Studying the link between institutions and health system performance: a framework and an illustration with the analysis of two performance-based financing schemes in Burundi

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Institutional arrangements of health systems and the incentives they set are increasingly recognized as critical to promote or hinder performance in the health sector. Looking at complex health system interventions from an institutional perspective may contribute to better understanding what are the paths and processes that lead to the results of such interventions. In this article, we propose an analytical framework drawing from new institutional economics. This framework suggests seven dimensions to look at: institutions, enforcement mechanisms, property rights, incentives, interactions between extrinsic and intrinsic sources of motivation, behavioural changes and organizational performance. For illustrative purposes, we then apply the framework to the analysis of the institutional (re)arrangements of two performance-based financing (PBF) schemes in Burundi by carrying out an empirical comparison of case studies. We use mainly qualitative data from primary and secondary sources and analyse them with focus on the seven dimensions of the framework. The analysis of the case studies provides a comparative narrative of the two PBF schemes and highlights the differences in their operational design, the challenges faced during implementation and the adaptations made. From a methodological perspective, this article proposes a tool to analyse complex health system interventions, looking beyond the evaluation of the final effects to focus on the processes through which institutional (re)arrangements affected those results. Its application indicates, at an empirical level, that such analysis could help identify lessons regarding the design of health systems interventions, such as PBF schemes, and the process of reforming institutional arrangements.

Keywords Institution, institutional analysis, incentives, pay-for-performance, performance-based financing, Burundi
KEY MESSAGES

- Institutional arrangements of health systems are critical to promote or hinder performance in the health sector. Analysing such arrangements may illuminate the complexity of the relationship between health system interventions, modification of institutional arrangements and performance of the health system. However, whereas this health system research programme attracts interest, it raises challenges by its breadth and complexity.

- This study proposes a simple framework that highlights key dimensions for potential institutional analysis. Drawing on insights from New Institutional Economics, this framework may help structure institutional analysis and provide directions to researchers.

- An illustration of the analytical framework by its application to the case of two performance-based financing (PBF) experiences in Burundi shows the relevance of the analysis. The framework not only helps to gain original insights in terms of institutional design and implementation but also indicates potential future developments for the research agenda on PBF evaluation.

Introduction

Despite recent advancements in health outcomes worldwide, progress in low-income countries (LICs) has been slow to meet the health needs of the populations (Travis et al. 2004; Fryatt et al. 2010). Some argue that one of the causes of low performance is the traditional organization of the public health sector (World Bank 2004; Meessen and Van Damme 2005). Indeed, in many countries, institutional arrangements establishing public health systems may not be the most appropriate ones, as they fail to set incentives conducive to managers’ and health personnel’s performance. This points to the importance of a research agenda focused on institutional arrangements and their influence on the performance of health systems.

However, because of its breadth, research focusing on institution and health system interventions poses important challenges for researchers. Despite having attracted the interest of social sciences scholars for decades, the study of institutions was initially marked by a division of labour among disciplines. In 1901, Emile Durkheim declared that sociology was the science of ‘institutions’ and economics the ‘science of market’ (cited in Aoki 2001, p. 4). However, in the last 30 years, economists have developed a keen interest for institutional arrangements—this article refers to the work done by New Institutional Economics (NIE).

Pioneer NIE authors, such as Coase, Williamson and North can be inspirational for researchers looking at health systems in LICs. Yet, when attempting to perform applied empirical analysis, the researcher is either left to broad observations, or steered towards narrow hypothesis testing, such as those drawn from microeconomic agency models (cf. literature on provider payment mechanisms; e.g. Liu and Mills 2003) and the ‘vertical integration’ literature (e.g. Castano and Mills 2012). Instead, a research programme that addresses the central role of institutional arrangements in the organization of health systems and that recognizes that modifying them (in terms of design and enforcement) is precisely what health sector reform is about is pivotal to understanding and improving performance of health systems in LICs. Beyond specific literature on institutional arrangements, such as user fees, provider payment and health insurance, some scholars of health systems in LICs have adopted ‘institutions’ as their main field of study. Among these are for instance, Lucy Gilson’s important contributions as a political scientist (Gilson 2003) and Gerald Bloom’s work, over the last 20 years, which focused on the establishment of market institutions in transitional China (e.g. Bloom 2011). Institutions are also central in Thomas Bossert’s study of decentralization and decision rights (e.g. Bossert 1998) and, more recently, in Kenneth Leonard’s analysis of individuals’ behaviors and on how enforcement mechanisms influence intrinsic motivation Leonard and Masatu (2010). Yet the question remains on how to organize systematically this sub-field of health systems research and better understand its scope and main components. This also would require reducing the distance between disciplines, and in particular between economics and other social sciences (Bennett et al. 2011).

This article is an attempt in this direction, as it aims to help researchers gain a better understanding of how institutional arrangements shape the performance of health systems. It echoes a similar proposition, advanced by Mathauer and Carrin (2011). We propose a simple framework that aims to identify key dimensions of focus, drawing from concepts of NIE. To provide an example of its potential use, we apply the framework to the empirical analysis of two performance-based financing (PBF) schemes in Burundi: Cordaid’s project in Bubanza province and the Swiss Tropical Institute’s intervention in Ngozi province.

PBF schemes are a useful entry point for this illustration for at least four reasons. First, the intrinsically institutional character of PBF intervention has often been highlighted (Meessen et al. 2006; Soeters et al. 2006). Second, PBF schemes are rapidly expanding in sub-Saharan Africa, including in countries with a disappointing track record with regard to the establishment of ‘modern’ institutions (e.g. rule of law, enforcement of contracts—Soeters et al. 2011). These contexts raise specific challenges for the institutional analyst and the use of the framework could help identify lessons. Third, PBF is increasingly emerging as a vehicle for broad reform of public health systems broader than just a modification of the provider payment mechanism (Meessen et al. 2011). It is thus essential to fully understand its nature and implications on institutions. Fourth, the assessment of PBF interventions is currently a debated topic. Critics have pointed to the lack of empirical evidence (Fretheim et al. 2012), but acknowledged that this is explained by the complexity of the intervention (Macq and Chiem 2011; Witter et al. 2012). A better grasp on this
complexity through institutional analysis may help the empirical documentation of PBF interventions.

The empirical part of this article is mainly illustrative. Although descriptive, the comparison of case studies allows for a certain level of critical analysis of key institutional dimensions. In this way, the objective of this article is 2-fold: (1) to propose an analytical framework to look at institutional arrangements (on methodological grounds); (2) to confirm its usefulness by showing how it can provide insights into the mechanisms of PBF in Burundi (at an empirical level). The article begins with a discussion of the insights that NIE can offer to health system researchers, before moving on to the presentation of the analytical framework. Then, an illustration of the empirical analysis that could be carried out by using the framework is presented based on the comparison of two PBF schemes, highlighting findings and discussing some lessons on design and implementation of PBF interventions. Conclusions are drawn in the last section.

A better understanding of institutional arrangements in the health sector: insights from NIE

The body of literature under NIE is vast and complex. It initiated in the late 1930s, when a young economics student identified a major flaw in standard market economics—their incapacity to explain the existence of firms—and proposed an explanation: market interactions entail ‘transaction costs’ (Coase 1937). It took more than 30 years for this observation to trigger major theoretical developments (among others: Coase 1960; Alchian and Demsetz 1972; Williamson 1975; Jensen and Meckling 1976; Fama and Jensen 1983; North 1990; Greif et al. 1994; Aoki 1996), whose insights were then progressively integrated into neo-classical economics (e.g. Akerlof 1970; Stiglitz 1974; Grossman and Hart 1986; Hart and Holmstrom 1987; Holmstrom and Milgrom 1991). This section does not aim to summarize the richness of such bodies of knowledge, but highlights a number of key insights that can help us to understand the institutional dimensions of health systems.

The main hypothesis of NIE is that the performance of an economy or of an organization (e.g. the public health system in LICs) is the result of underlying institutional arrangements (North 1990). An ‘institution’ can be defined as a pattern of behaviours enacted to solve a co-ordination problem. Institutions work because the pattern is known, expected and respected by most individuals aware of that specific interaction (Aoki 2007). Because of this, institutions play a key role in co-ordinating human beings, providing a collective recognition of individuals’ rights over assets. By reducing uncertainty, they enhance interactions and transactions.

A key contribution of NIE was to clarify how institutions shape property rights. An individual has ‘property rights’ over an asset to the extent of his ability to freely exercise choices over this asset (Barzel 1997). In particular, ‘decision rights’ refer to the ability of deciding on the use of the asset, whereas ‘earning rights’ refer to the ability of appropriating the utility of the asset. Property rights can be partitioned among individuals; e.g. earning and decision rights over the same assets can belong to different individuals. This characteristic is fundamental to the organization of the economy: some allocations of property rights can create more well-being for a society than others. Property rights held by individuals stem from the recognition obtained from others, but individuals can also rely on ‘enforcement mechanisms’ to maintain their control. These mechanisms entail enforcement costs, which have been interpreted as equivalent to transaction costs.

Clear property rights give clear directions to individuals, as they know which the available options for use of assets are and which proportion of the earnings produced by the use of such assets will accrue to each person. If we assume that rational individuals decide over the use of assets to pursue their objectives, it is also true that property rights can be shaped in a way that provides individuals an ‘incentive’ to behave as another individual wishes (‘principal-agent model’). A branch of microeconomics, referred to as ‘theory of incentives’ or ‘contract theory’, has been important in gathering insights at this level (Laffont and Martimort 2002). The ‘contract’ is a particularly instrumental institutional arrangement in this sense, as it establishes an agreement between a limited number of parties on a specific set of behaviours. Yet, it should be noted that a contract is always part of the environment of all existing institutions (Brousseau and Glachant 2002). This underlines the need for a holistic analysis of institutional arrangements.

This brief overview suggests that some NIE insights may be relevant for health system thinking. Indeed, health systems can be seen as institutional arrangements whose main purpose is to co-ordinate economic agents involved in the production of health outcomes. The issue of health system performance can then be formulated as the quest of the institutional arrangements which provide the greatest well-being given an amount of resources available. To structure such reflection on health system interventions and allow analytical work and the formulation of normative and prescriptive stances, we propose a simple framework—defined as a conceptual artefact providing a list of key elements and highlighting the relations between them (Ostrom 2005). Our proposition, depicted in Figure 1, recognizes the centrality of incentives in the discussion about underperformance of health systems, but tries to embody it into a multidimensional view revealing different ‘facets’.

The framework consists of the following seven dimensions:

1. The ‘institutional arrangements’ that define the health system, viewed as a nexus of institutions. This view is broader than the one of ‘nexus of contracts’ described among others by Alchian and Demsetz (1972). It acknowledges that not all institutions are vulnerable to actions by health system actors as some are society wide. The introduction of a PBF scheme, presented in our illustration, is an example of a ‘rearrangement of institutions’, and of contracts in particular.

2. Institutions are abided by because of individuals’ interest and ‘enforcement mechanisms’ (Aoki 2001). Such mechanisms which ensure that actors comply with the new institutions should be documented by institutional analysis. This requires not only reviewing the content of contracts, rules and laws but also observing such compliant behaviours, the balance of power and the individual
Figure 1 The analytical framework. Source: Adapted from Meessen (2009, p. 126).

interests of actors affected by the institutions (see below, intrinsic motivation). In the case studies, the analysis covers the motives of the main actors, the existing enforcement mechanisms, those introduced by the intervention and their interaction.

(3) Institutional arrangements and enforcement mechanisms shape the ‘property rights’ (earning and decision rights) that individuals hold on different assets (e.g. their selves, drugs, infrastructure, etc.) (Barzel 1997). To capture them, ‘property rights mapping’ can represent a third step in this analysis. This is not dissimilar to decision rights analysis in health system research (Bossert 1998), but encompasses the mapping of earning rights. Our illustration looks at what changed in the decision and earning rights of the key actors (providers, health authorities and project implementers), under the new institutional arrangements.

(4) Property rights define ‘incentives’ for individuals and determine whether incentive sets are more or less well-aligned on principals’ objectives. This dimension of the analysis should ideally draw on the knowledge generated by contract theory, trying to identify asymmetries of information, multi-tasking situations and assessing the appropriateness of the power of the incentives set in place.

(5) Usually, two sources of motivation are identified: intrinsic (an individual behaves in a certain way because she values a behaviour itself or the goal achieved by such behaviour) and extrinsic (an individual adopts a behaviour because it leads to resources useful for achieving other behaviours or goals). Incentives mainly play on extrinsic motivation, but they may also affect ‘intrinsic motivation’. Indeed, intrinsic motivation is not given: individuals may revise their preferences, e.g. because they have accumulated knowledge through experience or education. Moreover, some property rights revisions may convey messages on what matters now from the principal’s perspective (e.g. in PBF schemes, recognition that rewarding effort is more important than previously). According to the way individuals interpret this information, the revision of property rights may crowd-out or crowd-in their initial intrinsic motivation. Because of this, attention to interactions between intrinsic motivation and incentives is extremely important (Leonard and Masatu 2010).

(6) ‘Behavioural changes’ are determined by the incentive structure as it interacts with the intrinsic motivation. They should be, ideally, observed and measured for the purpose of the analysis. However, because of data limitations in the case studies, findings are based on perceptions reported in the interviews when asking ‘before/after’ questions.

(7) Certain behaviours are important from the perspective of the ‘performance’ of the local health system, while others are not. This last step is about assessing the extent to which the induced behaviours contribute to progress towards the goals of the principals, and of the Ministry of Health (MoH) in particular. For example, to what extent is the observed and attributed increase in caesarian sections appropriate from a public health perspective?

It is important here to draw attention to three important issues with reference to the framework.

First, it focuses on clarifying the ‘internal’ processes by which institutions affect performance of an organization. Attention should also be paid to external parameters, such as the ‘actors’ involved (their individual preferences, initial endowments and opportunities), the degree of ‘uncertainty’ and the ‘assets’ at stake (and their characteristics as for enforceability of property rights partitioning) (Barzel 1997).

Second, this framework should be seen as a ‘system’ rather than a pathway or causal chain. Indeed, any new institution rests on other pre-existing institutions which themselves hold because they have an instrumental value. This systemic nature indicates a sort of egg-chicken situation and the analyst should not attempt to find a ‘starting point’. Our recommendation is to identify the core set of institutional arrangements of scrutiny, and then appreciate the role of the surrounding institutions.

Third, the framework allows for looking at two, non-exclusive and non-independent, ways for influencing behaviour: extrinsic and intrinsic motivation. From the principal’s perspective, it is possible to use the ‘carrot’ and ‘stick’ instruments, and to develop a rhetoric (so-called ‘sermon’ instrument) to support the incentive strategy. In this respect, working on intrinsic motivation can be seen as a complementary enforcement strategy of the reform. This point will emerge in our case studies.

An illustration of the analytical framework: the comparative analysis of two PBF schemes in Burundi

Methods

To empirically illustrate the use of the framework, we analyse two PBF experiences in Burundi. The research design adopted for this study is a comparison of case studies. Such design couples the advantages of a case study design with the explanatory power of comparisons (Yin 2003; Flick 2006). Comparisons of case studies present some advantages as they: (1) allow a more distanced view of a seemingly familiar subject; (2) identify a descriptive pattern of key elements; (3) develop
an analytical framework to systematize the analysis; (4) build and generalize theory by validating or invalidating hypotheses (Noirhomme et al. 2007).1

The empirical analysis was carried out at the end of 2009, as part of an independent study commissioned by the European Commission and Cordaid to better understand the institutional arrangements of PBF interventions in Burundi, before the scale-up at national level in April 2010.2 Mainly qualitative information was collected from secondary and primary sources. Secondary data were gathered through a review of literature and available documents (project documents, reports, evaluations, manuals and surveys). Primary information was collected in the field in November 2009 by one co-author (M.P.B.) through semi-structured, in-depth interviews of key informants, including: all projects’ staff in the provinces (7) and projects’ funders and representatives at national level (3); all available staff of the MoH at district (7), provincial (5) and national level (1, responsible for monitoring and evaluation of PBF pilot projects); directors and administrators of health facilities purposefully selected to represent the best and worst performers (7); representatives of both local associations involved in the projects (2) and the two verification agents involved in Ngozi. In total, 34 people were interviewed. Informed consent and authorization to use the information provided in an anonymous way was obtained orally from all interviewees. To validate and corroborate the evidence gathered, all information has been carefully triangulated with one or more other sources. The information collected was then analyzed using the analytical framework. The findings were first compiled into a report shared with stakeholders in Burundi. Both project teams read and provided feedback on the draft report, as a last step in the validation process.

We recognize that the methods for our analysis present some limits. The main one refers to the little quantitative information available and the consequent, rather heavy reliance on qualitative data, perceptions and opinions. Second, data were collected during interviews by a single researcher, whose previous familiarity with the Burundi setting undoubtedly influenced the analysis. However, these issues are mitigated by other aspects of the methodology, in particular the use of a rigorous analytical framework, the thorough triangulation process and the frequent exchanges with actors in the field. In addition, particular attention was given to the question of the role and perspective of the researcher (called ‘positonality issue’ by Walt et al. 2008) by including constant discussion and reflection with a second author (B.M.), external to the country.

Context

Our case-study projects carried out their activities in the provinces of Bubanza and Ngozi in Burundi.4 Both projects include a PBF component. In this context, PBF refers to the ‘model’ implemented in the African Great Lakes Region (Musgrove 2010 for a glossary; Meessen et al. 2006; Soeters et al. 2006; Busogoro and Beith 2010, for case studies). In such schemes, health facilities are remunerated on the basis of the quantity of services provided, compounded by a quality score. Providers are encouraged to develop innovative solutions to increase quantity and quality of services and an entrepreneurial spirit, managing autonomously their financial resources. The bonus obtained can be used for the facility’s recurrent expenditures, or for small investments, and divided among personnel. Although slightly different for the two projects, services included in the schemes cover broadly all those provided by the health facilities. At health centre level, they include outpatient visits, HIV screening, TB and malaria services, family planning, antenatal care and assisted deliveries, vaccination and nutrition services, reference to the district hospital. Quantity and quality of services are verified before payment. Thus, the introduction of the scheme requires the existence of a fund holder, a purchasing agency and a verification agency (although, as we will see, different models are possible). Table 1 provides some information on the two projects.

Findings

Our analysis begins with a brief introduction of the interventions, their historical development and objectives. It then develops a comparative narrative along the dimensions of the analytical framework, by focusing mainly on the issues and themes that were deemed relevant to highlight similarities and differences in the case studies and point to lessons for the design and implementation of PBF interventions.

Cordaid’s project in Bubanza has a clear PBF component, which was influenced by Cordaid’s pioneer PBF scheme in neighbouring Cyangugu, Rwanda (Soeters et al. 2006). In the scheme, performance contracts link the key actors of the health system to an independent purchasing agency, the ‘Agence d’Achat des Performances’. One of the aims of the project is to reinforce the entire local system by involving all the components of what Cordaid calls the ‘health triangle’: the health actors (including the health authorities and the providers) on one side, the administrative authorities on the second and the population on the third (Ndayishimiye 2009; Soeters 2009; Peerenboom 2010). The Purchasing Agency maintains a very strong and independent role—it is represented in the centre of the triangle.

The project in Ngozi adopts a substantially different approach, based on a ‘co-management’ philosophy, creating a strong and close partnership between the project team and the health hierarchy, represented by the Provincial Health Bureau [‘Bureau Provincial de Santé’ (BPS)]. The BPS becomes the ‘institutional partner’ and holds a key role as president of the Operational Committee, a joint group in charge of weekly management and operational decision making. It is important to note that the project in Ngozi was not focused on PBF from its inception. A PBF component was introduced later on and remained limited in funding and importance (Table 1). Indeed, both the donor (Swiss Development Co-operation) and the implementer (Swiss Tropical Institute) do not fully support the strategy as an effective tool to address the problems of health systems, because of previous experience (namely in Rwanda) and on theoretical grounds (Medicus Mundi 2009). They introduced it for the sole reason that it is included in the National Health Strategic Plan of Burundi (MoH 2005).

Institutional (re)arrangements

The implementation of the PBF interventions required a revision of institutional arrangements, although it was done differently by the two projects. Both interventions introduced
performance contracts that define the remuneration for quantity and quality of services delivered, linking the key actors of the health system, i.e. providers, health authorities, local associations in charge of verification at household level and a purchasing agency (under different arrangements in the two schemes). In Ngozi, it was decided to establish ‘conventions’ rather than ‘contracts’ as they are perceived as less legally binding and in line with the partnership approach chosen by the project.

Moreover, in Bubanza, an independent Purchasing Agency was created which performed multiple functions: fund holder; purchaser of services; verifier of the contracts; and channel of technical assistance and ‘coaching’. The Agency is also involved in ‘strategic purchasing’ by its defining the content of contracts (including services remunerated and level of subsidy), in partial collaboration with the Provincial Health Bureau. However, findings in the field showed the leading role of the Agency for this task. In Ngozi, an Operational Committee (CoDir) was created, chaired by the Provincial health authorities. Representatives of the project team were part of the Committee, but the leadership clearly rested in the hands of the Provincial Health Bureau Director. During the interviews, it emerged that this allowed external factors (e.g. political pressure) to frequently intervene in the decision process, causing inefficiencies in the management of the PBF scheme (e.g. in the selection of the facilities to include or the level of subsidies).

Enforcement mechanisms
Implementers of both projects were aware from the inception that the institutional revision relied on the creation of new enforcement mechanisms (verification of performance and execution of contracts), which interacted with preexisting ones (regulation by health authorities and coaching/supervision).

In Bubanza, the verification was performed directly by the Purchasing Agency and, under its close oversight, by local associations contracted to conduct household surveys. It was designed and implemented as a strong mechanism to avoid possible collusion and conflicts of interest. In Ngozi, in contrast, the verification of the performance of health facilities was initially entrusted to the District Health Bureaus (‘Bureaux de District de Santé’). However, this system led to episodes of collusion between Districts and providers. It was also a cause of conflicts of interest, as the Districts were in turn evaluated on the basis of the health centres’ performance. Later on, the verification was entrusted to independent individuals (nurses from the local paramedical school). In general, the verification remained weak as an enforcement mechanism.

The timely and duly execution of contracts may become an important enforcing mechanism as it creates trust in providers that rewards and punishments set in the contracts (the new institution) are real and enforced. In Bubanza, contracts were regularly executed by the Purchasing Agency and payments made on time. This reinforced the authority of the Agency. In Ngozi, instead, contracts were not always duly executed, because of lack of financial resources or other operational problems. As a consequence, providers did not trust the certainty of the enforcement of the contract clauses, causing a dilution of the enforcement power of the ‘conventions’.
The new institutions and actors interacted with previously existing mechanisms. Enforcement of the respect of norms, protocols and health priorities is usually a prerogative of the health authorities, though top-down command (albeit limited to the reposting of staff, rather than firing). However, such hierarchical control should be accompanied by supportive supervision, which, despite being ‘softer’ than command and control, can be quite effective in ensuring the compliance to norms, by creating a relation of trust and respect between provider and coach. In Bubanza, the presence of a strong and capable Purchasing Agency profoundly affected these enforcement mechanisms. The health hierarchy’s authority appeared weakened, both for contextual reasons (i.e. the constant turnover of the Provincial Director) and by the presence of the Agency. In addition, the Agency captured the ‘coaching’ role and became a reference point for providers for all problems, including those strictly clinical. The manager of a health facility stated that the Agency is ‘like a father’ to them, for its role of close guidance and support. In Ngozi, in contrast, supervision and coaching remained in the hands of District Health Teams, with financial assistance from the project. The health hierarchy’s authority remained quite strong. Although decisions should have been taken by consensus, the president of the Operational Committee (the Provincial Medical Director) had an authoritarian role. As a key informant stated, ‘it is the BPS [Provincial Bureau] which decides everything. The project is only the funder’. Because of the ‘co-management’ approach, the project team had no means to overcome this problem and appeared, at times, frustrated by the situation and the inefficiencies it caused.

Changes in the property rights structure
In both provinces, property rights mapping showed that health providers gained earning rights, because of the PBF bonus, and decision rights on how to organize the service delivery, to use assets to generate revenues, and to utilize these revenues. Despite the recurrent mention of providers’ autonomy and the ‘black-box approach’ of PBF schemes (under which providers are allowed to autonomously and entrepreneurially manage their resources) in particular by Cordaid, the increased decision rights seem to be determined more by the ongoing decentralization process than by the introduction of PBF. Indeed, the Purchasing Agency in Bubanza retained some control over the provider’s financial decisions both through close coaching, as well as through the use (enforced in the contracts) of health facility planning tools, which include rules and distribution keys for the allocation of resources to different expenditures.

As for the other key actors, in Bubanza the health authorities saw their decision rights captured de facto by the Purchasing Agency, which, because of its coaching role and its function as strategic purchaser was able to allocate rights, deciding who did what, and who had decision and earning rights over what. In Ngozi, the health authorities maintained strong decision rights, which were increased by the acquired control over PBF resources through the CoDir.

Incentives established
In Bubanza, providers hold extensive decision and earning rights on the health facilities’ resources and the PBF revenue. This bundling generates ‘high-powered’ incentives, i.e. a situation where the economic agent has a clear entitlement to net receipts (Williamson 1996). Despite general dependency on the Agency, the intervention was able to define clear rules and responsibilities for the health providers, and to determine a set of high-powered and well-aligned incentives to ensure the improved performance of each actor.

In Ngozi, the situation was different. Findings in the field showed that, because of financial concerns, a cap was introduced in 2009 to limit the maximum bonus amount to 500 USD per month per health centre, whatever the actual quantity and quality of services produced. Thus, providers were incentivized to increase service production only to a certain extent (corresponding to the maximum subsidy), after which the incentive disappeared. Project documents reveal that ~90% of health centres received the maximum monthly amount and, therefore, they faced no incentives to further increase or improve services. Another issue regards the coexistence of input and output-based approaches. In 2008, providers received 71% of funds for drugs, functioning, training, rehabilitation and equipment as input-based provision, whereas only 29% of the funds were output-based payments. This causes a misalignment of the incentives, as, on the one hand, providers were required to use a part of the PBF bonuses for the facility’s expenditures to improve service delivery, but on the other, the facility needs were already attended to with items provided in kind. Hence, providers had little incentive to increase the volume of services and obtain funds to purchase items that were already supplied to them.

Interaction with intrinsic motivation
Although changes in ethical commitment and professional deontology are complex to capture, no evidence of crowding-out of intrinsic motivation was found during the interviews in Bubanza. On the contrary, providers interviewed reported that having clear tasks and objectives assigned, more financial resources and support and mentoring available generated pride and professionalism in them and their teams.

In Ngozi, the capped bonus became a ‘fixed’ extra remuneration for 90% of the facilities and this may have led to a reduction of intrinsic motivation. Health workers began to perceive this bonus as a right and expect it every month, even when performance did not justify the payment of the entire bonus, and they reportedly spent time on endless discussions to obtain it, rather than in the provision of services to the population.

Changes in behaviour
When asked about the difference in their work before and after the introduction of the scheme, all interviewees in Bubanza agree that ‘after’ they worked more, more quickly, more focused on objectives and priorities, and in a more responsive way to the population. Not only financial incentives but also clear responsibilities and the activity planning required to all facilities, coupled with technical support for those tasks, were recognized as factors contributing to the behavioural change and the increase in effort. However, all actors were greatly dependent on the Purchasing Agency for the performance of their tasks and most providers showed a tendency to ignore the health hierarchy. In contrast, in Ngozi, when asked the same question, most health workers reported that they did not radically changed their working behaviour or workload.
Performance
Performance of the two PBF schemes is difficult to assess because of the lack of time series starting before the introduction of the project and the presence of confounding factors (such as introduction of user fee exemptions in May 2006, other projects’ funding in the same provinces, etc.). For the Cordaid project, analysis performed by Renaud and Batungwanayo (2010) calculated a ‘summary index’ for the services included among those provided by health facilities and showed that service provision increased from 40% of the originally set target in November 2006 to 102% in July 2009. In Ngozi, the data analysis also showed some positive trends. For example, vaccine coverage increased from ~60% in 2006 to a constant level of around 90% between 2007 and 2009; family planning rose from 31% in 2006 to 41% in 2007 and 68% in 2008. However, it is impossible to disentangle the effects of PBF from those of other components of the intervention. Moreover, those same indicators increased over the initial period and then stagnated, either because of their already high level or because of the capped bonus introduced in 2009.

Discussion
As per the second objective of this article, we attempt here to highlight some insights into PBF in Burundi provided by the use of the framework, in order to assess whether the institutional analysis can be helpful. In general, the analysis of the case studies confirms the view that the introduction of PBF entails a broader institutional reorganization than a mere change in the provider payment mechanism (Meessen et al. 2011). As reported in our case studies, this reorganization includes a revision of the institutional arrangements, as well as of the roles and functions of key actors of the local health system. Furthermore, our findings contribute to highlight lessons for such revision of institutions and functions, and for the design and implementation of PBF interventions. Let us illustrate this with three findings and a broader discussion on the research agenda on PBF. We then conclude with some general reflections on the framework.

The function of ‘strategic purchasing’
One point regards the assignment of key decision rights on ‘strategic purchasing’. Our findings show that, in Bubanza, the institutional reorganization was successful in limiting conflicts of interests and clarifying responsibilities. However, issues emerged with reference to the excessive transfer of decision rights to a purchasing agency outside the State structure. In Ngozi, the institutional reorganization was less radical. As a consequence, responsibilities were ill defined, which caused a misalignment of incentives and a dilution of their power.

The operational question then is how to avoid the potential shortcomings highlighted by this analysis (the excessive power of a non-public agency, in Bubanza), while benefitting from the positive aspects (a clear definition of responsibilities). Indeed, Burundi was faced with this issue at the moment of the scale-up of PBF at national level in April 2010 and such appropriation of significant property rights by an external organization in the pilot phase could have had counterproductive consequences in the design of the national policy. After discussions involving all stakeholders, it was decided to separate fund holding and payment from ‘strategic’ purchasing. This entailed the creation of a multi-stakeholder agency under the MoH with major purchasing responsibilities, such as the decision on the fees for services and on the indicators of quality. Further empirical analysis of the actual implementation of these arrangements is required, but such compromise could (at least in theory) ensure a balance in the reorganization of the institutional arrangements.

‘Coaching’ and technical support
Our exploration of enforcement mechanisms confirms that ‘coaching’, i.e. the provision of technical assistance, support and guidance to the providers, plays a key role in activating and boosting staff motivation it is (one of the ‘hygiene’ factors to avoid workers’ dissatisfaction—Hertzberg et al. 1959; Franco et al. 2004). In particular, ‘coaching’ is crucial for the good functioning of a PBF scheme as providers are confronted with new institutions (i.e. the payment and verification mechanisms) that imply a revision of the usual modus operandi and challenges that are not easily solved without external support and capacity building.

The experience in Bubanza indicates that bundling the role of purchasing and verification with that of ‘coaching’ under the Purchasing Agency can be the less complicated solution, in the short term. Indeed, an external agency is able to tap into highly qualified national and international expertise and, because of its role in the verification, it has at its disposal information on facilities’ performance that could help effective coaching. In addition, at pilot stage and in countries where local health hierarchies are particularly weak, as in the case of Burundi in 2009, District officers are themselves in need of capacity building to be able to provide such support to the facilities. However, coaching is also a powerful enforcement mechanism. Entrusting it to an external agency may create a dependency, which could pose challenges in the long-run to sustainability of the intervention (Ssengooba et al. 2012) and the continuity of the behavioural changes. Moreover, as the capacity of District Health Bureaus strengthens, such reliance on an external agency would become counterproductive, creating an overlap in the responsibilities of two fundamental actors.

The role of values and rhetoric in the implementation of PBF interventions
The analysis of the case studies highlights two important questions that affect the implementation of PBF interventions. They are the values inspiring the agency’s intervention and its ‘philosophy’ with regard to the PBF approach; and the possible distance between rhetoric in the design and practice in implementation of the schemes.

The underlying philosophy of a project can influence the institutional rearrangement that its implementers are prepared to put in place and the possible clarification of roles and responsibilities. The interventions analysed differ substantially as for the project philosophy and values. While Cordaid is an active proponent of PBF to improve the performance of health systems, those responsible for the Swiss project were reluctant in adopting such an approach and limited it to the minimum in their project. Moreover, while Cordaid is an independent...
NGO that aims to reinforce the entire ‘health triangle’, the Swiss project adopts a traditional ‘co-management’ approach common in bilateral projects (Hill 2000). Therefore, Cordaid was willing and able to create a strong, independent purchasing agency. On the contrary, the corresponding agency in Ngozi, the Operational Committee, is composed of interdependent actors (health hierarchy, project team, providers), all of whom should theoretically take decisions jointly on both macro- and micro-issues.

Our findings show that these views and values influenced the implementation of PBF. Cordaid introduced a pragmatic revision of the institutional arrangements, entailing a clear distribution of roles and the necessity of checks and balances. Bilateral aid agencies practising co-management are, in contrast, in a weaker and less effective position if they want to add PBF to their toolbox, as their approach does not allow for a radical revision of institutional arrangements and, in the case of Ngozi, resulted in a blurry and ineffective definition of property rights.

A second point that emerged is the difference between the discourse on some issues and actual practice. In Bubanza, a detachment between documents’ rhetoric and implementation practice was particularly clear with reference to the ‘black-box approach’ (i.e. the autonomy of facility managers’ decisions on the allocation of financial resources) (for another example, see Falisse et al. 2012). Such a ‘principle’ was put forward by several key informants, while questions on the actual practice it emerged that the autonomy of providers was constrained by close coaching and the mandatory use of planning tools. This consideration does not intend to diminish the role that ‘coaching’ and planning tools played (indeed, they may be considered one of the key elements in the Bubanza scheme), but to highlight the detachment between rhetoric and practice. Indeed, others have noted de jure and de facto discrepancies in the design and implementation of PBF interventions (Sengooba et al. 2012) that represent pragmatic responses to problems encountered in the field, with positive or negative implications for the success of the scheme. Our analysis under the institutional framework points out that a strong rhetoric and the insistence on so-called ‘fundamental principles of PBF’ (such as, providers’ autonomy and ‘black-box approach’) at the initial stages of the intervention could also represent a sort of enforcement mechanism of the newly introduced institutions. Highlighting new ‘principles’ and stressing the difference with previous practices could be a way to clarify the new institutional set-up and property rights arrangements, thus shaping the actors’ expectations and behaviours. However, such rhetoric and the distance from actual practice may risk being misunderstood and masking (important) pragmatic arrangements of the pilot schemes when their experience is analysed to draw lessons for scale-up at national level or for other settings.

Conclusions

Institutional arrangements do matter in influencing the performance of an organization as they define rules, rights and incentives within the system. In this article, we have proposed a framework to structure the institutional study of health systems. We illustrated its relevance by a comparative analysis of two PBF interventions in Burundi. Through the case studies comparison, the analysis provides insights into the institutional nature of PBF interventions; some lessons emerge on the design of such institutional arrangements and the implementation and management of the institutional reform process.

The analytical framework we propose is yet to be refined and should be viewed as an initial sketch with the aim of organizing reflection on institutions as determinants of health system performance. However, the development of simple frameworks has proved highly useful in health system research in the past to structure further, more complex analyses (e.g. Walt and Gilson 1994). Our framework could help situate specific contributions focusing on one institutional dimension within the broader picture illustrated in Figure 1. In addition, this type of analysis may also reduce excessive claims, misunderstandings or erroneous interpretations as, we believe, may have been the case in the debate on PBF so far. Eventually, its simplicity could help bridge the analytical work of economists and health system researchers and, in this sense, contribute to structure future research on institutions and health systems. Indeed, further work on institutional analysis is certainly needed to better understand the complexity of the relationship between health system interventions, modification of institutional arrangements and performance of the health system.

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Endnotes

1 For an introduction to NIE, see chapter 2 in Meessen (2009).

2 It is interesting to note that, whereas comparative case studies are well-accepted in health system research, in economics they have been re-legitimated by the development of NIE. NIE is indeed, essentially, a comparative discipline. On positive grounds, the programme is about understanding why an organizational form emerged (against less efficient alternatives). On prescriptive grounds, it is about identifying the best arrangement. As put by Williamson (1999), ‘because all feasible modes of organization are flawed, the strengths and weaknesses of each candidate model need to be assessed comparatively’.

3 The full report is available online at: http://www.cordaid-pbf.com (‘Splitting Functions in a PBF System’). It describes in detail the data collection process, the persons interviewed, the documents reviewed and the findings.

4 For background on the health system and health system financing in Burundi, see Nimpaqarite and Bertone (2011).

5 The experience of Burundi in moving from pilot experiences to a national policy confirms that the institutional reorganization implied by the introduction of PBF is a complex process that requires careful and incremental adjustments and is subject to path-dependency (Meessen and Bloom 2007; Bloom 2011). PBF interventions demand a reflection on design issues, such as finding the best fit with the existing institutions and addressing context-specific implementation concerns. A body of knowledge on the process of institutionalization of PBF schemes is emerging in the literature (see e.g. Jacobs et al. 2010).

References


