

Impacts of the Covid-19 Pandemic in the Multiple Scenarios of Primary Care in Boa Vista

Impactos da pandemia do Covid-19 nos múltiplos cenários da Atenção Básica em Boa Vista

Impactos de la Pandemia del Covid-19 en los Múltiples Escenarios de la Atención Básica en Boa Vista

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RESUMO

Objetivo: Descrever o processo de reorganização dos serviços de saúde em Unidades Básicas de Saúde de referência exclusiva para atendimento à COVID-19, na perspectiva do enfermeiro, no período de 2020 a 2021. **Método:** Trata-se de um estudo quanti-qualitativo descritivo e exploratório, delineado a partir de dados extraídos de entrevistas semiestruturadas com enfermeiros que atuam em algumas unidades básicas de saúde do município de Boa Vista, em concomitante comparação com dados epidemiológicos do período pandêmico. No estudo foi utilizada a metodologia de análise temática ou categorial de conteúdo. **Resultados:** Como resultado da reorganização, destacam-se duas categorizações (infraestrutura e trabalho precário). **Conclusões:** Ao final, revelou-se que os sistemas de saúde privado e público não estavam preparados para atender a alta demanda de serviços diante da crise pandêmica, sendo necessária uma revisão na organização e administração dos serviços de saúde.

Descritores: Atenção Primária à Saúde; COVID-19; Enfermagem.

ABSTRACT

Objective: To describe the process of reorganization of health services in Basic Health Units of exclusive reference for COVID-19 care, from the perspective of nurses, in the period from 2020 to 2021. **Methods:** This is a descriptive quantitative-qualitative study and exploratory, designed of data extracted from semi-structured interviews with nurses who work in some basic health units in the city of Boa Vista, in concomitant comparison with epidemiological data from the pandemic period. The study used thematic or categorical content analysis methodology. **Results:** As a result of the reorganization, two categorizations stand out (infrastructure and precarious work). **Conclusions:** In the end, it was revealed that the private and public health systems were not prepared to meet the high demand for services in the face of the pandemic crisis, requiring a review of the organization and administration of health services.

Descriptors: Primary Health Care; COVID-19; Nursing.

RESUMEN

Objetivo: Describir el proceso de reorganización de los servicios de salud en Unidades Básicas de Salud de referencia exclusiva para la atención de la COVID-19 desde la perspectiva del enfermero durante el período 2020 a 2021. **Métodos:** Se trata de un estudio cuantitativo, descriptivo y exploratorio, diseñado a partir de datos extraídos de entrevistas semiestruturadas a enfermeros que actúan en algunas unidades básicas de salud de la ciudad de Boa Vista, en comparación concomitante con datos epidemiológicos del período pandémico. En el estudio se utilizó la metodología del análisis temático o categórico del contenido. **Resultados:** como configuración emergen dos categorías (infraestructura y trabajo precario). **Conclusión:** Al final se reveló que el sistema de salud público y privado no estaba preparado para atender la alta demanda de servicios ante la crisis pandémica.

Descritores: Atención Primaria de Salud; COVID-19; Enfermería.

ORIGINAL

Introduction

In December 2019, the World Health Organization (WHO) became aware of the first cases of an atypical pneumonia, reported in the city of Wuhan, Hubei province, in the People's Republic of China.¹ This pneumonia was caused by a new strain of coronavirus called MERS-COV (Middle East respiratory syndrome), later called the novel coronavirus (2019-nCoV) and recently modified the nomenclature to SARS-CoV-2, responsible for the evolution of the COVID-19 disease.^{2,3}

At the end of January 2020, the WHO declared that the coronavirus outbreak is a "Public Health Emergency" of global concern, thus constituting the high alert level of this organization, according to pre-established protocols provided for in the "International Health Regulations".¹ Such protocols, in this and other situations of health risk, direct and systematize control measures, prevention and intervention in order to improve the management of the health crisis. In addition, it enables solidarity cooperation between nations in order to reduce damage and control to safe levels the transmission process of high-impact communicable diseases, which was the case of COVID-19, which in March 2020 was "characterized by the WHO as a pandemic".¹

Even with the warnings and experiences of other countries in the management of the pandemic, Brazil became the epicenter since the first months of 2021, with high morbidity and mortality rates in the first half of the year, with a peak of transmission recorded in June of the same year. This condition has had negative impacts on several health situations, including the economy and the use of human resources in the management of this disease, as well as consequences for other health problems and programs. Thus, the pandemic was far from being just a weakness of high-complexity care, given its impacts on the actions of Basic Health Units (UBS).

In Boa Vista, some UBS during the pandemic became references for COVID-19 care, a fact that required the relocation of health programs to other units. Therefore, this study aims to describe the process of reorganization of health services in basic health units, an exclusive reference for COVID-19 care, during the period from 2020 to 2021.

Method

For the interview, semi-structured instruments were used - a questionnaire with closed questions and an interview script (the aid of a voice recorder) containing questions that served as a basis for understanding and analyzing the process of reorganization of care in these reference units. In addition to the interviews, secondary data from the Integrated Health Services Management System (SIGSS) on the production of health teams during the period from 2019 to 2022 were also used. For these data from the (SIGSS), descriptive statistical operations, Chi-square test of independence and probability value were used.

For the interview, semi-structured instruments were used - a questionnaire with closed questions and an interview script (the aid of a voice recorder) containing questions that served as a basis for understanding and analyzing the process of reorganization of care in these reference units. In addition to the interviews, secondary data from the Integrated Health Services Management System (SIGSS) on the production of health teams during the period from 2019 to 2022 were also used. For these data from the (SIGSS), descriptive statistical operations, Chi-square test of independence and probability value were used.

In order to describe the impacts proposed in the main objective of this study, it was necessary to cross-reference the following information: the epidemiological data resulting from the production of the activities of this period with the statements resulting from the interviews. The interviewees' interpretations of the content were fundamental to understand the reorganization process and its consequences in primary care.

To this end, the thematic or categorical analysis technique of the content methodology was also used,⁴ in order to allow a robust description of the pandemic scenario in the context of primary care. Therefore, all the steps were carefully followed, from the pre-analysis with the organization of the corpus, followed by the floating reading, the clipping of the record units extracted from the context units, until the formulation of the categories. The entire analysis process obeyed the rules of Representativeness, Homogeneity, Relevance and Exclusivity proposed by Bardin.⁴

As for the exploration of the contents - which consists of codifying the constituent elements of the material, it was carried out from the statements of the interviewees. It began by cutting out the registration units within each context. Then, he made the selection of counting rules (enumeration), emerging from these cutouts two categories - infrastructure and precariousness of work. Finally, the treatment resulting from the inference that allowed the interpretation of the contents to be carried out. In this study, the inference was a posteriori, since the contents came from interviews of a prospective study.

The research project was approved on 11/22/2022 (opinion No. 5,677,499) of the Research Ethics Committee (CEPE) of the Federal University of Roraima (UFRR). and authorization from the Municipal Health Department (SEMSA) of the municipality of Boa Vista, through the letter of consent.

Results and Discussion

As of June 2020, during the pandemic, some Basic Health Units became a reference for preferential care for COVID-19, a fact that required the relocation of Health Programs to other units. However, patients enrolled in certain programs and suspected of having Covid-19 were treated at these referral units. This reorganization process occurred quickly, due to the demand for care of patients with respiratory symptoms, which became a medical emergency. In view of this reorganization, other UBS became support units for the users referred to the exclusive Covid-19 units.

These referral units are distributed in three macro-areas of Boa Vista, where the questionnaire and semi-structured interview script were applied to six

nurses who worked in primary care between 2019 and 2022. Of these, 80% were female, with a mean age of (Me = 38.1). All of them had tenured positions with specialization in the area of family health (100%).

Chart 1- Categorization of survey data.

Category	Subcategory	Outcomes
Infrastructure	Changes	Flows, protocols
	Improvisation	Emergencies, Emergency Care
Precariousness of work	Demand vs Human Resources Psychological trauma	Work overload

The categories arose from guiding questions about the impacts of the pandemic on the routine of Basic Health Units in Boa Vista. From the beginning, the fragility of the infrastructure in the face of the volume of demand resulting from the collapse of medium and high complexity care in the state has already been verified. This fact resulted in the directing of hospital demand from other municipalities to the city of Boa Vista.

"There was a lot of impact, mainly because the units were not prepared to receive the number of users who came to the UBS. I didn't have enough staff to meet all this demand and I didn't have the structure." (enf.5) A study conducted on the effects of the Pandemic on surveillance activities associated difficulties in the organization of work with a lack of infrastructure.5 Still on this topic, the lack of planning and human resources ended up limiting the performance of surveillance in the context of the pandemic.6 This limitation was also expressed in our study - "Total change in flow. Difficulty in follow-up (prenatal care, hypertensive, DM, childcare...). Patients with difficulties in providing care, because there was no structure." (Nur.4)

Such impacts were observed in some Health Programs, such as the Hiperdia Program - Systemic Arterial Hypertension (SAH) and Diabetes Mellitus (DM). As can be seen in tables I and II, UBS Olenka treated more hypertensive patients than the other referral units for Covid-19. In addition, it can be observed that the number of hypertensive patients treated at the UBS Délio Tupinambá was higher in 2019 compared to the pandemic and post-pandemic years of Covid-19. At the UBSs Olenka and São Vicente, the year 2021 recorded the lowest number of SAH consultations. At UBS Silvio Botelho, the year with the highest number of consultations for SAH was in 2022. All of these observations were statistically significant (p value <0.05).

Table 1 - Distribution of consultations of individuals with Systemic Arterial Hypertension in the Primary Health Care Units for Covid-19 in Boa Vista - RR in the 2019-2022 time series.

Basic Health Unit	N. of consultations								Total	Mean	χ ²	p value
	2019		2020		2021		2022					
	N	%	N	%	N	%	N	%				
Délio Tupinambá	952	34,1	619	22,2	351	12,6	866	31,1	2788	697 ± 270,4	315	<0.001
Olenka Macellaro	605	20,7	892	30,5	255	8,7	1176	40,2	2928	732 ± 394,3	637	<0.001
São Vicente	165	22,3	227	30,6	27	3,6	322	43,5	741	185,25 ± 123,7	248	<0.001
Silvio Botelho	54	8,5	197	30,9	71	11,1	316	49,5	638	159,5 ± 122,3	281	<0.001
Total	1776	25,0	1935	27,3	704	9,9	2680	37,8	7095	-	-	-

Source: Integrated Health Systems Management System/SMSA/PMBV (2023).

χ² = Chi-square test of independence. p value = Probability value.

Still on Hiperdia, the year 2021 was characterized by the lowest number of consultations of patients with Diabetes Mellitus at the UBSs Olenka and São Vicente. The year 2022, on the other hand, had the highest number of consultations with this public, considering the historical series (table II) of the UBSs Silvio Botelho and Délio Tupinambá (p value >0.05), the latter being the place with the most consultations of patients with DM in the last 4 years.

Considering specifically this program (Hiperdia), the changes in the care flows had negative impacts on patient follow-up. Thus, the weakening of the care process, including health programs, affects the operationalization of primary care, in view of its preventive nature in the midst of an urgent demand that escapes the primary care capacity.⁷ Corroborating this fragility, the insipidity of the infrastructure and routine planning of the units was a recurrent statement among the interviewees - "... yes! There was a lot of impact! needed to readjust the flow of care; adaptation of flows and protocols, without even having infrastructure" (n.1,2,3).

Table 2 - Distribution of consultations of individuals with Diabetes Mellitus in the Primary Health Care Units for Covid-19 in Boa Vista - RR in the 2019-2022 time series.

Basic Health Unit	N. of consultations											
	2019		2020		2021		2022		Total	Mean	χ^2	p value
	N	%	N	%	N	%	N	%				
Délio Tupinambá	227	17,9	299	23,6	300	23,6	443	34,9	1269	317,2 ± 90,5	77,5	<0.001
Olenka Macellaro	335	28,5	285	24,2	62	5,3	495	42,1	1177	294,25 ± 178,9	326	<0.001
São Vicente	61	20,5	122	41,1	10	3,4	104	35,0	297	74,2 ± 49,9	101	<0.001
Silvio Botelho	57	10,8	133	25,2	58	11,0	280	53,0	528	132 ± 104,9	250	<0.001
Total	680	20,8	839	25,6	430	13,1	1322	40,4	3271	-	-	-

Source: Integrated Health Systems Management System/SMSA/PMBV (2023).

χ^2 = Chi-square test of independence. / p value = Probability value.

From the manifestations about infrastructure, improvisation/changes that occurred during the process of reorganizing the routines of actions in primary care also emerged as subcategories. It is important to remember that these are Covid-19 reference UBS and all actions carried out internally in these UBS have been suspended, such as dressing, diagnosis of malaria, tuberculosis, HIV, among others, and actions. In addition, Family Health Strategy services, programs and home visits were also suspended, resonating in the health processes of users and families who were advised to seek support in adjacent units.

According to the interviewees (100%, n=6), the improvisations that occurred due to the changes brought several negative consequences to the dynamics of the UBS, especially for the users - Yes, the users decreased their demand for FHS services. To this day, the UBS functions as an emergency care unit. The patients became accustomed to not scheduling (nurse 3).

Table 3 shows that 2021 was the year with the fewest prenatal visits. The UBS Délio Tupinambá recorded the highest number of prenatal consultations in the period analyzed, with 2019 being the most prominent year. The year 2021 was atypical, as there were no more than 7 consultations registered in the SIGSS, adding up all 4 units. Analyzing the historical series of the UBS Silvio Botelho, it can be observed that in 2022 more prenatal consultations were carried out (p value <0.001). This confirms the negative impact of the pandemic on some programs.

In this context, there was a shift in the service offer from the family health strategy to the care of patients with respiratory symptoms, that is, the profile of the public immediately changed. The routine was drastically modified to meet this new profile, in addition, bonds and agendas were changed, as reported by the interviewee 6 - "mischaracterized the work of the members of the family health team". Even so, despite these changes, some patients with Covid-19 who fit into some health programs were cared for in these referral units.

Table 3 - Distribution of prenatal consultations carried out in the reference Basic Health Units for Covid-19 in Boa Vista - RR in the 2019-2022 historical series.

Basic Health Unit	N° of consultations				Total	χ^2	p value
	2019	2020	2021	2022			
Délio Tupinambá	2840	1146	2	1478	5466	2996	< 0.001
Olenka Macellaro	1930	766	4	1032	3732	2031	< 0.001
São Vicente	371	399	1	410	1181	394	< 0.001
Silvio Botelho	213	252	0	503	968	154	< 0.001
Total	5354	2563	7	3423	11347	-	-

Source: Integrated Health Systems Management System/SMSA/PMBV (2023)/ χ^2 = Chi-square test of independence p value = Probability value

Concerning the category - precariousness of work, circumstances associated with scarce elements emerged from the statements. In the face of the pandemic crisis, health professionals faced a significant increase in care due to the displacement of users of UBS dedicated exclusively to Covid-19. The six interviewees (100%) share the perception that the support units were not adequately prepared to deal with the growing demand for care.

Thus, the term work overload appears strongly at various times, prominently in their reports, either explicitly or suggested between the lines - there is an excess of outpatient demands, we are overloaded, and there is no return from patients... Increased demand and loss of links with registered users, even overload. The interviewees report (nurse 3 and nurse 6), and the table below shows this increase in most units compared to 2019.

Overwork, combined with shorter rest periods and insufficient human resources, characterize, at any time or circumstance, a flagrant precarious job. This characteristic does not seem to be a novelty, since there have been contradictions for a long time between the rights of workers, as a whole, and specifically the rights of health workers, especially in health companies that aim at profit.⁸ This reinforces the need for occupational health surveillance as a SUS policy in the fight against economic neoliberalism.⁹

This counterpoint between the excess of health activities and the availability of the workforce at the time in that chaotic scenario, generating fear and psychological trauma of a disease that was lethal at that time, is revealing.

In that situation, there was tension, fear and anguish, as can be seen in this statement - The professionals were psychologically shaken and were affected by the disease. Users were afraid to go to the units.

Although PPE was available, it was a highly transmissible disease, with high morbidity with thousands of deaths in a short period of time, with no immediate response from science regarding drug therapy. At the time, the literature described the fundamentality of occupational biosafety measures, but there was effectively no guarantee of protection associated with the use of PPE.

Fear and other psychological disorders suffered due to the precariousness of work are widely described in scientific texts^{7,10-13} and could be observed through the descriptions of health professionals, as the lack of knowledge and complexity of the disease caused emotional disturbances in health professionals, especially those working on the front lines.¹³ "Damage to the mental health of professionals, monitoring patients' health and work overload (n.6) In this sense, the chaotic scenario reverberated several components of the precariousness of work in health, reflecting, above all, on the mental health of workers.

Final Considerations

Bringing the categories to this end, infrastructure and precariousness need to be perceived beyond the pandemic. The public and private health system was not prepared to meet the high demand for services in the face of the pandemic crisis. Boa Vista's primary care, likewise, was also not structurally able to massively receive individuals seeking diagnosis and treatment for Covid-19. In addition, the demand of people with comorbidities in need of care in the midst of the chaos of the pandemic further increased the queues for care in other health units.

There were improvisations in the health care system that modified the dynamics of care flows that affected the dynamics of application of primary health care programs. Some modifications are perpetuated to the present day. Infrastructure weaknesses have created a setback for the quality of health care. The precariousness of work also surrounded this period and was part of the routine of these nurses, as observed in several statements. One of the precarious elements of this period had an impact on the mental health of nurses who worked in the fight against Covid-19 in Boa Vista.

One of the limitations for this study was the inability to bring the number of deaths from diabetes in these health units in this period in order to understand the impact of Covid-19 in addition to morbidity. As suggestions for projects that contemplate the same nature as this research, we recommend a time-series survey that analyzes the impact suffered by the pandemic on other health programs in other regions of the country, thus contributing to the dissemination of knowledge in the scientific field.

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References

1. Organização Pan-Americana da Saúde. Histórico da pandemia de COVID-19. Organização Pan-Americana da Saúde [Internet]. Disponível em: <https://www.paho.org/pt/covid19/historico-da-pandemia-covid-19>
2. Lu R, Zhao X, Li J, Niu P, Yang B, Wu H, et al. Genomic characterisation and epidemiology of 2019 novel coronavirus: implications for virus origins and receptor binding. *Lancet*. 2020; 395(10224): 565- 74. doi: [https://doi.org/10.1016/S0140-6736\(20\)30251-8](https://doi.org/10.1016/S0140-6736(20)30251-8)
3. Zhu N, Zhang DY, Wang WL, Li X, Yang B, Song J, et al. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med*. 2020; 382(8):727-33. doi: <https://doi.org/10.1056/NEJMoa2001017>
4. Bardin L. *Análise de Conteúdo*. Lisboa: Edições 70, 1977. 225 p
5. Araújo PS, Souza GS, Costa EA, Souza MKBD, Lima YOR. Efeitos da pandemia de COVID-19 no trabalho em vigilância sanitária. *Ciênc. saúde coletiva*. 2023; 28(05):1365-76. doi: <https://doi.org/10.1590/1413-81232023285.11852022>
6. Costa EA, Costa EAM, De Souza MKB, Araújo PS, Souza GS, Lima YOR, et al. Desafios à atuação dos trabalhadores de vigilância sanitária nos serviços de saúde. *Vigilância Sanitária em Debate: Sociedade, Ciência & Tecnologia*. 2022; 10(1):14-24. doi: <https://doi.org/10.22239/2317-269X.01844>
7. Rocha NL, Marinho GL, Paz EPA. O impacto da covid-19 nas práticas de enfermeiras da Atenção Primária à Saúde no município do Rio de Janeiro. 2023; *Tempus*, 16(4):25-35. doi: <https://doi.org/10.18569/tempus.v16i4.3084>
8. Sousa BRB, Negreiros RV, Rodrigues OB, Fonseca ENR, Silva RTA, Santos MWB, et al. Precarização do trabalho em saúde no contexto social: um ensaio teórico. *E-Acadêmica*. 2023; 4(1):5. doi: <https://doi.org/10.52076/eacad-v4i1.414>
9. Giovanella L, Escorel S, Lobato, LVC, Noronha JC, Carvalho AI, organizators. *Políticas e Sistemas de Saúde no Brasil*. 2. ed. Rio de Janeiro: Editora Fiocruz; 2012. 1097 p.
10. Lima ICS, Belarmino AC, Rodrigues MENG, Junior ARF, Cavalcante ASP, Sampaio JJC. Repercussões e estratégias de cuidado em saúde mental: cuidando do trabalhador de saúde no enfrentamento da COVID-19. *Revista de Saúde Coletiva da UEFS*. 2022; 12(2):7. doi: <https://doi.org/10.13102/rscdauefs.v12i2.7755>
11. Galon T, Navarro VL, Gonçalves AMS. Percepções de profissionais de enfermagem sobre suas condições de trabalho e saúde no contexto da pandemia de COVID-19. *Rev. bras. saúde ocup*. 2022; 47:9. doi: <https://doi.org/10.1590/2317-6369/15821PT2022v47ecov2>
12. Passini ES, Pinheiro SS, Makewitz GG, Knorst SL, Giongo CR. Saúde mental dos trabalhadores na pandemia por covid-19: uma revisão integrativa da

literatura internacional. Trabalho (En) Cena. 2023; 8:1-23. doi: <https://doi.org/10.20873/2526-1487e023015>

13. Guimarães-Teixeira E, Machado AV, Neto DL, Costa LS, Garrido PHS, Aguiar Filho W, et al. Comorbidades e saúde mental dos trabalhadores da saúde no Brasil. O impacto da pandemia da COVID-19. Ciênc. saúde Coletiva. 2023; 28(10):2823-32. doi: <https://doi.org/10.1590/1413-812320232810.10192023>

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