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Proportion of Health Facility Expenditures Allocated to the Payment of Financial Incentives in a Performance-Based Financing Program: A Case Study of Six Health Facilities and Four District Hospitals in the Koulikoro Region of Mali

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Abstract **Original Research Article**

This study examines the effects of using special quality improvement bonuses (Special Quality Improvement Bonuses) as a strategy to address health inequalities and accelerate universal health coverage under a results-based financing model. The authors present a case study of a health facility located in a vulnerable and insecure area that received such a bonus, highlighting the positive impact on infrastructure, equipment, staffing and service delivery. The study highlights the effectiveness of these bonuses in improving the quality of health services and bringing quality of care closer to vulnerable populations. More specifically, these incentives enabled health facilities to upgrade their technical platform (infrastructure, equipment, technical staff), thereby enabling them to implement the minimum package of activities. In addition, these bonuses, which had been awarded on the basis of the level of the technical level, were intended to correct inequalities between competing health facilities, thereby further improving the staffing and service delivery capacities of these structures.

Keywords : Performance-Based Financing (PBF), Financial Incentives, Health Facilities, Expenditures, Subsidies.

1. INTRODUCTION

Motivating healthcare workers is crucial to effective healthcare delivery. While intrinsic motivation is important, extrinsic rewards, such as performance-based financial incentives, also play an important role. The amount of these financial incentives is set by the actors responsible for healthcare institutions in an autonomous and participative way, without reference to a national guideline [2]. This provision has often been perceived as potentially leading to overuse of the subsidies received for the payment of performance bonuses. As a result, in the two previous PBF projects in Koulikoro, a formula for distributing subsidies was defined (40% for incentive bonuses and 60% for operating support or investments) to mitigate the risk of subsidies being overused. Since 2020, Mali has been implementing a performance-based financing program covering almost 33% of the Malian population [2]. After four years of implementation of this program, this study was initiated to examine concerns about the potential overuse of financial incentive grants.

2. BACKGROUND AND RATIONALE

In Mali, performance-based financing (PBF) operations are based on a quality-adjusted fee-for-service model [2, 3]. Health facilities receive subsidies based on the number of services provided against a predefined list of services and may receive a quality bonus if the services are in line with norms and standards, as well as an equity bonus to correct inter- and intra-district inequities. To this end, checks are carried out quarterly in health facilities and in the community. The amount of subsidies is used to improve the quality of care offered to the population but also to pay bonuses to the employees of the health facilities [2-4]. The total bonus for staff of the month is the difference between the revenue (including subsidies) and the total expenses of the health facility during the month/quarter. However, this can only exist if a profit has been made only if the

revenues exceed the expenses [2]. Individual bonuses are calculated on the basis of an index tool that must be completed collaboratively to ensure transparency in the management of funds at the health facility level. It makes it possible to manage the distribution of individual bonuses based on the overall premium according to criteria predefined by FOSA. These criteria can be: qualification, seniority, level of the salary index, responsibility, attendance (days of absence and overtime), quality score of the individual's unit, individual performance [2].

The PBF procurement mechanism provides incentives for institutions and individuals to improve the quantity and quality of services through: (i) management autonomy at health facilities, which would allow them to achieve the improvements they desire; ii) Improving systems for supervising health workers and collecting routine data [5]. These two processes are also ways to address human resource issues in low- and middle-income countries, including the motivation of health workers [6]. The PBF model developed in Mali since 2020 includes this autonomy. However, regulators quickly became anxious about the risk of giving preponderance to the payment of bonuses to the detriment of investments in the quality of health facility services. This could reduce financial resources that can be injected into operations and investments to improve the performance of health facilities, a major objective of any PBF program [7-9].

It should be noted that there are very few studies on the weight of incentive bonuses in the operating budget of health facilities and on the use of PBF subsidies received by these facilities.

This study was initiated to evaluate health facility expenditures allocated to the payment of incentive bonuses in the PBF model implemented in Mali since 2020.

3. RESEARCH QUESTION AND OBJECTIVES

Research Question: Is the amount allocated to performance-based incentives in health facilities excessive?

Objectives:

- Analyze revenue sources and expenditure items, including incentive payments.
- Assess the share of financial incentives in health facility expenditures, including PBF subsidies.
- Determine the proportion of PBF subsidies allocated to financial incentive payments.

4. METHODS

- **Research Design:** Retrospective quantitative cross-sectional study.
- **Data Collection:** Data was collected from financial audit reports of selected health facilities.

Sampling:

Ten health facilities (4 district hospitals and 4 CSCOMs) and 2 private facilities were selected in four districts of the Koulikoro region. The selection of the districts was deliberate, considering the geographical representation and compliance rate [1], of the audit activities found by the external audit (at least 95%). The schools within the districts were selected by systematic random sampling with a sampling step of 20. The first health facility identified through this sampling was systematically selected for each district.

Data Analysis: Quantitative data were analyzed using Excel.

Study Period: January 1, 2022, to June 2023 (18 months).

Data Collection 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 90,120 km2 and its capital is the city of Koulikoro. 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.

[1] The compliance rate is the ratio between the quality score of the cross-check performed by the regulator and the score obtained by the medical check. It is considered acceptable if it is greater than or equal to 90%. In our study, we made a reasoned choice of districts run by medical auditors who regularly obtained an acceptable score.

5. RESULTS

5.1 Sources of Income

Table I: Revenue categories, financial position, district hospital level from January 2022 to July 2023.

	Dioila District Hospital	Nara District Hospital	Kalabancoro District Hospital	Kolokani District Hospital	Averrage
Size/Population	396733	363434	393948	359443	
18 Months Income/Expenditure (XOF)	761,504,410	430,013,560	1,160,991,836	350,656,706	
USD/hbt/an	2.67	1.64	4.09	1.35	2.44
Internal revenue (%)	56	48	46	42	48
External revenue (%)	44	52	54	58	52
Government budget (%)	23	24	23	27	24
Local government budget (%)	0	1	17	7	6
Cost Recovery (%)	30	34	34	31	32
Withdrawals from reserves bank accounts (%)	27	14	12	11	16
Subsides FBP (%)	14	27	14	24	20
NGO contributions (%)	7	0	0	0	2

*1USD=600 fcfa.

From the analysis of this table, we note that district hospitals achieved on average US$2.44 per capita per year, a level of revenue well below the US$20 needed to effectively improve the quality of services at this level.

At the district hospital level, cost recovery (out of pocket) represents less than 50 % of revenues. External financing, which accounts for 52 % of revenues, is essentially made up of the State budget, subsidies provided by the PBF program, and the budget of local governments. All these hospitals had a surplus and a level of financial reserves that respected the principles governing the payment of incentive bonuses (except in Kolokani). Contributions from the state budget and local authorities are mainly made up of the salaries of civil servants in these public health establishments.

Table II: Revenue categories, financial position, number of reserve days at the level of CSCOMs and private health structures from January 2022 to July 2023

	CScom of Dioila	CScom de Koronga	CScom de Mountou-goula	CScom de Kolokani	''Commu-nion'' Medical Clinic	''Destin'' Medical Clinic	Average
Population	37912	12218	9681	23245	7755	5732	
18 Months Income/Expenditure (XOF)	259,155,853	88,771,956	76,419,673	112,115,971	157,651,125	115,767,186	
USD/hbt/an	7.60	8.07	8.77	5.36	22.59	22.44	12.47
Internal revenue (%)	57	63	61	48	96	74	66
External revenue (%)	43	37	39	52	4	26	34
Government budget (%)	7	5	11	6	0	0	5
Local government budget (%)	1	0	0	2	0	0	0
Cost Recovery (%)	51	28	56	34	96	74	57
Withdrawals from reserves bank accounts (%)	6	34	4	14	0	0	10
Subsides FBP (%)	35	32	28	41	4	26	28
NGO contributions (%)	0	0	0	3	0	0	1

The first-contact health facilities, unlike the district hospitals, generated on average US$18.71 per capita per year, a level of revenue well above the US$7 needed to effectively improve the quality of services at this level. A large part of these resources came from reserves, which were not usually mobilized to improve the quality of care and working conditions of staff.

Unlike district hospitals (public health facilities), which receive substantial support from the State budget and local governments, the largest share of revenue at first-contact health centers comes from cost recovery, i.e., direct payments to households. This situation is stronger in rural and remote CSCOMs (Koronga and Mountougoula) as well as private health facilities. External financing comes from PBF subsidies, the State Budget, and NGO subsidies. Basically, health facilities comply with the principles that must be observed for the payment of incentive bonuses, whether they are in insecure areas and whether they are regularly supervised or not.

It should be recalled that all these health facilities have total autonomy in the management of their financial resources and have bank accounts that are not linked to the public accounts of the State for this purpose.

5.2 Expenditure Pattern

Table III: Health Facility Expenditure Items from January 2022 to June 2023

	HD Dioila	HD Nara	HD Kala-bancoro	HD Color-Sound	CS Dioila	CS Koron-ga	CS Man-Tougoula	CS Kolo-kani	Clinique Commun-nion	Destin Clinic
Wages (%)	32	34	42	39	16	13	20	23	9	10
Premiums (%)	12	11	6	16	15	9	11	23	2	5
Operating (%)	13	14	23	21	15	28	20	9	29	16
Investments (%)	3	2	7	5	5	14	6	6	6	6
Drug purchases (%)	10	8	3	13	31	20	32	21	26	28
Depreciation expense + Surpluses	31	31	18	5	17	15	11	19	28	35

In district hospitals, salaries accounted for an average of 37 % of expenditures [32-42 %], incentive bonuses 11 % [6-16 %], depreciation allowances 21 % [5-31 %], current operations 18 % [13-23 %], and investments 4 % [2-7 %].

In community health centers, salaries accounted for an average of 18 % of expenditures [13-23 %], incentive bonuses 15 % [9-23 %], depreciation allowances 16 % [11-19 %], current operations 18 % [9-28 %], and investments 8 % [6-14 %].

In private health facilities, salaries accounted for an average of 9 % of expenditure [9-10 %], incentive bonuses 4 % [2-5 %], depreciation allowances 32 % [28-35 %], current operations 22 % [16-29 %], and investments 6 %.

Current operations (38 % on average) and staff compensation (payment of salaries and incentive bonuses, 35 % on average) were the main items of expenditure in health facilities, followed by depreciation/bank reserves (21 % on average). Investments accounted for an average of only 6 %. However, it should be noted that the level of investment was higher in the CSCOMs in rural areas.

The amount allocated to incentive bonuses hardly exceeded 25 % of expenditure, and this proportion is even less than 10 % in private health structures that face immense investment needs and the payment of debts.

It should be noted that district hospitals received 66 % of their salaries from the state budget, 16 % from the local government budget, 13 % from the district hospitals' own funds, and 6 % on average from the contribution of certain NGOs. The recruitment of additional health personnel using collection resources remains a key strategy to ensure that these public entities have a satisfactory staff.

In the community health centers (CHCs), salaries came from the State budget for 46 %, from own funds for 44 % on average, from the local government budget for 6 % and from contributions from certain NGOs for 4 % on average. The presence of civil servants is greater in urban than in rural CSCOMs (most of which do not even have civil servants).

In for-profit private health facilities, salaries came solely from own funds.

Overall, health facilities finance their employees' salaries from several sources: from their own funds (43 %), the government budget (45 %), the local government budget (9 %), and contributions from partner NGOs (4 %). This arrangement allows health facilities to adjust their staffing according to their needs.

5.3 Subsidies's Utilization

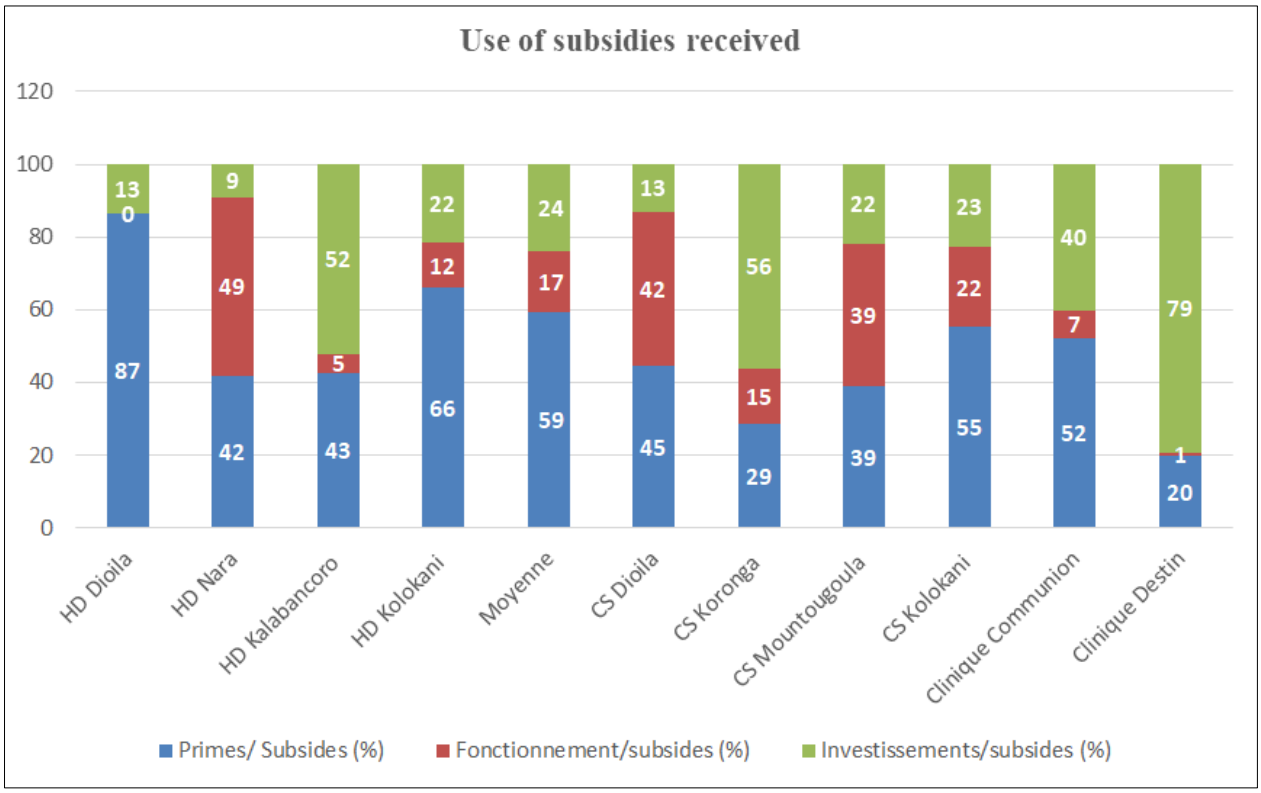

Figure No. 2: Subsidy utilization items for health facilities from January 2022 to June 2023

Contrary to the fears of some stakeholders regarding the overuse of subsidies for the payment of incentive bonuses at the expense of investments to improve the quality of care, the situation was as follows.

In district hospitals, subsidies were used for the payment of premiums for an average of 59 % [42-87 %], 24 % for investments [9 to 52 %], and for operating expenses for 17 % on average [0-49 %].

In the community health centers (CSCom), subsidies were used for the payment of premiums for an average of 42 % [29-55 %], 28 % for investments [13-56 %], and for operating expenses for an average of 30 % [15-42 %].

In for-profit private health facilities, subsidies were used for premium payments on average [20-52 %], 60 % for investments [40-79 %], and for operating expenses for 4 % on average [1-7 %].

Overall, 46 % of health facility subsidies are used to pay bonuses, 37 % for investments, and 17 % for day-to-day operating support.

6. DISCUSSIONS

One of the limitations of this study is the paucity of literature on the subject matter. In addition, choosing an optimal period of operation for the PBF program as well as for the FOSA covered by strong auditors can induce selection and information bias in our study. Indeed, the choice of period, one year after the start of the program, did not make it possible to obtain the first data from health facilities, which were marred by irregularities because they were of lower quality. Ridde *et al*., 2021, found that the beginnings of PBF in Burkina Faso were marred by serious deficiencies contrary to principles. In addition, the choice of health facilities supervised by strong Verifiers also did not allow us to study what happens in areas where poorly performing Verifiers operate.

One of the first findings of this study, a first in Mali, is that first-contact health facilities (community health centers and private health facilities) generate revenue from PBF subsidies that are likely to enable them to improve the quality of their services. This situation, contrary to that observed at the district hospital level, changes fundamentally if subsidies are withdrawn.

About the category of revenue from health facilities, an average of 63 % of revenues come from cost recovery (48 % for district hospitals, 57 % for CSCOMs, and 85 % for for-profit private facilities). The 2021 edition of Mali's National Health Accounts finds that the contribution of direct payment to health expenditure was 63%. On average, external financing accounted for 37 % of revenues (52 % for district hospitals, 44 % for CSComs, and 15 % for private health facilities). This external financing is essentially made up of the State budget (48 %), subsidies provided by the PBF program (42 %), and the local government budget (10 %).

It should be noted that the cost recovery of health facilities represented on average 48 % of the resources of district hospitals, 57 % of the resources of the CSCOMs and 85 % of the resources of for-profit private health structures. Cost recovery consisted of fees for medical procedures (38 % on average in district hospitals, 20 % on average in CSComs, and 38 % on average in for-profit private health facilities) and the sale of drugs (25 % on average in district hospitals, 52 % on average in CSCOMs and 62 % on average in for-profit private health facilities) for these two items. The study also included the build-up of bank reserves (37 % on average in district hospitals, 28 % on average in CSComs) because they came from the former. Konaté *et al.*, 2003 found that more than 50 % of the financial resources of the CSCOMs came from the sale of drugs.

About the health facility expenditure items, the main expenditure item for health facilities was current operations, including the purchase of drugs (38 %), followed by the payment of staff wages (24%), depreciation/bank reserves (21%), the payment of incentive bonuses (11%), and investments (6%). However, it should be noted that the level of investment was higher in the CSCOMs in rural areas.

Compared to overall expenditures, the amount allocated to incentive bonuses did not exceed 25 % of expenditure. This proportion is even less than 10 % in private health facilities. These health facilities have autonomously given priority to the payment of debts contracted for the acquisition of basic equipment and infrastructure, the settlement of social security contribution arrears, etc.

Compared to the subsidies received, the bonuses paid by the medical facilities were on average 48 %. Investments accounted for 33 % and support for current operations 19 %. This same ratio was on average 59 % for district hospitals, 42 % for CSCOMs and 36 % for private health facilities. In the study conducted by Zitti *et al*., in 2019, the design provided for 40% of subsidies to be allocated to the payment of premiums in CSCOMs. This proportion was 60 % at the district hospital level. The results achieved were better than those expected, which called for the overuse of health facility resources in the payment of bonuses in a context of total autonomy. A robust qualitative study would further substantiate the factors that support this finding. However, Coulibaly *et al*., 2018 argue that PBF implementation and decision-making autonomy lead to initiatives that could result in savings in anticipation of difficult times and investments to be made to attract more customers.

7. CONCLUSION

Despite the autonomy of health facilities in resource allocation, the study suggests that with adequate supervision and supervision, the proportion of PBF expenditures and subsidies allocated to performance-based incentives remains acceptable. Additional qualitative research is recommended to explore the enabling factors.

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