



**Performance-Based Financing Strengthens
Public-Private Partnerships in the Health Sector
– a Case Study from the Littoral Region of Cameroon**

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ABSTRACT

These days, many African countries are in search of strategies to reinforce public-private partnerships (PPPs) to align private providers with national health policies in order to attain public health goals, including Universal Health Coverage (UHC). The aim of this study is to analyze how Performance Based Financing (PBF), as a contracting approach, can contribute to reinforcing private-public partnerships.

Methods. This retrospective study analyses data (validated through PBF verification mechanisms) from 66 health facilities (HF) in 4 out of 19 health districts in the Littoral Region of Cameroon. The study compares data from private-for-profit (PFP), faith-based and public health facilities that were contracted under PBF. The data includes (i) the package of health services provided; (ii) the quality of these services; and (iii) referral patients. The data collected at the entrance of each health facility in the project since the first quarter of 2011 was compared to data collected during the second quarter of 2013 from the same health facilities, and analyzed using EPI INFO software.

Results. With PBF, an increasing number of PFP facilities have expanded their package of health services by including preventive health care, such as family planning (FP) and Prevention of Mother-to-Child Transmission (PMTCT). The number of beneficiaries of modern contraceptives and antiretroviral drugs for PMTCT increased respectively from 21 to 361 per quarter, and the number of partner private health facilities grew from 3 to 24 during the study period. The quality of health services offered improved significantly in all facility types, with the quality score of PFP facilities showing an increase from 12.6% to 61.7%, while in public HF it increased from 15.3% to 67.3% and in faith-based HF from 17.9% to 63.2%. Collaboration between private for-profit, public and faith-based health facilities at the operational level also improved, leading to more effective referrals and counter referrals between health centers and hospitals within the districts.

Conclusion. PBF is an effective contracting approach for reinforcing PPP in the health sector and to motivate private providers to provide essential services needed to enhance public health goals that contribute to Universal Health Coverage. Policy makers should therefore consider using PBF to strengthen PPP within the health care system – where the private health sector is gaining ground – to regulate and align them in order to reach public health goals.

Key Words: PBF; private-for-profit; public-private partnership; private sector; urban setting.

ABBREVIATIONS

ARV	Anti-Retroviral
CBO	Community-Based Organization
CPA	Complementary Package of activities
DMT	District Medical Team
FB	Faith-based
FP	Family Planning
GPS	Global Position System
HF	Health Facility
IE	Impact Evaluation
IUD	Intra-Uterine Device
M&E	Monitoring and Evaluation
MOH	Ministry of Health
MPA	Minimum Package of Activities
NHMIS	National Health Management Information System
PBF	Performance-Based Financing
PFP	Private-For-Profit
PMTCT	Prevention of Mother-to-Child Transmission
PPA	Performance Purchasing Agency
PPP	Public-Private Partnership
TQC	Technical Quality of Care
UHC	Universal Health Coverage

INTRODUCTION

In many African countries today, the health care system is highly pluralistic, especially in urban areas where the importance of the private health sector in service delivery is increasing (1-4). However, the role of the private-for-profit (PFP, from now on also referred to as 'private') sector is often limited (5). Ministries of Health (MOHs) tend to establish working relationships mainly with public and faith-based (FB) health facilities (HFs) to which subsidies and inputs are provided without any clear link to results (6). Collaboration with private providers encounters four main bottlenecks: (i) the public sector lacks the capacity to manage collaboration; (ii) the lack of an umbrella organization of private sector providers to negotiate service contracts; (iii) the need to harmonize service packages and standards for health care delivery in private and public providers; and (iv) incomplete reporting by private providers (7). However, private health facilities also represent an opportunity to enlarge the pool of resources available in the country (human, infrastructure, equipment and knowledge) to attain public health goals. Furthermore, without accurate regulation and oversight of the private sector, patients can be at risk of receiving poor quality health services. As a consequence, a growing need exists for governments to regulate private providers and for private providers to align with national health policies, with the aim to attain public health goals and achieve Universal Health Coverage (UHC).

Cameroon faces a situation of proliferation of the private health sector, specifically in the urban areas of the country. For example in the "Cite des Palmiers" health district in Douala, there are 203 private providers, compared to only 5 public and 5 faith-based health facilities. In Douala, control and regulation within the health system are weak: many private health facilities are providing care without *legal* authorization. Over 54% of the population in the Cite des Palmiers health district mainly sought for health care at private and faith-based health facilities (8)¹. So there was a clear need and a great potential for the government to reinforce public-private-partnerships (PPP) in order to attain its public health goals. Currently, the government authorizes the creation and operation of accredited private health facilities, but prior to 2011 there were no appropriate strategies in place to align their services with the public health goals of the MOH. The potential contribution of the private sector to improve health care delivery in Douala was clear; but a need of adequate strategies to integrate private health sector to the national health system remained.

There is no broad international consensus on what constitutes a public-private partnership (PPP). Broadly, PPP refers to arrangements, typically medium- to long-term, between the public and private sectors whereby some of the services that fall under the responsibilities of the public sector are provided by the private sector, with clear agreement on shared objectives for delivery of public infrastructure and/ or public services. PPPs typically do not include service contracts or turnkey construction contracts, which are categorized as public procurement projects, or the privatization of utilities where there is a limited ongoing role for the public sector (10).

Performance Based Financing (PBF) may present an opportunity to enhance public-private partnerships. In PBF, private, public and faith-based health facilities are treated equally without discrimination: they are contracted to attain the same results (11). Shared conditions are needed to provide the package of activities such as improved quality of care standards and the content of the basic package of services, including preventive health care. Processes and content for contracting, monitoring and evaluation is the same for public and private providers – bound by the same Performance Purchasing Agency (PPA).

This article is a case study in Littoral region of Cameroon where PBF is reinforcing PPP in the health sector.

¹ The other 46% of the population who seeks modern health care when there are ill visited the 5 public facilities, which include the largest hospital in Cameroon: the General Hospital of Douala. Patients often prefer to visit these referral sites over primary care providers. African studies have found that the majority (61–82%) of users of hospital facilities are 'self-referrals' (9).

Performance-Based Financing in Cameroon

In this paper we present PBF experience in the Littoral Region of Cameroon with a special focus on PPP. Cameroon started implementing the pilot phase of the PBF project in four regions: East, Littoral, South West and North West. In the Littoral Region the PBF project started in 2011 with funding from the World Bank, targeting 4 out of the 19 health districts in the Littoral Region: Cite de Palmier, Edea, Loum and Yabassi. In these four health districts, a total of 308 health facilities (237 private + 45 public + 26 faith-based) cover a population 636,000 inhabitants, according to a 2005 projection for the year 2010 (12). 66 % of the population reside in urban areas (notably Douala), where 80% of the health facilities are located, according to a census done in 2013 (13). All public and faith-based facilities are eligible for the project whereas only private health facilities which fulfilled norms and standard required by the national policy (administrative documents that allow its creation and functioning according to the law; adequate infrastructure, staff and equipment) can be included in the project. Based on these criteria, a district medical officer evaluates each private health facility before granting authorization to the PPA to sign his first performance contract. All facilities with PBF contracts are treated equally by the PPA. So if the provider (public, private or faith-based) is not performing up to standards, its quarterly performance contract will not be renewed by the PPA.

Institutional set-up of PBF in Cameroon

Contract management for PBF in Cameroon rests on several key principles:

1. The set of services in the contract purchased by PPA and their unit price are the same for public, private and faith-based health facilities (HF). PBF doesn't pay for specific equipment of private, public or faith-based health facilities. HF that lack necessary equipment can use locally-generated revenue and PBF subsidies for acquisition of such equipment.
2. The number of people who used different services of the minimum package of health care (rewarded by the PBF scheme) is declared each month by health facilities on a declaration/validation form and validated by the PPA. The declaration/validation form comprises 23 indicators for the Minimum package (*for primary health centers*) and 25 for the complimentary package (*for hospital.*)
3. In health areas with more than one health center, the best performing centers (whether it is private, Public or faith based) sign a primary contract with the PPA, while others subcontract with these primary centers. Production of sub-contractors and the main contractor are combined in one declaration form sent to PPA by the main contractor. Verification agents of the PPA will then verify the level of service provision using registers of primary and sub-contracted health centers.
4. Payment is done to the main contractor who will then pay its subcontractors. Quarterly the performance of these health facilities in the same area is evaluated. If a health facility with a subcontract delivered more services than the facility with a primary contract, the subcontractor would sign a primary contract and the facility previously being the primary contractor would sign a subcontract. Health facilities with primary contracts carry out pre-verification and supervision of those with subcontracts and retain 20% of subsidies to cover the cost of this supervision.

Methodology

Concepts and variables

We studied how PBF has reinforced PPP in the health sector in Cameroon, in four dimensions:

- the number of private health facilities that signed a performance contract;
- the package of services provided by the contracted private providers;
- the quality of the services provided by the contracted private providers; and
- the implication of private providers in the referral and counter referral system of patients between Health centers and Hospitals at the operational level.

- **Number of private health facilities that signed a performance contract**

This variable was used to assess the number of private health facilities that have signed a performance contract with the PPA. A private health facility signing such a contract indicates willingness to enter in a partnership with the public sector; to cooperate in reinforcing the supply of health services; and to achieving public health goals.

- **Package of services provided by the contracted private providers**

This variable was used to evaluate how far the contracted private providers had expanded the package of services given to the population to integrate preventive health care. We evaluated the changes in the number of facilities that offered preventive health care like PMTCT, family planning and in the number of beneficiaries between their first quarter in the project and the end point (2nd quarter 2013) of our analysis.

- **Quality of the services provided by the contracted private providers**

After signing a performance-based contract, private providers as well as public and faith based providers with performance based contract should improve the quality of services offered to the population. Two quality indicators were assessed: the quality from a technical point of view and the quality perceived by patients.

- *The ‘technical’ quality score of health facilities*

This score is based on the quarterly technical quality evaluation of health facilities by District Medical Team. The first quality evaluation is done before health facilities sign their first contract. The team uses a checklist of “composite indicators” that are based on the norms and standards, in which the weighting of indicators depends on their public health importance (see Textbox 1).

Textbox 1: Measuring the technical quality score

A composite indicator may contain several elements, which must be satisfied to earn points. The weighting of indicators may be 1, 2, 3, 4 or 5 points depending on its public health importance. An example of a composite indicator is “cold chain management assured” and a health facility must fulfill the following criteria in order to obtain a point: 1) Presence of a fridge; 2) Thermometer available and regular temperature control; 3) Temperature form available, filled twice a day, including the day of visit; 4) Temperature remains between 2 and 8 degrees Celsius in register sheet; 5) Supervisor verifies functionality of thermometer; 6) Temperature between 2 and 8 degrees Celsius also according to thermometer; 7) Temperature tag does not change color. In total X points can be obtained and the score is documented as the number of points obtained as a percentage of the total number of points that can be obtained. Technical quality evaluation of a health center may take 4 to 6 hours. At the end of technical quality review, the supervision team (District Medical Team) organizes a feedback meeting with the staff to share the strengths, weaknesses and recommendations for improvement of the health facility.

- *Perceived quality (community perception)*

Even if the government’s norms and standards are met, this does not automatically mean that clients are also satisfied with the quality of the services offered. An evaluation of the quality of services as perceived by the beneficiaries is carried out quarterly by local associations, using a questionnaire, under the supervision of PPA. A sample of 44 patients who received health care in each health facility during a given quarter is randomly chosen in registers. Interviewers from local associations then use identification information collected in the

Textbox 2: Measuring the perceived quality score

At the end of each quarter, a sample of 44 patients per facility is drawn by the PPA. The sample contains patients who visited the health facility during the quarter for any of the services covered under the performance contract. Questionnaires containing information that will help to identify the randomly selected patient in the community (name, location, phone number of patient or contact person) are given to members of a local association who will go in the community for two objectives: 1) identify if the patient exists and has indeed visited the health facility for the given period; and 2) collect information on the perception of this patient concerning the services received. After collecting information, the local association submits the questionnaires to the PPA. The PPA verifies the information with their sampling list in order to validate whether the patient has been identified correctly. If not, the questionnaire is rejected and the patient is considered as ‘not found’. The second step is the analysis of the validated questionnaires. Five indicators are used to evaluate the community perception of the quality of care: 1) the way the patient was received; 2) waiting time; 3) availability of drugs prescribed; 4) the perception of the costs; and 5) the place of payment (to the cashier or to health personnel) in order to evaluate potential corruption.

register to find patients in the community for interviewing. This community evaluation have two main objectives: (i) Verify that patients declared by health facilities have really been in that health facilities during that period and have received health care; and (ii) Evaluate their perception of the quality of health care they received.

- **The implication of private providers in the referral and counter referral system of patients between Health centers and Hospitals at the operational level.**

To evaluate to what extent contracted private providers collaborate at the operational level with public and faith-based hospitals for patient referrals, we analyzed the number of patients referred from private health centers to hospitals, which mainly public or faith based (there was no private hospital offering complementary package of health care in the project zone) and those counter referred by hospitals to health centers.

Study design

The study was conducted retrospectively. Data collected on the number of services delivered, the technical quality of these services, and their quality according to the patients at their entrance in the project since Q1 2011, served as baseline data. Data collected during the second quarter of 2013 (Q2 2013) in the same health facilities was used as end line data in this analysis. Comparisons were made between baseline and end line data in public, faith-based and private health facilities.

Data collection

The data used for this assessment was extracted from the routine PBF data. A special feature of the PBF project is that results declared by the health facility are all verified and validated by the independent PPA on a monthly basis at the level of the health facility and quarterly at households' level by community based organization (CBOs). This validation, verification and contra-verification makes PBF data is highly reliable.

Sampling

Our sample included health facilities that signed performance contracts with the PPA since the beginning of the project in 1st quarter 2011 until the 2nd quarter of 2013, having spent at least 3 quarters in the project and have not dropped out of the program or been suspended. We assess the evolution of total number of private health facilities that signed a performance contract each quarter. Only health facilities contracted for minimum package of services (primary care centers) were included. We also assessed the evolution of the package of services provided and the number of beneficiaries; the quality of the services provided; and the number of patients referred to hospitals by contracted health facilities.

Data analysis

PBF data in Cameroon is recorded and saved in a web Database (www.fbrcameroun.org) after validation and cannot be changed after publication. After exportation to Excel. EPI INFO Software was used for data analysis. The Student t-test was used to analyze continuous data when the distribution was normal. In case of abnormal distribution the non-parametric test (Wilcoxon - Mann-Whitney test) was used. A Chi-squared test was used to compare proportions. When conditions to use a Chi-squared test were not fulfilled; Fisher's exact test was used.

Ethical clearance

The information for this study derived from an existing database; no primary data was collected. Patient information in this database is anonymous. Verifiers from the PPA, who verify the data in registers before it is entered in the database, are nurses who took an oath to keep the patient information confidential.

RESULTS

Health facilities included in the study

Figure 1 below shows the evolution of the total number of contracted facilities per quarter per type of facility until the 2nd quarter of 2013, which is the 10th quarter of the project. Each quarter facilities may be suspended for poor performance or cheating and new facilities can be contracted. From all health facilities included in this analysis, 66 have fulfilled our study criteria (have already spent at least nine months in the project and has never been suspended).

Table 1 below shows the starting quarter of these 66 facilities in the project.

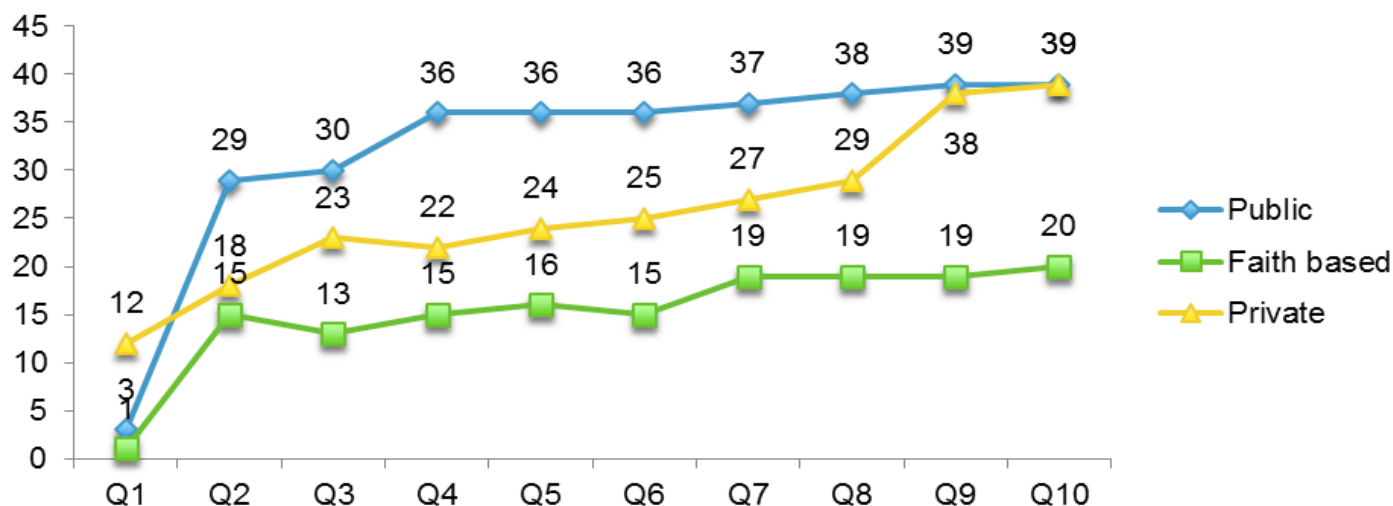


Figure 1 Evolution of the number of health facilities in Littoral (by status) that signed contracts with the PPA between the Q1 2011 (Q1 of project) and the Q2 2013 (Q10 of project).

Sixty-six (66) health facilities spent at least nine months in the project without interruption before the 2nd quarter of 2013. These health facilities entered the project at different times. The first 11 health facilities included in this study started the project during Q1 2011. Thirty-seven started during Q2 2011, six during Q3 2011, one during Q4 2011, two during Q1 2012, and nine during Q3 2012. Table 1 below shows the repartition of these health facilities among public, private and faith-based.

Table 1 Starting date in the PBF project for the different types of health facilities included in this study

Status	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	TOTAL
Public	3	18	4	1	0	0	2	28
Faith-based	0	11	0	0	0	0	3	14
Private	8	8	2	0	2	0	4	24
TOTAL	11	37	6	1	2	0	9	66

(cumulatively N=66)

During Q1 2011, the project started in the Cite des Palmiers health district. The project was scaled up in Q2 2011 to the 3 other districts (Edéa, Yabassi, Loum). That explains why the maximum of health facilities in our study started at Q2. By Q2 2013, 16% of the public and 12% of the faith-based health facilities in the four districts had not yet joined the project, even though all public and faith-based health facilities were automatically eligible for the project at the beginning. Although private health facilities were the majority among those already in the project, 83% of them were still not included in the project. The reason for this was that many of them did not have an authorization by the Government which was one of the criteria for eligibility (less than 30% of the private health facilities are legally approved). Some were afraid that something was hiding behind this sudden generosity of the government and the invitation to participate in such project.

Package of services provided by the contracted providers

In the beginning of the project, many private health facilities were not offering preventive services, but with the introduction of PBF and the signing of contracts between the PPA and private providers, some started offering preventive activities like Prevention of Mother to Child Transmission and family planning. Private facilities significantly increased the provision of these preventive services to the population as shown in the table below.

Table 2 Comparison of proportion of private as well as public and faith-based facilities that offered preventive services (PMCT, Family planning) at their entrance in the project and the 10th quarter of the project

Health facility	Number of HF included in the study (N)	At the entrance (absolute and relative)	Q10(absolute and relative)	Difference in proportion offering the service	Probability (p)
Number and proportion of health facilities offering PMTCT					
Public	28	10 (36%)	15 (54%)	5 (+18%)	0.183
Faith-based	14	3 (21%)	4 (29%)	1 (+7%)	0.668
Private	24	1 (4%)	9 (38%)	8 (+33%)	0.005*
TOTAL	66	14 (21%)	28 (42%)	14 (+21%)	0.009
Number of pregnant women living with HIV put on prophylactic ARV in included health facilities (N=66)					
Public	28	48	71	23 (+48%)	0.212
Faith-based	14	6	8	2 (+33%)	0.650
Private	24	3	24	21 (+700%)	0.006*
TOTAL	66	57	103	46 (+81%)	0.011
Proportion of health facilities offering family planning services (N=66)					
Public	28	7 (25%)	28 (100%)	21 (+75%)	0.000*
Faith-based	14	1 (7%)	6 (43%)	5 (+36%)	0.320
Private	24	4 (17%)	22 (92%)	18 (+75%)	0.000*
TOTAL	66	12 (18%)	56 (85%)	44 (+67%)	0.000
Number of clients on contraceptive pills and injectable in included health facilities (N=66)					
Public	28	71	1150	1079 (+1519%)	0.000*
Faith-based	14	3	75	72 (+2400%)	0.068
Private	24	21	361	340 (+1619%)	0.000*
TOTAL	66	95	1586	1491 (+1596%)	0.000
Number of clients on intra-uterine devices and implants in included health facilities (N=66)					
Public	28	9	82	73 (+811%)	0.026*
Faith-based	14	0	79	79	0.150
Private	24	17	144	127 (+747%)	0.000*
TOTAL	66	26	305	279 (+1073%)	0.004

*P Value Statistically Significant

The proportion of HF in the study that were providing PMTCT services increased significantly. This increase was most significant for the private health facilities, which showed an increase from 4,2% to 37,5%. The service utilization rate increased as well. The number of HIV-positive pregnant women on prophylactic ARV increased significantly (eight times) in private health facilities. In public and faith-based facilities the increase was not statistically significant.

The proportion of health facilities offering family planning increased significantly for private and public health facilities. Faith-based facilities in Littoral, mainly dominated by catholic facilities , did not provide family planning services for religious reasons.

The table shows that the largest relative increase was found in the number of clients using modern and reversible family planning through pills, injectable, intrauterine devices and implants. This increase was significant in private and public facilities. In the faith-based facilities the increase was considerable as well, even though not statistically significant.

This data demonstrates that before introducing PBF, the MOH mainly relied on public and faith-based facilities to deliver preventive and promotional health care like PMTCT and family planning to the population. Private health facilities did not provide these services even though they are the predominant providers in urban areas. With the introduction of PBF, private providers with the support and supervision of the district medical team started reorganization in order to be able to offer preventive services.

Quality of the services provided by the contracted providers

As shown in Table 3 below, the technical quality of care (TQC) offered to the population in Littoral before introducing PBF was poor in private as well as in public and in faith-based health facilities.

Table 3 Mean technical quality of care score before the entrance in the project and at Q10 of PBF in private as well as in public and faith-based health facilities

Status of Health Facility	No of Health facilities	Mean TQC before the entrance	Mean TQC at Q10	P- Values
Public	28	15.3%	67.3%	0.000*
Faith-based	14	17.9%	63.2%	0.000*
Private	24	12.6%	61.7%	0.000*
Total	66	14.9%	64.4%	0.000*

* Significant change

There was a significant improvement in the main TQC scores for all three types of providers. This can be explained by the fact that since the inception of PBF and the establishment of performance contracts between providers (private, public and faith-based) and performance contracts between Regulators (Regional Health Delegation and District Medical Teams) and the PPA, supervision has changed. It is more regular (each quarter) and is carried out more effectively with appropriate tools (technical evaluation checklist) in private, public and faith-based health facilities. Also, private health facilities now see supervision as supporting activities that help them not only to improve but also to become aware of norms and guidelines of the Ministry of Health, at the same time with public health facilities. Previously, the DMT did not see supervision of private health facilities as part of their work, and private facilities also did not accept supervision from the DMT. Supervision delivered in public health facilities before PBF was not regular, lacked appropriate tools, was not effective, and did not improve the quality of health care.

Community evaluation of health care provided

An evaluation of the quality of services as perceived by the beneficiaries is carried out in a sample of 44 patients per HF on a quarterly basis, drawn by the PPA. The sample contains patients who visited the health facility during the quarter concerned for any of the services covered under the performance contract. Interviewers from local associations go into the community to find patients selected from registers and ask questions on how they perceive the quality of health care the received in the health facilities. A questionnaire with standardized questions is used. Table 4 shows the number of patients drawn quarterly and the number of these patients that were subsequently found in the community.

Table 4 Proportion of patients found in the community and their perception of the quality of health care received

Type of Health facility	Number of health facilities	At the entrance		Q10 of PBF		Difference	Probability (p)
		Number	Proportion (%)	Number	Proportion (%)		
Number of Patients drawn (reported?) and Proportion found in the community (verification)							
Public	28	940	38%	1232	82%	44%	0,000*
Faith-based	14	439	41%	616	76%	35%	0,000*
Private	24	834	28%	1056	77%	49%	0,000*
TOTAL	66	2213	35%	2904	79%	44%	0,000*
Number of patients interviewed and proportion of those who perceived the (overall?) quality of reception was good							
Public	28	352	93%	994	98%	5%	0.000*
Faith-based	14	166	98%	451	98%	0%	0.887
Private	24	217	93%	777	99%	6%	0.000*
TOTAL	66	735	94%	222	98%	4%	0.000*
Number of patients interviewed and proportion of those who perceived the waiting time was reasonable							
Public	28	352	88%	982	95%	7%	0.000*
Faith-based	14	166	95%	451	94%	-1%	0.953
Private	24	352	88%	982	95%	7%	0.000*
TOTAL	66	735	90%	2209	96%	6%	0.000*
Number of patients interviewed and proportion who found all drugs prescribed at the pharmacy of the health center							
Public	28	274	77%	696	82%	5%	0.051
Faith-based	14	125	90%	321	84%	-6%	0.087
Private	24	160	59%	531	70%	11%	0.013*
TOTAL	66	559	75%	1548	78%	3%	0.032*
Number of patients interviewed and means cost paid per patient in FCFA (declaration of patients)							
Public	28	296	12652	784	10482	-2170	0.492
Faith-based	14	146	13951	362	18073	4122	0.185
Private	24	185	31489	599	22798	-8691	0.261
TOTAL	66	627	18512	1745	16284	-2228	0.785
Number of patients interviewed and proportion of those who perceived the costs of health services as high							
Public	28	296	25%	784	26%	1%	0.819
Faith-based	14	146	35%	362	31%	-4%	0.454
Private	24	183	29%	599	24%	-5%	0.138
TOTAL	66	625	29%	1745	26%	-3%	0.260
Number of patients interviewed and proportion of those who paid all their bills to the cashier at the health center							
Public	28	305	72%	784	88%	16%	0.000*
Faith-based	14	146	90%	362	94%	4%	0.099
Private	24	183	80%	599	96%	16%	0.000*
TOTAL	66	634	79%	1745	92%	13%	0.000*

* Statistically Significant

Some of the patients interviewed could not answer every question as they were not related. For example, questions on the perception of cost or the availability of drugs were not appropriate for a mother who was in the health facility to vaccinate her child. Vaccinations are made free of charge and drugs are not prescribed to children after the procedure. The proportion of patients interviewed during community evaluation significantly improved in all types of facilities. The greatest increase was among private health facilities.

Low proportion of patients interviewed at the beginning was due to poor registration and over-declaration. The quality of data recorded in registers was very poor because there was no incentive to appropriately document information about services provided. After signing the first contract in the project, private facilities started to register all patients received, but also over-declared in an attempt to receive higher subsidies. They continued to have challenges with the registration because they did not yet receive verification and guidelines on how to do it well, and some registration lacked information to validate.

Five indicators were used to evaluate the community perception of the quality of care among the patients interviewed: 1) the quality of reception; 2) waiting time; 3) availability of drugs prescribed; 4) the perception of the costs; and 5) the place of payment (to the cashier or to health personnel) in order to evaluate potential corruption.

Perception of the quality of reception significantly improved in private and in public health facilities. This indicator was already high in the faith-based health facilities and did not change significantly. It should be noted, though, that the reception was already regarded to be of good quality before - is subjective appreciation of those who attended the health facilities.

Perception of the waiting time significantly improved in private and public health facilities. This was already the case in the faith-based health facilities and did not change significantly. The proportion of patients who found all the drugs prescribed in health facility pharmacies increased significantly in private health facilities. This was due to the fact that with the help of PBF private providers now had the right to purchase generic drugs at the same source as public and faith-based facilities, which was not the case prior to the project. In public and faith-based health facilities, the increase was not statistically significant.

The average cost paid by the population decreased in private and public facilities, while it increased in faith-based facilities. These differences were not statistically significant. Costs decreased because with PBF, health facility managers acted as rational economic agents. The project expected that good managers of health facilities would reduce the prices in order to increase utilization, resulting in higher PBF subsidies.

The proportion of patients who perceived that the costs of health services were high declined slightly in faith-based and private facilities and slightly grew in public health facilities. These changes however were not found to be significant. This was a subjective perception – it was about the perception people had on the cost. The perception of the cost may be influenced by the quality of health care received.

The proportion of patients who paid all their bills to the cashier at health centers significantly increased in private and public health facilities. The increase was not significant in faith-based health facilities as it was already high at the baseline. This result captured a reduction in under-the-table payments by providers.

Referral of patients to hospitals

Table 5 Quarterly Referral of patients from PHC facilities to a hospital at the entrance and at Q10 of PBF

Status of Health Facility	Number of health centers	Number of cases referred by Health Centers to Hospital at entrance	Number of cases referred Health Centers to Hospital at Q10 of PBF	P- Values
Public	28	5	234	0.001*
Faith-based	14	1	50	0.029*
Private	24	10	63	0.013*
Total	66	16	347	0.000*

* Statistically Significant

Table 5 shows that the number of (registered) cases referred to the hospital per quarter significantly increased in private, public and faith-based health facilities.

Table 6 Counter referral of patients from hospitals to health centers before and after the introduction of PBF

Status of HF	No of Hospital	No of Counter referral cases at entrance	No of Counter referral cases Q10 of PBF	P- Values
Faith-based	4	0	123	0.047*
Public	3	0	212	0.037*
Private	0	0	0	N/A**
Total	7	0	335	0.009*

* Statistically Significant

** Private referral hospitals do not exist in the PBF project (see Table 3).

The results show that since the introduction of PBF (the registration of) counter referrals from public and from faith-based hospitals back to public, private and faith-based primary health centers increased significantly from 0 to 335. Despite the fact that there were no private hospitals, public and faith-based hospitals that received patients from private health centers, they could do counter reference to the private health facilities where the patients originated from.

DISCUSSION

PBF improved the quality of data for monitoring and evaluation (M&E)

The data used for this study was obtained from the database of the PBF project in Littoral Region. Contrary to data from National Health Information Systems the quality of which is doubtful, PBF data is verified and validated. The process of verification and validation were audited by internal and external auditors from the MOH and the World Bank. So, the quality of PBF data used for this study is correct – this shines a new light on an old discussion: the costs and benefits of impact evaluations. One of the arguments to carry out costly impact evaluations on health interventions through primary data collection (e.g. at household level) is that secondary data collection based on H/MIS data bases is not reliable. PBF databases are far more likely to be reliable and additional costs required are far less than in the case of an impact evaluation (IE). This does not mean that IE would not be longer necessary in the case of PBF, but less IE can be carried out: PBF data is available to generate lessons learnt, track processes and examine the effectiveness of PBF. However, this type of M&E lessons on *why and how* it works require additional qualitative research.

PBF improved contracting and regulation of the private sector

The PBF program has been able to contract all 3 types of providers under the same conditions. Findings from this study reveal that PBF helps to regulate private health facilities through contracting and verification, and align private providers to public health goals by encouraging them to provide preventive and promotional services needed to attain these goals. This is particularly true in urban areas, where most private facilities are found. Before the introduction of PBF, regulation and supervision of private providers did not seem to be the priority of District Medical Teams, because government used only public and faith-based providers to deliver preventive and promotional health care to the population. Before PBF, inputs from the MOH for these activities were also given predominantly to public and faith-based providers.

The role of improved supervision, monitoring and evaluation in improving the quality of care under PBF in Cameroon

Before PBF the quality of care in Cameroon was quite low, even though faith-based and public health care providers received some kind of supervision. Supervision in public and faith-based facilities was not well organized, not well implemented, not regular and did not focus on the quality of services provided. Our study shows that after the introduction of PBF, the (reported) technical quality of health cares improved significantly in all types of facilities in the Littoral Region of Cameroon. A main factor in this could be the quality of supervision that is specific to PBF. Supervision in PBF focuses on quality of health care and on the indicators of the minimum and complimentary package of activities and carried out quarterly in each health facility. With a checklist of many composite indicators, the supervision team goes through norms and standards of each service of the health facility. After each supervision session, recommendations are made, and the next supervision begins with the evaluation of recommendations of the previous supervision. In PBF, the quality scores received by the health facility after supervision are used to calculate subsidy payments. In other words: respecting the quality of care criteria (or not) has financial consequences.

The study also found that before the introduction of PBF, the number of cases referred from health centers to district hospitals, as well as the number of cases counter-referred from hospitals to health centers were very low. There was inadequate collaboration in terms of referral and counter referral between health centers offering the minimum package of activities (MPA) at the primary level, and hospitals offering the complementary package of activities (CPA) at secondary level. This type of collaboration was even weaker between private facilities and public health hospitals, with facilities in competition for patients. Each health facility tried to solve the problem of patients it received on its own. As a result, patients were kept in health facilities for too long and without major health improvements. This causes delays in adequate treatment of patients and could result in poor recovery and even deaths in some cases.

With the coming of PBF at the operational level, public, private and faith-based sector facilities received an opportunity to sit and discuss referrals with the district medical team and the PPA during quarterly evaluation meetings. This led to the establishment of an effective referral mechanism and resulted in knowing each other better and developing referral and counter referral pathways for patients. First, each health facility involved received corresponding subsidies from the PPA for referral and counter referral. Secondly, they ceased to talk negatively about each other because they now had a common patient-oriented focus and operated respecting the norms, standards and protocols of health care of the MOH under the technical supervision of the DMT and Regional Delegation of Public Health as regulators. This collaboration contributed to improved referral and counter-referral practices within health districts, increasing the probability of better outcomes for the referred cases, and reducing the number of avoidable deaths. Further research could focus on the impact of improved referral mechanisms on patient outcomes.

Does the provision of services by the private sector improve quality of care and service utilization?

Some studies show that private health facilities become the first choice for the majority of population in primary health care in some developing countries (16, 17, 18, and 19). In Vietnam this choice was motivated mainly by perceived better quality of care; clients who reported seeking care at both a public and private facility were more satisfied with the latter (22). Some studies show that the public sector appears to lack hospitality towards patients (20). The baseline study of PBF in Littoral region of Cameroon showed that the quality of health perceived by the population was less in public health facilities than in private and in faith-based facilities (8). The present study shows that the perceived quality of reception and of the waiting time has improved in private and in public health facilities. No change was observed in faith-based facilities. Before the beginning of PBF, 98% patients noted that the quality

of health care was already good in faith-based facilities (8).

Attractiveness of a contract between the public and the private sector

Contracts between private providers and the Government through the PPA, created a win-win relationship. On one hand, private facilities in the project had the opportunity to benefit not only from PBF subsidies received according to their performance but also from supervision and coaching done by DMT and PPA, who assisted them in raising awareness about updated norms and standards of the MOH. This knowledge allowed them to build staff capacity and to improve their management skills. They also received free inputs of health programs like vaccines, vitamin A, ARV drugs for PMTCT for the patients from the government. PBF contracts also gave them the right to purchase generic medicines at cheaper prices from the government wholesalers. Before PBF private health facilities did not have the right to buy generic drugs from the national pharmaceutical wholesaler, and the public health facilities did not have the right to buy drugs elsewhere than national pharmaceutical wholesaler, even if there was stock out of medication. With the coming of PBF, private providers are now able to purchase generic medical products from the national pharmaceutical wholesaler². Results from patient interviews done by local community based organizations assist the private providers to know what patients want and what they have to do to improve the quality of care, keep their clients, receive more new clients and greater incentives.

On the other hand, contracting private providers through the PBF system helped the Government to improve the quality of health care in these facilities, reducing health risks to the population, and offering a wider variety of providers (infrastructures, equipment, and personnel) available for the population. Private providers were found to be highly receptive to quality improvement recommendations and willing to invest in human resources, equipment, infrastructure and organization of services to improve on the quality of care rendered to the growing population in urban areas and beyond. This gives the opportunity to the government to increase availability of health resources in urban areas, without a need to build new infrastructures.

Findings of our study show that PBF can push existing private sector to improve quality of care and to expand their package of services to include preventive and promotional health care. This is how PBF has developed public-private collaboration. Private providers who signed performance contracts have not only improved the quality of health care, but have also expanded their package of health care, by introducing preventive health care like family planning and PMTCT. It has been suggested that strategies to improve quality of care can raise demand for services, and thereby expand access (21): higher quality of care will attract more patients.

Some authors say that a critical challenge for PPP is to convince the public sector workers to accept and support private sector participation (22). This has also been the case in Cameroon before the introduction of PBF. Public facilities were reluctant to collaborate with private facilities. Some of their personnel even scolded patients when they told them that they had sought care in a private health facility prior to coming to public facilities.

Did PBF also improve the partnership between the public and the private sector?

Prior to PBF, the only existing PPP in Cameroon was between the public and faith-based sectors and was not results-oriented. The impact of these previous partnerships remains questionable. With the coming of PBF, PPP was extended to include the private for-profit sector, adhering to the PBF Principle “*Promote public-private partnerships with the same contract for public, religious and private providers*” (11). In Littoral Region where for-profit providers are predominant, private facilities joined the project progressively. Almost all public and faith-based providers that existed in the project districts had already joined the project from the start.

The fact that public and faith-based providers joined from the start was because they often worked with the MOH and were not reluctant to join the project – contrary to private providers. Many of these for-profit facilities did not function according to the norms and standards put in place by the MOH, and were not able to fulfill mandatory conditions (having administrative documents for creation and functioning) necessary to join the project at the beginning.

² On the other hand public health facilities can purchase medication from accredited private pharmaceutical wholesalers that are supervised quarterly by pharmacists from the Regional Delegation of Public Health. The quality and quantity of medical drugs available are controlled by DMT quarterly in both private and public health facilities.

Some were not willing to join the project, because they were not sure to be paid by the government and were afraid that something could be hidden behind this project. But when a few of them “took the risk” of signing a contract with the project and started to receive funds and supervision, with improvement in quality and encouraging results – trust increased and those who were reluctant before, became highly enthusiastic to join the project. The desire to join the PBF project encouraged them to make the effort, with the support of DMT, to fulfill the required conditions.

The reason why not all for-profit facilities entered into performance contracts was because many of these health facilities were functioning illegally and many of them did not even have adequate infrastructure to be considered as health centers. Several private health facilities refused to join because they were afraid that, since it was a government project, the true level of service delivery would be revealed and they would not be able to avoid paying taxes. Contrary to initial expectations, there was no problem with the attractiveness of indicators among private providers.

In the second quarter on 2013 (Q10 of the project), private facilities were dominant in the project, and the potential to increase their number still exists. There is a need for the MOH to collaborate with private for-profit providers, and that is possible through PBF as a “strategic purchaser” of the Government’s priority services. PBF also mobilizes somewhat dormant resources (like infrastructures, equipment and personnel) available in the private sector, which are not performing according to their potential. These changes will help to improve the availability and quality of health services for the population, particularly in urban areas where the private sector is playing a crucial role.

CONCLUSION

Our study revealed that PBF is an effective mechanism to reinforce public-private partnerships in the health sector and to motivate private providers to improve the quality of health care, to collaborate with public and faith-based facilities for effective referrals and counter referrals of patients and to provide preventive and promotional health care that is essential for public health goals leading to Universal Health Coverage. This provides an opportunity for the government to regulate the private sector and to use it in order to increase health resources available for the population in urban areas. Policy makers in Cameroon and other developing countries should therefore consider using PBF as a strategy to enable and strengthen public-private partnerships within the health care system where private health sector is gaining grounds – to regulate and align the private health sector with the public health goals nationwide.

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ANNEXES
AAP/FSPSL

FICHE DE DECLARATION/VALIDATION DES PERFORMANCES REALISEES PAR LA
FORMATION SANITAIRE PMA SOUS CONTRAT AVEC L'AAP/FSPSL

District de santé	
Aire de santé	
Nom de la formation sanitaire	
Adresse	
Période (mois)	

N°	Services à contracter Indicateurs	Performance du mois				Prix Total
		Nbre déclaré	Nbre validé	% d'erreur	PU	
	PMA de Base					
01	Nouvelle consultation curative - médecin (nvx cas)				650	
02	Nouvelle Consultations curative -infirmier (nvx cas)				200	
03	Nle Consultations curative infirmier/médecin-épidémie, gratuité				1000	
04	Journée d'hospitalisation				400	
05	Journée d'hospitalisation -épidémie, gratuité				1500	
06	Petite chirurgie				1500	
07	Références arrivé à l'hôpital				1500	
08	Dépistage des cas TBC positifs par mois				10000	
09	Nombre de cas TBC traités pendant un semestre et guéris				20000	
10	Enfants complètement vaccinés				2500	
11	VAT2 ou VAT3 ou VAT4 ou VAT5				1500	
12	Inspection des ménages :				2500	
13	Distribution Vit A				20	
	SANTE REPRODUCTION					
14	Accouchements eutocique				2500	
15	PF : Nouvelles ou Ancienne acceptantes pilules ou injectables				1200	
16	PF: Implants ou DIU				3000	
17	Curetage après avortement spontané(ou indication médicale)				3500	
18	CPN 1ou CPN2 ou CPN3 ou CPN4				500	
19	TPI1 ou TPI2 ou TPI3				500	
	PMA VIH/SIDA					
20	Cas IST traité selon protocole				400	
21	Dépistage volontaire du VIH/SIDA y compris femmes enceintes				1000	
22	Femme enceinte VIH + mise sous prophylaxie ARV				7000	
23	Prise en charge du nouveau né d'une femme VIH +				7000	
	Total 1					
	Prime d'équité					
	Total 2 = total 1 + prime d'équité					
	Bonus qualité = total 2 x 30% x _____ %					
	Total général = total 2 + bonus Qualité					
	Montant Total en lettres					

N B : % d'erreur > 10% ou < -10% annule l'indicateur

Déclarée à _____ le _____

Responsable de la formation sanitaire

Vérifiée à _____ le _____

Vérificateur d'AAP

Responsable de la formation sanitaire

Validée le _____

Manager Adjoint

**FICHE DE DECLARATION/VALIDATION DES PERFORMANCES REALISEES PAR LA
FORMATION SANITAIRE PCA SOUS CONTRAT AVEC L'AAP/FSPSL**

District de santé	
Aire de santé	
Nom de la formation sanitaire	
Adresse	
Période (mois)	

N°	Services à contracter Indicateur	Performance du mois				
		Nbre déclaré	Nbre validé	% d'erreur	PU	Prix Total
	SERVICE CURATIF					
1	Nouvelles consultations curative par médecins			650		
2	Nouvelles consultations curative par médecins épidémie, gratuité			1000		
3	Journées d'hospitalisation			600		
4	Journées d'hospitalisation épidémie, gratuité			1.500		
5	Contre référence arrive au CS			800		
6	Cas IST traités selon protocole			400		
7	Dépistage des cas TBC positifs			10.000		
8	Cas TBC traité et guéris			20.000		
9	Actes Chirurgie Majeure en dehors des césariennes			10.000		
10	Petite chirurgie			1.500		
11	Transfusion Sanguine			1.500		
	SANTE REPRODUCTION					
12	Accouchement eutocique			2.500		
13	césariennes			12.000		
14	Accouchement dystocique- ventouse, forceps			8.000		
15	PF: Implants ou DIU			3.000		
16	PF nouveaux ou anciennes acceptantes pilules ou injectables			1.200		
17	PF : méthode définitive –vasectomie ou ligature des trompes			12.000		
18	Curetage après avortement spontané(ou indication médicale)			3.500		
19	CPN1 ou CPN2 ou CPN3 ou CPN4			500		
20	TPI1 ou TPI2 ou TPI3			500		
	VIH/SIDA					
21	Dépistage volontaire du VIH/SIDA y compris femme enceinte			1.000		
22	Femme enceinte VIH+ sous protocole ARV prophylaxie			7.000		
23	Prise en charge du nouveau-né d'une femme VIH +			7.000		
24	Nouveaux cas de VIH mis sous ARV			2.000		
25	Patients sous ARV suivis semestriellement			12.000		
	Total 1					
	Prime d'équité					
	Total 2 = total 1 + prime d'équité					
	Bonus qualité = total 2 x 30% x _____ %					
	Total général = total 2 + bonus Qualité					
	Montant Total en lettres					

N B : % d'erreur > 10% ou < -10% annule l'indicateur

Déclarée à _____ le _____

Responsable de la formation sanitaire

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Vérifiée à _____ le _____

Vérificateur d'AAP

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Responsable de la formation sanitaire

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Validée le _____ **Manager Adjoint**