The complexity of results-based financing implementation in Mali

Abstract:
Introduction
Results-based financing (RBF) has been tried in numerous sub-Saharan African countries with a view to improving health system performance. To date, few articles have examined the implementation of this type of complex intervention in francophone West Africa. This article analyzes the implementation of RBF in the Koulikoro region of Mali.

Method
This was a contrasted multiple case study of performance in 12 community health centers in three districts. The data were collected using a qualitative approach consisting of 161 semi-structured interviews, 69 informal interviews, and 96 non-participant observation sessions. Data collection and analysis were guided by the Consolidated Framework for Implementation Research (CFIR) adapted to the research topic and local context.

Results
Analysis revealed that the internal context of the RBF intervention implementation played a key role in the process. Leadership and commitment were exercised more strongly in high-performing centers than in low-performing ones. These two characteristics were associated with taking initiatives to promote RBF implementation and strengthen team spirit. The values attached to RBF were in perfect harmony with those held by health workers. Information regarding the intervention was best appropriated by qualified health professionals. However, the limited duration of the implementation did not allow the emergence of networks or champions. The enthusiasm initially generated by RBF soon dissipated, mainly due to a delay in the implementation schedule and the payment modalities.

Conclusion
RBF is a complex intervention in which many actors intervene in diverse contexts. The CFIR was a robust conceptual framework to support the analysis. Future work in this area would benefit from an interdisciplinary approach combining public health and anthropology to better understand such an intervention.

Corresponding Author: Abdourahmane Coulibaly, Ph.D
Faculté de médecine et d’Odontostomatologie (Mali); MALI
Corresponding Author E-Mail: coulibalyabdourahmane@gmail.com

First Author: Abdourahmane Coulibaly, Ph.D
| Order of Authors:                       | Abdourahmane Coulibaly, Ph.D             |
|                                      | Lara Gautier                             |
|                                      | Tony Zitti                               |
|                                      | Valéry Ridde                             |

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<td>Robert Soeters</td>
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The complexity of results-based financing implementation in Mali

Coulibaly A* (AC), Gautier L (LG)**, Zitti T (TZ)***, Ridde V (VR)****

Author names and affiliations

Abdourahmane Coulibaly, corresponding author
Affiliation: Miseli Research NGO, Bamako, Mali; Faculty of Medicine and Odonto-Stomatology, Université des Sciences, des Techniques et des Technologies, Bamako (Mali); UMI 3189 Environnement, Santé, Sociétés (CNRS, UCAD, UGB, USTTB, CNRST)
Email: coulibalyabdourahmane@gmail.com

Tony Zitti
Affiliation: CEPED (UMR 196), Institut de Recherche pour le Développement, ERL INSERM SAGESUD, École doctorale Pierre Louis de santé publique : épidémiologie et sciences de l’information biomédicale, Université Sorbonne Paris Cité, Paris, France; Miseli Research NGO, Bamako, Mali
Email: tonyjonan@yahoo.fr

Lara Gautier
Affiliation: Department of Social and Preventive Medicine, University of Montreal, Montreal, Canada; Public Health Research Institute, University of Montreal, Montreal, Canada; CESSMA (UMR 245), Institut de Recherche pour le Développement, ERL INSERM SAGESUD, Université Sorbonne Paris Cité, Paris, France
Email: lara.gautier@gmail.com

Valéry Ridde
Affiliation: CEPED (UMR 196), Institut de Recherche pour le Développement, ERL INSERM SAGESUD, Université Sorbonne Paris Cité, Paris, France; Public Health Research Institute, University of Montreal, Montreal, Canada
Email: valery.ridde@ird.fr
Tel: +33 1 76 53 34 53
Address: CEPED, 45 rue des Saints-Pères 75006 Paris, France
ABSTRACT

Introduction

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Conclusion

RBF is a complex intervention in which many actors intervene in diverse contexts. The CFIR was a robust conceptual framework to support the analysis. Future work in this area would benefit from an interdisciplinary approach combining public health and anthropology to better understand such an intervention.

Key words: Implementation, RBF, Mali, CFIR, complex intervention
BACKGROUND

Over the past 15 years, RBF has attracted attention as a means of achieving specific health objectives more effectively in low-income countries and fragile states [1]. In summarizing RBF in both its broadest sense and in the narrow view focused solely on financial incentives, Renmans et al. [2] offer the following definition of RBF-type interventions: “performance-based financing is a supply-side reform package that is guided towards improved performance (defined as increased predefined services and improved quality measures) by using performance-based financial incentives for health providers (facilities and/or workers).” In this view, positive performance can be encouraged by linking payments to desired outcomes and by fostering decision-making autonomy and entrepreneurial behavior at the health facility level [3].

Thirty-two (out of a total of 46) sub-Saharan African countries have experimented with RBF with the objective of reforming their health system [4]. Thus, this is an emerging field often stimulated with the support of certain international actors, such as the World Bank. Some studies have seemed to suggest RBF has had a positive influence on the overall performance of health facilities, particularly on services use [5–7]. Yet after many experiments, it remains controversial, notably because of discrepancies between the funding allocated and the results obtained [8–10]. Scientific evidence of its effectiveness and efficiency remains limited [11, 12]. In particular, it is criticized for its potential perverse effects, including the fact that it can, in fact, weaken the health system [8] and have unintended effects [13].

The reasons for the RBF deployment in Mali were diverse, but the initiative was motivated mainly by weak health system performance and poor governance of health centers. The RBF project in Mali discussed in this article was funded by the World Bank as part of a larger initiative to strengthen reproductive health. It was implemented in the 10 health districts of the Koulikoro region between July 2016 and February 2017. We refer to it here as the “second pilot project”. It followed an earlier project implemented in three health districts in this region between 2012 and 2013, supported by the Koninklijk Instituut voor de Tropen (KIT – Royal Tropical Institute) and Stichting Nederlandse Vrijwilligers (SNV), the Dutch development agency. We refer to this as the “first pilot project”. The first pilot project, called a “pre-pilot” by its designers, was intended to give concrete expression to the notion of a “Malian RBF” based on local specificities. A study revealed its poor sustainability [14].

While some research has been conducted on RBF implementation on the African continent [9, 15–18], studies on the subject are still limited in francophone Africa [19]. The RBF literature remains largely dominated by impact assessments. While these are useful to better understand RBF’s effects on health worker motivation and on health, they do not clearly explain how these effects are produced [3], nor the contexts in which they occur. Some research has shown that analyzing the RBF implementation process provides a better understanding of the outcomes achieved [18]. Recent studies have paid more attention to the impacts of RBF on the relationships among actors in the health system and to the contexts and processes that explain whether or not these outcomes are achieved [15, 17, 20–23]. To understand the processes, the contextual characteristics of implementation are essential elements and warrant in-depth analysis [24]. In this article, we aim to contribute to this emerging field by analyzing the RBF implementation in Mali’s outlying health centers.

RESEARCH METHODOLOGY

Conceptual framework
The term “implementation” refers to one or more processes organized in a particular context to help achieve the changes intended by an intervention through the means being deployed [25]. Many theories and conceptual frameworks exist to understand the implementation of interventions. For this study we chose to use the Consolidated Framework for Implementation Research (CFIR) [26] for two reasons. First, it is easy to apply because of its adaptability. Second, it is one of the few tools that can provide a comprehensive view of the intervention within a logically coherent framework.

According to the CFIR, to understand an intervention’s implementation, five domains must be studied: 1) the characteristics of the intervention; 2) the external context of health facilities; 3) the internal context of health facilities; 4) the characteristics of individuals; and 5) the implementation process. The CFIR consists of 39 constructs divided among these five domains.

The research design we adopted was that of a contrasted multiple case study with several embedded levels of analysis [27]. The contrast was in the health centers’ performance. The cases were community health centers (CSCOMs), which are primary care centers. Data were collected between December 2016 and January 2017 in three of the 10 health districts (HDs) in the Koulikoro region: HD1, HD2, and HD3. The three HDs were selected on the basis of specific criteria: an agricultural site that had experienced being involved in a cash transfer program for the poorest; a site where it was planned to test a communal mutual insurance program; and a site with an urban character. Of the three HDs selected, only one (HD1) had taken part in the first RBF pilot project in 2012–2013.

**Description of the intervention**

The second RBF pilot project involved a certain number of actors and functions (Table 1).

**Table 1. Actors involved in the RBF implementation by functions and tasks**

<table>
<thead>
<tr>
<th>Institutions</th>
<th>Functions</th>
<th>Tasks</th>
</tr>
</thead>
</table>
| ✓ Community health center (CSCOM) | Service provision | - Propose and execute the results plan
| ✓ Reference health center (CSREF) | | - Negotiate and sign the contract
| ✓ For CSCOMs: Commune and ASACO (pays for the technical services) | Purchasing (contracting) | - Produce the services and care
| ✓ For CSREFs: Cercle Council | | - Define priorities
| ✓ Project coordination unit (PCU) / Strengthening Reproductive Health Project (SRHP) | Payment (for outputs produced) | - Negotiate the results plan
| ✓ Health district management team (HDMT) / Regional health department (RHD) | Regulation | - Negotiate and sign the contract
| ✓ For CSCOMs: HDMT | Performance auditing of providers (quantity and quality) | - Launch the audit process
| ✓ For CSREFs: RHD | | - Purchase the outputs
| | | - Pay, after purchaser has signed
| | | - Ensure availability of funds
| | | - Ensure norms and standards are respected – national policy
| | | - Coach providers
| | | - Audit the veracity and reliability of the numbers reported in health center registers
| | | - Monitor technical quality
In an RBF intervention, health facilities are specifically funded based on the purchase of quantitative indicators (Table 2) and qualitative indicators (Table 3).

### Table 2. Quantitative indicators

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Purchase price (Francs CFA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prenatal consultation (PNC 4)</td>
<td>3,968</td>
</tr>
<tr>
<td>Delivery assisted by a qualified professional</td>
<td>1,984</td>
</tr>
<tr>
<td>Postnatal consultation (PONC)</td>
<td>661</td>
</tr>
<tr>
<td>Use of modern contraception by a woman</td>
<td>2,645</td>
</tr>
<tr>
<td>Appropriate management of a malaria case in a pregnant woman</td>
<td>1,323</td>
</tr>
<tr>
<td>ARV treatment for a pregnant woman (tested HIV positive)</td>
<td>2,976</td>
</tr>
<tr>
<td>Complete vaccination of a child under 12 months</td>
<td>397</td>
</tr>
<tr>
<td>Consultation for a child under 5 years in compliance with IMCI</td>
<td>397</td>
</tr>
<tr>
<td>Appropriate management of a malaria case in a child under 5 years</td>
<td>198</td>
</tr>
<tr>
<td>DOT management of a case of uncomplicated tuberculosis</td>
<td>2,645</td>
</tr>
</tbody>
</table>

### Table 3. Qualitative indicators by category

<table>
<thead>
<tr>
<th>Category</th>
<th>Content</th>
<th>Weight in calculation of subsidies (value attributed to each category of qualitative indicators)</th>
</tr>
</thead>
</table>
| Resources and processes | - human resources  
- infrastructures  
- interactions with patients  
- hygiene  
- governance  
- role of the ASACO | 30% |
**Clinical indicators** - availability of essential drugs, maternal and neonatal services, cold chain | 50%

Users’ satisfaction | 20%

Quantity indicators are purchased at a fixed price, whereas the payment for quality indicators depends on achieving a minimum target. After an audit that involves identifying any discrepancies between the figures reported by the CHCs and the actual provision of services, as well as assessing users’ satisfaction level and verifying the health workers’ quantitative results, an invoice is drawn up and sent via a portal to a payment agency, which then makes the transfer to each CHC’s account.

Unable to conduct our study in all CHCs due to budget and time constraints, we selected four CSCOMs per HD, two from among the highest-performing and two from the lowest-performing, for a total of 12 CSCOMs within the three HDs. The CSCOMs’ performance level was defined on the basis of qualitative and quantitative criteria that emerged from a participatory and consensual process involving the teams of the CSREFs and a Miseli team composed of the principal investigator (AC) and a doctoral student [28]. Data were collected over a four-week period between December 2016 and January 2017.

**Data collection instruments**

Interview guides were developed for each category of actors interviewed and translated into the Bambara language. The guides were then pre-tested. An observation grid was also used. These various guides were developed taking into account the five domains of the CFIR. Discussions were held beforehand among the co-authors of the article (VR and LG, TZ and VR) to reach a common understanding of the different constructs.

**Techniques for data collection and sampling**

1. **Formal and informal interviews**

   Applying a purposive selection sampling strategy, data were collected from different actors involved in RBF implementation in the CSCOMs. These various actors included CSCOM personnel (director of the center (TDC), nurses, midwives, birth attendants, nurses’ aides, vaccinators, drug depot manager), members of the ASACO (community health association, responsible for managing the CSCOM on behalf of the community), community workers, who assist health workers with interventions within the community, and community leaders, who have the power to influence public opinion.

   Research assistants (n = 3) were hired to collect the data. They were trained in the use of the survey instruments by the first author (AC), who also provided, at the start of the collection, “formative supervision” by monitoring some interviews conducted by the assistants or by conducting some interviews in their presence. In total, 161 formal interviews (Table 4) and 69 informal interviews (Table 5) were conducted in the three HDs based on respondent profiles. This technique was adopted so the interviewers could collect “confidences and gossip” that would have been difficult to access otherwise.
Table 4. Distribution of respondents by category and health district, semi-structured interviews

<table>
<thead>
<tr>
<th>Health districts</th>
<th>Technical directors of the centers (TDC)</th>
<th>CSCOM personnel</th>
<th>ASACO members</th>
<th>Community leaders</th>
<th>Community workers</th>
<th>Members from the commune</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD1</td>
<td>4</td>
<td>22</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>4</td>
<td>56</td>
</tr>
<tr>
<td>HD2</td>
<td>4</td>
<td>18</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>50</td>
</tr>
<tr>
<td>HD3</td>
<td>4</td>
<td>22</td>
<td>7</td>
<td>10</td>
<td>9</td>
<td>3</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>62</td>
<td>23</td>
<td>26</td>
<td>27</td>
<td>11</td>
<td>161</td>
</tr>
</tbody>
</table>

Table 5. Distribution of respondents by category and health district, informal interviews

<table>
<thead>
<tr>
<th>Health districts</th>
<th>CSCOM personnel</th>
<th>Community workers</th>
<th>Members from the commune</th>
<th>ASACO members</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD1</td>
<td>8</td>
<td>8</td>
<td>2</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>HD2</td>
<td>8</td>
<td>8</td>
<td>2</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>HD3</td>
<td>8</td>
<td>8</td>
<td>2</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>24</td>
<td>24</td>
<td>6</td>
<td>15</td>
<td>69</td>
</tr>
</tbody>
</table>

Data were collected from these respondents based on their availability [29] and presumed ability to shed light on the situation under study.

2. Observations

Non-participant observations were conducted in the CSCOMs to study interactions between service providers and patients during medical consultations as well as changes made at the managerial level since the launch of the RBF activities (hygiene of premises, data recording procedures). The observation results were recorded in a logbook. The investigators conducted an average of eight observation sessions per CSCOM, for a total of 96 observation sessions for the 12 CSCOMs.

Data analysis process

All interviews conducted and notes written were classified by the investigators according to HDs and CSCOMs. All formal interviews, conducted in Bambara, were audio-recorded and then fully transcribed directly into French. The entire corpus of data (transcripts and notes of informal interviews) was then coded using QDA Miner Lite software. The researchers familiarized themselves with this software beforehand in a three-day training workshop led by LG. A coding tree was developed by AC and validated by all the co-authors of the article. The data were coded by two research assistants trained and guided by the first author (AC). Of these two coders, only one took part in the data collection.

The data analysis approach adopted after coding was that of a deductive thematic analysis using the CFIR domains and constructs.

It should be noted that, at the time of data collection, most of the CSCOMs had started the RBF implementation just three or four months earlier. As such, it was difficult for the workers to perform certain activities that required a little more time to become apparent. Thus, some constructs were not informed due to lack of data: “reflection and evaluation”, “opinion leaders”, “internal leaders formally appointed for implementation”, “champions”, “evolution”. All these
constructs belong to domain 5 ("process") of the CFIR. For the reasons that led to the non-inclusion of these contents, see Appendix 1.

RESULTS
To present the results of this study, we begin with the overall results and then specify in a later section the details of certain health districts and CSCOMs.

Characteristics of the intervention
The survey participants stressed the exogenous origin of the intervention, most often referring to its source of funding. Only the HD1 workers, who had prior experience with RBF, had a more positive perception of it. The results were considered to be proof in themselves:

“When we look at the results, we can see there really have been changes, especially in the indicators. It's a CSCOM that's under-used.” (TDC, HD1).

The reasons for the positive view of the first pilot project, which at the same time entailed a negative view of the second, had to do with the creation of infrastructures. They were also related to subsidy amounts and the choice of indicators considered more advantageous:

"[In the] first [project], delivery was paid at 1000 F for birth attendants and 3000 F for nurse-obstetricians, but this time there was nothing for delivery by birth attendants.” (Birth attendant, HD1).

Other respondents, particularly those from HD3, cited past experiences of CSCOMs’ being awarded non-RBF-related bonuses, such as the “Ciwara d’Or” (Golden Ciwara). This prize was awarded by the USAID-funded Kènèya Ciwara program between 2003 and 2008 to reward the best-performing CSCOMs. The quality indicators from this Ciwara program were used to develop the list of quality indicators for the RBF project.

RBF was seen as an intervention that addressed what local actors considered to be “health priorities”. In particular, these included increasing immunization rates, prenatal consultations (PNC), facility-based deliveries, and family planning. However, local personnel were not involved in designing the project. This explained its poor adaptation to the local context, since its content was perceived as having been decided by the World Bank, with no possibility for the actors involved in its implementation to modify the choice of indicators.

“Often this demotivates us. Because if they say it’s black, then it’s black. It can’t be changed. So, it means we have no impact on that. So we have to live with this.” (TDC, HD2)

Among the 10 indicators selected, “management of mother-to-child transmission of HIV (PMTCT)” and “tuberculosis management” were considered to be of limited relevance. The workers had not received sufficient training in these areas and mentioned the limited use of health facilities for these types of consultation.

Malnutrition, curative consultations for adults, geriatric illnesses, and childbirth attended by birth attendants were perceived by many respondents as relevant indicators. Yet these were not included in the list of selected indicators.

In some cases, health workers were no longer motivated to strive for the center’s good performance (as intended by the purchase of these indicators) but rather for personal financial
gain. The higher the associated payment, the more relevant and motivating the indicator became: “We’re more motivated by indicators that are well paid than by indicators that are not well paid.” (Nurse, HD1)

With few exceptions, RBF was perceived as a complicated intervention to implement, partly because of data management procedures. The number of working tools, particularly forms and reports, contributed to this complexity:

“With RBF, entering it in the register isn’t enough, you have to write on the admission form, as required. It’s the reports and procedures that are a bit complicated.” (Birth attendant, HD1)

External context

Overall norms and problems experienced

Local perceptions of pregnancy (e.g. as being shameful) resulted in patients’ low attendance at health centers: “You call some women to come for PNC, they refuse. They say pregnancy is shameful.” (Birth attendant, HD1).

Problems experienced by patients and highlighted by health center personnel were numerous. These included financial difficulties, transportation problems, inadequate information on the negative consequences of certain practices, deficiencies in patient intake and referral, and not enough hospital rooms. Yet RBF did not offer any solutions to most of these problems.

Networks of health workers

In the RBF project, the CSCOMs’ quantitative results were audited by the district health team (DHT), but due to the project’s limited duration, only one audit cycle could be completed. This short time frame limited the possibility of establishing a system of networks. On the other hand, collaboration between CSCOMs and ASACOs, and between CSCOMs and their communes, was linked to health decentralization and had existed for a long time. According to many respondents, the RBF implementation fostered closer collaboration among these three entities, which worked together to develop the CSCOM’s quarterly results plan in the initial training. Quarterly results plans are documents that describe the main obstacles to improving health indicators, the solutions proposed to address them, and the means needed to implement those solutions. In theory, the quarterly results plans are drawn from the CHC’s annual micro plan, which is a kind of business plan that identifies trends in the quantitative and qualitative indicators to be purchased and includes the CSCOM’s projected cash inflows and outflows to purchase these indicators. They contain the technical elements of health planning required to implement the agreements set out in the tripartite contract between the commune, the ASACO, and the CSCOM technical team.

The three entities (CHC, ASACO, and commune) also joined forces to conduct awareness-raising activities in the villages. Also, the commune representative was often invited to attend ASACO meetings, and vice versa.

A competitive environment

RBF was perceived as arising from a competitive logic:

“When we talk about RBF, the competition becomes tangible. So we need to really emphasize the competition among villages in the [health] area. Not only among villages in the area, but also among the CHCs. No one wants to come in last.” (TDC, HD1)
Another respondent concurred, adopting a militaristic idiom: “It’s competition, that’s what it is. In any case, for us, it’s a weapon of warfare.” (DTC, DS1)

This competitive logic was largely fuelled by the existence of projects such as the “Golden Ciwara” in the past and the “Blue Star”, still in progress, whose approaches greatly value the idea of competition among CSCOMs. Besides the CSCOMs, communes, and health areas, this competition played out among ASACOs and even health districts.

This competition impelled them towards greater efficiency:

“… [if] there’s competition, everyone tries to save their own heads… So people will make the effort. You’ll find that there are things we don’t think of doing, but as soon as they say this is how it has to be, we’ll scramble to do it, you see.” (Community leader, HD3)

Influence of public policies

The 2014–2018 Social and Health Development Program (PRODESS III) refers to RBF, providing details on its definition, benefits, and functioning [30]. RBF is also among the activities planned by the World Bank’s Strengthening Reproductive Health Project (SRHP) as a means to strengthen the supply and quality of reproductive health services by improving indicators in this area. Thus, RBF is expected to contribute to the achievement of a range of objectives of each of these programs as well as those of the 2014–2018 National Reproductive Health Strategic Plan.

Internal context

Information dissemination

TDCs and colleagues who had attended the initial training subsequently organized briefing sessions where they shared information on RBF functioning with the other workers who had remained on site. However, some respondents felt they had not benefited from this information sharing.

The briefings provided an opportunity to communicate the objectives contained in the results plans. In fact, they were validation sessions of what the CSCOM representatives had decided, rather than real discussions: “It’s the leader doing this and then informing us” (Birth attendant, HD1). In some cases, the development of the performance contract objectives was largely dominated by the TDC, who involved few other staff. The performance contracts set out, on a quarterly basis, the commitments of the signatory parties and the projected results. At the CSCOM level, the contract was signed by the TDC, the ASACO president, and the commune mayor. Several respondents were unable to provide sufficient details on certain aspects of the RBF project, including the calculation of workers’ premiums and the procedures for payment of premiums and subsidies. We noted that those with higher levels of training were generally more knowledgeable about RBF. Among the information best understood by the respondents were the objectives of the intervention, with a focus on financial motivation and payment based on work performed.

Professional standards valued
RBF encourages the development of team spirit within health teams. In its principles, RBF is intended to defend equity among workers by paying each according to his or her performance. The values and professional standards identified by the people we met were many and varied, as illustrated by the following excerpts from interviews:

“It produces cohesion because we collaborate with each other” (Commune member, HD3)

“When merit is rewarded, I think everyone will apply themselves to quality. That’s it, really.” (Drug depot manager, HD3)

“It will help us educate ourselves on the idea of work, that is, being punctual, being present every day, giving ourselves autonomy in our work, and empowering people.” (Midwife, HD1)

**Forms of commitment to RBF**

Commitment was expressed in the TDC’s efforts to inform other staff members of the importance of the RBF:

“I remind the staff that they need to do their job well, and I remind them of the importance of implementing RBF.” (TDC, HD1).

Some ASACOs agreed to invest in infrastructure renovations, while others made efforts to reinforce human resources. Commitment was also reflected in regular visits by the ASACO president or members to the CSCOM to observe the progress of activities:

“If the president is seen here every morning, it’s because we’re respecting our commitments to RBF.” (Vaccinator, HD2).

One respondent from HD1 noted that other ASACO members were visiting the CSCOM much more regularly since the launch of the intervention. Every staff member had signed a personal commitment form. The TDCs asked that this form be posted in front of the offices so that everyone’s commitment would be visible. In some cases, this commitment depended on the degree of motivation. For example, for birth attendants, who did not receive premiums for deliveries, the commitment had to be put into perspective:

“I myself am a birth attendant. What I’ve noticed, in my view, in this new RBF, is that it’s birth attendants who come last. That’s what I see.” (Birth attendant, HD1).

One respondent, however, considered that RBF created a situation of unfairness among workers, with the most qualified being treated better than the others:

“No, they’re not rewarding everyone’s work, just those who are qualified professionals.” (Community leader, HD3).

**Characteristics of individuals**

Those interviewed in the centers had been quite receptive to the change proposed by RBF. News of the arrival of the RBF generated enthusiasm. This positive response often stemmed from their having heard about the successful implementation of the first pilot project. The enthusiasm expressed at the launch soon dissipated due to the lack of any RBF-specific supervision once the project was under way. In some cases, the good practices generated by RBF, such as the introduction of attendance lists, quickly disappeared.
Most of the reasons given by respondents to explain their positive attitudes towards RBF were based on their perception that the initiative’s objectives incorporated values they defended (work well done, merit rewarded, consensus, cohesion, etc.). However, the conditions defined for financial incentives were a source of frustration for some workers, and especially for the less qualified, as noted above in the case of birth attendants. Some respondents expressed skepticism or concerns about RBF: “...but we were all happy and worried at the same time, because it’s a new thing for us, even if it’s the same for the center’s functioning.” (TDC, HD3)

Implementation process

Within the RBF framework, the CSCOMs’ activities were planned on a quarterly basis. The only intervention outcome plans were developed during the initial training. At the time of our data collection, CSCOM personnel were focused more on making changes to maximize their individual premiums. The schedules for the various activities were rarely respected. Certain activities, such as staff evaluations, could not be carried out in some cases for lack of time. In fact, the initial time frame allotted for project implementation (eight months) was reduced to six months due to numerous problems (2012 political crisis, recruitment of the implementing agency, management problems, etc.). Initially, it was announced that premiums would be paid on the basis of two working quarters. In the end, workers received premiums for only one quarter, with payment delays of up to six months in some cases.

Despite the problems encountered by health teams, significant changes appeared to have been made in several areas. Schedules for outings in outreach strategies (teams going to villages to conduct health activities) were modified; in particular, the duration of outings was increased. Some CSCOMs decided to strengthen the vaccination team by recruiting again. This trend of recruiting additional staff was not observed in CSCOMs with low performance levels. To reduce the cost of prescriptions for children, in accordance with a quality standard imposed by the RBF project, some ASACOs negotiated with health workers to encourage them to talk with patients with a view to assessing their financial capacity and then issuing prescriptions based on their situation. This was done so that premiums would not be negatively affected due to non-compliance with this standard. One of changes mentioned most often by respondents with regard to the on-call system was that, with the introduction RBF, skilled personnel (nurse, nurse-obstetrician, midwife, TDC) became much more present during childbirths than before. In accordance with the new RBF instructions, when childbirth cases arrived in the absence of skilled personnel during on-call periods, the birth attendants called them to attend the childbirths, unlike the pre-RBF period when they could attend these deliveries on their own. For eligible staff, the objective of such a measure was to earn more premiums related to these deliveries.

Intake had evolved from being “non-welcoming” to showing greater availability to patients. The intake system now included referring patients to the services they needed. In the CSCOMs classified as low-performing, measures to improve intake more often took the form of verbal instructions.

In the area of hygiene, the RBF project compelled almost all the CSCOMs to adopt new rules on cleaning. In many centers, the rate of cleaning had increased considerably: “Cleaning is done every morning, first thing. Often when the hygienist has finished the job, we do the rest after the childbirth, and we also do the cleanup.” (Nurse, HD1). RBF also resulted in a better drug
management system. Monthly drug inventories were carried out by the ASACOs and done regularly, according to the depot managers: “Since the new RBF started, I fill out these documents every morning.” (Drug depot manager, HD1)

Specific features of CHCs and districts

The data revealed differences between high-performing and low-performing CSCOMs in the approach adopted for RBF implementation (Table 6). These significant differences were seen in the “implementation climate” and “implementation preparation” sub-constructs related to the intervention context (CFIR Construct 3) and in the “involvement” sub-construct related to the implementation process (CFIR Construct 5).

Table 6. Comparison of high- and low-performing CHCs by CFIR domains and constructs

<table>
<thead>
<tr>
<th>Domain</th>
<th>CFIR construct</th>
<th>High-performing CSCOMs</th>
<th>Low-performing CSCOMs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal context</strong></td>
<td><strong>Implementation climate:</strong></td>
<td>Perception that the CSCOMs had prepared well for RBF implementation.</td>
<td>Staff of some CSCOMs reported that the conditions required to start the RBF were not met due to lack of equipment and infrastructure</td>
</tr>
<tr>
<td></td>
<td>- tension around change</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Implementation climate:</strong></td>
<td>Objectives set out in the contract were, in many cases, discussed before being ratified.</td>
<td>The objectives were hardly discussed with the rest of the staff.</td>
</tr>
<tr>
<td></td>
<td>- objectives and feedback</td>
<td>Briefing sessions were used to communicate the objectives in the results plans</td>
<td>Results plans were seldom shared with the rest of the staff.</td>
</tr>
<tr>
<td></td>
<td><strong>Implementation climate:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- a learning environment</td>
<td>Awareness of being a single team in which each member is personally responsible for the outcomes.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stronger collective commitment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Preparation for implementation:</strong></td>
<td>TDCs explained the data on the importance of RBF to the rest of</td>
<td>Weak leadership of TDCs; often conflictual</td>
</tr>
<tr>
<td></td>
<td>- commitment of leaders</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13
the staff to motivate them. interactions with the ASACO.

| Processes | Involvement | Many awareness-raising activities conducted by a team consisting of the TDC, the commune mayor, and the ASACO president. | TDCs led most of the awareness-raising sessions on their own. |

Analysis of the data also revealed similarities and differences among health districts (Table 7). The specific features refer to three of the five CFIR domains: internal context, characteristics of individuals, and implementation process.

Table 7. Summary of RBF implementation results in the three health districts according to the five CFIR domains

<table>
<thead>
<tr>
<th>CFIR domains</th>
<th>Similarities among districts</th>
<th>Specific features</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Characteristics of the intervention</td>
<td>- RBF perceived as a foreign intervention - Difficulty citing the name of the funder - Perceptions of a complicated intervention</td>
<td>N/A*</td>
</tr>
<tr>
<td>2. External context</td>
<td>- Late recourse to care - Insufficient vaccination coverage of children - RBF network not well developed among the health personnel involved in its implementation - Presence of NGOs that could contribute to the achievement of RBF objectives - Implementation of the Social and Health Development Program</td>
<td>N/A</td>
</tr>
<tr>
<td>3. Internal context</td>
<td>- Strong correlation between level of information and level of education - Personnel focused on financial incentives</td>
<td>Experience of having been involved in implementing a previous RBF project</td>
</tr>
</tbody>
</table>
- Appearance of different forms of engagement towards RBF
- Perceptible frustration among staff with less training

### 4. Characteristics of individuals
- Personnel receptive to change
- Perceived link between RBF objectives and professional values held by workers

Arguments in favor of RBF were based on the values attributed to it and on rumors about the RBF project

Arguments in favor of RBF were based on the values attributed to it and on rumors about the RBF project

Arguments in favor of RBF were based on the values attributed to it and on rumors about the RBF project

### 5. Implementation process
- Schedule of planned activities not respected
- Reforms implemented to maximize results
- Increased connivance among workers
- Increased presence of skilled personnel during on-call shifts
- Recruitment of new personnel by some CSCOMs

Greater proficiency with RBF tools and content

Low proficiency with RBF tools and content

*N/A: non-applicable

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**Discussion**

With the CFIR, which is increasingly being used in LMICs [31], we were able to conduct an in-depth contextual analysis, reflecting in particular on the internal and external contexts of the intervention. There is a recurrent conclusion in the literature that context has been neglected in research aimed at developing and evaluating population health interventions [32]. In sub-Saharan Africa, any analysis of the implementation of public health interventions must take into account context [33]. In the context we studied, our attention was drawn to certain constructs related to the internal context. The difference between high-performing CSCOMs and low-performing CSCOMs was most significant in terms of these constructs, which also reflected attitudes and practices that were especially evident in the intervention start-up phase. These were the “implementation climate” and “management commitment” constructs. In addition, our analysis of the issue of leadership showed this to be a factor that promoted good performance. As such, CSCOMs led by a TDC with strong leadership achieved more reforms in this RBF intervention. A study conducted in Burkina Faso in district hospitals highlighted that health center managers’ leadership and vision were essential ingredients for effective health action, particularly in contextualizing national strategies and taking patients’ concerns into account [34].
Our data underscore a strong link between leadership and engagement. In the more successful CSCOMs, managers’ commitment in turn fostered staff commitment. In these CSCOMs, the start-up phase of the intervention was marked by multiple efforts from TDCs to explain to the rest of the staff the importance of RBF in order to motivate them. Recent research has shown the importance of leadership styles (directional or participatory) in determining health workers’ motivation for RBF in Mali [35].

RBF is an intervention that, like any other, requires both individual and collective commitment on the part of the actors involved. Individual commitment was theoretically manifested in each CHC employee’s signing of a commitment form. Collective commitment was expressed as a heightened spirit of initiative to improve the chances of gaining more subsidies. This spirit of initiative was seen more often in the high-performing CSCOMs than in the others, which performed poorly in terms of the redesign of data collection tools, service organization, measures to improve patient intake, and better hygiene.

The literature identifies several contextual factors that could potentially explain the difference in performance among facilities involved in RBF implementation [36–38]. In particular, authors point to the uncertainty surrounding the payment of premiums (e.g. late payment), communication among stakeholders, confidence in the performance measurement instrument methodology, the health workers’ understanding of how RBF works, and the role of facility managers (management skills).

RBF can affect health workers’ motivation in a variety of ways, and often in ways that extend far beyond the direct effects of financial rewards for individuals [23]. One study in Nigeria showed that health workers’ motivation and performance were reduced by uncertainty about obtaining the incentive and inadequate infrastructure [39]. Conversely, a good understanding of the system among health workers and strong management skills are likely to improve motivation and performance, just as reducing delays in incentive payments, communicating effectively, and strengthening health workers’ understanding of the FBR system are likely to produce better results in pay-for-performance programs. Another study conducted in Sierra Leone found that implementation deficiencies, such as late payment and access difficulties, posed a series of problems that limited the motivational effects of incentives [40].

The analysis of our data showed the RBF project also generated uncertainty and frustration among those involved in its implementation. These had to do, among other things, with the long delay in starting activities and the lack of consideration for deliveries carried out by birth attendants, particularly for those in HD1, who had experience with the first pilot RBF project in which these deliveries had been taken into account. These situations created a certain skepticism initially, even though the majority of health workers expressed buy-in for the intervention. In the interviews, the RBF remained an important source of motivation for the health workers. Their motivation was linked not only to subsidies but also to improved working conditions (acquisition of equipment, infrastructure) and better system governance (rewarding merit). As such, RBF stimulated an interactive relationship between internal and external motivational factors related to responsibility, achievement, and recognition, thus increasing perceived motivation [41].

Some studies have strongly underscored the importance of RBF-related motivation associated with work environments, including systematic supervision and availability of essential drugs [20]. In Benin, a contextual analysis of the implementation of two different RBF models showed
that, in this field, there is no rigid and standardized model because each context dictates its specific features [42]. Given the specificities of contexts and characteristics, the “same” project will be “different” in each facility, i.e., some mechanisms may work in one context and not in another, to the point where it becomes possible to identify features specific to each RBF system [2].

It is important to note that RBF does not operate in a vacuum within health systems. Some studies have underscored the complexity of these interventions, highlighting the notion that an intervention can be seen as a critical event in a system’s history, resulting in the emergence of new structures of interaction and new shared meanings [43]. Complexity of social interactions is a property of both the intervention and the context [44]. Often, both CSCOM workers and the general population perceived RBF as just another development project like so many others they had seen pass by over time, as noted regarding RBF in Burkina Faso [22]. In this context, projects come and go, but to the actors involved, they all look the same [45]. Indeed, they are most often implemented in an environment that has undergone many previous interventions that have left their traces. Such local history necessarily structures present behaviors, at least in part [46]. This observation reflects the notion of “path dependency”, in which each new reform is defined in reference (positive or negative) to a set of past policies [47]. The logic that generally prevails among project designers is to consider the story as starting with their own project, and then systematically underestimating all that has been done before and overestimating their project’s impact. RBF is no exception to this rule, as the payment of performance-based premiums that is at the heart of this intervention is a common practice. In the past, some projects also offered premiums linked to health facilities’ overall performance. As a public policy, RBF has been analyzed at the national level based on an accumulation of experiences in which local actors have played a particularly important role, as Ma-Nitu et al. have suggested in other African contexts [48].

The CFIR also enabled us to reflect on practices to encourage uptake of the intervention. RBF is anchored in comprehensive standards for specific reforms: renewal of public management structures, separation of functions (buyers–providers), strengthened supervision, greater autonomy of service providers, and enhanced effectiveness of information systems [49]. This research highlights how uptake is constructed through the interplay of multiple actors. Indeed, analyzing the results through the lens of the CFIR domains and constructs, in particular domains 1 (characteristics of the intervention), 2 (internal context), and 3 (external context), revealed useful information on the ways in which local actors adapted RBF and shaped it to their own logic. Such uptake occurs in a system of norms and values that can influence the way it manifests. We observed, for example, that the RBF implementation’s external context was marked by attitudes and practices that could impede services use. An example of this was the sense of shame associated with pregnancy that prevented many women from going to the health center for PNC. Along these lines, some studies have noted that the social context can directly affect the attainment of RBF objectives if behaviors advocated by this intervention are not socially or culturally anchored [50]. Others have shown that how equity is conceived in a given context can influence the acceptability of meritocratic payment systems [51].

Overall, certain “visible” changes marked the launch of the FBR project, notably the various changes made to the on-call system, vaccination outings, patient intake, and hygiene. These reforms show that RBF implementation can have an impact on the health system, particularly on service delivery, human resources, and governance [3].
Some studies have shown that giving specific information to the community increases the effectiveness of participation [52]. This information-sharing approach corresponds to the theory of change centered on responsibility towards the community, as opposed to the theory of change centered on responsibility towards purchasers of services [2]. The case presented in this study belongs to the latter theory of change, notably because what the health workers primarily retained from RBF was that they should receive premiums and that these were linked to achieving performance indicators. Their statements reflected the fact that they had very little understanding of the complexity of RBF functioning. A similar observation was made in Burkina Faso [22].

Conclusion

RBF was initially viewed as a classic development project based on comprehensive logics carefully described in the manual of norms and procedures for the various projects and inspired by international standards in this field. In practice, these comprehensive logics collide with local logics that transform them, subjugate them, or even challenge them in some cases. All of this shows that, to study development phenomena, it is important not to isolate them or disconnect them from their social dimensions (e.g. couple relationships, relationships with authority, definition of justice, equity, forms of local solidarity). The CFIR is a robust conceptual framework that can be used to carry out a sufficiently detailed contextual analysis, but whose contents do not entirely coincide with our reflections. We deliberately “broadened” it to incorporate notions we considered relevant for the analysis of some constructs without compromising their semantic contents. This iterative interplay between embedded meaning and “enlarged” meaning made it an appropriate tool for analyzing the implementation of an intervention [13].

Appendix 1. Reasons for non-inclusion of certain constructs

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Reasons for non-inclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opinion leaders</td>
<td>Opinion leaders such as imams, politicians, and presidents of women’s associations and youth associations were not involved in the implementation of the project.</td>
</tr>
<tr>
<td>Leaders formally appointed for the implementation</td>
<td>In the three districts, no CHC had formally appointed any agents for the RBF implementation.</td>
</tr>
<tr>
<td>Champions</td>
<td>The implementation period was not long enough to allow for the emergence of champions.</td>
</tr>
<tr>
<td>Reflection and evaluation</td>
<td>In the start-up phase, no reflection or evaluation had yet been carried out.</td>
</tr>
<tr>
<td>Evolution</td>
<td>At the start of the intervention, there were no data available to monitor whether the activities were progressing according to the implementation plans.</td>
</tr>
</tbody>
</table>
List of abbreviations

ASACO: Association de santé communautaire / Community health association
CFIR: Consolidated Framework for Implementation Research
CSCOM: Community health center
CSREF: Reference health center
DOT: Directly observed treatment
HD: Health district
HDMT: Health district management team
HIV: Human immunodeficiency virus
IMCI: Integrated management of childhood illness
KIT: Koninklijk Instituut voor de Tropen / Royal Tropical Institute
KMIC: Knowledge Management and Innovation Clinic
LLMIC: Low and lower middle income country
PCU: Project coordination unit
PNC: Prenatal consultation
PONC: Postnatal consultation
PRODESS: Programme de développement socio-sanitaire / Social and Health Development Program
RBF: Results-based financing
RHD: Regional health department
SHRP: Strengthening Reproductive Health Project
SNV: Stichting Nederlandse Vrijwilligers / Netherlands Development Organisation
TDC: Technical director of the center
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Availability of data and materials
Non-applicable

Authors’ contributions
VR drafted the research protocol with the collaboration of AC and LG. AC supervised the data collection with TZ, LG, and VR. LG trained AC, TZ, and the assistants in the use of the qualitative data analysis software. AC performed the data analysis and wrote the article, which was reviewed and enriched by LG, TZ, and VR. All authors were involved in the study design, the development of survey tools, and the literature review.

Conflicts of interest
The authors declare they have no conflicts of interest.

Consent to publication
Non-applicable

Ethical approval and consent to participate
The protocol for this study was reviewed and approved by the Ethics Committee of the Institut de recherche et de formation en santé publique (INRSP) in Mali (tel.: 00223 76187260).
Dear editors,

On behalf of my co-authors, I am pleased to submit our qualitative research paper entitled: “The complexity of the implementation of results-based funding” to your journal Health research policy and systems.

We chose your journal because we think that the subject mentioned in the article fits well with the research focus of this journal, emphasizing health policy analysis. The journal’s audience and its open-access policy lead us to believe that the results we are presenting on the implementation of a health policy in Mali will be widely disseminated, particularly to health researchers.

I confirm that all co-authors have approved the manuscript for submission and accept the copyright transfer.

We also confirm that the content of this manuscript has not been the subject of any previous publication.

Thank you for your consideration,

Dr Abdourahmane Coulibaly