these gains. The main area of under-performance was capacity building of CHSWTs, where only limited progress was made.

There are several factors identified by the evaluators as contributing to the success of the PBCs. First is the creation of a “data-driven culture” that resulted in improved data management and capacity building of all partners (JSI Research and Training 2011, USAID 2011). The regular communication forums also contributed to the smooth running and success of the PBCs (JSI Research and Training 2011, Morgan 2011). Particularly during year 1, RBHS was slow to penalize partners until systems were established, definitions clarified, and verification procedures understood. The project’s flexible, lenient approach to PBC management is considered highly relevant to the Liberian context (Republic of Liberia 2011) and helped to generate trust and goodwill among partners (Morgan 2011).

Both financial and non-financial motivators contributed to improved health worker performance. These included timely payment of wages, performance bonuses,

regular supportive supervision, training opportunities, and regular data feedback (JSI Research and Training 2011, USAID 2011).

While PBCs have been associated with rapid expansion of services (Loevinsohn 2005), the post-conflict environment itself can provide an opportunity for scale up from very low baselines. In Liberia the MOHSW's National Health Policy and Plan, BPHS, and annual accreditation surveys provided both a framework and strong motivation for expansion of services from very low levels. The RBHS successes should be considered in this context.

Capacity building of the CHSWTs was one of three PBC objectives, consistent with the MOHSW's policy on decentralization. As noted, limited progress in this area is considered the main weakness of the project (Republic of Liberia 2011d, USAID 2011). In their efforts to expand service delivery, partners invested much energy in capacity building of facility staff, CHVs, and NGO staff. They had limited resources, time or capacity to also assist CHSWT personnel in developing their management or technical skills.

In retrospect, it was probably unrealistic to include this responsibility in the PBCs. Following year 2, the donor agreed that a model in which the NGO contractor was to expand health service access and quality, as well as build CHSWT capacity, was impractical in Liberia. This responsibility was therefore removed from the year 3 PBCs and transferred to RBHS. Others have also suggested to separate service delivery and higher-level capacity development functions when implementing PBCs (OECD 2010).

Year 3 has been associated with major shifts in the institutional arrangements of the project that aim to ensure sustainability of PBF within Liberia. The role of fund holder has transferred from RBHS to the MOHSW in a two-step process that was completed by the end of year 3. The new U.S. government-funded, MOHSW-managed PBCs will be consolidated into three counties, while still supporting 112 facilities. This change from seven to three operational counties will allow for reductions in the number of implementing partners, transaction costs, and other inefficiencies.

RBHS's new role in the PBCs is to build the capacity of the MOHSW at central and county levels, based on the model already established. The MOHSW has recently established a new PBF Management Team and reconvened its PBF Technical Committee. RBHS has seconded a full-time PBF Advisor to the MOHSW management team, who is also an active member of the committee. Capacity Building Officers have been seconded to CHSWTs to support them in their PBF and other management and technical roles.

As noted, the MOHSW's own PBCs have to date operated primarily as input financing. But following technical assistance from RBHS and the World Bank they have recently adopted many of the RBHS approaches, with some refinements.

Baseline estimates for indicators have now been determined, targets negotiated, verification procedures developed, and a system of penalties and bonuses established. Memoranda of understanding (MOU) will also be signed between the contracting NGOs and both the CHSWTs and the health facilities, to clarify roles, responsibilities, and procedures. The RBHS PBCs did not establish such MOUs, but would have benefitted from them (Republic of Liberia 2011d).

Lessons Learned

The experience of Liberia provides further evidence that PBCs can be successfully implemented in post-conflict and fragile states. MOHSW policy and commitment to including PBF as a central component of national health sector reform contributed to this success. Others have documented effective PBC implementation in fragile states, including in settings where the political and/or security environment has not been as conducive to health service delivery (Ameli and Newbrander 2008, Basinga et al 2011, Soeters et al 2011).

The extensive time and energy devoted to establishing the M&E system paid rich dividends. The set of project indicators was expanded, refined, and revised as experience accumulated. Verification and counter verification processes at field and central levels were instrumental in promoting data quality. Because their own data was subject to strict analysis, implementing partners established their own increasingly effective verification systems. Partner coaching and mentoring also strengthened the system.

Consistent communications, frequent feedback, and regular joint meetings created a dynamic of collaboration and sharing among all stakeholders. One area where communications could have been improved was more effective orientation of providers during PBC start-up (Morgan 2011). A sound communication strategy and regular provider feedback should be central to the design of any PBF scheme (Brenzel 2009, Liu et al 2008a).

While the performance bonuses were highly motivating to front-line health workers (USAID 2011), NGO staff reported that non-material incentives previously mentioned were equally important (JSI Research and Training 2011). Most reviews of PBF focus on the role of financial or in-kind incentives to motivate health workers (Eichler R. 2006, Liu et al 2008b), but material incentives themselves may be insufficient to sustain desired behavior changes and improved performance (Health Systems 20/20, 2011). Other factors, such as improved management approaches and changes in the organization of health services can also influence motivation (Lagarde, Palmer 2009), as has been observed in Liberia.

The first bonuses were distributed on an annual basis, at the end of year 1. This allowed time to develop capacities and systems around verification and distribution. NGO managers and health workers appreciated the shift to quarterly bonuses in

year 2 and acknowledged their greater motivational effect. While the flexibility in allowing partners to design their own distribution schemes was effective up to a point, a more standardized approach has been established in year 3.

Limitations

One of the main limitations of the analysis is the reliance on HMIS data for three key service delivery indicators (pentavalent-3 coverage, IPT2 coverage, facility-based deliveries with skilled attendant) and three monitoring indicators (e.g. antenatal attendance, tetanus toxoid coverage for pregnant women, utilization rate).

The project attempted to document the best possible numerators and denominators for each of the indicators. Early problems related to facility catchment populations (denominators) were largely resolved through use of updated 2008 national census data and a detailed, year-long, RBHS-led process by which all communities across the country were linked to specific facilities. This process was primarily conducted to assist the MOHSW with health-planning issues, but had the added benefit of providing reasonably reliable denominator data.

Problems were identified with the facility-based recording of ante-natal attendance and tetanus toxoid immunization, with subsequent improvements. While data quality improved generally, unreasonably elevated coverage rates for pentavalent-3 and IPT2 coverage persisted, with varying explanations by partners. Nonetheless, trends over time are still relevant and the project was able to document consistent increases in coverage for each of these indicators.

A second limitation is that it was difficult to obtain adequate data to draw comparisons with areas not supported by PBCs. As noted, the MOHSW was nominally implementing PBCs in six other counties, although these did not truly function as such. Comparisons with these counties are not helpful because of the highly variable quality of the data and contextual issues (e.g. rural-based PBCs versus the urbanized county of Montserrado).

CONCLUSION

The three years of PBC implementation in Liberia have been associated with documented improvements in the access to, utilization of, and quality of primary health care services. A successful PBC model has been developed that is based on strong M&E systems, frequent communications and feedback to stakeholders, a mixture of financial and non-material incentives, and a flexible and responsive management approach. Sustainability of PBF in Liberia is being promoted through transitioning of responsibilities and funds to the MOHSW, while at the same time providing intensive capacity building at central and county levels.

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Table 1: Indicators for RBHS PBCs 2009 – 2012

INDICATOR	YEAR 1 (07/09 – 06/10)	YEAR 2 (07/10 – 06/11)	YEAR 3 (07/11 – 06/12)	COMMENT
Service delivery	7	11	12	Performance against targets determines bonus payment – annual in year 1, quarterly in year 2 and 3
Administrative	6	6	6	Performance against targets determines potential quarterly penalty
Monitoring	53	53	56	Used to monitor progress in implementation of non-incentivized activities

Table 2: Calculation of quarterly penalties – illustrative examples

FUNDS WITHHELD QUARTERLY (%)	NUMBER TARGETS MET IN QUARTER (OF 5)	FUNDS REIMBURSED (%)	PENALTY (%)	TOTAL DISBURSEMENT (%)
5	0	0	5	95
5	3	3	2	98
5	5	5	0	100

Table 3: Results for service delivery indicators, years 1, 2 and 3

SERVICE DELIVERY INDICATOR	RESULT Q1	RESULT Q4	RESULT Q8	RESULT Q12	% CHANGE Q1 - 4	% CHANGE Q4 - Q8	% CHANGE Q8 - Q12	INCENTI VIZED YEAR 1	INCENTI VIZED YEAR 2	INCENTI VIZED YEAR 3
% of children under 1 year who received DPT3 or pentavalent-3 vaccination	94%	100%	110%	121%	6%	10%	10%	Yes	Yes	Yes
% of children under 5 years with diarrhea treated with ORS	121%	89%	N/A		-26%	N/A	N/A	Yes	No	No
% of pregnant women provided with 2 nd dose of IPT for malaria	43%	67%	84%	81%	56%	25%	-4%	Yes	Yes	Yes
% of deliveries that are facility-based	27%	46%	N/A	N/A	70%	N/A	N/A	Yes	No	No
% of deliveries in facility with a skilled birth attendant	17%	39%	63%	68%	129%	62%	8%	No	Yes	Yes
% of facilities with staff member competent to provide counseling on informed choice for FP	64%	89%	98%	99%	39%	10%	1%	Yes	No	No
% of facilities with no stock-out tracer drugs during the quarter	1%	44%	92%	99%	4,300%	109%	8%	Yes	Yes	Yes
Proportion of all OPD patients for whom no more than 3 drugs are prescribed (based on random sample of patients from OPD register)	N/A	N/A	88%	94%	N/A	N/A	7%	No	Yes	Yes
% children under 5 years diagnosed with malaria treated with Artemisinin-based Combination Treatments (ACTs)	29%	90%	92%	95%	210%	2%	3%	No	Yes	Yes
Number of people who received HIV counseling and testing and received their test results (HCT and PMTCT)	1241	3365	6409	8873*	170%	90%	38%	No	Yes	Yes
Couple-years of contraceptive protection	1116	1,693	3885	3872*	52%	129%	0%	No	Yes	Yes
% of gCHVs who received at least 1 supervision visit in last quarter	N/A	N/A	93%	98%	N/A	N/A	5%	No	Yes	Yes

SERVICE DELIVERY INDICATOR	RESULT Q1	RESULT Q4	RESULT Q8	RESULT Q12	% CHANGE Q1 - 4	% CHANGE Q4 - Q8	% CHANGE Q8 - Q12	INCENTI VIZED YEAR 1	INCENTI VIZED YEAR 2	INCENTI VIZED YEAR 3
Mean percentage score from the MOHSW's annual accreditation survey	N/A	84	88	68**	N/A	5%	**	Yes	Yes	Yes
Percent of clinical standards met in annual quality assurance survey	N/A	39%	45%	48%	N/A	15%	7%	No	Yes	Yes

*Two of 6 contracts ended in December 2011, hence in Q12, there were 4 reports included.

** not comparable due to difference in methodology of 2012 survey with past ones

Table 4: NGO performance against service delivery targets

NGOs	Year 1 Target = 7	Q5 Target = 9	Q 6 Target = 9	Q 7 Target = 10	Q 8 Target = 10	Q 9 Target = 11	Q 10 Target = 11	Q 11 Target = 11	Q 12 Target = 12	Average % targets met by NGO (adjusted)
NGO 1	4	6	9	10	8	10	10	11	9	78%
NGO 2	4	5	6	9	7	7	9	10	11	70%
NGO 3	2	2	3	5	6	10	10	0	0	54%
NGO 4	3	5	9	8	9	9	9	8	10	68%
NGO 5	5	3	5	6	9	7	10	0	0	70%
NGO 6	5	6	7	8	8	6	7	10	11	74%
% targets met by quarter	55%	50%	72%	77%	78%	74%	83%	89%	85%	69%

Table 5: Results for administrative indicators, years 1, 2 and 3

ADMINISTRATIVE INDICATOR	RESULT Q1	RESULT Q4	RESULT Q8	RESULT Q12	% CHANGE Q 1 - Q4	% CHANGE Q4 - Q8	% CHANGE Q8 - Q12	INCENTIVIZED YEAR 1	INCENTIVIZED YEAR 2	INCENTIVIZED YEAR 3
Average number of Community Health Development Committees meetings held per facility in the last quarter	0.1	2.7	N/A	N/A	2600%	N/A	N/A	Yes	No	No
Average number of joint (CHSWT and NGO) supervisory visits per facility during the quarter	0.4	2.0	N/A	N/A	400%	N/A	N/A	Yes	No	No
Average number of total supervisory visits per facility during the quarter	2.0	2.9	N/A	N/A	45%	N/A	N/A	Yes	No	No
% of timely, accurate and complete HIS reports submitted to the CHSWT during the quarter	45%	94%	86%	99%	109%	-9%	15%	Yes	Yes	Yes
% of NGOs submitting timely and complete quarterly report to RBHS project	83%	100%	100%	100%	20%	-	-	Yes	Yes	Yes
% of staff funded by NGOs paid on time in the quarter	64%	99%	95%	99%	55%	-4%	4%	Yes	Yes	Yes
% of facilities whose CHDCs held at least 3 meetings in last quarter	N/A	N/A	93%	99%	N/A	N/A	6%	No	Yes	Yes
% of facilities that received at least 2 joint (CHSWT and NGO) supportive supervision visits in last quarter	N/A	N/A	95%	99%	N/A	N/A	4%	No	Yes	Yes
% of facilities that received at least 3 supportive clinical supervision visits in last quarter	N/A	N/A	97%	97%	N/A	N/A	-	No	Yes	Yes

Table 6: NGO performance against administrative targets: targets met per quarter (out of 5)

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	% targets met by NGO
NGO 1	5	4	4.5	3.5	3	4	5	5	4	5	4	5	87%
NGO 2	2.5	2.5	3.5	5	3	3	4	4	3	5	5	5	76%
NGO 3	2	3.5	3	4.5	2.5	4	5	5	5	5			79%
NGO 4	3	2	5	3.5	3.5	5	5	5	5	5	4.5	5	86%
NGO 5	3	2	3.5	3.5	2.5	3	4	5	4	5			71%
NGO 6	2	5	4	2.5	5	4	5	5	4	5	5	5	86%
% targets met by quarter	58%	63%	78%	75%	65%	77%	93%	97%	83%	100%	93%	100%	

Table 7: Results for monitoring indicators, years 1, 2 and 3 (non incentivized)

Indicators	RESULT Q 1	RESULT Q 4	RESULT Q 8	RESULT Q 12*	% CHANGE Q 1 - Q 4	% CHANGE Q4 -Q8	% CHANGE Q8 - Q12	INCENTI VIZED YEAR 1	INCENTI VIZED YEAR 2	INCENTI VIZED YEAR 3
Utilization rate (new curative consultations per year per capita)	0.92	1.04	1.04	0.8	13%	-	-19%	No	No	No
Number of children under 5 years who received vitamin A	5,640	8,506	9,147	5,959	51%	8%	*	No	No	No
% of pregnant women receiving second or greater dose of tetanus toxoid	114%	108%	110%	109%	-6%	2%	-1%	No	No	No
% of pregnant women having at least 4 antenatal care (ANC) visits with skilled providers	37%	93%	91%	85%	154%	-2%	-7%	No	No	No
Number of child pneumonia cases treated with antibiotics during the quarter	5,210	7,745	8,593	8,875	49%	11%	*	No	No	No
Number of counseling visits for FP/RH	2,833	12,228	19,420	12,193	332%	59%	*	No	No	No
Number of women receiving AMTSL	387	2072	4390	4016	437%	112%	*	No	No	No
% people over 5 years treated for malaria with Artemisinin-based Combination Treatments (ACTs)	N/A	N/A	90%	93%	NA	NA	4%	No	No	No
% of facilities adhering to proper medical waste disposal (solid waste, sharps, infectious waste, latrines)	38%	94%	94%	99%	147%	-	6%	No	No	No

* Caution to interpret absolute figures reported: Q11 and Q12 reported by 4 NGOs while Q1-10 by 6 NGOs