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Health System Strengthening: Role of conditional incentives?

Health Care's supply side incentive scheme in Rwanda: processes, tools and effectiveness

A health care supply side incentive scheme on a national scale: operational issues and effectiveness

Von Bonaventure Savadogo et.al.

There is a growing interest, particular in the developing world, to achieve health goals by paying for performance. Numerous strategies labelled under multiple appellations are being set up in different contexts, which make the assessment of such strategies complicated and polemic. The present article is an analytical description based on an on-going field experience which aims at sharing the Rwandan experience and at feeding the reflection on this strategy.

Rwanda belongs to the countries who have already adopted incentive scheme (supply-side) as a policy tool on the national scale for approximately three years. The experience shows that immediate positive results can be observed, such as the surplus of financial income to health workers, which should lead to an increase in motivation and quality in their performance. However, it also allows foreseeing negative effects in the short and longer term that such scheme implies, such as the heavy workload that the mechanism of monitoring and evaluation of performance-based financing requires. Further, it must be highlighted that because many other strategies are implemented at the same time in the same sector, it is difficult to measure the outcomes of this specific strategy and the results produced.

Health sector reforms in Rwanda

Rwanda is a small landlocked country in the East Central Africa, bounded by the Democratic Republic of Congo (Lake Kivu), Uganda, Tanzania, and Burundi. Extended on 26'338km2, the country counted in 2008 approximately 9.3 million of inhabitants, which corresponds to one of the highest population densities in Africa with over 350 inhabitants per square km. Further, Rwanda has a population growth of approximately 3.5% per year, and more than 46% of the population is under 15 years of age (UNDP 2007).

Economically, Rwanda belongs to the group of poorest countries in the world with US$367.73 per capita Gross National Income (UNDP 2007), despite an impressive economic growth rate, presently at 6% per year (Logie et al, 2008). The average Rwandan lives on less than US$0.70 per day, and the poorest households are located in the rural areas, of which 32% are headed by women. A very large proportion (78%) of Rwandan households presents some vulnerability in access to or consumption of food and 28% are food insecure.

Rwanda has a similar epidemiological profile as other sub-Saharan African countries, characterized by an important burden of communicable diseases, which for the majority can be prevented through better hygiene and behavioural change or can be easily manageable. This burden is mainly attributable to malaria (35% of deaths in under 5 children), pneumonia, diarrhoea, HIV/AIDS, malnutrition, tuberculosis and diseases associated with childbirth. Life expectancy at birth is estimated at 52.73 years (UNDP 2007), and Rwanda faces true challenges in decreasing some mortality ratios to meet the Millennium Development Goals (especially concerning maternal and infant mortality). Rwanda now has however the highest immunisation coverage in Africa.

Since 2000, the Government of Rwanda adopted a decentralisation process with all aspects of health care delivery set to the district level. However, the process faces some difficulties, mainly due to personnel and infrastructure shortages. Throughout the country, health services are provided through 3 referral hospitals, 33 district hospitals and 369 health centres (peripheral health facilities). The need for more qualified health personnel remains significant, as the existing personnel/population ratio is well below the WHO-suggested minimums. Further, health staff is unequally spread across the country, with 83% of the staff working in urban areas (UNDP 2007).

The dependency of the health sector on external financial assistance remains significant. Per capita annual health spending averages around US$14, with donors funding over 40%, government about one-third, and the population contributing roughly one-quarter (MoH 2006).

Since 2006, the government of Rwanda is steering the coordination of international aid through the integration of all donor funds within one fiscal framework, the setting up of a budget support harmonisation group, and the reinforcement of a health sector cluster group. This cluster has the task to align the aid to the Health Sector Strategic Plan and to foster mutual accountability. Furthermore, the government has engaged in several important policy and public health reforms to improve health systems performance, which include the development of a community based health insurance scheme (mutuelles de santé) and performance-based services (approche contractuelle).

"Mutuelles de santé"

A development of community based health insurance scheme or 'mutuelles de santé' was established in 1999 and has gradually increased its coverage to include all provinces. The national policy on mutuelles stipulates that each Rwandan citizen living in Rwanda has to be

covered by a health insurance. Civil servants and army servants are covered by national/military insurance and the general population by the 'mutuelles de santé' with a current enrolment ratio of 85%. Each citizen has to contribute 1000 Rwanda Francs (approx. $2) per year, and will pay a 10% fee for each medical service. The premium of the poorest households, which are unable to pay the insurance fee, is paid by third party such as development partners, NGOs or other associations.

"Approche contractuelle"

A performance based service scheme for territorial administration has been introduced through the IMIHIGO institution. This national institution establishes contracts between the President of the Republic and the district mayors and different local administration levels, which regulate the measures outlined in the annual plans to be implemented. Key health indicators integrated in the contract are coverage and effective use of Insecticide-Treated Bed Nets (ITN) in households, the enrolment rate in mutuelles, the prevalence of the use of modern contraceptives, safe deliveries, and hygiene. The contracts are quarterly reviewed with the Prime Minister with the President attending twice a year. At the same time with this experience, performance based financing at the output level of health care services has been implemented and then scaled up, aiming at retaining health personnel as well as increasing their performance.

Performance Based Financing in Rwanda: development process, set-up and tools

The Rwandan national incentive scheme for health care providers is commonly known under the name of "Performance Based Financing" (PBF), or "approche contractuelle" in French. PBF is a public to public contract, which means an internal contract between one level of the government and another level, for instance between the Ministry of Health central level and district administrative, and then further down between the latter and health facilities in its area of responsibility. Though established as voluntary, practically all facilities participate in the PBF scheme, as the national policy is targeting all public and certified health facilities (private health facilities, of which a majority are owned by Christian congregations). PBF in Rwanda relies essentially on paying a premium to the health facilities according to the number of services delivered for a set of previously agreed indicators. The contracting agency "buys" a package of services at a predetermined rate from the health centres and district hospitals, who then share the amount between staff (75% maximum) and structural investments (25% minimum). Staff incentives are provided on top of salaries to retain health personnel at their respective place of duty and increase their performance.

The development process for the Rwandan national incentive model followed three important steps:

(i) a pilot phase between 2001 and 2005, where three pilot projects were implemented by international NGOs and one bilateral cooperation agency in three different provinces of the country;

(ii) a harmonisation phase between the end of 2005 and beginning of 2006 lead by the government using the experience of the pilot projects, which defined the common national model for health centres and hospitals and established instruments, such as standardised indicators to be included, contract arrangements, monitoring, and payment schemes;
(iii) the scaling up phase, which progressively started in 2006 by introducing one group of districts after the other.

The PBF institutional frame is based on a three-level structure, starting with the national Task Force at the Ministry of Health, which includes the participation of donors providing technical support; the PBF Steering Committees at the district level; and the management committees at the level of the health service providers. This structure implies that there are three common forms or levels of contract arrangements: between the mayors (representative of government) and the district PBF steering committees; between the district PBF steering committees and the health centre management committees; and between the health centre management committees and the individual health worker. However, at the moment, this level of contracting is not completed yet.

Financing of the scheme (operations and payment to health facilities) is ensured by two main funding sources: a PBF budget line in the official budget of the Government of Rwanda and contributions of many partners through the Ministry of Health coordination mechanism for PBF. A large contribution is made by donors active in HIV and AIDS, notably the Global Fund who is paying for HIV indicators in their supported area.

For general health services the national model has retained 14 primary health indicators and 10 HIV service indicators listed in the table below associated with the price paid per performance unit.

Monitoring & Evaluation

The Monitoring and Evaluation mechanism constitutes a "complete programme" in itself. The Health facility teams collect the quantity of monthly delivered service units (primary health care and HIV services) at their level. Subsequently, the district teams validate those figures (but only for primary health care services) by applying pre-selected criteria to a random sample of 15 cases for verification. In a first step the quantity of primary health care services delivered monthly is verified using a systematic tool reviewing service output (registration and performance), include patient registration number, full name, sex, new case, address, complaints, clinical signs, laboratory test, diagnosis, treatment, etc. In parallel quality indicators are extracted from a quarterly quality score calculation for health facilities based on 185 composite indicators across 13 services (excluding HIV services).

The payment to the health facilities is made quarterly. The following formula is used to calculate the revenue of each health centre:

For general health services, the total amount received per facility is the quantity of services provided multiplied by the percentage positively validated multiplied by Unit Fees and then multiplied by Quarterly Composite Quality Index:

General health services earnings = ∑ [(Quantity * "% Validated") * (Unit Fees) * (Quarterly Composite Quality Index)]

For HIV services, the formula is similar, but there is no multiplication with a validation score; total amount earning by a health facility is the quantity of services produced multiplied by Unit Fees and then multiplied by Quarterly Composite Quality Index:

HIV services earnings = ∑ [(Quantity * Unit Fees) * (Quarterly Composite Quality Index)]

Is the intervention effective?

Three factors limit an objective analysis on the effectiveness of this national strategy at this point. First of all, as the intervention only started in 2000, it is currently too early to evaluate its impact in terms of retaining of staff and performance improvement. The second restrictive factor is the fact that many other strategies are implemented at the same time in the same sector, which makes it difficult to attribute effects to a specific strategy. Finally, weaknesses linked to the evaluation methodology and processes reduce the ability to assess the impact of the intervention. Despite those limitations, some appreciations can be made within this short timeframe.

What works or seems to work?

A direct positive impact is the improvement of the health staff incentives. Indeed, each health worker earns per month 30-40% on top of his/her salary.

According to Ministry of Health figures most of the indicators (outputs) targeted by PBF are in progress since the beginning of the intervention, amongst others family planning (FP) users per month (increased by 306%); FP new users (increased by 209%); ante-natal consultations with second dose of tetanus toxin (increased by 150%); new curative consultations (increased by 51%); institutional deliveries (increased by 78%). However, as stated in the limitations above, some of the indicators – e.g. utilisation of insecticide-treated mosquito nets, "mutuelle de santé", family planning, safe deliveries, hygiene – are also targeted by others strategies. Moreover, the context in which out-contracting is implemented, may influences its success.

Weaknesses and potential risks of the scheme

The mechanism of monitoring and evaluation causes a large burden for health facilities in terms of human and financial resources. Data collection as well as further preparation for the frequent assessments conducted by the district PBF steering committees creates heavy administrative workload for health staff. The members of the districts committees are also constrained to giving up their normal tasks to carry out the evaluation and monitoring of the data for each health centre of their district. The heavy workload produced by the procedure as a whole comes in addition to the already limited time health workers have for the delivery of care, mainly due to staff shortages in health facilities.

The implementation of the PBF scheme does not take supply–side constraints into consideration. In other words, health facilities are put in competition without taking account of their initial differences and contexts (for example the quantity and quality of personnel or the availability of equipment and infrastructure). According to the scheme, it is up to each health facility to find the means to produce more and better. Theoretically, it is the 25% of the premium paid to the health facility for structural investments, which is to be used for that purpose. However, considering the specific needs of the health facilities, this sum is unlikely to be sufficient and further inputs are still needed from the State and the partners.

Data manipulation such as rearrangements of the data sources to benefit from larger incentives – a risk foreseen with the implementation of PBF – starts to appear at the level of the health facilities. Although mechanisms of fraud prevention, such as audits and re-control, have been included in the PBF implementation scheme, they are not functioning optimally yet. In the case of fraud, the sanctions applied range from the reduction of payment, its suppression to penal sanctions.

Another adverse effect of PBF is the fact that the services, which are not included in the PBF scheme are neglected by the health facilities or health staff, as they are not rewarded by incentives. A solution foreseen to prevent this is by using a mechanism of assessing the business plans of each health facility; however this is not yet effective in Rwanda. An example of the adverse effect on non-PBF indicators, is the Integrated Management of Childhood Illness (IMCI). The IMCI strategy has been adopted and is currently being implemented in Rwanda. Although child examination using the IMCI method is highly time-consuming, but is not part of the quality criteria within the PBF scheme. This implies that the health facilities that correctly apply the IMCI methods are likely to lose money in comparison to facilities, which do not apply IMCI methods at the time of PBF evaluations. The adverse effects of PBF on IMCI implementation contradict national strategies for the improvement of health care delivery particularly for children under 5 years old, which in turn may have a negative impact on the achievement of related MDGs.

In Rwanda quality of health care is essentially assessed by using checklists to appreciate the availability of some inputs considered as prerequisites to the provision of quality services, such as a consultation room in primary health care equipped with thermometer, blood pressure measurement, stethoscope, otoscope, gloves, scale, table of examination, and others. Thus, the

methodology permits to measure the presence of the necessary conditions for the delivery of quality services, but do not aim at assessing the actual practices and delivery of care. In fact, the evaluation of process quality during health care delivery is almost non-existent. For example the assessment scheme does not allow for high quality formative supervision, as health care delivery processes are not observed. The performance of health workers is rather controlled through completed patient registration forms.

What to do for further health system strengthening?

A recent literature review on the effectiveness of contracting of primary care services and its impact on health systems performance in low and middle-income countries conducted by (Liu et al, 2008) suggests that though "contracting-out has in many cases improved access to services, the effects on other performance dimensions such as equity, quality and efficiency are often unknown. Moreover, little is known about the system-wide effects of contracting-out, which could be either positive or negative". Although final conclusions cannot be drawn from the Rwanda experience due to its relatively short implementation period, a certain number of questions must be addressed to respond to the apparent weaknesses and risks and to continuously improve the supply-side incentive scheme.

Indicators Primary Health	**Unit** RWF	**Price** USD
Number of new case PHC	100	0.18
Number new case ANC	50	0.09
Number of ANC with 4 visits	200	0.36
Number of ANC with 2 to 5 VAT doses	250	0.45
Number of ANC with 2 doses of Sulfadoxine Pyrimethamine	250	0.45
Number of risky pregnancies referred (<9 month)	1000	1.82
Number of children 11-59 month consulted (growth monitoring)	100	0.18
Family Planning: Number of news users during the month	1000	1.82
Family Planning: Number of users during the month	100	0.18
Number of children fully immunised during month (BCG,VAP123,Pentavalent 123,VAR)	500	0.91

Number of assisted deliveries	2500	4.55
Number of women referred for delivery	2500	4.55
Number of children referred for malnutrition	2000	3.64
Number of others reference	1000	1.82

Indicators HIV services	**Unit** RWF	**Price** USD
VCT: Number of clients tested for HIV who received a counselling post-test	500	0.91
PMTCT: Number of couple tested for HIV	2500	4.55
PMTCT: Number of women HIV+ under ART during labour	2500	4.55
PMTCT: Number of exposed children tested	5000	9.09
Care: Number of HIV+ tested for CD4	2500	4.55
Care: Number of HIV+ who received Cotrimoxazole	250	0.45
ART: Number of news adults HIV+ under ART	2500	4.55
ART: Number of new paediatrics' HIV+ under ART	3750	6.82
HIV prevention: Number of women HIV+ using FP method	1500	2.73
TB: Number of HIV+ tested for TB	1500	2.73

Monitoring & Evaluation

Solutions have to be found to minimise the burden of M&E in a context of human and financial resources constraints. Improvements can be made for instance by adapting and integration of the PBF reporting system into the national health information system and to promote the effective collection and utilisation of data for managerial decision making.

The coordination of reforms and strategies

For the last decade the Rwandan government has been in the process of introducing and implementing numerous reforms and strategies. The PBF strategy has to be well coordinated with these reforms in order to avoid contradictions and adverse effects of PBF on other strategies, such as presented above with the IMCI strategy. This raises the issue of capacity reinforcement at the national normative level.

PBF as a complementary strategy

The lack of evidence on the impact of PBF on the health system on a wider scale, and current observations of positive and negative effects of PBF in the Rwandan context, makes PBF rather a complementary strategy than a general solution for health systems performance problems. Although the PBF scheme allows tackling some important issues (incentives, performance improvement on some indicators, retaining of health staff), it does not show an effect on others.

In most contexts PBF is applied at provider or consumer levels and aims at improving the performance at the local level. However, improvements are still required at the broader health sector level (district and national), with its responsibility for health planning, financing and monitoring. Identifying the underlying causes for weak performance and results of health systems should enable decision makers to develop a range of solutions incorporating payment for performance as a complementary measure alongside other interventions.

*Dr Bonaventure Savadogo is a medical doctor and health economist with experience in public health working at the Swiss Centre for International Health of the Swiss Tropical Institute. He is the coordinator of the Health System Support Programme in Rwanda financed by the Swiss Development and Cooperation Agency and is based in Kibuye, Rwanda. Contact: bonaventure.savadogo@unibas.ch

*Dr Manfred Zahorka is a medical doctor and public health expert working at the Swiss Centre for International Health of the Swiss Tropical Institute, based in Basel, Switzerland. He is the project leader of the Health System Support Programmes in the African Great Lakes region (Rwanda, Burundi and Democratic Republic of Congo), financed by the Swiss Development and Cooperation Agency. Contact: Manfred.Zahorka@unibas.ch

*Joëlle Schwarz is a social development specialist working at the Swiss Centre for International Health of the Swiss Tropical Institute, within the team in charge of the Health System Support Programme in Rwanda financed by the Swiss Development and Cooperation Agency. Contact: Joelle.Schwarz@unibas.ch

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Kontakt

Deutschschweiz
Medicus Mundi Schweiz
Murbacherstrasse 34
CH-4056 Basel
Tel. +41 61 383 18 10
info@medicusmundi.ch

Suisse romande
Medicus Mundi Suisse
Rue de Varembé 1
CH-1202 Genève
Tél. +41 22 920 08 08
contact@medicusmundi.ch

Bankverbindung
Basler Kantonalbank, Aeschen, 4002 Basel
Medicus Mundi Schweiz, 4056 Basel
IBAN: CH40 0077 0016 0516 9903 5
BIC: BKBBCHBBXXX