

**Hospital public private partnerships in low resource settings: perceptions of how the Lesotho PPP transformed management systems and performance**

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## **Abstract**

Public private partnerships (PPP) seek to expand access to quality health services in ways that best leverage the capacities and resources of both sectors. There are few examples of PPPs in the hospital sector in developing countries, and little is known about how the involvement of the private sector transforms the delivery of health services in this context. In 2006, the Government of Lesotho adopted a PPP approach for the health sector, contracting out to design, build, and operate a hospital network in its capital district. This case study examines differences between a government-run hospital and the PPP-run hospital that replaced it, using in-depth interviews with key informants, observation of management systems, and document review. Key informants emphasized changes in infrastructure, communication, human resource management, and organizational culture that improved quality and demand for services. Important drivers of performance included better defined policies and procedures, empowerment and training of managers and staff, and increased accountability. Well-functioning support systems kept the hospital clean and equipment functioning, reduced stock outs, and allowed staff to do the jobs they were trained to do. The Lesotho PPP model provides insight into the mechanisms by which public private partnerships may increase access and quality of care.

**Key words:** public private partnerships, delivery of health care, organization and administration, qualitative research, developing countries, Lesotho

## **List of Abbreviations**

DBSA	Development Bank of South Africa
ICU	Intensive Care Unit
IFC	International Finance Corporation
MOH	Ministry of Health
NICU	Neonatal Intensive Care Unit
OECD	Organization for Economic Cooperation and Development
PPP	Public private partnerships
QE II	Queen Elizabeth II
QMMH	Queen 'Mamohato Memorial Hospital

## Introduction

Engagement with private providers is increasingly an integral component of health system service delivery.<sup>1</sup> A public private partnership (PPP) is a formalized cooperation between the public- and private-sector that combines the competencies of partners involved to achieve specific outcomes.<sup>2,3</sup> Healthcare PPPs can involve diverse models of governance, management, risk sharing, and financial contributions.<sup>3-6</sup> Nearly \$4 billion in healthcare PPP contracts were signed in 2010<sup>7</sup> representing approximately 35% of the total PPP market.<sup>8</sup> PPPs are less common in transitional economies due to unstable macroeconomic environment and the absence of necessary institutions; however, where the two sectors perceive the need and are willing to collaborate, PPPs have potential to succeed.<sup>9</sup> Outside assistance from development partners to strengthen institutional frameworks can help increase the feasibility of PPP projects in such environments. Given the amount of money invested in PPPs, taxpayers have high expectations regarding clinical outcomes, quality of care, accountability, and value for money. Evaluations of actual PPP experience can illuminate the mechanisms by which a PPP may contribute to these goals.<sup>10</sup>

From the private sector perspective, the PPP provides an opportunity to gain profit, stimulate market growth and be seen as a solution provider,<sup>2</sup> while the public sector partner gains access to private financing and innovative management. Where goals align, companies may be seen as helping to meet public needs and save lives. But worry that private-sector profit incentives may not converge with development objectives has created skepticism of PPPs and driven interest in evaluating outcomes. Past evaluations have been criticized for not adequately explaining how outcomes can be traced back to the partnership,<sup>4,6,11</sup> and the Organization for Economic Cooperation and Development (OECD) has called for more measurement of the results of private engagement with public sector.<sup>2</sup> A recent systematic

review of PPPs proposes a research agenda focused on institutional learning.<sup>7</sup> Our study contributes to this goal by analyzing a hospital network PPP in Lesotho, one of the only hospital PPPs operating in Africa, to document perceptions and mechanisms by which innovation, technical knowledge and skills, and organizational culture may have been altered by the partnership, and how these changes may influence clinical outcomes.

### *Background of the Lesotho PPP*

In 2006, the Government of Lesotho adopted a PPP approach to replace Queen Elizabeth II (QE II), the 100-year old national referral hospital in the capital of Maseru and to upgrade the network of urban clinics which, together with the hospital, provided publicly-funded health care services in the greater Maseru district, and referral services for the country. The PPP included construction of a new, 425-bed national referral hospital (Queen 'Mamohato Memorial Hospital, or QMMH), a gateway clinic adjacent to the hospital, and the refurbishment and re-equipment of three urban “filter” or feeder clinics which provided ambulatory care and referred patients. The second purpose of the PPP was to engage the private sector in new ways to ensure that these facilities functioned effectively as an integrated care network to provide more efficient, higher quality care and expanded access to services. QE II hospital was staffed and managed by government employees and its operation was constrained by laws, regulations, and traditions that governed procurement, human resources management, finance and administration in the public sector. The partnership mechanism, including contracting out for building and operating the integrated network and the use of output-based payment mechanisms, was designed to increase accountability for service delivery and quality of care by relieving the government of responsibility for the day to day functioning of the facilities, while maintaining the government’s role as steward of the health sector and promulgator of national health policies and standards. The government

did not want the new hospital to have the same concerns of the old hospital and thought the best way to achieve change was to transfer responsibility of hospital operations to the private partner.

Through a competitive tender process, the Government of Lesotho selected Tsepong, a consortium of Netcare, a private South African healthcare provider, and several Lesotho-owned businesses and provider-associations. The consortium was contracted to build, operate, manage, and deliver clinical and non-clinical services through this integrated network over the next 18 years. The project has an overall capital value of over USD \$100 million with capital expenditures jointly financed through public (38%) and private funds (62%) including a loan from the Development Bank of South Africa (DBSA) and equity capital investment by Tsepong.<sup>12</sup> Funding for Tsepong to repay the DBSA loan and to finance annual operating expenses—including staffing, medicine, general expenses, preventive maintenance, ambulances, and management services—is bundled into a single unitary payment that the government pays to Tsepong each year. The unitary payment is calculated based on the estimated cost to serve up to 310,000 outpatients and 20,000 inpatients per year. At volumes above this ceiling, Tsepong is entitled to incremental payment per patient from the government according to negotiated rates. Certain services are excluded from the PPP contract, including chemotherapy and radiotherapy. History and further background of the PPP are detailed elsewhere.<sup>13-15</sup>

In preparing for the PPP, the International Finance Corporation (IFC) served as transaction advisor, an independent advisor engaged by the government to provide feasibility studies, tender issuance support, and financial and commercial expertise. The IFC drew on the Lesotho Boston Health Alliance to collect detailed baseline indicators on the situation at QE II and its filter clinics, including indicators of access to services, utilization, clinical quality of care, referrals, patient satisfaction, and health outcomes. The baseline indicators were useful in designing key performance indicators, the project's key monitoring

tool, as well as designing an output-based payment component. These also served as a comparison to evaluate later PPP performance.<sup>16</sup>

The renovated and expanded clinics opened in May 2010, and the new PPP hospital began seeing patients on October 1, 2011. In 2013, the World Bank engaged an outside evaluation team with funding from the Global Partnership on Output-Based Aid, to assess QMMH network performance at the end of the implementation phase (“endline”). These data could then be compared to the previously collected baseline indicators of QE II. We collected data 17 months after the hospital had started operation and two years after the filter clinics were opened, and compared these data with QE II hospital and filter clinic data from 2007. The study found the PPP hospital network delivered more and higher quality services, and achieved significant gains in clinical outcomes compared to the government-managed hospital system at baseline. Hospitalizations increased 51%, outpatient visits increased 126%, deliveries increased 45%. Overall hospital mortality declined by 41% from 12.0% to 7.1%, and still births declined 50%. Emergency clinical carts were more accessible, a higher proportion of patients were triaged appropriately, and drugs were more available.<sup>12,17</sup> QMMH had 882 staff as of December 2012 including 70 physicians and 284 registered nurses: this is 37% more than the 642 staff at QE II, with most of the additional staff in clinical and allied health positions. In light of these quantitative findings, documented in more detail in other publications,<sup>12,17</sup> analysis of qualitative data provides an opportunity to better understand how the model of the PPP had achieved these results. The objective of this study is to assess how the public and private sector partners perceived the differences in roles and functions of the PPP compared to the government-managed hospital it replaced, and to identify possible performance drivers.

## Methods

We did a qualitative analysis of interview and observational data. Data collection included in-depth semi-structured key informant interviews, observations of hospital processes (e.g. tracking of medications), and review of hospital documents (e.g. monthly departmental reports). We selected informants to include all executive management team members, hospital service chiefs for all major services, clinical managers of each filter clinic, and all Ministry of Health (MOH) personnel working directly with the PPP. In addition we interviewed the director of clinical services at the MOH who was previously the medical superintendent of QE II hospital, and several other government informants (e.g. director of disease control, financial controller, district statistician, social worker). Finally, we selected several clinical care providers at the hospital and filter clinic level to gain insight from this perspective. We interviewed 36 informants, including 24 Tsepong staff (hospital executives, chiefs of clinical and support services, clinical care providers, and filter clinic staff), 8 Ministry of Health and Ministry of Social Welfare personnel, and 4 others (Tsepong sub-contractor personnel and consultants). Fifteen informants (42%) were male; 26 (72%) were Basotho (citizens of Lesotho). Interviews were conducted from February to April 2013.

The study director and senior scientist, both of whom are experienced researchers trained in qualitative research methods, conducted all interviews. For each interview a research assistant took typed notes and the interviewer took handwritten notes. Interviews lasted between 30-60 minutes and were not audio-recorded. Interviews started with a general question, "How do PPP hospital systems differ from the systems in place at QE II?" For different functions, such as human resources management, drug management, facilities and maintenance, participants were probed with questions such as "How does the hospital manage this function now? How does this affect performance? Is this different from how



the function was managed at QE II?” Questions about the performance factors included: “What do you think are the most important factors driving performance? What are the reasons for changes in performance between how QE II used to perform, and how the PPP hospital performs?” About 64% of key informants had experience with both hospitals (54% of Tsepong informants, 88% of government informants, and 75% of other key informants; prior experience with QEII was not recorded for three Tsepong and one government informant—these informants were considered to have no experience). If a participant did not know QE II hospital at baseline, the interviewer asked the informant to describe the PPP hospital’s current policies and practices. Often, people who had not worked at QEII still were able to describe how performance measures at the PPP hospital had changed compared to past performance reports, and they could distinguish changes between the initial start-up of the PPP and the present (e.g. how professional skill levels or surgical waiting lists had changed over time). The interviewer also explored informants’ perceptions of drivers of PPP performance without the comparison to baseline, and asked about challenges of the PPP as it currently functioned. Drivers described by informants who had worked in both facilities were more numerous and detailed than those described by informants who had only worked at the PPP hospital, but touched on the same topics.

Following each interview, the research assistant and interviewer compared notes and consolidated the information into a final written transcript. The senior scientist then coded each transcript for themes relating to performance drivers and differences between the government- and PPP-managed hospital networks.<sup>18</sup> Codes and coded segments were tracked in an Excel database and sorted. The study director and senior scientist then worked together to organize codes into broad domains and group similar themes together to reflect activities, structures, patterns or processes that conveyed meaning, iteratively refining codes throughout the process.<sup>19</sup> The study was approved by the Boston University Medical Campus Institutional Review Board and the Ethics Committee of the Lesotho Ministry of Health.

## Results

We identified three domains of differences: *inputs and capacity to offer care; policies and processes to manage service delivery; and patient outcomes* (Table 1). Each domain includes several sub-categories or themes discussed below.

### ***Inputs and Capacity to Offer Care***

*Facilities, Equipment, and Technology.* Almost all informants mentioned buildings and equipment as an important difference between QE II and QMMH. Key informants observed that QE II was smaller with aging buildings, while QMMH's modern buildings and design helped facilitate better quality of care.

*The most important difference is in the equipment. When you are just out of school, you want to work and practice what you've been taught. But at QE II, you had nothing to use.*

Informants noted that patient rooms have bathrooms, hot water, privacy curtains, and outlets for nurse call, suction, and oxygen, most of which were not available or consistently present at QE II.

Several informants also mentioned that QE II had no computerized patient record system, whereas QMMH has an electronic data system to track, share and analyze data. The changes in availability of data empower staff to use data for problem-solving:

*I know the Ministry was trying to get facilities to appreciate how to use data [at QE II]. But people didn't have a lot of things to do with data. Here [at QMMH], data is readily available; they get it, they can absorb it and it helps them to realize things. They draw conclusions, for example, about staffing and how they can cover the service better by moving a nurse from one area to another. People appreciate the data. They know they can use it.*

*Clinical Services.* Many informants mentioned the addition of *Gateway*, the general outpatient clinic at the hospital which allows filtering of non-urgent cases, decreasing congestion in the Casualty unit. Others mentioned added hospital-based specialty services, Intensive Care Unit (ICU) and Neonatal Intensive Care Unit (NICU), and added capacity for diagnostics and services in the filter clinics. Informants remarked on increased hours of services compared to QE II. *"The pharmacy and laboratory are open 24 hours, 7 days a week including holidays,"* said one clinician. *"At QE II, this was not the case. If you needed something on a weekend, they might technically be open, but you wouldn't get it."*

Yet, several informants observed that wait times are still long, especially at the filter clinics where patients may arrive at 4 a.m. to get in line for 7 a.m. opening. When filter clinics were government-managed, they followed a policy of only seeing a set number of patients per day. This resulted in patients coming very early to the clinic to ensure that they received service. This culture has not changed even though current policy is not to limit the number of patients seen, and it is uncommon for a patient not to be seen by a provider on the same day.

*Support services.* Informants also mentioned differences in support services such as security, cleaning, maintenance, waste management, food and linens. They perceived an increase in hospital security to protect against theft of hospital assets, robbery of patients' personal articles, and personal assaults.

*[At QE II] you heard about...large equipment disappearing overnight, stolen...people used to steal property from patients. It seems like there aren't so many security incidents at QMMH. There are more controls. For example, we are supposed to declare things we move in and out. They search the bags of staff when we leave. We want to promote a secure environment: for the company, for patients, for staff. Everyone benefits.*

Informants also perceived that cleanliness was an important characteristic of the new hospital, and that cleaning services were very different from QE II.

*The cleaning company is outsourced now, and maybe that's why it's the best. Before, an old woman would put her new mop in the bucket once, and would do the whole floor without changing it. If you talk to her, she says 'You do your job, I'm doing mine.'*

Informants observed that QMMH emphasizes preventive maintenance and back- up systems, while QE II did not. Several clinical staff described how QMMH maintenance staff reach out to departments daily to make sure things are operating properly, and clinical staff can ask for support at any hour. Septic tanks are emptied regularly instead of being allowed to overflow as at QE II, and the PPP hospital has implemented a waste management system as part of its infection control program. Informants also mentioned improvements in food and linen services compared to QE II; QMMH outsources laundry and linens are replaced daily. *"At QE II, patients were not given robes, so there was always laundry hanging*

around,” said one clinician. *“They had to wash their own robe. Now, laundry is washed by the hospital and patients get clean clothes every morning.”*

### ***Policies and Processes to Manage Service Delivery***

*Policies and Standards.* Key informants observed that QMMH has more clearly defined roles, hospital-level policies, and procedures which are consistently communicated to staff. *“It is not that there were no policies and procedures at QE II,”* said one nurse. *“But here, we have access to them in how we do work.”*

One example of a hospital policy involves the use of entrances to the Casualty unit. The unit now has one entrance for emergencies where the patient is taken directly to the resuscitation room, and another entrance for ambulatory patients who do not require immediate care. The policy related to use of these entrances was explained to all staff, and signs are posted as reminders for patients. *“Now patients are not just doing whatever they want,”* said one nurse, *“They are not going in whichever way they please.”*

Informants talked about work being done *“in a more structured way”* at QMMH compared to QE II. Many functions are tracked, including attendance at meetings, training received, maintenance requests, and security guard rounds. Staff are expected to follow procedures, and managers are given authority to discipline employees if they do not.

*Whereas in the MOH [QE II hospital], policies were not known to staff, here we are made to be part of the policies, and asked to adapt them to be relevant to our situation. We disseminate them to all teams, so they know how they should conduct themselves.*

*Communication.* Informants described how QMMH uses committees to facilitate communication. “We have an audit committee, management committee, infection control committee, and others. There may have been committees at QE II, but they were not active.” Other informants discussed Quality Improvement teams working at the departmental level. These inclusive teams often focus on achieving objectives set by the government as priorities: e.g. reducing maternal mortality.

One informant mentioned that communication is more structured and written down: “We do a lot through email. That is best because then there is always evidence. If we disagree later, we can go back and see. Back then [at QE II], the communication wasn’t written.” Communication helps to avoid work disruption: for example, an informant described how the maintenance department at the PPP hospital communicates with other departments ahead of time about preventive maintenance activities, allowing staff to prepare for equipment down time.

In the Pediatrics and Surgery Departments, managers discussed how staff meetings are used to discuss unusual cases and analyze mortality. Another area of increased communication was the sharing of patient feedback and complaints. In addition to getting quantitative results of patient satisfaction surveys, the Public Relations Office shares patients’ answers to open-ended questions with managers. Managers said they liked to get feedback as it can help them make improvements. One manager explained, “We attend to the things they have complained about, so it is less now.”

Informants did not mention any specific changes, positive or negative, in communication between the hospital and the Ministry of Health. A few people mentioned efforts that had been made to improve guidance for district hospitals on referrals, but it seems as though communication between districts and QMMH is not very different from when QE II was open.

*Human resources.* Several informants mentioned changes in upgrading staff qualifications and numbers.

*“There are now nurses who specialize in surgical theatres, and more nurses who have been sent for training in South Africa. This has improved their skills and knowledge,”* said one informant. Other informants noted the addition of neonatologists, anesthesiologists and other specialists, as well as increased numbers of pharmacists and pharmacy technicians.

Several people who had worked at QE II in the past mentioned having their role expanded at QMMH. People perceived this positively and felt empowered by the new responsibilities and ability to participate in decision making:

*At QE II my role was limited to [a smaller department]. I wouldn’t take on big decisions such as planning if things needed to be changed, or developing the budget. But here, I am involved with budgeting, recruitment of staff. It is a serious shift, responsibility-wise.*

Informants described an increased emphasis on orientation of staff, continuous education, and competency testing. For example, QMMH staff are oriented to new responsibilities:

*The orientation for a new job which I was given was never done when I was promoted by the Ministry of Health [at QE II]. They would give you a promotion, but they didn’t help you to learn your new responsibilities. [By contrast, at QMMH], I knew what was expected of me by the time I started at Tsepong.*

Informants mentioned how physicians are sent to conferences and trainings in laparoscopy, pediatrics, or gynecology, and nurses were sent to a South African hospital to be trained in emergency room practices, whereas this was less common at QE II. One PPP department manager described hosting “clinical day” when university lecturers would come to speak; other informants discussed integrating educational activities into regular staff meetings.

Several people connected the training opportunities to an increased emphasis on competency testing at the PPP hospital. “Nurses take exams to make sure they are suitable for different areas of specialty, for example to be an operating theatre nurse,” said one informant. Informants saw advantages in taking tests to determine skill level: “The trainer gets the results [and] they can help you learn more in the areas where you are struggling or need more knowledge.” Several informants highlighted the hospital’s strategy of universal skills training, e.g. all clinical staff are trained in intubation, infection control, cardiopulmonary resuscitation and customer care.

Informants also mentioned compensation and working conditions as a key difference between QMMH and QE II. Average Tsepong base salaries were 3.4% to 54% higher than compensation offered by Government for public workers, depending on the job level.<sup>12</sup> In addition Tsepong provides fringe benefits including pension fund contributions and shift pay. Informants were pleased that the hospital had a system of giving an end-of-the year bonus to employees, as well as ward level bonuses based on patient satisfaction survey results. One informant observed, “Bonus check? We never had that before. We didn’t even know what that was.” Other informants described how the policies for overtime, night shifts, and weekend work were clearer, fairer and more generous than under QE II. For example, one informant explained:



*Doctors at QE II could be on duty during the day, then they would have to be on duty at night, and then be on duty the next day too. For this, they received only a 150 Maloti supplemental (about USD \$13). They might have to do 5-6 nights a month, and on call time and night duty were not counted as regular work hours. No wonder they sometimes went home or slept during night duty. It is too much to ask.*

Several people mentioned increased enforcement of rules, and how the willingness to discipline or even to fire staff increased individual accountability. People referred to the biometric time clock attendance system as an example of how discipline is enforced. Managers also said that the Human Resources Department supports them in holding employees accountable, a notable change from QE II where civil service rules made it more difficult to take disciplinary action.

*In government [at QE II], people do whatever they want, whenever they want. There are no controls. But here, there are lots of controls. I cannot say that disciplinary procedures did not exist in government: they did, but they weren't implemented.*

*Organizational culture.* Many informants mentioned organizational culture and work ethic as areas where there are differences between the new hospital and QE II. The organizational culture at QMMH was perceived as focused on individual and team accountability, quality improvement, and the use of data for decisions. Working in such an environment, staff reported becoming more adept at problem solving. Several informants mentioned the ongoing implementation of a balanced scorecard system as an example of the organization's focus on accountability. This performance management tool requires every manager to set goals for their unit, and to monitor their unit's performance against goals using

hospital information systems. The following quotes illustrate the perceived changes in organizational culture related to accountability, work ethic, and teamwork at QMMH compared to QE II:

*Back then [at QE II] we were civil servants and we worked like civil servants. You only do something if someone is pushing. But here [at QMMH] you have a role, you know what to do. You can't just sit.*

*Quality improvement, it was not done at QE II. But here [at QMMH], we really sit down and see what is wrong and what we can improve. Even to stand in front of others to present your case, and the others are there not to criticize, but to tell what could have been done better so we can learn from our mistakes. That was not done at QE II.*

### ***Patient and Staff Outcomes***

*Service volume and patient mix.* In the developing world context, patient perceptions of quality strongly influence care-seeking decisions.<sup>20</sup> Patients may not seek care if they think care will be ineffective or they will be treated poorly, or they may seek care in the private sector in the hope of receiving higher quality care, thus increasing out of pocket payments and impeding progress toward the WHO goal of universal coverage.<sup>21</sup> Hence, increased patient volume in this context is considered a positive performance measure.

Many informants described the increase in patients coming to QMMH. The perceptions of increased volume are corroborated by service statistics: inpatient admissions were 51% higher, deliveries had increased 45%, and the PPP hospital network was seeing 126% more outpatients.<sup>17</sup> Several informants mentioned that the case mix at QMMH has also changed, with an increase in very sick patients,

malnourished children, and very premature and low birth weight infants. (Because it was not possible to measure differences in acuity using hospital administrative data, we could not corroborate these findings.)

*Quality of care.* Informants perceived that improved processes and services have led to improved patient care, especially related to better nursing, access to medications, and reduced wait times for treatment. They noted that improved ordering and recording systems for medications have reduced stock outs. Tsepong established relationships with the National Drug Service Organization and other vendors to promote faster order delivery. Purchases are made weekly or monthly, rather than quarterly as was the custom at QE II, and orders are placed via an online system. Informants said that while stock outs still occur, they are less frequent and do not last as long as at QE II. In addition, they noted that theft of drugs is less of a problem due to stronger controls on medication issuing and more frequent stock taking.

*We used to have huge losses of medications at QE II. Now the pharmacy is not ordering such large boxes but instead is ordering very often, regularly. Everything that goes to the ward is recorded. Now you charge whatever you are using for the patient, and the pharmacy can see when stocks are low and reorder. That has really reduced theft. Another thing that never happened at QE II is stock taking. That happens 2 times per year now.*

Informants also perceived that outsourcing of laboratory services has increased efficiency and improved the ability of clinicians to diagnose and treat patients.

*At QE II the laboratory turnaround time [for laboratory tests] was slow partly because of the manual systems. Things were manually labeled and samples were manually pipetted. Now the lab receives and puts bar codes on the samples, then they scan everything. The sample might be separated and sent to different areas. Results are entered in the system as they are available, so the doctors can get the results from one test before the other results are ready.*

Lab personnel are also seen as partners in the care process. One clinician observed that even if a lab request is not marked as urgent, if the lab technician sees something alarming, they will call immediately so the clinical staff can find the patient.

Waiting time for elective surgery, another quality measure, was perceived as lower at QMMH compared to QE II. One informant stated that *“when QMMH opened there was a 6-month long backlog for elective surgery. However, plans were made for backlog reduction, and now it is a 1 month wait with few exceptions.”* This informant did not believe that QE II ever had less than a 6-month wait time.

*Staff outcomes.* Several staff members observed that being able to give good patient care, and feeling appreciated and being thanked for that work, is a very important motivator. They felt more able to do their job, and more appreciated at QMMH than at QE II. They sense that this has led to lower turn-over as well.

*Before, some people did good nursing, but they weren't appreciated. No one ever said thank you before. Now they are appreciated and awarded. They might get “best ward” award and all will get a voucher [to use to buy things in shops]. And there are personal*

*rewards: now they see the tiny babies who would have died before being saved and going home. And they come back, the mothers with their babies, to say hello. That is rewarding.*

## **Discussion**

This study provides one of the first looks inside a hospital PPP operating in a developing country. Added to data on clinical outcomes reported elsewhere,<sup>17</sup> the insights from hospital and government key informants help us to see how private management of public health services may result in more efficient and higher quality care. Key informants identified major improvements in the new hospital network compared to the government-managed facilities it replaced, and related those changes to staff motivation and patient care outcomes. The qualitative data largely supports the quantitative findings, previously reported,<sup>17</sup> which showed significant improvements in clinical outcomes.

Some differences noted by informants, such as new clinical services and better infrastructure, are to be expected with any new facility, and such investments could also have been introduced in a publicly-run hospital. Yet, certain characteristics of the PPP model appear to be necessary or facilitating conditions which allowed the kinds of improvements we observed in Lesotho. These include allowing the private sector partner to assume responsibility for managing personnel, which enabled the PPP the flexibility to add posts, change pay scales, discipline, reward and dismiss people. In addition, the use of a contract model with performance requirements is an important distinguishing characteristic of the partnership. For example, the private contractor was required to win and maintain external accreditation of the clinics and hospital, which Tsepong achieved in May 2013 and November 2013, a goal that had eluded government facilities since 2006.<sup>22,23</sup> Another distinguishing characteristic of the PPP model is that Tsepong has equity at risk, unlike a simple management contract for a government facility. This gives the

private partner an enduring interest in seeing the venture succeed.<sup>24</sup> Long term contractual arrangements are designed to assure that facilities are adequately maintained,<sup>25</sup> and we saw evidence of increased attention to maintenance in the Lesotho PPP. Finally, the involvement of a private sector partner was critical to promote innovative changes in management systems (e.g. procurement and medicines supply, information technology, etc.).

Both government and non-government key informants had similar thoughts regarding drivers of PPP performance. While government informants mentioned additional money, facilities and staff as drivers of the changes in performance at the PPP hospital network, they also mentioned thoughtful planning processes and structured problem solving, political will and commitment, good leadership from both the government and Tsepong, and the fact that the PPP can move faster and is more efficient in using resources than government alone. Government informants also mentioned better training, increased quality of care through changes in patient management and nursing, and more motivated staff.

Private management through Tsepong introduced new ways of managing people and systems via hospital rules, policies and procedures. These changes were perceived as having transformed the way staff did their work and interacted with each other--in essence transforming the culture of care. In small and large ways, these functional support systems and management structures contributed to staff competency, empowerment and accountability, and a work environment that resulted in increased demand for services and quality of care. The government's primary motivation to enter into the PPP was to improve patient care by leveraging the private partner's expertise in hospital management and operations, i.e. avoid building a new facility that housed the same old problems. These findings suggest that the private partner was successful in changing the day to day operations of the hospital to achieve this goal.

VanDeusen Lukas, Holmes, et al. (2007) have explored transformational change in health care systems, studying factors that contribute to “sustained, reliable, organization-wide, and evidence-based improvements in patient care.” Their model includes five domains: impetus to transform, leadership commitment, improvement initiatives, alignment and integration.<sup>26</sup> We found evidence of all of these factors in Lesotho. Impetus to change how the hospital was managed was inherent in the design of the PPP and was bolstered by the PPP’s output-based financing contract and the management role assumed by the private sector partner. Hospital leadership showed commitment to the goal of providing high quality clinical care and increasing customer service, and made this commitment clear to staff throughout the organization. They worked hard to align expectations of staff with the new vision of a more accountable healthcare organization. Strengthened communication and electronic information systems allowed for improvement initiatives and organizational learning through continuous training and performance feedback. Hospital systems were aligned to achieve goals of increased quality and patient satisfaction; for example, changing data systems to support medicine distribution on wards to reduce stockouts, and tracking and reviewing departmental metrics with the aim to adjust care processes as needed. These system changes required integration across professional boundaries in order to succeed,<sup>27</sup> which was done through the establishment of multiple communication channels, including committee meetings. Alignment and integration were less evident outside the hospital: for example, there was little evidence of integrating the PPP hospital referral system with district hospitals’ referral practices, or increasing communication and collaboration with Ministry of Health officials on training district staff. As the responsibility for such coordination was outside the role assigned to the private partner in the PPP, the impetus to change may not have been as strong on these dimensions.

An overarching outcome of the differences we noted between the government-managed and PPP-managed hospital networks is that the PPP-managed system produces a work environment that can be conceptualized as “reliable.” Figure 1 is an illustration based on the findings of the study. A major driver of identified differences appears to be leadership commitment, consistency of message, and alignment of structural inputs (facility, equipment, technology) and management inputs (rules, policies and procedures) with strategic goals. This results in higher staff satisfaction and morale, and better patient outcomes. In unreliable work environments the culture is one of frustration, where staff do not consistently have the direction, support or materials they need to do their jobs well, or their work is not valued.<sup>28, 29</sup>

In creating the reliable work environment, the PPP system makes use of clearly outlined expectations (e.g. standard operating procedures, hospital targets and standards), and processes that lead to increased staff competency and accountability (e.g. training, performance metrics and incentives, disciplinary process), empowerment of management (e.g. managers can request additional hires and can discipline staff), formal and informal channels of communication (e.g. monthly reports, standing meetings, patient satisfaction surveys), and improved security and other support services (e.g. building and equipment maintenance, food service). These conditions help create a work culture that values staff, their work, and teamwork, and results in a reliable work environment: people know what they need to do, how to do better, and the goals they are working toward. The environment is safe and predictable because staff can also rely on co-workers to do their jobs. They can be sure that the pharmacy will have drugs in stock, drugs on the crash carts will not be expired, or that maintenance will fix something within prescribed time periods. And if things don't go according to plan, there is a process to bring it to someone's attention. In this way, staff have what they need to focus on doing their jobs well rather than expending time and energy on working in a 'unreliable' environment. While further



research is needed to validate this model, we believe it captures an important aspect of innovation which may be gleaned through a healthcare public private partnership.

### **Limitations**

This study had several limitations. As we did not interview all staff, we may not have captured all the themes related to differences in hospital networks; however, we did see the same concepts discussed across multiple interviews so we suspect we reached saturation on major themes. We did not conduct in-depth interviews with patients at either baseline or endline, so we cannot report on changes in patient perspectives related to the two hospitals. This perspective is important and should be included in future research to gain a comprehensive understanding of differences between the two models. Similarly, we did not interview staff who worked at QE II but declined to work at the PPP hospital. These staff may have had a different perspective from those who continued working under new management. In addition, our analysis does not address the financial sustainability of the PPP model, another important dimension of PPP performance. While some data suggests that the PPP model has increased efficiency,<sup>12</sup> other stakeholders have raised concerns that the model is not affordable for the Ministry of Health and may be diverting resources from rural primary health care to urban hospital care.<sup>30</sup> This problem may be ameliorated in the future as a result of a national effort to refurbish 138 primary care clinics in the country.<sup>31</sup> The refurbished clinics will reduce incentives to bypass this level in seeking high quality care, and the resulting decrease in outpatient visits at QMMH will likely decrease the amount the Government is paying to Tsepong for excess visits. In addition, the Ministry of Health is planning to re-open QE II hospital as a district level facility,<sup>32</sup> which will further reduce pressure on the PPP hospital, although the net financial impact of an additional facility is uncertain.

Finally, our analysis is of a single case study and our results may not reflect the experience of other PPPs. However, the theoretical framework that resulted may serve in analyzing the performance of healthcare PPPs in other settings.

### **Conclusions and Implications**

Researchers have debated whether contracting out to private sector is a better strategy than putting the same amount of money into developing the public sector.<sup>33, 34</sup> Our results suggest that from the viewpoint of staff and government officials closely involved in PPP implementation, engaging a private partner in building, operating, managing and delivering services has catalyzed transformative changes in this example of a PPP hospital in southern Africa. The implementation of a PPP may offer an opportunity for many changes to be done simultaneously that are needed to improve the work environment and culture. Policy makers need to consider financial analyses, clinical outcome indicators, and perceptions of stakeholders in deciding what role PPPs might play in health systems strengthening and service delivery, and how the PPP fits into the larger healthcare system.

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### **Author Contributions**

Taryn Vian made substantial contributions to the manuscript involving: literature searches, study design, data collection, data analysis and interpretation, and manuscript preparation and editing. She has given final approval of the version to be published and has agreed to be accountable for all aspects of the work.

Nathalie McIntosh made substantial contributions to the manuscript involving: literature searches, study design, data collection, data analysis and interpretation, and manuscript preparation and editing. She has given final approval of the version to be published and has agreed to be accountable for all aspects of the work.

Aria Grabowski made substantial contributions to the manuscript involving: study design, data collection, data analysis and interpretation, and manuscript preparation and editing. She has given final approval of the version to be published and has agreed to be accountable for all aspects of the work.

Elizabeth Limakatso Nkabane-Nkholongo made substantial contributions to the manuscript involving: study design, data analysis and interpretation, and manuscript preparation and editing. She has given final approval of the version to be published and has agreed to be accountable for all aspects of the work.

Brian Jack made substantial contributions to the manuscript involving: data analysis and interpretation, and manuscript preparation and editing. He has given final approval of the version to be published and has agreed to be accountable for all aspects of the work.

#### **Declaration of Interests**

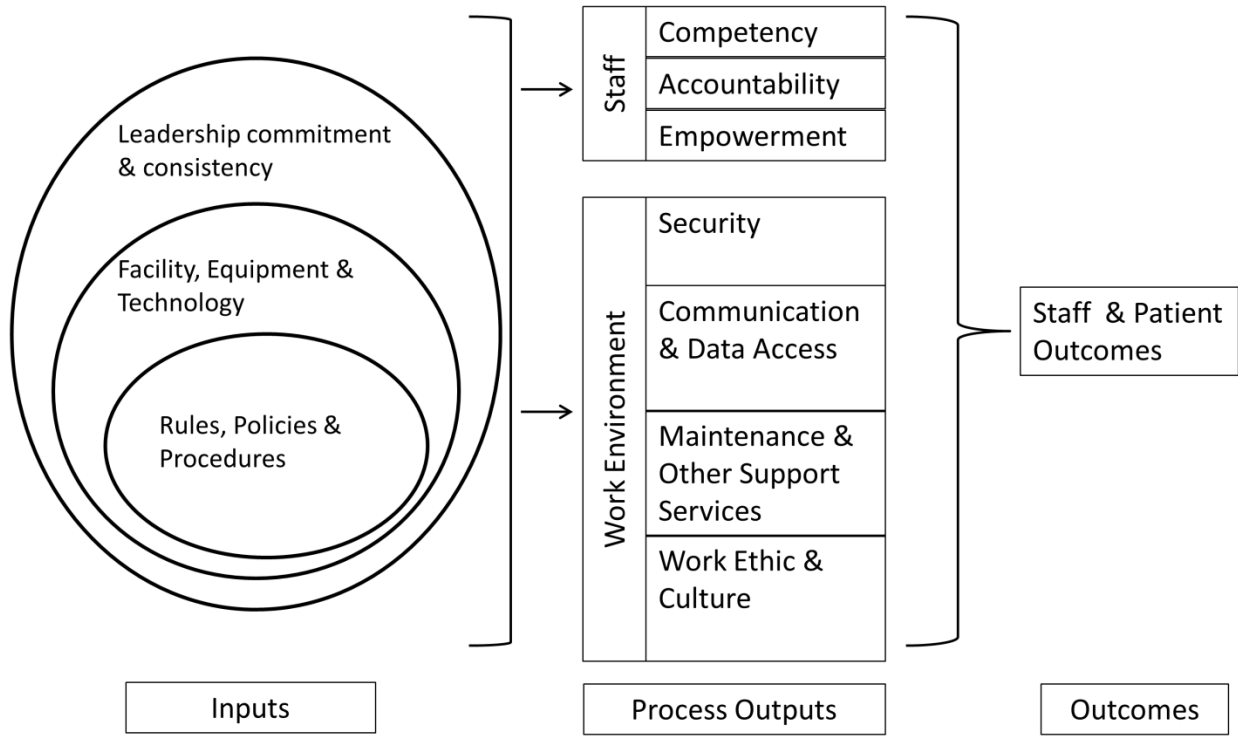
Taryn Vian, Nathalie McIntosh, Aria Grabowski, Elizabeth Limakatso Nkabane-Nkholongo and Brian Jack have no conflicts of interest to declare.

**Table 1: Differences between the government-run and PPP-managed hospital**

<b>Domain</b>	<b>Theme</b>	<b>Changes noted in the PPP</b>
Inputs and capacity to offer care	Facilities, equipment, and technology	PPP replaced aging buildings, had an efficient hospital design, and introduced new equipment and new electronic data systems for admissions, medical records, and pharmacy and support services. Patient rooms were updated for bedside care.
	Clinical services	PPP Gateway clinic decreased crowding in Casualty unit. PPP added specialty services (including ICU and NICU). The pharmacy and laboratory functioned 24/7. The pharmacy tracked medications and dispensed them at the patient level.
	Support services	PPP strengthened security, cleaning services, maintenance, waste management, food and linen services. The focus shifted from repair to preventive maintenance, and toward planned redundancy (e.g. back-up power systems).
Policies and processes to manage service delivery	Policies and standards	PPP more clearly defined staff roles, hospital-level policies, and procedures, clearly communicated expectations to staff, provided more structure, and tracked performance against standard.
	Communication	PPP communications were more structured and formal. There was increased use of committees, department staff meetings, and teams, and a greater focus on patient feedback.
	Human resources	PPP upgraded staff qualifications and numbers, especially clinical staff, expanded roles of staff for more participatory decision making, put more emphasis on continuous education and competency testing, and increased compensation and benefits, accountability, and discipline.
	Organizational culture	PPP organizational culture focused on individual and team accountability, goal-setting, quality improvement, and use of data for monitoring and decisions.
Patient and staff outcomes	Service volume and patient mix	PPP had increased service volume (inpatient admissions, deliveries, outpatient visits) and there was a perceived increase in severity of case mix.
	Quality of care	PPP had reduced wait times for elective surgery, faster laboratory test turn-around times and a perception of improved access to medicines.
	Staff outcomes	PPP staff felt more empowered, appreciated, motivated and capable of doing their work.

Notes: PPP = public private partnership; ICU = intensive care unit; NICU = neonatal intensive care unit

Figure 1: Reliable Work Environment Framework



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