



The Unpreparedness of a Health District in the Face of an Epidemic, the Case of COVID-19 and Its Impact on Neurosurgery Activities

J. Fondop^a, M. C. Atyam Ekoto Tchoffo^b, T. Atemken^a,
C. A. Djam^{a*}, J. F. Ondo Ondo^b and L. T. Takoudjou^c

^a Faculty of Medicine and Pharmaceutical Sciences, University of Dschang, Cameroon.

^b Covid 19 Unit, Dschang District Hospital, Cameroon.

^c Head of Dschang Health District, Cameroon.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/IJTDH/2023/v44i101435

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/99891>

Original Research Article

Received: 01/04/2023

Accepted: 02/06/2023

Published: 10/06/2023

ABSTRACT

In December 2019, the occurrence of several cases of pneumonia of unknown origin in Hubei province in China led to the identification in January 2020 of a new coronavirus, named SARS-CoV-2 by the Coronavirus Working Group of the International Committee on Taxonomy of Viruses. In 2019 the national strategy to combat COVI 19 planned for national and regional centres. Thus, as of 20 March 2019, the first suspected cases were registered and taken care of by the District Hospital of Dschang in an unpredictable manner and without any fund.

The objective of this study was to describe the management of the COVID 19 epidemic by a district hospital without preparation and to describe its impact on hospital activities, in particular neurosurgery.

*Corresponding author: Email: djamalain@yahoo.com;

Methodology: it was a retrospective descriptive study, focused on the documents and the management of human resources, material, suspect patients and financial means of the hospital during the first phase of the epidemic from March - August 2019 the crisis. It was only in September 2019 that the plan provided for the monitoring of patients at home and the patient at the case infected in KOUEKONG in Bafoussam in the region.

The result A service was created with new staff as a matter of urgency and the hospitalisation of the first suspect led to a drop in the early attendance of the structure, hospitalisation of the hospital and especially of the surgery service. The barrier measures introduced at the hospital were financed entirely by the hospital's own funds and donations, without any special funding, the hospital's revenue fell from 46,909,106 CFA francs in January 2019 to 27,103,235 CFA francs in June 2019, with a 43% drop in June 2019. expenses, masked by donations, fell from 46,909,106 CFA francs in January 2020 to 24,765,492 CFA francs in May 2020, but increased slightly to reach 38,724,361 CFA francs in August 2020. All activities were affected particularly surgery and neurosurgery.

Conclusion: The unpredictable management of the Covi19 epidemic led to a disruption of the hospital's organisation and human resources, a drop in the hospital's income and an increase in the burden of self-management, without subsidies from the hierarchy.

Keywords: Covid-19; management; improvisation; HHDschan.

1. INTRODUCTION

In December 2019, the occurrence of several cases of pneumonia of unknown origin in Hubei Province, China, led to the identification in January 2020 of a new coronavirus [1], named SARS-CoV-2 by the Coronavirus Working Group of the International Committee on Taxonomy of Viruses [2]. This new corona virus disease (COVID-19), discovered in Wuhan, China in December 2019, is transmitted by people carrying the virus, mainly through respiratory droplets expelled through the nose or mouth when a sick person coughs, sneezes or talks [3,4]. Covid-19 appears to affect men more than women (about 60 versus 40%) and WHO epidemiological data suggest a higher mortality rate in male patients, especially in the elderly [5]. The most common symptoms of COVID-19 are fever, dry cough and fatigue, although some infected people have only very mild symptoms and other symptoms may be present. Most patients (about 80%) recover without the need for hospitalisation. About one in five people who contracted the disease have severe symptoms, including difficulty in breathing [6]. The rapidity and extent of the viral spread around the world has led to numerous publications on clinical, biological and radiological data [7]. Over time, it has progressively spread to Asia, Europe and Africa, resulting in the death or quarantine of several people. In March 2020, the WHO counted 170,000 people who were already infected in 146 countries and about 6,500 deaths. It is on March 17, 2020, that Cameroon effectively launched its response plan [8]; with

the official reception structure of care in the Cities of Yaoundé and Douala then in the regional hospitals, the District hospitals were not authorized to take care of the patients, it is thus that on 20/03/2023 the District hospital of Dschang received its first suspect case which led to an upheaval of hospital activities particularly, of the service of surgery and neurosurgery. Numerous publications concerning clinical, biological and radiological data have been published this work has the particularity of describing this hospital in its unpreparedness for the emergence of this sudden case [7]. We reviewed the epidemiological situation of Covid 19 in the district hospital of Dschang, Cameroon, during the first four months of the first wave of the health crisis.

1.1 Objectives

1.1.1 General objective

The general objective of our work is to describe the management by a district hospital of the occurrence of the covid 19 epidemic without any preparation and to describe its impact on hospital activities, in particular neurosurgery.

1.1.2 Specific objectives

To describe personnel management and barriers faced.

In the management of COVID 19 suspected patients, and to describe the impact of COVI 19 on the hospital.

2. METHODOLOGY

We conducted a retrospective cohort study during the period March to August 2020 on :

- the staff

The general behaviours of staff; the application of barrier measures.

- The archives and meeting reports however on the management of COVI 19 and in particular the management of the water point, the application of barrier measures between other users of the hospital.
- Data from the hospitalization registry of suspected cases for demographic data, patient signs and symptoms, results of RDT and PCR tests performed and patient outcomes.

The data collected was entered into Excel and analysed.

3. RESULTS

Staff

The arrival of the first suspected case in hospital caused widespread panic,

This panic was aggravated by the fact that the Director had personal protective equipment in reserve in his private belongings from the donations of a Franco Cameroonian association (Association PACA CAMEROUN MEDJOWE) after the avian flu.

It has resulted in:

Vis-à-vis cases suspected by:

- I. The disappearance of the stretcher bearer when he was asked to accompany the patient to a room created by the administrative staff on the field after the arrival of the first suspect case.
- II. The request for leave by several staff the day after the first case was discovered (not granted following instructions from the hierarchy during the crisis)
- III. The declaration with and sometimes without justifying elements by the selected personnel to take care of cases suspected of being carriers of chronic pathologies or with loss of immunity (HTA, diabetics, HIV positive ...).

A meeting was convened to present the lump-sum incentive payments introduced by the hospital, after which 6 volunteers opted to work in this department.

In relation to staff and other patients the hospital has:

- a. Equip staff with gangs, caps and masks
- b. Trained and introduced staff in staff-patient distancing measures
- c. Trained staff Training for protective measures and hand washing
- d. Checked all users for hand washing before entering and leaving the hospital (Management was sometimes obliged to approach staff who refused to comply to explain the validity of these measures)
- e. Trained and implemented the direction of movement of staff in the hospital.

Of the Hospital

As soon as the first suspected case was reported, the high-standard ward was the only one suitable for isolation, it was the only ward where each room had two beds, a shower and a toilet and had a veranda, this ward had 10 beds.

The rooms were divided as follows: Two rooms (for both sexes) were partitioned for the positive cases and three other rooms for the suspect cases, respecting the sex and if possible the children.

By asking the patient to go to another service, everyone went home instead, and the next day attendance and consultations dropped,

The patients scheduled for functional surgery were also discharged, only the extreme surgical emergencies remained.

Suspect patients, hospitalized in the isolation ward, were entirely at the hospital's medical expense, with only nutrition being paid for by the family.

Barrier mitigation measures and direction of movement of patients were introduced with the creation of an intra-hospital police force to monitor unmasked patients.

The direction of movement in and out were set up and marked with arrows) with water points at the entrance to each building.

The separate hospital in Dschang is the only one in the Health District where suspected cases were hospitalised and sampled.

All expenses were paid by the hospital and ²with support of donations from corporate citizens, associations, NGOs and national companies.

Hospital finances on COVID 19

3.1 Revenues

Very globally, the hospital's revenues have fallen (Fig. 1) more drastically, from 46,909,106 CFA francs in January before the crisis to 27,92,8740 CFA francs in May at the height of the crisis (Table 1).

3.1.1 Expenditure

Expenditure was drastically reduced from 46909106 CFA francs in January 2020 to 24765492 CFA francs in May at the peak of the crisis before increasing slightly to 38724361 CFA francs in August 2020 (Table 1 and Fig. 2). Despite the drop in revenue, the hospital's expenses were cushioned by donations from more than 16 national NGOs and companies. Despite this drop, the salary of the PBF person in

charge of the hospital was an obligatory expense for the hospital, as well as the person's bonuses, the rate of which varied according to performance.

All sectors of activity were affected by the crisis and in particular surgery and neurosurgery, where people only came for consultations when there were life-threatening emergencies (Fig. 3)

3.1.2 Suspect patients

The 56 suspected patients of which 20 women and 36 men were hospitalised in isolation. Nineteen 19(34%) were positive of which 5 women and 14 men. 28(50%) that were hospitalised in isolation were not infected with Covid 19 with the RDT test, 9(16%) patients were discharged after regression of symptoms on treatment without ever having the result of their RDT or PCR test sample

90% of the patients did not like the isolation, 5% of the patients escaped from isolation after one week in hospital.

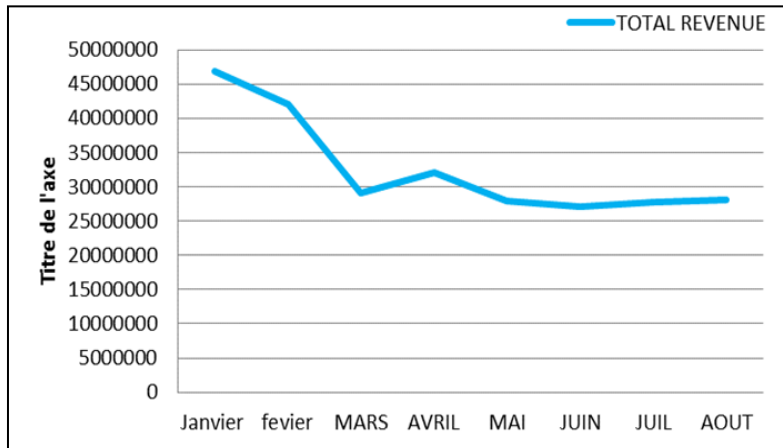


Fig. 1. Overall revenues from January to August 2020

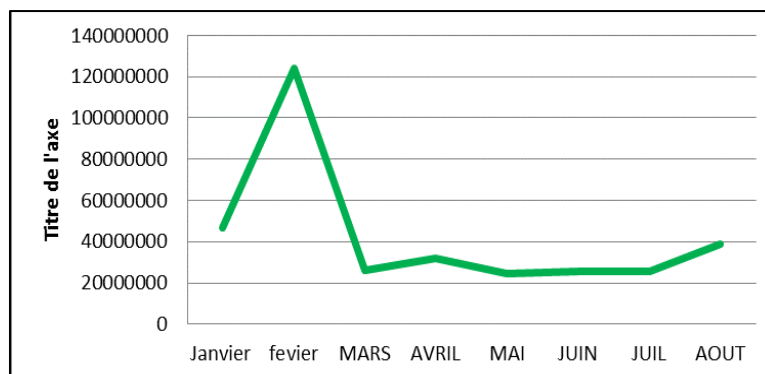


Fig. 2. Overall expenditure curve January-August 2020

Table 1. Overall revenues of hospital

2020	January	February	March	April	May	June	July	August	Seven
Overall revenue	46909106	41952729	29021730	32045835	27928740	27103235	27749525	28139865	26631990
Other Expenditure	3304254	2819780	1857500	1500200	1586400	689000	593050	472000	1885000
Spent D Investment	829890	440000	335000	4724000	298000	1330000		7774651	
Overall Expenditure	46909106	123825534	26299147	32036510	24765492	25452114	25658134	38724361	34098821
Recipe In Surgery	2738690	2599200	2519250	1158150	1894810	953950	1734770	1336500	1675200
Neurosurgery	162500	87500	57200	50000	55000	55000	90000	55000	65000
Hospitalization revenue	1806700	1924000	1619000	1019000	1045800	1130300	1293480	3283650	1356500

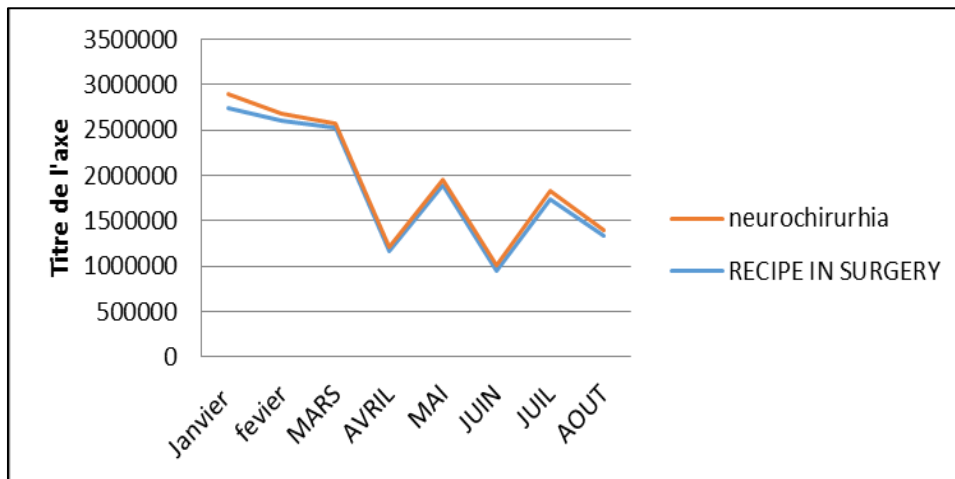


Fig. 3. Revenue curve for surgery and neurosurgery January to August 2020

The average age of the patients was 37.9 years. The symptoms presented were: cough (50%), fever (29.6%), headache (27.3%), sore throat (22.7%). Comorbidity factors were present in 25.1% of patients and 74.9% had no comorbidity, these factors were: arterial hypertension (17.8%), asthma (2%), diabetes (1.6%), obesity (2.7%) and diabetes and hypertension (1%).

The average length of stay was 13.8 days.

4. DISCUSSION

Cameroon, like many countries in the world, is not spared from the COVI-19 pandemic. From the very beginning, the government had put in place a prevention and response plan aimed at containing the spread of this pandemic [9]. The first case of COVI-19 was declared in Yaoundé on 24 February [10]. Despite the preventive measures, this disease is evolving very rapidly in Cameroon and on 20 March 2020, the District Hospital of Dschang was surprised by its first suspect case.

The covid-19 virus, which appeared in Cameroon on 6 March 2020, has infected 3529 people as at the 15 of May 2020, with a total of 140 deaths [11].

This condition has led to a disruption of the structure of hospital operations, with an impact on bioethics in Cameroon as in other countries of the world [12].

As well as the rate of attendance. the isolation of infected patients was very difficult to accept and is one of the factors that justified the desertion of

hospitals by the population, this desertion of hospitals would seem to be marked by the non-adaptation of the measures taken, to scientific knowledge and to the socio-cultural context.

5. CONCLUSION

The Covi-19 is a pandemic born in China which has spread rapidly in the world. Despite the measures taken to limit its spread, the first case was detected in Cameroon in February 2020. The national management plan for the epidemic provided for care centres up to the level of regional hospitals, but in the unforeseen and unpreparedness, the district hospital of Dschang found itself faced with the first suspect case. This unpredictable management of the Covi19 epidemic led to a disruption in the organisation of the hospital in terms of human resources, a drop in the hospital's income and an increase in the burden of autonomous management, without subsidies from the hierarchy.

The fight against the Covid 19 pandemic concerns everyone, whatever the level in the health pyramid. The main challenge remains the survival of patients with co-morbidities and the elderly, who are the predictive markers of severity or mortality.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist. 7

REFERENCES

- 1 Zhu N, Zhang D, Wang W, Li X, Yang B, Song J. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med.* 2020;382(8):727-733. 8
- 2 Wu Y, Ho W, Huang Y, Jin D-Y, Li S, Liu S-L. SARS-CoV-2 is an appropriate name for the new coronavirus. *Lancet.* 2020; 395(10228):949–950. 9
- 3 Mary Eyram Ashinyo, et al. Clinical characteristics, treatment regimen and duration of hospitalization among COVID - 19 patients in Ghana: a retrospective cohort study. *Pan African Medical Journal.* 2020;37(1):9. DOI:10.11604/pamj.sup.2020.37.1.25718 10
- 4 WHO website pages on COVID-19; EPI-WIN: WHO Information Network for epidemic. 11
- 5 Schuhler C, Alberto C, Toutous-Trellu L, Kaya G. 'SARS-CoV-2 infection and skin manifestations'. *Rev Med Suisse.* 2021; 7(732):642-645. 12
- 6 World Health Organization. Director-General's remarks at the media briefing on 2019-nCoV on 11 February 2020. Available: <http://www.who.int/dg/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020> (Accessed on February 12).
- 7 Plaçais L, Richier Q. COVID-19: Clinical, biological and radiological characteristics in adults, pregnant women and children. An update at the heart of the pandemic. *Rev Med Interne.* 2020;41(5): 308-318. DOI: 10.1016/j.revmed.2020.04.004
- 8 Special Statement by the Prime Minister, Head of Government, Government Response Strategy to the Coronavirus Pandemic (COVID 19) 19 December 2019.
- 9 Grant Murewanhema, et al. A descriptive study of the trends of COVID-19 in Zimbabwe from March-June 2020: policy and strategy implications. *Pan African Medical Journal.* 2020;37(1):33. DOI:10.11604/pamj.sup.2020.37.1.25835
- 10 Cameroon confirms its first case of coronavirus. Available: <https://www.bbc.com/afrique/region-51767>) 655
- 11 Jean Christophe Onana, Etat des lieux et bref aperçu des effets socio-économiques potentiels de la pandémie du Covid-19 au Cameroun, hal-02659445, version 1 (30-05-2020).
- 12 Henri-CortoStoeklé, AchilleIvasilevitch, Laure Ladrat, Sidonie Verdier, Sakina Sekkate Elisabeth Hulier-Ammar, et al. Impact of the COVID-19 pandemic on the hospital: The contribution of bioethics, Ethics and COVID-19 , *Médecine de Catastrophe - Urgences Collectives.* 2022; 6(2):99-104.

© 2023 Fondop et al; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/99891>