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RESEARCH ARTICLE

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## INFLUENCE OF PERFORMANCE-BASED FINANCING ON THE HEALTH SYSTEM IN SOUTH KIVU PROVINCE: A QUASI-EXPERIMENTAL STUDY BETWEEN KATANA AND KALEHE HEALTH ZONES IN SOUTH KIVU

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### ABSTRACT

Health actors in low-income countries like the Democratic Republic of Congo are paying increasing attention to performance-based financing. This system aims to improve the qualitative and quantitative performance of healthcare services. Its purpose is to make essential health care of good quality accessible to all with the participation of the community. With the sensitization of the Health Committees, this system should increase the rate of use of health services by patients and in this case the Health Units should increase their own revenue. This article analyzes the influence of performance-based financing on the use of health services in South-Kivu, thanks to a quasi-experimental analysis between the health zone of KATANA and KALEHE in South-Kivu.

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## INTRODUCTION

The financing of health services is an increasingly major issue in the field of public health. This is related to several observations made in the past: First of all, the quality of care is costly. In addition, it is difficult to define this quality, which can lead to abuse in the name of quality. The quality concept lacks objective criteria to qualify it. Similarly, a health system not supported by a strong and vigilant State inevitably leads to an uncontrollable increase in costs for the system and for the patient. This observation is universal. It should also be noted that the poverty of the populations and in particular of the Congolese population and the low rate of employment in the formal economy prevent certain initiatives such as the establishment of mutual health insurance which can meet either little to the challenges of the health system in the Kivu Region. (Cordaid, 2017). Improving the use of health services, being a national priority for the DRC, the government and its many other development partners have supported significant investments to build and equip basic health centres. (ILO/STEP Report, 2015). However, despite a considerable increase in the number of health centers in the KATANA health zone,

attendance has not changed much and health indicators remain very worrying. The current trend will not allow the DRC to achieve the objectives of sustainable development. As long as the population does not make greater use of preventive and curative care services, it is very likely that this trend will not change significantly. Trying to get closer to the objectives of sustainable development requires measures allowing a positive evolution of the rates of attendance of health services. (MINISANTE, 2007). In this perspective, international humanitarian aid organizations, especially CORDAID, through European Union funding, have initiated a performance-based health financing system. This system aims to improve the qualitative and quantitative performance of healthcare services. Its purpose is to make essential health care of good quality, accessible to all and with the participation of the community. Within this framework, Cordaid focuses the financing of health care on the results produced. (European Union, 2016). It is a question of buying the health services well carried out within health structures (health centers, hospital centers, health centers specialized in mental health, general hospital of reference). The aim of this system is to reduce the costs of care paid by patients, to encourage health structures to be efficient and

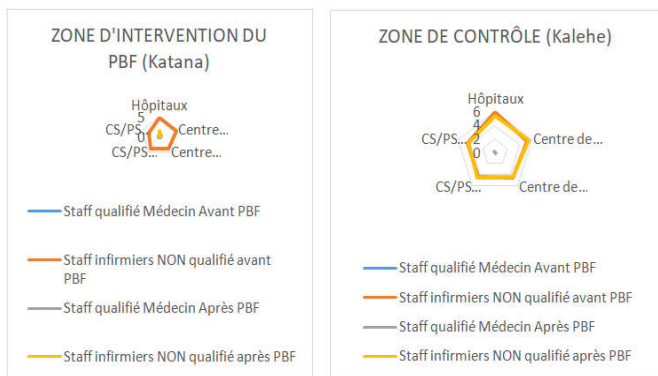
subsequently to allow the growth of their self-financing. In the absence of HealthNET TPO, these health structures should be able to guarantee patients quality care at a lower cost and be able to operate with their own revenue. (World Bank, 2017). It is in this perspective that fits this research article where we want to analyze the influence of financing based on performance on the performance of the health system in South Kivu.

## METHODS

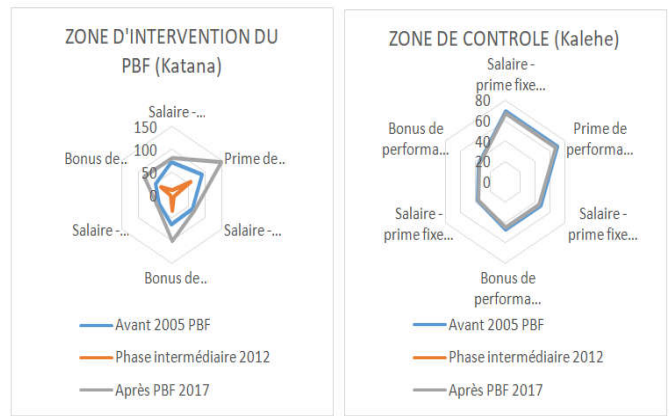
As a reminder, the method is a particular procedure applied at one or the other stage of research or exploitation, logic underlying a set of approaches To carry out our research well, we used the inductive method, the comparative method and the analytical method. (Pierrette RONGERE, 1975). The inductive method helped us to draw a general conclusion from the particular facts observed in certain health facilities in the KATANA health zone compared to that of KALEHE in SOUTH KIVU in the DRC. The comparative method allowed us to compare the results of the health structures, of the Rural health zone of KATANA (Intervention health zone) compared to that of KALEHE – Control health zone, before, during, and after the project. performance-based financing. The Student's statistical test as well as the comparison of proportions also allowed us to compare average receipts but also to test the difference between the different rates of use of health services. Thanks to a content analysis and a systemic model we managed to analyze the different results found.

### Influence of PBF on Health System Performance Indicators

#### Human Resources

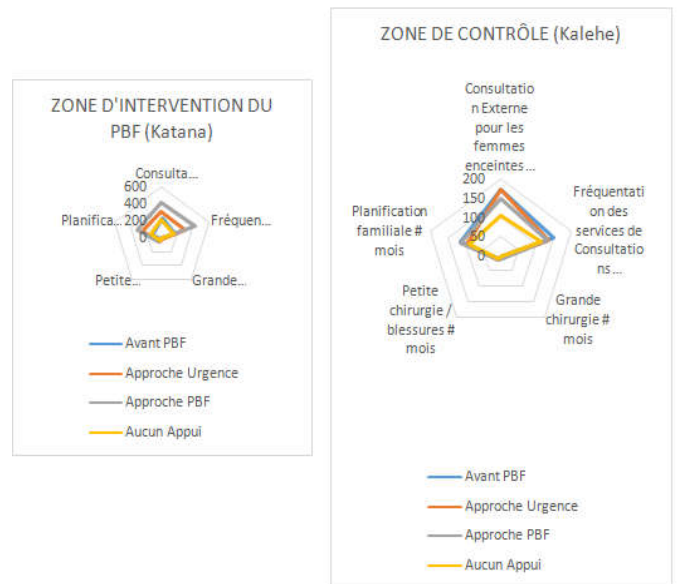


The radars above highlight the situation of personnel before and after PBF in the two health zones. It can be seen that the indicators have remained almost unchanged in the control zone, which is the opposite in the intervention zone. We find that after PBF, staff salaries increased significantly in the PBF intervention area while this situation remained constant in the control area. We find that the attendance activities of the consultation services experienced a significant growth during the PBF approach in the intervention health zone, a situation that remained stagnant in the control zone. With regard to revenue, these indicators were significantly improved in the intermediate phase with the PBF approach in the PBF intervention area. In the control area, the situation before-during-after PBF remained the same. We see a striking contrast between the situation before PBF and after PBF, which highlights the various improvements due to PBF on these indicators in the intervention area compared to the control area. Let us test the hypotheses H0: there is a significant difference between the indicators in the PBF intervention zone and those of the control zone against H1: there is a significant difference between the indicators in the PBF intervention zone and those of the control area.



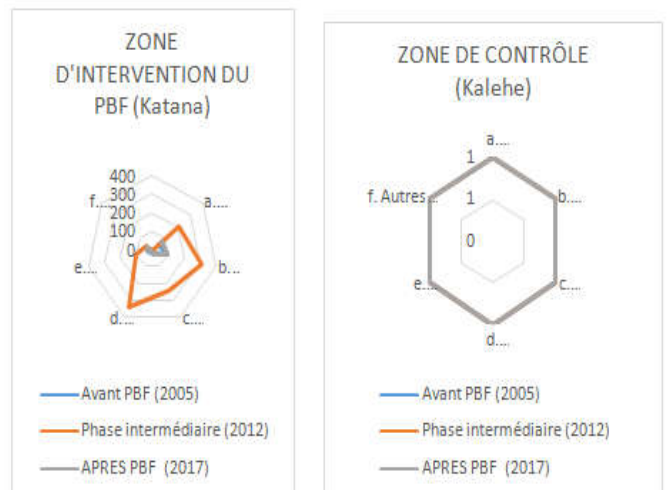
Source: Survey on the Influence of PBF on Maternal Health in South Kivu, February 2022

The results of the comparison of proportions test show that almost all the performance indicators of the maternal health system have p-values below the level of significance equal to 0.05; we accept the H1 that there is a significant impact of PBF on these indicators. We find that PBF has a significant impact on maternal health system performance indicators in general.



Source: Survey on the Influence of PBF on Maternal Health in South Kivu, February 2022

#### Recipes



Source: Survey on the Influence of PBF on Maternal Health in South Kivu, February 2022

## ASSESSMENT OF EQUITY MEASURES

Equity measures	Before PBF	Emergency approach	PBF approach	No Support	Before PBF	Emergency approach	PBF approach	No Support	Impact Before PBF	Impact Emergency	PBF impact	Impact No support
General vulnerable subsidies 5%	0%	100%	100%	7%	0%	0%	0%	0%	0%	100%	100%	7%
Targeted subsidies for pregnant women	0%	100%	100%	7%	0%	0%	0%	0%	0%	100%	100%	7%
Total free	0%	100%	100%	0%	7%	0%	7%	0%	-7%	100%	93%	0%
PBF isolation bonus	0%	93%	93%	0%	0%	0%	0%	0%	0%	93%	93%	0%

Source: Survey on the Influence of PBF on Maternal Health in South Kivu, February 2022

Indicators	ZS WITH PBF INTERVENTION (Katana)		CONTROL SZ (Kalehe)		Impact (%)	p-value
	Freq.	%	Freq.	%		
<b>GENERAL INDICATORS</b>						
1. Availability of a health map of the attraction area Displayed	15	100%	9	60%	40%	0.0062*
2. Quarterly FOSA business plan (or action plan) available and used	15	100%	3	20%	80%	0.0000*
3. Minutes of the technical meetings of the FOSA made monthly and available	15	100%	4	27%	73%	0.0000*
4. Reference sheets available	15	100%	6	40%	60%	0.0010*
5. Availability of radio or portable for communication between the health center and the first referral hospital	15	100%	5	33%	67%	0.0001*
6. Cost recovery tariffs are displayed visible to the public	15	100%	8	53%	47%	0.0025*
7. The nurse sterilizes the instruments according to the standards	15	100%	7	47%	53%	0.0010*
8. Waste is collected in appropriate bins	15	100%	10	67%	33%	0.0143*
9. Incineration carried out correctly - waste pit present	15	100%	11	73%	27%	0.0317*
10. Presence of latrines in sufficient quantity and in good working order	15	100%	7	47%	53%	0.0010*
11. Cleanliness of the yard	15	100%	8	53%	47%	0.0025*
<b>EXTERNAL CONSULTATION</b>						
1. The correct numbering in the CE register	15	100%	8	53%	47%	0.0025*
2. Services available 24 hours a day, 7 days a week,	15	100%	9	60%	40%	0.0062*
3. Protocol displayed for the management of malaria	15	100%	9	60%	40%	0.0062*
4. Satisfactory management of uncomplicated malaria	15	100%	6	40%	60%	0.0003*
5. Satisfactory management of severe malaria	15	100%	7	47%	53%	0.0010*
6. Availability of functional stethoscope / blood pressure monitor	15	100%	10	67%	33%	0.0143*
7. Availability of working thermometer	15	100%	9	60%	40%	0.0062*
8. Availability of functional otoscope	15	100%	11	73%	27%	0.0317*
9. Availability of functional scales	15	100%	11	73%	27%	0.0317*
<b>MATERNITY</b>						
1. Availability of the partograph	15	100%	11	73%	27%	0.0317*
2. Taking blood pressure during childbirth	15	100%	12	80%	20%	0.0679*
3. Systematic intake of APGAR during childbirth	14	93%	6	40%	53%	0.0019*
4. Availability of a measuring rod (to measure height)	15	100%	10	67%	33%	0.0143*
5. Availability of an obstetrical stethoscope	15	100%	10	67%	33%	0.0143*
6. Delivery table in good condition (functional footrest)	15	100%	10	67%	33%	0.0143*
7. Availability of 2 sterilized obstetrical boxes, which contain at least 1 scissor, 2 forceps, 1 needle holder	15	100%	10	67%	33%	0.0143*
8. Availability of a functional baby scale	15	100%	9	60%	40%	0.0062*
9. Availability of a pear (= manual vacuum cleaner)	15	100%	9	60%	40%	0.0062*
10. Availability of mosquito nets in the accommodation room	15	100%	10	67%	33%	0.0143*
<b>FAMILY PLANNING</b>						
1. FP register available and well filled out	15	100%	8	53%	47%	0.0464*
2. Oral and injectable contraceptive methods available and in quantity	15	100%	8	53%	47%	0.0464*
3. IUD methods available and in quantity	15	100%	9	60%	40%	0.0062*
4. FP sheet available and well filled out (5 sheets)	14	93%	9	60%	33%	0.0143*
5. Nurse calculates the number of women expected for FP in her catchment area	15	100%	8	53%	47%	0.0464*

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VACCINATION						
1. DTC+Hib+Hep, BCG, VAR, VAP, VAT availability	14	93%	10	67%	27%	0.0317*
2. Regular monitoring of the cold chain	13	87%	6	40%	47%	0.0464*
3. Compliance with vaccine storage standards	14	93%	6	40%	53%	0.0019*
The provision of vaccines - VAR & VAP in freezer	15	100%	8	53%	47%	0.0464*
Other vaccines in the refrigerator	13	87%	7	47%	40%	0.0062*
4. Stock of ENP notebooks for clients - at least 10	13	87%	9	60%	27%	0.0317*
5. ANC register available and well completed – last 10	15	100%	9	60%	40%	0.0062*
6. Stock CPN cards – at least 25	14	93%	11	73%	20%	0.0679**
LABORATORY						
1. Availability of a working centrifuge	15	100%	9	60%	40%	0.0062*
2. Availability of a working microscope	14	93%	10	67%	27%	0.0317*
3. GIEMSA Availability	14	93%	8	53%	40%	0.0062*
MEDICATIONS						
1. Amoxicillin caps 250mg	14	93%	9	60%	33%	0.0309*
2. Coartem comp	14	93%	11	73%	20%	0.0679**
3. Cotrimoxazole tab 480mg	15	100%	11	73%	27%	0.0317*
4. Diazepam 10mg/2ml – injectable	15	100%	11	73%	27%	0.0317*
5. Mebendazole 100mg or albendazole tab 400mg	15	100%	11	73%	27%	0.0317*
6. Methergine or oxytocin amp injection	14	93%	13	87%	7%	0.3091**
7. Metronidazole tab 250mg	15	100%	12	80%	20%	0.0679**
8. Paracetamol tab 500mg	15	100%	12	80%	20%	0.0679**
9. Quinine tab 300mg	15	100%	13	87%	13%	0.1432**
10. ORS/Oracel sachet	14	93%	13	87%	7%	0.3091**
CONSUMABLES						
1. Sterile gloves	15	100%	14	93%	7%	0.3091**
2. Compresses	15	100%	11	73%	27%	0.0317*
3. 5% glucose solutions	15	100%	13	87%	13%	0.1432**

Source: Survey on the Influence of PBF on Maternal Health in South Kivu, February 2022

\*the test is statistically significant i.e. there is a significant impact due to the PBF

\*\*the test is not significant i.e. the impact due to PBF is not significant

\*\*\*there is no difference between the intervention zone and the control zone, the impact due to the PBF is nil

## DISCUSSION AND CONCLUSION

Ultimately, in view of the foregoing, we note the service utilization rate of has increased significantly during the performance-based financing intervention period compared to the control health zone, however, the latter at a little decrease just one year later during the intervention. It increased significantly around 2013 and then fell after the departure of CORDAID. This is explained by the fact that during the intervention, the patients were made aware by the Health Committee to seek treatment and that the billing had just been revised downwards. After the Performance-Based Financing /PBF program, some Health Facilities resumed their previous pricing and patients are gradually decreasing. The average monthly solvency rate was low before the intervention, then increased during the intervention.

During PBF patients even came in large numbers and their creditworthiness increased, only some refused to pay their full bills because they believed CORDAID should pay for them. This aspect was also verified by testing the difference between revenue collection rates before, during, and after support from health facilities. By comparing collection rates before and during Performance-Based Financing, we conclude that the rate of collection of FOSA revenue increased during the CORDAID intervention compared to the Control health zone. In any case, it is certain that part of the financing need will continue to be covered by patient payments. To increase the performance of health facilities, motivation is needed, in the absence of subsidies they are demotivated. The additional measure is that CORDAID should initiate, sensitize the population to join a mutual health insurance after their departure which, in any case, can solve the problems of accessibility to quality care, reduction in the cost of care health and reduce patient insolvency. Also the Health Facilities must review their collection system.

## REFERENCES

- CORDAID, Report on the purchase of performance in the health zone of KATANA, unpublished, 2017, p7.
- DEP-Mini-healthground floor: "study on the financial accessibility of communities to health care", October 2004
- European Union (2016) "2nd Interim Report for an 8th EDF financing project (Art. 72 and 73 of the KATANA health zone, 2016.
- Health and Poverty Status Report, Health and Poverty in the DRC: Analysis and Strategic Framework for the Fight against Poverty, May 2005.
- ILO/STEP report: Mutual health insurance and financing of the health system, April 2015, p57
- Lututala M and Alfred Coffi: "the ancillary costs of hospitalization care for patients in the BDOM-KINSHASA network", April 2018, p74
- Ministry of Health, Democratic Republic of Congo "Inventory of the Health Sector: Health Profile at Central Level, Provinces, Health Zones and Households, April-June 2007," Kinshasa
- Pierrette RONGERE, Methods of social sciences, ed. DALLOS, Paris, 1975, p. 20.
- World Bank State Report on Health and Poverty in the DRC: Analysis and Strategic Framework for the Fight against Poverty, provisional version 2 of May 13, 2017, p.13
- World Bank State Report on Health and Poverty in the DRC: Analysis and Strategic Framework for the Fight against Poverty, provisional version 2 of May 13, 2013

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