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Analysis of hospital care provision in the urban health zones of Bukavu, DR Congo

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ABSTRACT: Introduction: In DR Congo, healthcare provision is characterized by the anarchic emergence of medical facilities and the medicalization of front-line healthcare structures. In urban areas, healthcare services are still poorly organized, despite the establishment of Health Zone organization and operating standards. In Bukavu, as elsewhere in the country, this situation arises against a backdrop of urbanization and galloping demographics, creating new healthcare needs for the population. The aim of this study was to analyze the organization of hospital care provision in the city of Bukavu. Methodology: The study conducted is of an exploratory cross-sectional type using documentary review, key informant interviews and geolocation of hospital structures from August 05, 2021 to October 30, 2021 in the city of Bukavu in DR Congo. Data from the complementary package of activities (PCA) and the geolocation of hospital facilities were collected to produce the mapping. Geolocation information was processed in QGIS software version 3.28 to produce a current health map of hospital structures. Results: We observed an anarchic proliferation of hospital structures and a medicalization of front-line health facilities, nearly half of which offer an incomplete package of complementary activities that do not meet the standards established in the Democratic Republic of Congo. 39% have been set up over the last 5 years (2016-2021) in a context of weak regulation and control by Congolese government services. The majority of hospitals in Bukavu offer the same type of services. They are essentially privately owned (50.3%), denominational/church-owned (21.1%), 13.6% are managed by non-governmental organizations and only 12.6% are under the direct management of the Congolese state. Conclusion: The supply of hospital care in Bukavu is plethoric and seems to pursue profit-making goals without necessarily meeting the real needs of the population. Re-regulating the organization of hospital care and providing technical and financial support to the health system could help to improve it in Bukavu.

KEYWORDS: Hospital analysis, Healthcare provision, Performance, Standards, Bukavu, Democratic Republic of Congo.

1 INTRODUCTION

Since the 1950s, the phenomenon of urbanization has been accelerating throughout the world, bringing with it numerous health challenges, particularly in sub-Saharan Africa [1, 2]. This has led to problems relating to governance in general and the organization of urban health services in particular [2, 3]. In the context of healthcare provision in Congolese urban areas, characterized by the plurality of services, we are also witnessing a privatization of supply and a medicalization of primary-level structures [1, 4, 5]. These types of structures are not described in the normative documents governing the functioning of the health system in DR Congo [6, 7].

In fact, the nature of the care provided varies greatly from one environment to another, in a context of growing competition on the supply market [8], with an impact on the hospital management of patients. Care providers emerge, establish themselves, multiply, diversify and offer care packages and technical platforms to their own liking, without being controlled or integrated (i.e., their status is not recognized in the health information system) and do not respond to any logic of rationalization of health coverage [9].The need for care and prevention is growing, and new needs are emerging, notably as a result of an ageing population [1] and in a context of epidemiological transition, marked by an increasing prevalence of chronic and non-

communicable diseases [7]. As the population becomes increasingly educated and demanding, it tends to consult more health structures with a doctor for a diagnosis deemed effective [10].

According to DR Congo's health policy, the Hospital Complementary Activity Package (CAP), whose role is to ensure continuity of care for the Health Center's Minimum Activity Package (MAP), comprises preventive, curative, promotional and rehabilitation activities organized within the framework of the internal medicine, surgery, gynecology-obstetrics and pediatrics departments [11]. It is carried out with varied support from different types of examinations, a reference laboratory, medical imaging and rehabilitation activities. Added to these activities are those relating to management, action research and the supervision of health zone personnel [6]. Policies and standards for organizing health services based on primary health care, inherited from Alma-Ata and the experience developed in rural areas, are applied indiscriminately in urban and rural areas. Unfortunately, the Health System Strengthening Strategy (HSSS) for urban areas has struggled to correct these distortions since its adoption in the DRC in 2006 [12].Multiple political crises have been accompanied by the gradual collapse of various sectors, including the economy and health. The provision of healthcare is largely left to private infomercial providers [13] with characteristics very similar to those of companies [14]. Added to this are administrative reforms that have exacerbated organizational failures in the healthcare system, and have prevented the public hospital from meeting its evolving challenges and the unlimited demand for care. As a result, the country's many hospitals and dispensaries soon found themselves short of equipment and medicines. Over time, the general referral hospital evolved apart from and competed with the health centers, and the complexity of the population's health led the Congolese state to make private health structures operational in order to improve coverage, but placed under the authorization and supervision of the Ministry of Public Health through the Provincial Health Division (PHD), the Provincial Health Inspectorate (PHI) and the Health Zone (HZ) [15-17].

Although very few studies have looked at the organization of hospital care provision in Congolese urban areas, the most recent ones have shown that hospital care provision has become plethoric and characterized by the medicalization of front-line care structures [1, 18, 19]. Primary care provision in the nearby town of Goma is mainly private for-profit (79%), with 56% of establishments created over the last 6 years, and is diversely distributed [1].We are also witnessing the emergence of optional, for-profit hospital structures in the city of Bukavu, most of which are not integrated into the health pyramid, and the exact number and quality of care are not well controlled in a context of increasing urbanization. What's more, there is no mapping of the hospital network to describe the new hospital structures or their characteristics.

The aim of this study is to analyze the organization of hospital care in the city of Bukavu. It makes a physical inventory of all existing hospital care structures in 2021, studies the evolution of their appearance over time, determines their geolocation, analyzes the supply of hospital services and other characteristics. The main research question is whether hospital structures in the city of Bukavu meet the definition of a hospital structure in accordance with current DR Congo standards. Secondly, what are the hospital structures in Bukavu's 3 health zones, and what are their characteristics?

2 METHODOLOGY

2.1 TYPE OF STUDY

The study was of a cross-sectional, exploratory type, using documentary review, key informant interviews and geolocation of facilities. It was conducted from August 05, 2021 to October 30, 2021 in the city of Bukavu, DR Congo.

2.2 STUDY ENVIRONMENT

This study was conducted in the city of Bukavu, South Kivu province, in the Democratic Republic of Congo. The city of Bukavu covers an area of 50 $km^{2,}$ with an estimated population of 1074224 in 2021. It is subdivided into three Health Zones: Bagira (27km^2) with a population of 157309, Ibanda (18km^2) with a population of 500324, Kadutu (15km^2) with a population of 416591. Its average population density is 21485 inhabitants/Km2 [20].

2.3 SAMPLING

In the course of this study, 95 existing hospital structures (any health facility using a doctor, whatever its status) were exhaustively included. These included dispensaries, health centers, medical centers, medical polyclinics, hospitals and General referral hospitals (GRH). These structures offer a complete or incomplete complementary package of activities in the 3 health zones of the city of Bukavu.

2.4 DATA COLLECTION

It was based on a literature review and interviews with key informants.

- **Document review**

The data sought from the HPD and HZ were the number of integrated health facilities (HF) offering a complementarity activity package in the three urban HZ of Bukavu. We reviewed many documents to identify the type of services provided: tools and national and provincial texts relating to the provision of hospital care in urban areas, the health development plans of the health zones in the city of Bukavu, the compendium of health zone standards with a focus on the organization of the Complementary Package of Activities and various provincial tools at HPD level, the annual reports of the BAGIRA, IBANDA and KADUTU health zones from 2015 to 2020 and the official list of structures integrated and being integrated into the health pyramid in each of the 3 health zones.

- **Key informant interviews**

Individual interviews were carried out with 196 informants from the 95 medical facilities identified, including 8 members of the HZ management teams of the 3 HZ in the city of Bukavu, and 188 service providers, with two informants per medical facility (head doctors of the health zone, medical directors and directors of nursing, members of the HZ management team, owners of these facilities). A data collection sheet was used to guide the gathering of general information on all facilities offering complete or incomplete CAP in Bukavu's 3 health zones. Information on the geolocation of facilities offering CAP was collected using a GPS device to study their positioning in relation to each other (distance and location area). This identification of hospital structures was carried out in collaboration with health mapping specialists from the Catholic University of Bukavu, who have a geographic information laboratory. As well as providing additional information on the identification of health facilities and their characteristics, the interviews also enabled us to analyze the supply of hospital care in the city of Bukavu. Hospital structures in the 3 health zones of the city of Bukavu were mapped, and an analysis of the activity package of each of the health facilities included was then carried out, with the aim of categorizing the structures according to the content of their BCP. As Chenge [21] has done, the survey questionnaire essentially collected basic data on each health facility (name of facility, institutional affiliation, year of opening), more specific information (year of integration of medical consultations, year of opening of the operating theatre, geolocation, etc.).

2.5 DATA ANALYSIS

An Excel database was created to encode and analyze the general data collected. Quantitative data collected were analyzed by counting organized services, doctors and other care staff, and beds set up by hospital structure. These data were entered and processed in Excel, the analysis being essentially descriptive. A map of health facilities offering a complete or incomplete CAP was drawn up using QGIS software, based on geolocation data collected from the facilities (latitude, longitude) and enriched with descriptions of other data types.

2.6 LIMITATIONS OF THE METHODOLOGY

The main limitation was the refusal or partial collaboration of some hospital managers to provide accurate or detailed information, particularly in the case of health facilities without official operating authorizations.

2.7 ETHICAL CONSIDERATIONS

A prior informed consent form, guaranteeing anonymity and free participation, was completed by each of the managers of the identified facilities and key informants in the study health zones. The research protocol had initially been accepted by the ethics committee of the Catholic University of Bukavu and by the management teams of the Bukavu urban health zones.

2.8 CONFLICTS OF INTEREST

No conflicts of interest were declared.

3 RESULTS

3.1 GEOLOCATION OF FACILITIES OFFERING HOSPITAL CARE IN THE CITY OF BUKAVU IN 2021

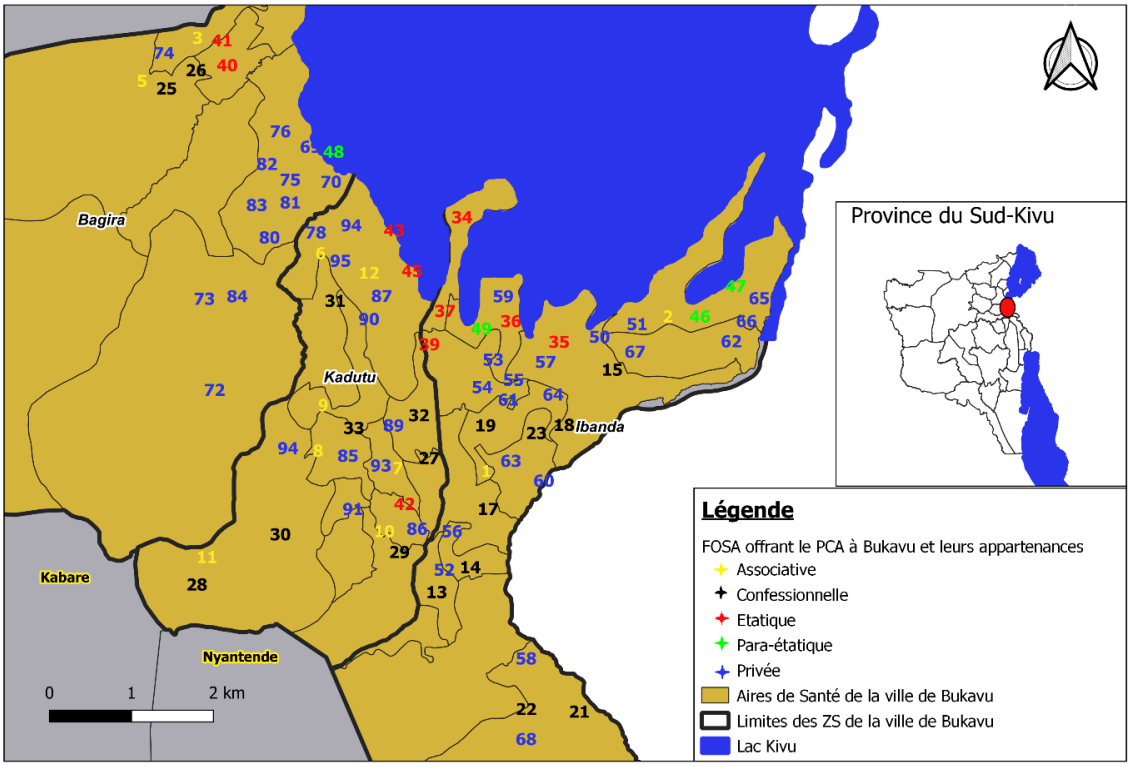

Fig. 1. Health map of facilities offering a PCA in the city of BUKAVU

At the time of the study (August 2021), the city of Bukavu had 95 facilities offering a complete or incomplete complementary package of activities. These facilities are shown on the map of the city of Bukavu, divided into the 3 HZ. The facilities in Bukavu, as shown on the geolocation map, are close to each other, with radii ranging from 0 to 2 km. Only a small proportion of health areas have not yet registered a hospital facility. All health facilities are considered geographically accessible, as there are no barriers despite the rugged terrain.

3.2 CHARACTERISTICS OF FACILITIES PROVIDING HOSPITAL CARE IN BUKAVU CITY

Table 1. General characteristics of hospital facilities by health zone in the city of Bukavu in 2021

Variables	KADUTU HZ Proportion (n=30)	IBANDA HZ Proportion (n=40)	BAGIRA HZ Proportion (n=25)	Total Proportion (n=95)
Health facility category				
Dispensary/Health post	2(6.7)	1(2.5)	5(20.0)	8(8.4)
Health Center	4(13.3)	3(7.5)	1(4.0)	8(8.4)
Medical Center	10(33.3)	11(27.5)	13(52.0)	34(35.8)
Polyclinics	5(16.7)	8(20.0)	1(4.0)	14(14.7)
Medical Clinics	1(3.3)	2(5.0)	2(8.0)	5(5.3)
Specialized center	2(6.7)	0(0.0)	0(0.0)	2(2.1)
Hospital center	3(10.0)	14(35.0)	2(8.0)	19(20.0)
General referral hospital	3(10.0)	1(2.5)	1(4.0)	5(5.3)
Structure ownership				
State	4 (13.3)	6 (15.0)	2 (8.3)	12 (12.6)
Parastatal	1 (3.3)	2 (5.0)	1 (4.2)	4 (4.2)
Confessional	7 (23.3)	11 (27.5)	3 (12.5)	21 (22.1)
Associative	7 (23.3)	2 (5.0)	3 (12.5)	12 (12.6)
Private	11 (36.6)	19 (47.5)	16 (66.7)	46 (48.4)
Existence of operating permit				
Yes	30 (100.0)	40 (100.0)	19 (79.2)	89 (93.7)
No	0 (00.0)	0 (0.0)	6 (25.0)	6 (6.3)
Structure integration				
Yes	19 (63.3)	22 (55.0)	11 (45.8)	52 (54.7)
No	11 (36.6)	18 (45.0)	14 (58.3)	43 (45.2)
Number of years in business				
≤ à 5 years	12 (40.0)	9 (22.5)	16 (66.7)	37 (39.0)
6 à 10 years	4 (13.3)	8 (20.0)	4 (16.7)	16 (16.8)
> 10 years	14 (46.6)	23 (57.5)	5 (20.8)	42 (44.2)
Medical staff (Number)				
General practitioners	108 (81.8)	184 (66.1)	48 (96.0)	340 (73.9)
Specilist doctors	24 (18.2)	94 (33.9)	2 (4.0)	120 (26.1)
Building type				
Durable	19 (63.3)	38 (95.0)	14 (54.0)	*71 (74.7)*
Semi-durable	7 (23.3)	2 (5.0)	7 (29.0)	16 (16.8)
Wooden walls	4 (13.3)	0 (0.0)	4 (17.0)	8 (8.4)

3.3 ORGANIZATION OF HOSPITAL CARE SERVICES IN BUKAVU

Table 2. Organization of hospital care services by facility category in Bukavu in 2021

Variables	Dispensary/ Health post (n=8)	Health center (n=8)	Medical center (n= 34)	Polyclinic (n=14)	Medical clinic (n=5)	Specialized center (n=2)	Hospital center (n=19)	General Referal Hospital ((n=5)	Total
Basic service									
Gyneco-Obstetrics	2(2.5)	7(87.5)	22(64.7)	14(100.0)	5(100.0)	0(0.0)	18(94.7)	5(100.0)	73(76.8)
Surgery	0(0.0)	3(37.5)	20(58.8)	14(100.0)	5(100.0)	1(50.0)	17(89.5)	5(100.0)	65(68.4)
Pediatrics	5(62.5)	7(87.5)	31(91.2)	14(100.0)	5(100.0)	0(0.0)	19(100.0)	5(100.0)	86(90.5)
Internal medecine	6(75.0)	8(100.0)	33(97.1)	14(100.0)	5(100.0)	0(0.0)	19(100.0)	5(100.0)	92(96.8)
Medical staff (number)									
General physicians	14	14	61	55	19	3	86	88	340(73.9)
Specialist doctors	2	3	9	36	12	1	17	40	120(26.1)
Dentistry	2(25.0)	1(12.5)	6(17.6)	6(42.9)	1(20.0)	0(0.0)	7(36.8)	4(80.0)	27(28.4)
Ophtalmology	1(12.5)	0(0.0)	2(5.9)	5(35.7)	1(20.0)	0(0.0)	1(5.3)	3(60.0)	13(13.7)
Kinesitherapy	0(0.0)	0(0.0)	7(20.6)	4(28.6)	1(20.0)	1(50.0)	3(15.8)	4(80.0)	20(21.1)
Others services									
Pharmacy	8(100.0)	7(87.5)	33(97.1)	8(57.1)	5(100.0)	2(100.0)	19(100.0)	5(100.0)	87(91.6)
Emergency and resuscitation	0(0.0)	0(0.0)	2(5.9)	4(28.6)	2(40.0)	0(0.0)	4(21.1)	5(100.0)	0(0.0)
Critical care	0(0.0)	0(0.0)	2(5.9)	4(28.6)	2(40.0)	0(0.0)	3(15.8)	4(100.0)	0(0.0)
Laboratory	4(50.0)	7(87.5)	26(76.5)	14(100.0)	5(100.0)	0(0.0)	18(94.7)	5(100.0)	81(85.3)
Vaccination	1(12.5)	8(100.0)	8(23.5)	8(57.1)	2(40.0)	0(0.0)	14(73.7)	3(60.0)	44(46.3)
Imaging									
X-RAY	0(0.0)	0(0.0)	0(0.0)	3(21.4)	3(60.0)	1(50.0)	4(21.1)	5(100.0)	16(16.8)
Ultrasound	1(12.5)	0(0.0)	0(0.0)	13(92.9)	5(100.0)	0(0.0)	18(94.7)	5(100.0)	42(44.2)
SCANER	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	2(40.0)	2(2.1)
MRI	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	2(40.0)	2(2.1)
Endoscopy	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	2(40.0)	2(2.1)

Table 3. Ownership, operation and equipment by category of hospital facilities in the city of Bukavu in 2021

Variables	Dispensary/ Health post (n=8)	Health Center (n=8)	Medical Center (n=34)	Polyclinic (n=14)	Medical clinic (n=5)	Specialized center (n=2)	Hospital Center (n=19)	General Referal Hospital (n=5)	Total
Health facility integration									
Integrated	6(75.0)	8(100.0)	9(26.5)	4(28.6)	3(60.0)	2(100.0)	15(78.9)	5(100.0)	52(54.7)
Not integrated	2(25.0)	0(0.0)	25(73.5)	10(71.4)	2(40.0)	0(0.0)	4(21.1)	0(0.0)	43(45.3)
Permit to operate									
Available	8(100.0)	8(100.0)	26(76.5)	14(100)	5(100.0)	2(100.0)	14(73.7)	5(100.0)	82(86.3)
Not available	0(0.0)	0(0.0)	8(23.5)	0(0.0)	0(0.0)	0(0.0)	5(26.3)	0(0.0)	13(13.7)
Ownership									
State	2(25.0)	0(0.0)	1(2.9)	0(0.0)	1(20.0)	0(0.0)	5(26.3)	3(60.0)	12(12.6)
Parastatal	0(0.0)	0(0.0)	2(5.9)	1(7.1)	1(20.0)	0(0.0)	0(0.0)	0(0.0)	4(4.2)
Confessional	0(0.0)	6(75.0)	2(5.9)	1(7.1)	0(0.0)	2(100.0)	8(42.1)	2(40.0)	21(22.1)
Associative	0(0.0)	1(12.5)	8(23.5)	3(21.4)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	12(12.6)
Private	6(75.0)	1(12.5)	21(61.8)	9(64.3)	3(60.0)	0(0.0)	6(31.6)	0(0.0)	46(48.4)
Sanitary equipment and installations									
Solar power	6(75.0)	7(87.5)	30(88.2)	12(85.7)	4(80.0)	2(100.0)	17(89.5)	5(100.0)	83(87.4)
Generator	2(25.0)	3(37.5)	18(52.9)	12(85.7)	3(60.0)	2(100.0)	16(84.2)	5(100.0)	61(64.2)
Incinerator	4(50.0)	8(100.0)	18(52.9)	12(85.7)	4(80.0)	2(100.0)	15(78.9)	5(100.0)	68(71.6)
Laundry	2(25.0)	5(62.5)	11(32.4)	10(71.4)	4(80.0)	2(100.0)	15(78.9)	5(100.0)	54(56.8)
Fitted beds (number)	80	156	578	551	114	80	704	1157	3420

The majority of hospital structures in Bukavu are privately owned (50.3%), denominational/church-owned (21.1%) and 13.6% are managed by non-governmental organizations. Only 12.6% of facilities are under the direct management of the Congolese state. Primary hospital care is organized in 23.3% of the facilities offering a Complementary Activity Package in the city of Bukavu. Specialized care is delivered irrationally at the lowest rung of the pyramid (health posts and dispensaries). A plethora and proliferation of structures offering hospital care in Bukavu's three Health Zones, nearly half of which offer an incomplete BCP package. 39% have been set up over the last 5 years (2016-2021) in a context of weak regulation and control by state services. Nearly half of the facilities (45.7%) have not yet been integrated into the health pyramid, and 13.7% are operating as such without prior authorization.

Medical centers represent the vast majority of emerging medical structures, and account for 36% of hospital structures in the city of Bukavu. Emerging hospital structures in Bukavu do not have sufficient basic medical materials and equipment to function as secondary structures. They are followed by polyclinics and hospital centers, which together account for 24.3%. The vast majority of structures were not originally designed for hospital services, and some were formerly homes, dispensaries, schools or other basic social services. They are so intermingled or confused with dwellings and/or so close to the population that only the wall inscriptions distinguish them from dwellings. Some are even built of wood (8%) in the urban-rural parts of the Kadutu and Bagira zones, or of semi-durable materials (19%) in the three health zones of the city. We note that 32 out of 38 health areas in three zones of the city of Bukavu host at least one medical facility, while others host 5 to 7 or even 13 facilities, depending on their demographic weight and accessibility.

In general, state hospitals are over-staffed compared with private facilities, with a ratio of one doctor for every 2,340 inhabitants (459 doctors for 1,074,224 inhabitants in the city of Bukavu). The number of doctors in Bukavu's various hospitals is 459, including 120 specialists (26%). The majority of specialists (94/120, or 78%) work in the Ibanda health zone, in the city center.

4 OFFER OF SPECIALIZED SERVICES IN BUKAVU'S HOSPITALS

Table 4. Categorization of hospital structures according to CAP and organized specialized care services in the city of Bukavu in 2021

Categories	Variables	Dispensery /Health Post (n=8)	Health Center (n=8)	Medical Center (n=34)	Polyclinic (n=14)	Cliniq (n=5)	Specialized center (n=2)	Hospital Center (n=19)	General Referal Hospital	Total
1	Structures offering 4 traditional services with at least 3 to 4 specialized services, intensive care, emergencies and resuscitation	0(0.0)	0(0.0)	0(0.0)	0(0.0)	1(20.0)	0(0.0)	0(0.0)	3(60.0)	4(4.2)
2	Structures offering 4 traditional services, at least 1 to 2 specialized services with or without intensive care, emergency and resuscitation services	0(0.0)	0(0.0)	5(14.7)	7(50.0)	0(0.0)	0(0.0)	8(42.1)	2(40.0)	22(23.2)
3	Structures offering only 4 traditional services	0(0.0)	3(37.5)	12(35.3)	6(42.9)	4(80.0)	0(0.0)	9(47.4)	0(0.0)	34(35.8)
4	Structures offering less than 4 traditional services	8(100.0)	5(62.5)	17(50.0)	1(7.1)	0(0.0)	2(100.0)	2(10.5)	0(0.0)	35(36.8)

We found that the provision of CAP services is incomplete and/or progressive in 43.3% of hospital facilities in the three Health Zones. Only 4.2% of facilities offer at least one of the following 4 specialized services (ENT, Ophthalmology, Dentistry and Physiotherapy) in addition to the 4 basic services. Most hospitals (83.4%) have no intensive care or emergency services. Specialized medical imaging services are very poorly organized in Bukavu hospitals (MRI, SCANER and Endoscopy) in only 3% of facilities. X-rays are performed in 15% of hospitals, with a very low proportion in the Bagira Health Zone.

Some health facilities carry out a range of activities that do not correspond to their status, such as dispensaries and health centers undergoing medicalization in the city of Bukavu. Still other structures, for profit-making purposes. bear the effigy of secondary structures, but do not offer PCA at all, and instead offer services that are irrational in relation to operating standards.

5 DISCUSSION

Our study drew up a map of hospital facilities and their characteristics in the city of Bukavu; it then analyzed the provision of hospital care to the population. As a result, 95 health facilities offering a hospital package in the three Health Zones were identified, more than half of which offer an incomplete Complementary Activity Package. This situation is more prevalent in young emerging facilities that are pursuing profit-making goals. They are too close together as they appear on the geolocation map. Medical practices are organized in first-level facilities without adequate resources or equipment, in an environment and under unhygienic conditions.

5.1 THE UNCONTROLLED PROLIFERATION OF HOSPITAL FACILITIES IN BUKAVU

The proliferation of hospital facilities in Bukavu is taking place against a backdrop of galloping demography, fuelled by irregularities in the control, regulation and supervision of healthcare provision by the Ministry of Health.

The practice of medicalizing front-line health structures in Bukavu is more organized by private-sector players pursuing profit-making goals. Specialized care is even irrationally displayed at the lowest level (health post & dispensary) of the health pyramid, which implies anarchy in the supply of care, given that such care is not authorized by the above-mentioned CAP standards. Some are even built of wooden walls in the urban-rural parts of the Kadutu and Bagira health zones, or of semi-durable materials. Still others operate without prior authorization (nearly 14%) and are not supervised [15]. These dysfunctions in the provision of hospital care give it an anarchic and irrational character [1] requiring rigorous monitoring by the Ministry of Health. The 2020 annual and investigative reports for Bukavu's three urban health zones had already identified a number of problems linked to the organization of CAP provision, but restrictive or accompanying measures have yet to be implemented. Among these problems were the sequestration of patients in prayer rooms and with traditional practitioners, the proliferation of private pharmaceutical dispensaries administering health care, encouraging self-medication, and the haphazard emergence

of private structures offering an ill-defined care package that does not comply with national policy standards, and most of which are not integrated into the national health information system [22-24].

The results of studies carried out by Chenge, Kanya and their colleagues in Lubumbashi [19] and Mazambi in Kinshasa [12] had already shown the medicalization and privatization of the first line of care, which is mainly private, and a tendency for the population to use hospital structures more than those of the first line like showed by kahindo at al in Goma [5].

In some countries, innovations have been introduced in the organization of health services in urban areas. In Mali, for example, the 1980s saw the launch of a carefully thought-out and supervised process of medicalized practice at primary care level. Initially motivated by a concern to alleviate the risk of physician unemployment, the 2010 WHO-sponsored evaluation of this initiative showed that this medicalized practice enhanced the acceptability and quality of front-line care [1].

5.2 Analysis Of Hospital Care Provision In Bukavu

An analysis of hospital care provision in Bukavu reveals one hospital for every 1.428 inhabitants. one bed for every 334 inhabitants and one doctor for every 2.340 inhabitants. In fact, only 20 out of 95 facilities (or 21.3%) in the 3 health zones have a capacity of at least 50 beds, including 12 in Ibanda, 7 in Kadutu and just 1 in Bagira. In pursuit of their rather lucrative goals, the various players offer the same types of services without necessarily meeting the needs of the population, and are multiplying the number of facilities instead of maintaining and improving their capacity and equipment. As a result, these facilities are increasingly in competition with each other and with primary care facilities, which use the same population in a health area for their operational survival [8, 15].Preventive, promotional and specialized care (physiotherapy, ophthalmology, ENT, dentistry, etc.) is still poorly organized in Bukavu and needs to be covered, as the population is forced to seek it elsewhere. These figures are not in line with current DR Congo standards (1 hospital bed per 1.000 inhabitants, 6 to 8 doctors for a hospital with 100 to 150 beds, 1 doctor per 10.000 inhabitants and one hospital per 100.000 inhabitants). The plethora of healthcare services usually conceals organizational constraints and inconsistencies that need to be addressed [1, 6, 21]. These findings are very similar to those of a study carried out in Goma (DR Congo), which showed that the city's healthcare provision is plethoric, with one facility for every 8.794 inhabitants, one hospital bed for every 326 inhabitants, one nurse for every 586 inhabitants and one doctor for every 2.567 inhabitants [16]. The need to improve the performance of health services, the technical quality of services, the technical qualifications of staff and the quality of infrastructures in the city of Bukavu were suggested during a study carried out in 2015 on factors favourable to the use of health services [25]. Although the context is different in terms of healthcare organization and supply compared with DR Congo. France relies on around one million professionals, a supply deemed abundant and reflected in a high level of medical densities: 171 general practitioners and 322 doctors per 100.000 inhabitants compared with an average for all OECD countries of 250 doctors per 100.000 inhabitants [26].

Despite the proliferation of hospital facilities in the city, the population continues to seek specialized, preventive and promotional care elsewhere. Hospital care is essentially made up of four basic services, which are generally incomplete in almost half of hospital structures. This kind of atypical care provision is far from meeting the needs or demand for care in an urban context naturally characterized by the population's high level of education, the emergence of chronic non-communicable diseases and high demand for care. Poor infrastructure and service organization can also limit demand for care [27]. For a long time, the healthcare system in the Democratic Republic of Congo has suffered the consequences of lax state authority, anarchy and non-compliance with established rules [6]. We are witnessing a proliferation of infrastructures that do not correspond to any rationalization of health coverage, from Referral Heath Centers performing surgical interventions to health posts in health areas [15]. Increasingly, certain players in the DRC's healthcare system are realizing the limitations of current policies and standards in the face of galloping urbanization [1]. In Congolese urban areas, the supply of hospital care has become plethoric, characterized by the medicalization of first-line care structures [18].

The urban population's heavy reliance on self-medication, secondarily on health services with doctors, and exceptionally on the health center, calls for a rethink of the organization and regulation of urban health services [4, 5]. The Ministry of Health can envisage mechanisms for coordinating and redefining the roles to be played by doctors and nurses, and between first- and second-line care, in order to adequately regulate the supply of first-line care in the DRC [19].

5.3 Inequitable Distribution Of Facilities In The City Of Bukavu

Our study revealed an inequitable distribution of hospital facilities in the three health zones of Bukavu. Of 95 hospital structures, 40% are located in the Ibanda health zone, 32% in the Kadutu health zone and 26% in the Bagira health zone. Each health zone has a specific category of hospital structures in operation. The Ibanda health zone, the city center, is home to 73.6% of Bukavu's 19 hospitals, where most specialized medical services are organized. In the urban-rural health zones of Kadutu and Bagira, the dominant structures are medical centers. Primary structures in the process of being medicalized (health

center, health posts and dispensaries) are more concentrated in the urban and urban-rural areas of these two health zones. This tendency to concentrate the supply of hospital care in the city center has already been observed in several towns in DR Congo and to neglect areas where demand is not very solvent or abundant [28]. This proliferation of sub-standard hospital facilities in Bukavu is a sign of a lack of leadership in the health system and its poor collaboration with other urban planning departments in complying with regulations governing the creation of health infrastructures in urban areas. The proximity of facilities was also observed in studies carried out in 2013 in the city of Lubumbashi, where several primary care facilities operate within a relatively small radius, with an average of 2.1 facilities per health area, or 1.6 facilities per Km2, or 1.5 facilities per 10.000 inhabitants [7]. A study carried out in Dakar noted that the geographical accessibility of health facilities in urban areas also revealed the proximity of facilities in each type of conurbation [29].

To operate more or less freely in the city of Bukavu, private owners variously assign names to structures that do not meet the appropriate definitions, or unilaterally change their status with little or no involvement of the supervisory authorities. This dysfunction is perpetuated by weak regulation and control of the sector by Congolese government departments. This context of poor organization and coordination of urban supply has been observed in the cities of Kinshasa, Goma and Lubumbashi in DR Congo [1, 7, 12, 16] and elsewhere in other cities in Burkina Faso and Abidjan [9]. In Bukavu, the lack of integration of structures and their supervision by the supervisory hierarchy may be a major source of health data loss. Should we continue to accredit these health facilities on the grounds of their contribution to universal health coverage? [4].

6 CONCLUSION

This study has established a current cartography that traces the geographical distribution of existing hospital care structures in Bukavu, and opens the way for further research to continue to analyze the evolution of their appearance over time (dynamics: reasons for their creation, possible medicalization, nature of their operation, principles of their survival in competition, etc.). In the course of this study, we noted the emergence of hospital structures in the city of Bukavu, most of them private, offering the same type of services and seemingly pursuing a profit-making goal, as well as proximity between them and medicalization of the first line of care. This emergence over the last 5 years is taking place against a backdrop of growing urbanization and poor regulation of supply by the Ministry of Health, which is seeking to rationalize the establishment of hospital structures.

These results call on the Ministry of Health to re-establish the regulation and organization of hospital care provision and rigorously monitor the supply of hospital care, as well as actions and prospects for the ongoing medicalization of front-line care structures in the city of Bukavu. In this context, hospital institutions have developed strategies to cope with competition and remain attractive to increasingly demanding users.

To adapt to the changing context, the first line of care will need to be organized differently in the future [30]. This supply of care requires strong regulation, with a view to a better-governed rationalized and staggered urban healthcare network that better meets quality standards and user expectations in an urban context. Stasse S et al. have suggested that health services can be successfully reformed and rationalized by moving away from a purely commercial logic [13]. In the context of strengthening the governance and leadership of the Ministry of Health, it is essential to improve the management systems of health facilities. We suggest that the Ministry of Health and its technical departments, including the Provincial Health Division and Inspectorate, reinforce control and regulation in the sector by applying greater rigor to procedures for opening health facilities or changing their status in the city of Bukavu.

The opening of any new hospital facility should be based on technical analyses of demand need and supply of services. Regular and serious control, monitoring and supervision missions should be reinforced to identify at an early stage any initiative likely to maintain anarchy in the organization of healthcare provision in the city of Bukavu. On the basis of these results, studies carried out in various towns in DR Congo and elsewhere in Africa have identified irregularities in the provision of healthcare and the organization of healthcare services in urban areas. Together. these studies suggest that health system approaches and policies need to be readapted to the specific features of today's urban environments, including pluralism in healthcare provision, medicalization of front-line healthcare structures, galloping demography and epidemiological transition. The city of Bukavu is affected by these phenomena, and this study therefore proposes a reorganization of the healthcare offer in this urban context, and rigorous regulation and control in the establishment and operation of hospital structures, with a view to halting this proliferation. This supply requires strong regulation with a view to a better-governed rationalized and staggered urban healthcare network that better meets quality standards and user expectations in an urban context.

To improve the quality of hospital services in Bukavu the study recommends (i) to strengthen control and regulation of hospital care provision in the health zone, and ensure regular technical support for all sectors involved (public and private, with a focus on primary care provision, which is becoming increasingly medicalized in urban areas; (ii) to re-adapt HZ policies and

operating standards to take account of the changing context of urban areas (growing demographics, plurality of healthcare provision, medical specialties, epidemiological transition, etc.) and (iii) to plan the supply of hospital care in urban areas, creating a balance of medical staff between urban and rural health zones, and relieving congestion in urban health zones.

REFERENCES

[1] Mbeva, J.-b.K., et al., *Profil de l'offre des soins médicaux en milieu urbain africain: Cas de la ville de Goma a l'est de la RDC.* International Journal of Innovation and Applied Studies, 2020. 31 (3): p. 458-471.

[2] Grodos, D., Le district sanitaire urbain en Afrique subsaharienne: enjeux, pratiques et politiques. 2004: KARTHALA Editions.

[3] Grodos, D. and R. Tonglet, Maîtriser un espace sanitaire cohérent et performant dans les villes d'Afrique subsaharienne: le district de santéà l'épreuve. Tropical Medicine & International Health, 2002. 7 (11): p. 977-992.

[4] Prudence, M.N., et al., De l'utilisation des services en milieu urbain à la couverture sanitaire universelle dans le contexte du système de santé de la République Démocratique du Congo: cas de la ville de Goma. International Journal of Innovation and Applied Studies, 2019. 26 (1): p. 175-184.

[5] Kahindo, J.B., et al., Itinéraire Thérapeutique du Patient en Milieu Urbain Africain: Cas de la Ville de Goma à l'Est de la RDC. International Journal of Innovation and Scientific Research, 2021. 53 (1).

[6] MSP-RDC, RECUEIL DES NORMES DE CREATION, D'ORGANISATION ET DE FONCTIONNEMENT DES STRUCTURES DE LA ZONE DE SANTE EN REPUBLIQUE DEMOCRATIQUE DU CONGO. Ministère de la santé, octobre 2019.

[7] Chenge Mukalenge, F., De la nécessité d'adapter le modèle de district sanitaire au contexte urbain: Exemple de la ville de Lubumbashi en RD Congo. 2013: ITGPress.

[8] John, K.N., et al., Facteurs influençant le choix d'un établissement de soins de santé par la patientèle dans la ville de Lubumbashi. Int. J. of Multidisciplinary and Current research, 2019. 7.

[9] Nikiema, A., Approche spatiale d'un centre hospitalier, le CHU pédiatrique de Ouagadougou (Burkina Faso). EchoGéo, 2014 (30).

[10] Greindl, I., Qualité des soins et sécurité des patients dans les hôpitaux de la RD Congo: quels dispositif et outils adaptés pour une gouvernance clinique efficace? Encadrement scientifique AEDES, 2022.

[11] Karemere, H., et al., Analysis of hospital performance from the point of view of sanitary standards: study of Bagira General Referral Hospital in DR Congo. Journal of Hospital Management and Health Policy, 2020. 4.

[12] Manzambi, J., et al., Les déterminants du comportement de recours au centre de santé en milieu urbain africain: résultats d'une enquête de ménage menée à Kinshasa, Congo. Tropical Medicine & International Health, 2000. 5 (8): p. 563-570.

[13] Stasse, S., et al., Improving financial access to health care in the Kisantu district in the Democratic Republic of Congo: acting upon complexity. Global health action, 2015. 8 (1): p. 25480.

[14] Kirmi, B. and W. Chahouati, Les établissements hospitaliers publics: Vers une nouvelle gouvernance hospitalière inspirée du management de la qualité. Revue du Contrôle de la Comptabilité et de l'Audit, 2019.

[15] MSP-RDC, *Statégie de Renforcement du Système de Santé (SRSS).* Minist`re de la santé de la RD Congo, 2010.

[16] Kamundu, A.K., et al., *L'Etat des lieux de formations sanitaires privées dans la ville de Goma.* Journal of Medicine, Public Health and Policy Research, 2021. 1 (1): p. 1-5.

[17] Mopene, J.L., et al., Réforme et performance de l'Inspection de la santé et de la Division de la santé au Sud-Kivu en République Démocratique du Congo. African Journal of Primary Health Care and Family Medicine, 2020. 12 (1): p. 1-9.

[18] Bosongo, S., et al., L'influence des prestations des médecins à la première ligne de soins sur le système intégré de district sanitaire à Kisangani, République Démocratique du Congo: une étude qualitative. Pan African Medical Journal, 2021. 39 (1).

[19] Kaya, M., et al., Prestations des médecins au niveau dela première ligne des soins dans la ville de Lubumbashi, République Démocratique du Congo. 2020.

[20] DPS-SK, Pyramide sanitaire de la province du Sud-Kivu, République démocratique du Congo. Division provinciale de la santé, 2021.

[21] Chenge, M., et al., La carte sanitaire de la ville de Lubumbashi, République Démocratique du Congo Partie I: problématique de la couverture sanitaire en milieu urbain congolais. Global Health Promotion, 2010. 17 (3): p. 63-74.

[22] ZS-Ibanda, *Rapport annuel 2021.* Ministère de la santé de la RD Congo, 2021.

[23] ZS-Bagira, *Rapport annuel 2021.* Ministère de la santé de la RD Congo, 2021.

[24] ZS-Kadutu, *Rapport annuel 2021.* Ministère de la santé de la RD Congo, 2021.

[25] Bashi, J., et al., Mutuelles de santé à Bukavu en République Démocratique du Congo: facteurs favorables à l'utilisation des services de santé par des adhérents. Pan African Medical Journal, 2020. 35 (1).

[26] Baudet-Michel, S., O. Groza, and A. Salaris, *L'État français et l'offre de soins. Concentration géographique, déconcentration administrative?* Villes et régions européennes en décroissance. Maintenir la cohésion territoriale?, 2010: p. 267-288.

[27] Geiling, J., et al., Resource-poor settings: infrastructure and capacity building. Chest, 2014. 146 (4): p. e156S-e167S.
[28] Kwamba, E., et al., Determinants of using the modern health care in the Bagira Health Zone: cases of children under 5 years old with malaria. Acta Sci Med Sci (ISSN: 2582-0931), 2021. 5 (10): p. 172-181.
[29] Ndonky, A., et al., Mesure de l'accessibilité géographique aux structures de santé dans l'agglomération de Dakar. Cybergeo: European Journal of Geography, 2015.
[30] De Munck, P., et al., *Les métiers de demain de la première ligne de soins.* Bruxelles: Service Public Fédéral-Santé Publique, Sécurité de la chaîne alimentaire et Environnement, 2011.