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Confronting COVID-19 in a health care region: a document analysis

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Abstract

Objective: Recognizing the importance of the tertiary Health Care Network (HCN) in confronting COVID-19, a document review was developed based on ordinances, decrees, and laws of the State of Pernambuco and the Federal Union that enabled the reorganization of health services. **Method**: A descriptive study, with document analysis of the municipal legal norms of the VII Regional Health Management of Pernambuco, using Bardin's analysis. **Results**: Two categories were established: **planning to face a Public Health Emergency of International Concern**, and **financial allocation** to strengthen actions against COVID-19. **Discussion**: Implementation of an emphasis on social distancing and use of facemasks, and expansion of hospital beds occurred. Tripartite efforts of (co)management and (co)financing were required. **Conclusion**: Due to this ongoing emergency situation, it is possible to anticipate some potential for reorganization, using the legal framework and experience in the state and municipalities.

Descriptors: Coronavirus Infections, Health Services, Public Health Policy.

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INTRODUCTION

The identification of a new virus, named Coronavirus - Severe Acute Respiratory Syndrome 2 (SARS-CoV-2), and the rapid advance of human infection to other continents, resulted in the World Health Organization (WHO) declaring, on March 11, 2020, the existence of a *Public Health Emergency of International Concern*, triggering the presence of a pandemic that threatens global health (1).

The disease caused by the new coronavirus 2019 (COVID-19) can be clinically manifested without symptoms, mild common cold symptoms, and even acute respiratory distress syndrome. The COVID-19 virus has a high dissemination power, however, according to the Chinese experience, around 5 - 12% of confirmed infections required advanced care, including mechanical ventilation ⁽²⁾.

Based on this scenario, public hospitals, very often operating maximum capacity, have become even more vulnerable. As a result, each country was required to develop strategies to strengthen its hospital network⁽³⁾. This preparation required the federal involvement for reorganization expansion of hospital coverage in states and cities, with the creation of new beds in the intensive care unit (ICU), opening of new hospitals, emergency health personnel recruitment, financial adjustments to the Unified Health System (UHS), support for the productive sector, and assistance for needy families⁽⁴⁾.

Each federative entity in Brazil holds governmental autonomy, in accordance with the protocols and guidelines of the Ministry of Health (MH) and the WHO, to restructure its Health Network $(HCN)^{(4)}$. Care Therefore, declared Pernambuco community transmission on March 18, and since then has created strategies to ensure mitigation of the disease, expanded high complexity health services, and strengthened the interior health network of the state⁽⁵⁾.

Numerous difficulties are being experienced by hospital services combating SARS-CoV-2, due to complexity and lack of concrete evidence. Considering the above, the challenge to be faced is to ensure timely access to services by members of the community, using models and actions consistent with political guidelines and provisions recommended by the UHS. So, it is important to know the organizational structure of the HCN of the states and municipalities, so that it is possible to identify the limits, challenges, and potentials that consolidate the organization and management of health services for the control of this virus.

Therefore, recognizing the importance of tertiary HCN in confronting COVID-19, a document review was conducted based on ordinances, decrees, and tangential laws of the State of Pernambuco and the Union that allowed for reorganization of health services.

METHODS

This was a qualitative, descriptive, normative document analysis study concerning the re-structuring of health services, including the allocation of financial resources from the State of Pernambuco and the Union to the cities within the *VII regional health management system* (GERES VII) of that state, to fight the new pandemic disease.

Pernambuco is subdivided into 12 health regions. The GERES VII is constituted by seven cities: Belém de São Francisco, Cedro, Mirandiba, Salgueiro, Serrita, Terra Nova, and Verdejante. This region represents a population of 144,983 individuals. Among these cities, two have a general hospital, three have mixed units, one has a small hospital, and one has a regional hospital unit, under state management.

The secondary sources used were plans, laws, decrees, ordinances, and technical notes resolutions, published in the Strategic Information on Health Surveillance Center of Pernambuco (CIEVS-PE); on the online site -Pernambuco against COVID-19, and the Health Ministry, and consultation with the Municipal Health Fund. Such data is in the public domain, as several initiatives on information transparency regarding the disease have emerged since the beginning of the pandemic.

This search was based on the legislative readings from the State of Pernambuco and the Union, guided by the following guiding question: What

documents have been issued by the three levels of government, aiming to develop a document for strengthening the health care network, especially tertiary care, in the fight against the new pandemic?

The period of publication of the legal norms was from February to July 1, 2020, due to the need to close the investigation and complete the text for publication. Note that there is ongoing publication and changes to legislation, due to the Inter-federative mobilization for adaptation of the health sector to face a Public Health Emergency of International concern. The initial search was composed of 19 documents.

The inclusion criteria were normative regarding the reorganization and expansion of the HCN under study; documents describing the operation of health services during the COVID-19 pandemic; legislation related to the financing of the HCN to face the pandemic. The revoked normative that approached the subject were excluded, such as those that, after complete reading, did not answer the guiding guestion. The following resources were used to access the material in its entirety: links available on the pages of the selected portals, or downloadable files. Based on the established inclusion and exclusion criteria, the body of this review consisted of 10 documents.

The first step of material analysis was conducted by reading, and developing of a synoptic table. The following variables were extracted for the table: type of

material, number of the normative, date of publication, level of government, summary, and material content. Therefore, the content analysis was developed by the categorization proposed by Bardin⁽⁶⁾.

After full reading of the material, characterization, interpretation, and discussion, the selected studies were distributed in two categories: planning to face a Public Health Emergency of International Concern, and financial allocation to strengthen actions against COVID-19. In order to avoid direct identification of the cities, they were labeled as City A, B, C, D, E, F, and G.

Because this document analysis came from the public domain, examination by the Committee of Ethics in Research was not required, according to the regulation of Resolution 466/2012, of the National Health Council.

RESULTS

For the first category, six legislative texts were selected; for the second, four were eligible.

Chart 1 presents the characteristics of legislation on planning and organization for the control of *Public Health Emergency of International Concern*, regarding applicability by the cities of Pernambuco. From these materials, the following were identified: a federal law published by the Union; two ordinances and two decrees by the State; a resolution by the author of the *Bipartite Inter-Governmental Commission* (CIB). An intensification in the publication of legislation occurred in March, due to the rapid expansion of the virus.

The content revealed the adoption of concepts and actions of isolation and quarantine, mandatory use of facemasks, and restrictions of circulation of people and vehicles.

Changes occurred with remote work in institutions, and suspension of school and commerce. In health, protective guidelines were established for the functioning of the public and private network; individual protection equipment was provided; hospital beds were qualified and provided, especially for ICUs. Socioeconomic Intermunicipal Committees were also created to confront the coronavirus.

Chart 1 - Legal norms on planning and organization of the cities for the control of a Public Health Emergency of International Concern. Pernambuco, Brazil, 2020.

Type document	of	Level of government / Publication Date	Summary		Mate	erial d	content			
Law		Federal/	Provides	actio	ns	to	Desci	ribes	actions	aimed
n.13.979(7)		06/02/2020	confront	the	Pu	blic	at	pro	tecting	the

		Health Emergency of International Concern, due to the coronavirus responsible for the 2019 outbreak.	collective. Defines concepts of isolation and quarantine. Establishes compulsory medical examinations; laboratory tests; collection of clinical samples; vaccination and other prophylactic measures; or specific medical treatments. Exposes the rights of individuals affected by the virus.
Decree 48.810(8)	Pernambuco state 16/03/2020	Regulates, in the State of Pernambuco, temporary actions to face the <i>Public Health Emergency of International Concern</i> , due to the coronavirus responsible for the 2019 outbreak, as provided in Federal Law No. 13,979 of February 6, 2020.	Authorizes remote work by those most vulnerable to COVID-19, whose physical presence is not essential. Suspends operation of educational institutions in the state. Establishes creation of the Special Intermunicipal Committee to Confront Coronavirus AND Special Socioeconomic Committee to Confront Coronavirus.
Ordinance 144(9)	State of Pernambuco/ 13/04/2020	Calls entities of the complementary network of the Unified Health System described in the State Contingency Plan for Coronavirus infection, to submit proposals to state health department for qualification and contracting of hospital beds.	Call for entities of the complementary network of the UHS in Pernambuco, described in the State Contingency Plan, to submit proposals for qualification and contracting of hospital beds, and to define the transfer of funds for these services.
Decree 49.017(10)	State of Pernambuco 11/05/2020	Provides for the intensification of restrictive actions, exceptional and temporary, focused on containing the dissemination curve of Covid-19.	Establishes the mandatory use of masks; determines control of the circulation of vehicles and people; establishes functioning of authorized and essential activities; regulates the inspection of these actions.

Source: Prepared by the authors.

Table 2 lists the norms regarding the financial allocation from the union and the state to the cities of the Pernambuco Regional Health. The funding of public health actions and services were responsibilities of the three UHS management levels. Among the materials identified, three were ministerial ordinances and one was a published document by the *National Council of*

Municipal Health Secretariats (CONASEMS). Almost all these materials were published in March.

Chart 2 - Legal norms regarding the federal funding to the cities of the State of Pernambuco, included in the document review, according to the type of norms, number, level of government, publication date, and summary. Brazil, 2020.

Type of document/ Number	Level of government	Publication date	Summary
Ordinance 395(13)	Federal	16/03/2020	Establishes a resource from the Sector of Financial Support for the Public Health Care Actions and Services - Group of Intermediate and High Complexity Care, for the States and Federal District, focused on health actions (financial sector) to confront Coronavirus - COVID 19.
Document 036(14)	CONASEMS	20/03/2020	Financial resource agreement to fight Coronavirus.
Ordinance 245(15)	Federal	24/03/2020	Includes procedure in the Management System of the Table of Procedures, Medicines and Orthoses, Prostheses and Special Materials (OPM) of NHS, for exclusive care of patients with diagnosis of infection by COVID-19, and modifies the Hospital Information System of NHS (SIH/SUS) to allow the registration of actions related to facing COVID-19.

Source: Prepared by the authors.

DISCUSSION

The analysis of the document review of the ordinances, decrees, and laws of the State of Pernambuco and the Union allowed for identification of how the health services were structured to confront COVID-19, and included planning and financial relocation.

Planning to face a Public Health Emergency of International Concern On February 6, twenty days before the identification of human infection by the new virus, Brazil published the law 13.979⁽⁷⁾, with the purpose of public protection to face the public health emergency of international concern due to the coronavirus, which resulted in the outbreak of 2019. This normative provided the first governmental measures, especially, the propagation of actions aimed at maintaining the physical distance

of people, isolation of fourteen days for suspected and confirmed cases, a fortyday quarantine, as a restrictive circulation measure for the entire population, in order avoid possible contamination or spreading of the pathogen. A study conducted in the United States showed that social distancing may reduce the spread of the virus by 49% in the course of two weeks, as opposed to an 84% increase in viral spread, with noncompliance with this measure. This nonpharmacological practice was very important for controlling the coronavirus and was supported by the municipalities. (17).

In accordance with the above-mentioned national legislation, the government of Pernambuco issued Decree No. 48,810 on March 16. Thus, it sought mechanisms to guarantee adequate care to people affected by the virus, with adequate hospital coverage, to guarantee better health indicators and lower mortality rates ⁽⁸⁾.

Periodically, new state regulations have been implemented. In accordance with current legislation, *Special Intermunicipal Committees for Confronting Coronavirus* were created during the month of March, and individual Contingency Plans⁽⁵⁾ were developed, by all seven municipalities within the GERES VII.

The functionality of the commercial sector, public and private healthcare units, elective surgeries in the hospital network, and athletic activities were reorganized,

and the activities of schools, universities, and other educational establishments were suspended, in order to expand measures to ensure societal safety^(8,11). The mandatory use of face masks in all public or private environments was also instituted⁽¹⁰⁾.

In this sense, the quarantine strategy aimed to reduce the circulation of people and consequently avoid a high infection rate that could not be cared for by the health system. Likewise, the use of a face mask was required, based on evidence that the entire community can contribute to the control of COVID-19 by reducing the amount of respiratory droplet emissions from infected individuals, especially those with asymptomatic and mild cases. (18)

With a high transmissibility and pathogenicity rate, SARS-Cov2 manifested a significant challenge to the provision of beds, staff, and health equipment. Hospital overcrowding predisposes individuals to higher rates of complications due to delays in care and overworked staff, increased risk of health professionals and other patients developing COVID-19, and emotional stress for families (19).

Observing this phenomenon, the cities started a race to increase the quantity and availability of infirmary and ICU beds for the critically ill. In order to meet the demand for suspected and confirmed cases for SARS-CoV-2, calls for approval of ICU and infirmary beds were opened for

patients with coronavirus, including for the complementary network of UHS. (9).

After the publication of these laws, the GERES VII was able to plan the reorganization of the COVID-19 network, promoting the expansion of tertiary care services, with the construction of a respiratory unit in the regional hospital, located in City D, with twenty-five ward beds and five ICU beds. In addition, the other cities were reorganized to qualify specific infirmary beds for the management of the new virus (4,12).

Integrating the complementary network of the NHS, a private service also located in City D, has provided twelve additional infirmary beds and two ICU beds for treatment of suspected and confirmed cases of the new virus ⁽¹²⁾.

Furthermore, in the same city, a temporary health unit – a field hospital - was constructed to provide hospital care, with twenty-four beds of low complexity and social isolation, for care and hospitalization of suspected and confirmed cases of the new coronavirus⁽¹²⁾. The field hospital was installed only in City D, as it was the only one without tertiary care under city management.

Financial allocation to strengthen actions against COVID-19.

In mid-March, the federal government issued Ordinance No. 395(13), which addresses the need to strengthen UHS outpatient and hospital services to respond to the emergency situation. Thus, a double allocation was

provided to the Sector of Financial Support for the Public Health Care Actions and Services - Group of intermediate and high complexity outpatient and inpatient care, in a regular and automatic manner, transferred to a specific bank account in a single payment, during the month of April of 2020, to the cities⁽¹⁵⁾.

Additionally, according to ordinance no. 395, and the decision of the Bipartite Inter-Management Commission (CIB) by means of Document 036, the amount of financing received by the state management of Pernambuco was shared. Thus, the distribution of 30% of the total of this resource was allocated to the 184 cities of the state, according to the number of residents. (14). Thus, local managers were able to guarantee maintenance of services, such as medicine and material acquisition, as well as the organization of the health care network, by hiring professionals and adjusting the flow of urgent and emergency services for treatment of respiratory symptoms⁽¹⁵⁾.

In addition, the President of the Republic sanctioned Ordinance 1,666, which establishes the transfer of financial resources to the States, Federal District, and cities to face the Public Health Emergency of International Concern. In this document, financial assistance was provided to the cities, to compensate lost revenue and to guarantee health and social actions, as a result of the new pandemic. The allocation was made to invest in actions to confront COVID-19 and to mitigate its financial effects (16).

All cities, except for City D, have general municipal or small hospitals for low and intermediate complexity, and were able to use resources received for restructuring and adjustment of services. The objective was to qualify respiratory beds, included in their contingency plans for COVID-19, acquire supplies, and hire staff exclusively for this sector⁽¹⁵⁾.

The expenses for this service were covered by the financial support defined in ordinances 395 and 1,666, in addition to the payment of the Hospital Admission Authorization (AIH), to be processed in the Hospital Information System DATASSUS -Decentralized Information System (SIHD) for which the Ministry of Health paid R\$1,500.00 for hospitalization of a confirmed case, with a test report attached in the system. Suspected cases that were discarded would receive values defined by the Management System of the Table of Procedures, Medicines and Orthotics, Prostheses and Special Materials of the Brazilian National Health System - OPM of UHS (SIGTAP - UHS)(15).

Until now, 44 infirmary beds have been distributed in hospitals in Cities A, B, C, E, and $F^{(4,12)}$. Significant political tripartite funding efforts have been made to ensure the decentralization of quality care to the population in need of multiprofessional treatment for coronavirus management.

Because of the agreements between three government levels, it was possible to quarantee the opening of a new hospital exclusive to COVID-19, expansion of the infirmary and ICU beds, acquisition of health equipment, medication and personal protective equipment (PPE) kits, be used by the services Pernambuco's Health Region VII. Thus, with the proposal to guarantee the monitoring of the occupation of these beds, the MH released a notification channel, the Ministry of Information System - e-SUS Notifica which allows for daily recording of the occupation rate of hospital beds with admission of suspected and confirmed cases of the infection, via a link (https://notifica.saude.gov.br).

For health surveillance, the compilation of data regarding the organization and financing of actions to fight a pandemic are fundamental, in terms of management planning, for implementation of practices that support improvement in developing health plans and strategic allocation of resources, which can improve negative indicators arising from a Public Health Emergency of International Concern.

CONCLUSION

This analysis describes the governmental strategies and investments in the health area, to reformulate the HCN, with emphasis on the high complexity of Health Region VII of Pernambuco, by means of the application of state and national regulations, and the applicability

of financial resources received at the time of the COVID-19 pandemic.

The ministerial and state publications explained the steps taken managers to offer services to their population infected by COVID-19. material built resulted from a consolidation of the actions developed by all municipalities that make up the aforementioned HCN, according to the conditions of each locale, for restructuring its health care network. Considering that this is an ongoing problem, with no end to this public health emergency situation, it is impossible to describe the outcome of the HCN organization, as the Union and are constantly the State updating regulations, in order to rectify possible gaps and failures in the restructuring of the network, so as to offer a higher quality service to its population. However, this legal framework will continue to support the structuring of health care facilities in the face of a public health emergency situation of international concern, and may point to a successful experience. In scenario, better governmental preparation will be required to face future public health problems, in addition to strengthening public policies.

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