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Performance-Based Financing, a Successful Approach to Improve the Involvement of Private Health Structures in Primary Health Care Delivery, Case of the Koulikoro Region in Mali

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Abstract **Original Research Article**

Introduction **:** Since 2020, Mali has been implementing a performance-based financing (PBF) program to reform its health financing approach as part of its march towards universal health coverage, one of the Sustainable Development Goals. A key feature of this program is the inclusion of all types of health care providers, including private health facilities (FOSA). Four years after the implementation of this inclusion, this study was initiated to assess its influence on the level of certain services offered in the Koulikoro region. ***Study Methodology*** **:** This was a retrospective descriptive study of the data entered into the RBF Program Information Management Portal. ***Results*** **:** From 2020 to 2023, the proportion of 133 private health facilities in the program intervention area that were able to sign a performance contract increased from 29 to 77 percent, or 5 to 12 percent of the total number of contractors. The proportion of private sector prime contractors increased from 0 to 11 percent, which likely led to an increase in the proportion of private FOSAs applying more than 70 percent of the minimum package of activities (MPA) from 0 to 31 percent. During the same period, the number of private FOSAs declared in the national statistical yearbooks increased from 129 to 409 in the Koulikoro region. By the end of 2023, private FOSA accounted for up to 42 percent of consultations conducted by doctors at the ART level, 16 percent of first prenatal consultations before 4 weeks of pregnancy, 19 percent of the fourth prenatal visit before delivery, and 18 percent of deliveries attended by skilled personnel. The proportion of births assisted by private FOSA increased from 0 to 18 percent in 4 years, the proportion of adolescents placed on intrauterine implants/devices by private FOSA increased from 2 to 19 percent, and HIV testing among pregnant women increased from 1 to 15 percent. ***Conclusion:*** The implementation of results-based financing activities in private health facilities has improved some indicators while strengthening collaboration between government and private sector managers. Given the potential they offer and the significant resources at their disposal, better inclusion of private health structures will have a definite impact on improving the indicators of the Malian health system.

Keywords: RBF, private FOSA, LDC.

N.B.: FOSA refers to a health facility, CSCom to a community health center, and PMA, to a minimum package of care.

1. INTRODUCTION

In many parts of the world, particularly in Sub-Saharan Africa, the health needs of the population are not met because health and social services are not accessible or are of poor quality [1, 2]. Initiatives to improve the quality of these services, such as primary health care [1], and the Bamako Initiative (1987) have only partially addressed these problems [2, 3]. Other initiatives focused on the performance and accessibility of health services have helped develop strategies that can lead to quality services at lower cost, more accessible, equitable and sustainable [1-2]. This is the case of performance-based financing (PBF), which contributes to the good governance of health services. The desired effect of the PBF approach is to increase the coverage, utilization of health services, quantity and quality of care in health facilities (FOSA) [3]. The current approach developed in Mali [3] was implemented following two pilot projects (the first in 2012-2013 and the second in 2017).

The approach has set as a major objective to improve the inclusion of all health care delivery

structures while ensuring the improvement of the quality of their services. Four years after the implementation of this approach, it was useful to assess whether it was influencing the utilization of frontline health services.

2. BACKGROUND, RATIONALE, AND OBJECTIVES OF THE STUDY

The Bamako Initiative (IB), adopted in 1987 following a meeting of African Ministers of Health, aimed to improve access to primary health care by improving its quality (WHO, 1988). It was based on the quest for financial sustainability and equity of health services. Therefore, health facilities should offer a minimum package of activities to meet the basic health needs of the communities. Access to medicines and community participation were core principles [1]. Thus, health facilities should have generic essential drugs available to treat essential health conditions. The Bamako Initiative also advocated for community participation in health decision-making. Health committees, whose members are elected in their villages, are created. In several countries, it has also led to the implementation of a number of care activities (minimum care packages) aimed in particular at improving the care of mothers and children and combating endemic diseases. This includes immunization, primary health care provision, and the sale of generic drugs (essential medicines policy, aimed at facilitating access).

Recall that 1987 also saw the publication of an important World Bank paper that strongly influenced health reforms in the 1990s (Creese & Kutzin, 1997; Ridde, 2002) and advocated for direct payment by users and the role of the private sector: "Financing health services in developing countries: an agenda for reform".

In the wake of the implementation of this reform, the first private health structures appeared in Mali [7]. Over the past 30 years, these lucrative private health facilities have steadily grown in number and in the range of care offered, to the point of becoming a major player in the provision of care, particularly in cities. This development has been carried out in parallel with the growth of a strong community and associative network (CHCOm and mutual health insurance). As far as pharmaceuticals are concerned, the private sector largely dominates, accounting for approximately 80% of the sector's turnover [9]. In 2018, data from the Mali health information subsystem statistical yearbooks showed that private for-profit health facilities reported in DHIS2 accounted for 36 percent of health facilities [18].

According to the legislation in force in Mali, the categorization of private health facilities reveals two main categories: private non-profit health facilities (CSCOMs) and private high-risk health facilities (doctors' offices, medical clinics, sage's offices). - woman, health care practices). There are also medical polyclinics and surgical clinics depending on the nature of the treatment allowed.

Despite this range of providers, in 2018, more than 44 percent of Malians did not have access to basic health care within a 5 km radius of their place of residence [16-18].

To improve the geographical and financial accessibility of populations to quality health care, Mali has implemented a performance-based financing program since 2020 [3-6]. This program enshrines the principle of free competition between public and private providers for access to contracts for the implementation of minimum and complementary service packages. The minimum package of activities includes curative, preventive, and promotional care, also referred to as community health care in the RBF model developed in Mali. [3] This package is broken down into 51 indicators. These community-based activities are typically conducted by community health centers, which are private, not-for-profit health centers established to ensure continuity of care provision in the absence of public services. Unlike community health centers, lucrative private health facilities have traditionally been excluded from this scope as well as from much of the preventive care such as immunization. This provision, which excluded a large part of the population from the supply of certain services, was suspended under the RBF program [3].

Under this program, health facilities, providers of care, receive subsidies based on the type of contract signed (main contract or subcontract) in proportion to the quantity of services offered (quantity for each indicator multiplied by the agreed price unit) and the quality of their services [3]. In addition, each health facility that incorporates the approach receives, for its first six months of operation, two bonuses for improving the quality of its services for the purchase of small equipment and the recruitment of qualified staff shortages. One year after onboarding, each FOSA was also likely to receive 7 quality improvement bonuses based on the level of its quality score. In addition to these financial benefits, partner health facilities benefit from supervision visits, coaching and, above all, greater visibility in their home district. The program is also unique in that it fosters more contact between CSCOM managers, district management teams and for-profit private FOSA teams. CSCOMs that have signed more sub-contracts receive 10% of the subsidies from their partners to cover supervision costs. District management teams gain recognition and have a better understanding of their areas of responsibility. In addition, they collect supervision fees for all supervised contractors. In short, the relationship was mutually beneficial for all stakeholders.

In the Koulikoro region, from 2020 to 2023, several for-profit private health facilities were enrolled in

the performance-based financing (PBF) program according to the following criteria [5, 6]. The for-profit private health facility must be recognized by the health authorities, i.e., have a license to operate the private facility. (i) The for-profit private health facility must demonstrate its commitment to respect the package of care assigned to operating health facilities at their level through the existence of a collaboration agreement signed with the district management team responsible for its area of intervention; and (ii) Private for-profit health facilities must demonstrate their willingness to contract performance and their willingness to meet the requirements of the results-based financing program (iii).

At the start of the PBF program, the contracting and verification agencies carried out an almost exhaustive inventory of all health facilities to determine which ones conformed to PBF requirements. [3]

In addition, one of the justifications for implementing this PBF program is that the national health information system takes very little account of information from services provided by for-profit private health facilities.

After four years of program implementation, it became necessary to study the effects of integrating private health facilities into the PBF approach on the health system in general and on improving the delivery of health services in the minimum package of activities.

3. OBJECTIVES OF THE STUDY

Main objective: To assess the influence of the inclusion of for-profit private health structures on the level of services offered under the RBF program in the Koulikoro region from 2020 to 2023.

Specific Objectives

More specifically, the aim was to assess:

a) Evolution of the level of inclusion of private FOSA in the RBF program from 2020 to 2023.
b) The evolution of the contribution of for-profit private FOSA to certain indicators of the minimum package of activities of Mali's RBF program from 2020 to 2023.
c) Annual change in the number of private health facilities recognized by district management teams and reports in the National Health Information System (DHIS2).

4. METHODOLOGY

Type of study:

This was a retrospective and descriptive study of data entered the Results Based Financing (RBF) Program Information Management (RBF) Portal as well as the National Health Information System of the Health Information Management Platform (DHIS 2) from 2020 to 2023.

Methods and tools: The methodology consisted of:

- On the one hand, selecting the for-profit private health structures that signed a performance contract with the Contracting and Verification Agency (ACV) of the Koulikoro region from 2020 to 2023 and assessing their contributions to the evolution of six indicators: the use of curative consultation by a doctor(i), the use of prenatal consultations (ii), eutocic assisted births (iii), use of long-acting contraceptives among adolescents (iv), number of children fully and correctly immunized (v), HIV-AIDS testing among pregnant women (vi).

This choice of indicators was based on the types of usual care offered by for-profit private health facilities (curative care) and the priorities of the Malian health system (promotion of maternal, newborn, child, adolescent and nutrition reproductive health, and RMNCH nuts).

- Second, data on the evolution of the level of data reporting of all for-profit health facilities in the National Health Information System (DHIS-2) were analyzed.

Data from the PBF Portal and DHIS2 were analyzed on Excel sheets to produce pivot tables and graphs. For the evaluation of statistical inferences, Stata software was used.

Study period:

The study included data entered the portal from Q4 2020 to Q4 2023 as well as data entered DHIS-2 for the same period. The study took place from July to September 2024.

Study area: The study took place in the Koulikoro region, which is Mali's second administrative region, located in the center of the country. It covers an area of 90,120 km2 and has the city of Koulikoro as its capital. The total population was 5,418,305 in 2023 with a density of 60 inhabitants/km2 and an average annual growth rate of 4% between 1998 and 2009.

The Koulikoro region is bordered to the north by Mauritania, to the west by the Kayes region, to the south by Guinea and the Sikasso region, and to the east by the Segou region. Together with the regions of Mopti and Ségou, it forms what is commonly referred to as central Mali.

In the area of health, it should be noted that the health and population sector policy adopted by the Government of Mali in 1990, based on decentralization of access to care and community participation, provided for a health care system with three levels of support. In Koulikoro, the situation is as follows:

The operational level with its two levels, which are:

- The first tier was composed of functional CSComs (289) in 2023, which offered the minimum package of activities (MPA) as well as faith-based health parastatals (4), army health services (2), rural dispensaries/maternity clinics (541), CHW centers (1276), school infirmaries (14) and other private health facilities (261). Data from all these service providers are aggregated with the parent CSCom in DHIS 2.
- The number of second- or first-level health facilities handling referrals from first level was 10 in 2023.

- The intermediate level is composed only of the regional health directorate in collaboration with the district-based health management teams. The only regional hospital under construction is not yet completed.
- In addition, the region is home to the University Hospital of Kati, the 3rd referral health center.

The main health indicators achieved in 2023 are:

- The number of functional CSComs as of December 31, 2023: 289 compared to 226 in 2020.
- Accessibility to CSComs within a radius of 5 km: 56% compared to 52% in 2020.
- Accessibility to CSComs within a radius of 15 km: 91% vs. 89% in 2020.
- The percentage of health districts that have organized the transfer/evacuation has reached 100% since 2017.
- The ratio of qualified health personnel per capita: 5 with 1947 health workers, including 342 doctors (and 77 specialists) compared to 1651 in 2020,
- The proportion of CSComs receiving medical treatment: 36% compared to 34% in 2020.
- The proportion of CSCOMs with a midwife: 98% compared to 13% in 2020.
- BCG coverage rate for children under one year old: 113 percent compared to 115 percent in 2020.
- PENTA3 coverage rate for children under one year of age: 111% compared to 104% in 2020.
- VAR coverage rate for children under one year old: 110% vs. 93% in 2020.
- Coverage rate of CPN1 (use of CPN services): 90% vs. 82% in 2020.
- Effective antenatal care coverage rate from 30% in 2020 to 50%
- Effective antenatal care coverage rate from 30% in 2020 to 50%
- The rate of coverage of assisted deliveries: 75% compared to 71% in 2020.
- Use of curative consultation: 0.46 NC/year/Hbt vs. 0.07 NC/year/Hbt in 2020.
- Contraceptive prevalence 34% compared to 31% in 2020.

Figure 1: Health map of the region in 2023

Inclusion criteria:

Private FOSAs with operating licenses with qualified personnel and whose managers have signed the performance contract with the manager of the Koulikoro ACV.

Criteria for non-inclusion:

Private FOSAs that do not have operating licenses and whose managers have not signed the performance contract with ACV. Health facilities will be health care delivery centers. This provision excludes licensed pharmacies and wholesalers that were also involved in this program.

5. RESULTS

Since the program started its activities in the 4th quarter of 2020, the data studied in this study will be those of the 4th quarters of the four years of RBF program implementation. In this study, the term private FOSA refers only to for-profit entities.

In an impact evaluation conducted as part of the RBF program, 35 percent of health areas and their health facilities were included in a control group that did not benefit from the interventions.

Despite this size limitation, the inclusion of private FOSA in the RBF program has evolved as follows:

Integration of private health facilities into the RBF program

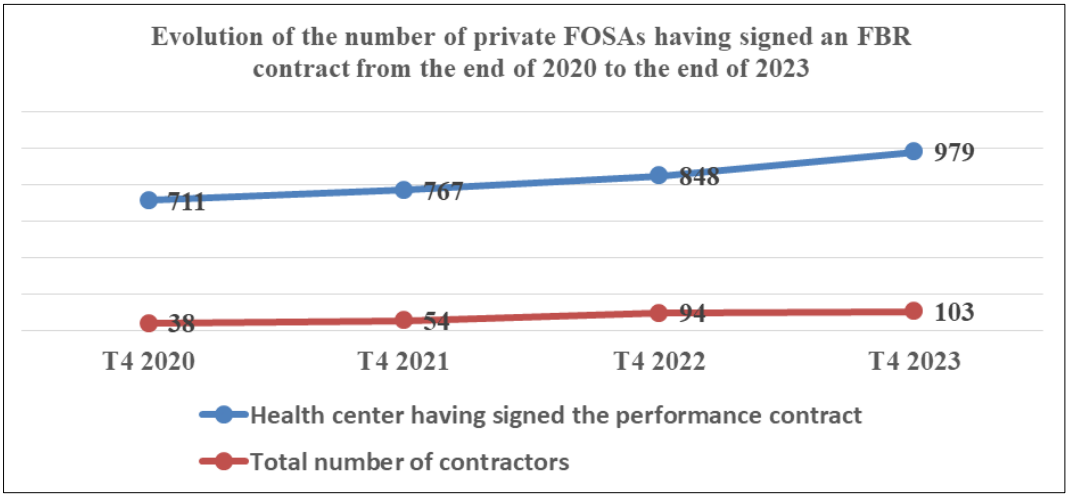

Figure 2: Evolution of the number of for-profit private FOSAs that joined the RBF program from 2020 to 2023.
Source: Mali RBF Portal

From 2020 to 2023, the proportion of 133 private health facilities that were able to sign a performance-based contract increased from 29 percent to 77 percent, or 5 to 12 percent of the total number of contractors, which increased from 711 to 879.

Of the FOSAs that have joined the program, some have been able to acquire the status of project manager. The proportion of private FOSA with a main contract increased from 0 to 11 percent (see table below).

Table I: Distribution of Top LDC Markets by Category from 2020 to 2023

Key Contracts Minimum Package of Activities	T$ 2020	Q4 2021	Q4 2022	Q4 2023
Community Health Center	160	160	180	190
Private health center with main contract	0	14	27	26
Rural maternity wards with main contract	0	28	28	25
Total	**160**	**202**	**235**	**241**

In 2020, due to reluctance due to the lack of mastery of certain RBF principles and tools, all the main LDC markets were held by the CSCOMs. Compliance with the principle of free competition for contracts and the requirement to streamline the areas of responsibility of these CSCOMs led to the granting of project manager status to 42 FOSAs, 14 of which were private in 2021. This provision has been implemented. Continuation in 2022 with the granting of this status to 13 private FOSAs.

In 2023, due to their inefficiency and compliance with RBF principles, respectively, 1 private FOSA and 3 rural maternity clinics lost their prime contractor status and 1 CSCOM was suspended from the program due to governance issues. Analysis of this table shows that the CSCOMs and village maternity clinics account for approximately 90 percent of project managers.

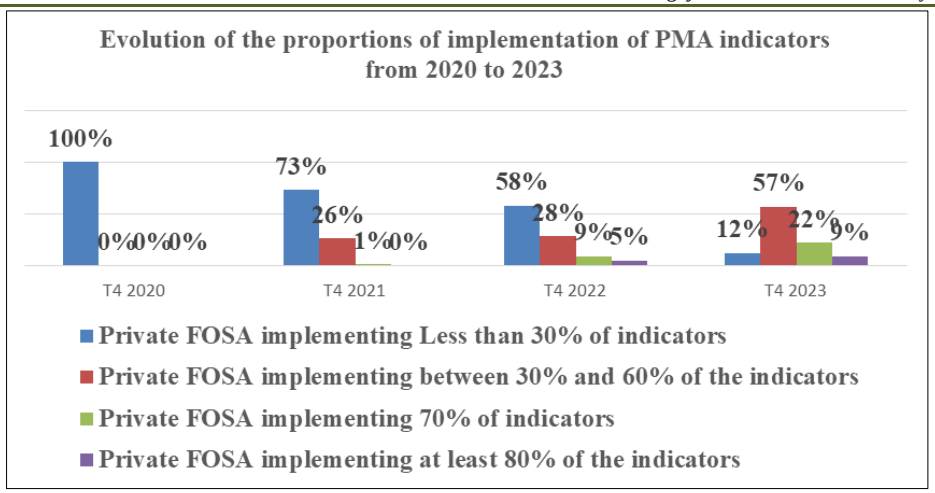

Figure 3: Change in the number of for-profit private FOSA's who joined the RBF program from 2020 to 2023.
Source: Medical audit reports of private health facilities

In 2020, the integrated private FOSA implemented less than 30% of the PMA indicators, a situation that has gradually improved (thanks to the various assessments, supervisions and coaching) to the point that in 2023, 9% reported data for more than 80% of the indicators, 22% for more than 70% of the indicators.

Indicators not reported include those related to COVID-19, HIV, and tracing lost to follow-up.

Evolution of certain indicators during program implementation

During the four years of the program, no for-profit private FOSA was able to acquire the status of project manager for the complementary package of activities (PCA) because of the criteria put in place. Our analysis focused only on the data produced by the LDC-type FOSA.

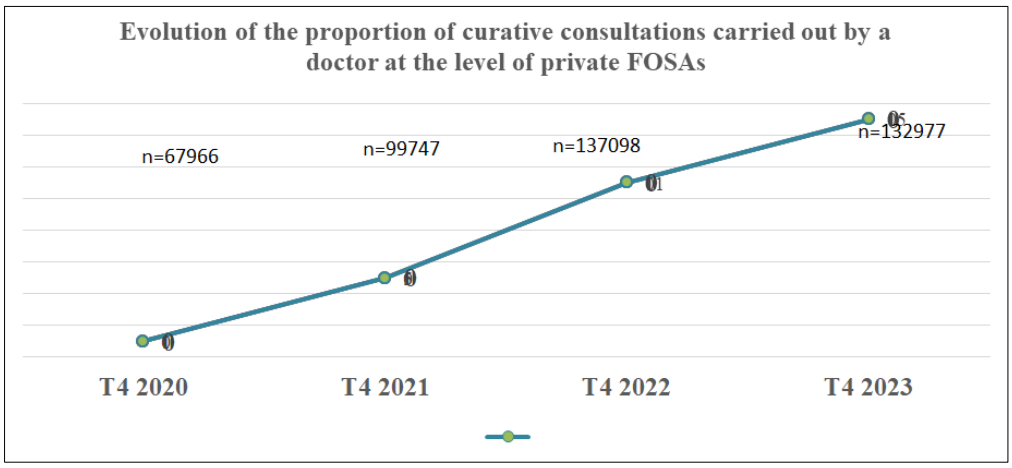

Figure 4: Trend in the proportion of curative consultations performed by a physician in LDCs
Source: Mali RBF Portal

From the analysis of this graph, we find that although they represent only 12% of contractors at the end of 2023, private FOSAs accounted for up to 42% of consultations performed by doctors. At the end of 2023, 22% of medical consultations offered to indigents were carried out by these same health facilities. It should be noted that 65 percent of consultations at the PMA level are performed by nurses and community health workers. Enhancing the potential of these private FOSAs will make it possible to improve the quality of consultations offered to users.

If we consider the 172,523 consultations carried out by referral health centers during the same period, the proportion of medical consultations carried out in private FOSAs amounts to 30 percent.

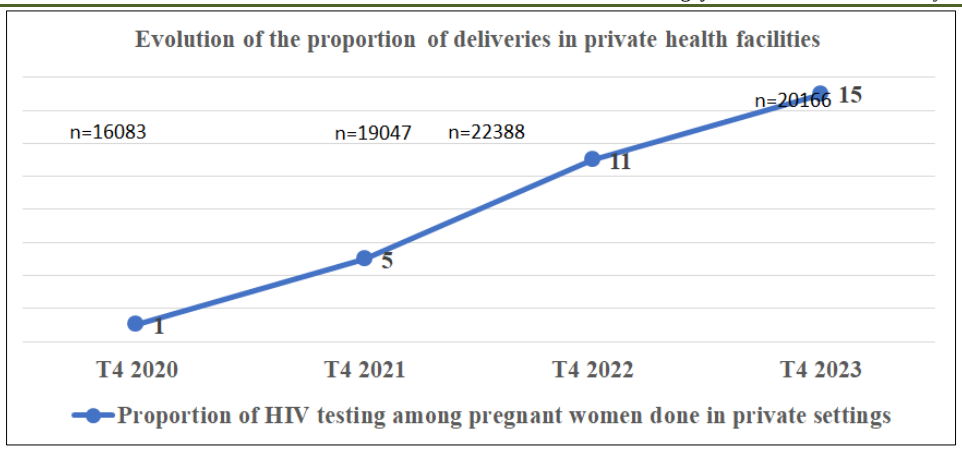

Figure 5: Change in the proportion of eutocic and obstructed births performed by private health facilities from 2020 to 2023
Source: Mali RBF Portal

The analysis of this figure shows that the contribution of private health facilities to deliveries increased from 3 to 18 percent over the period studied. The proportion of deliveries assisted by FOSA has increased from 0 to 18 percent, and the proportion is roughly the same for obstructed births.

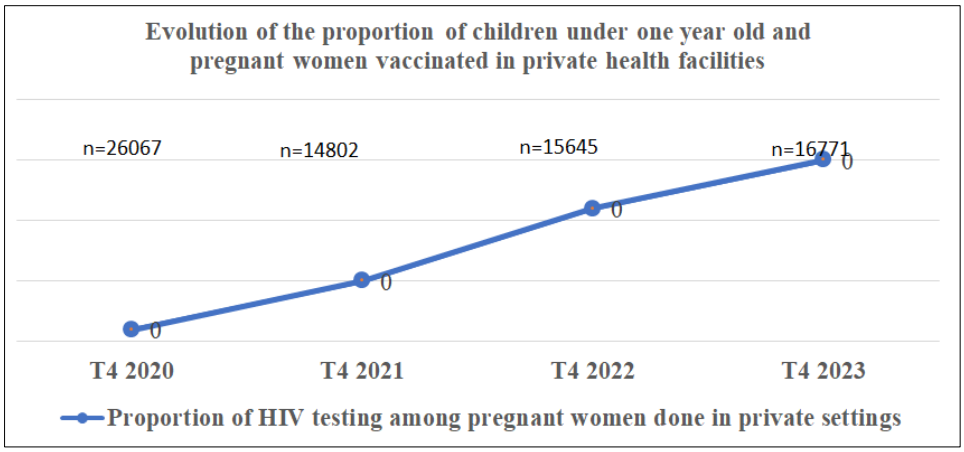

Figure 6: Change in the proportion of children and pregnant women immunized by private health facilities from 2020 to 2023
Source : Mali RBF Portal

Despite challenges in accessing vaccines and consumables, by the end of 2023, 15% of pregnant women and 5% of children under the age of one were fully vaccinated in private health facilities.

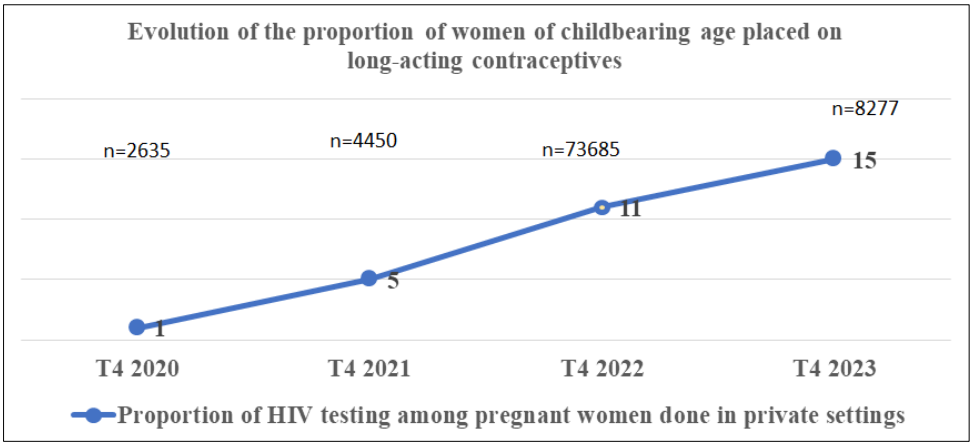

Figure 7: Change in proportion of adolescent girls receiving implants/intrauterine devices (IUDs) at private health facilities, 2020–2023

From 2020–2023, the proportion of adolescent girls receiving implants/IUDs at private health facilities increased from 2 percent to 19 percent. This trend is stronger among adults. It should be noted that adolescent girls generally use CSCOM and CSREF for their family planning needs.

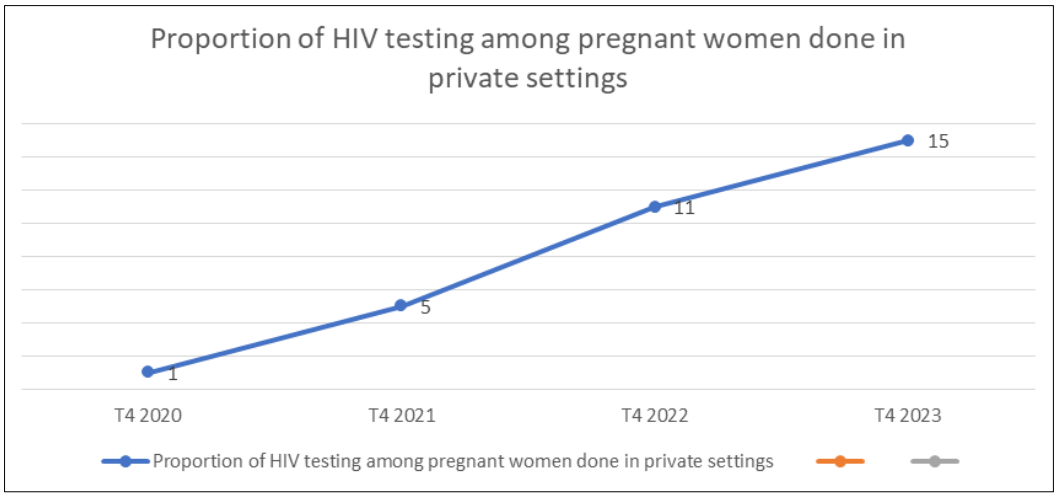

Figure 8: Change in the proportion of pregnant women screened for HIV by private health facilities between 2020 and 2023
Source : Mali RBF Portal

By the end of 2023, 15 percent of HIV testing among pregnant women was conducted by private health facilities. In parallel with the assessment of the contribution of private FOSAs to the supply of certain services, the study examined the evolution of the level of certain quality scores in these entities. The first aspect assessed in this section is the evolution of the average user reception score in FOSA, followed by the evolution of the user satisfaction score.

6. DISCUSSIONS

Under the implementation of the RBF program, the percentage of 133 private FOSAs with contracts increased from 5 to 12 percent of the total number of contractors. Of these, 25 percent (26) were even able to obtain a main contract by the end of the period. These results were achieved in spite of: difficulties in obtaining an operating license (i), insufficient information on the program (ii), discrimination against them because of difficult collaboration; (iii) limited access to the inputs necessary for certain services (care for the malnourished, etc.). Over time, FOSAs with RBF contracts improve their service offerings by strengthening the provision of preventive care. In 2020, the integrated FOSA implemented less than 30% of the LDC indicators, a situation that has gradually improved (thanks to the various assessments, supervisions and coaching) to the point that in 2023, 9% reported data for more than 80% of the indicators, 22% for more than 70% of the indicators. Taptue-Fotso & al found that through PBF, an increasing number of RBF health facilities have expanded their health service offerings to include preventive health care, such as family planning (FP) and prevention of mother-to-child transmission. -child (PMTCT).

Based on the analysis of data on the contribution of private FOSAs in the provision of curative consultations, our study revealed that although they accounted for only 12% of contractors at the end of 2023, they accounted for 42% of consultations performed by doctors. At the LDC level. The study by Tonia Marek *et al*. found that in Mauritania, the private sector conducted only 25 percent of consultations. According to the study conducted on the private health sector in Mali by the World Bank team in its working paper, the results of this study show that the contact rate of private commercial structures is 0.10 overall. For private practices and clinics, this rate is 0.07 and 0.04 respectively [2]. During the same period and according to yearbook data, the rate of new contacts per capita per year increased from 0.07 to 0.48 in the Koulikoro region.

Our study found that the contribution of private health facilities to the delivery of ANC visits increased from 0 to 16 percent for the first visit before 4 weeks of pregnancy, from 4 to 19 percent for the 4th prenatal visit, and from 3 to 18 percent of deliveries. Tonia Marek, et al., note that in Mauritania, the private sector provides 25 percent of prenatal visits and 9 percent of deliveries.

According to a 2017 study on the effects of RBF in Mali on the utilization of care by Zombré D *et al*. During the implementation of the RBF pilot, the rate of growth in maternal and child health outcomes was almost identical in both groups to that of the period prior to the introduction of the RBF pilot program for postnatal visits ($p > 0.98$). Under-5 consultations ($p > 0.93$) and fully vaccinated children ($p > 0.57$). However, the results obtained in this study showed a statistically non-significant decrease in the proportion of assisted births (trend deviation = -0.04, $p = 0.1$). Thus, they did not find any differences in the trend in the use of maternal and

child health services ($p > 0.10$), which suggests that the RBF pilot program did not have an impact on the trend of targeted maternal and child health outcomes in the intervention CHCOMs [3].

In this study, the proportion of adolescents receiving implants/IUDs at private health facilities increased from 2% to 19% and the proportion of HIV tests conducted (for all patients) increased from 1% to 15%. Taptue F. *et al*. found that private health facilities performed between 4 and 38 percent of PMTCT screening. Taptue Fotso *et al.* found that prior to the introduction of PBF, regulation and supervision. Private providers did not seem to be a priority for district medical teams, as the government relied only on public and faith-based providers to provide preventive and promotional health care to the population.

During the implementation period of the RBF program, we found that the number of for-profit private health facilities providing DHIS2 data in the Koulikoro region increased significantly from 2020 onwards. As of 2021, we even note that there are private FOSAs that are more lucrative than CSCOMs (private non-profit FOSAS) even if the latter are better distributed geographically. Tonia Marek et al estimate that private health facilities account for at least one-third of health services and that most governments and development organizations in Africa focus more on public health services. Taptue Fotso *et al*. found that PBF helps to regulate private health facilities through contracts and audits, and to align private providers with public health goals by incentivizing them to provide the prevention and promotion services needed to achieve those goals. While private health facilities dominate the pooled health care providers, those participating in the project have increased from 29 percent to 77 percent. At baseline, 71 percent of them were still not included in the health system. This is because many of them did not have government authorization, which was one of the eligibility criteria. Some feared that something might be behind this sudden generosity from the government and the invitation to participate in this project.

7. CONCLUSION

The implementation of results-based financing activities in private health facilities has improved some indicators while strengthening collaboration between government and private health facility managers. PBF makes it possible to improve the technical quality of these health facilities, which offer a much better reception to users. Given the potential they offer and the significant resources at their disposal, better inclusion of private health structures will have a definite impact on improving the indicators of the Malian health system.

Abbreviations

- ACV Contracting and Verification Agency
- FOSA: health training
- Prenatal consultation: Prenatal consultation
- CSCOM: Community Health Centre
- RBF: Results-Based Financing

Conflicts of interest: No conflicts of interest were involved in the development or execution of the protocol for this study-action.

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