REVIEW ARTICLE

Implications of the COVID-19 pandemic on Primary Health Care: an integrative review

Implicações da pandemia da COVID-19 sobre a Atenção Primária à Saúde: revisão integrativax

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ABSTRACT

Objective: To identify in the literature the implications of the 2019 Corona Virus Disease pandemic on Primary Health Care. **Method:** Integrative literature review performed in April 2021 using the indexed descriptors “Primary Health Care”, “Coronavirus” and “Pandemics”, from Health Sciences Descriptors and Medical Subject Headings. Articles in full with no time frame were included. Duplicate studies, case reports, reflections, manuals, recommendations, reviews and studies on other topics were excluded. **Results:** Twenty-five studies out of 768 publications were selected. They point to changes in work demands related to materials, logistics, standard of care, social distancing and healthcare surveillance and monitoring strategies used in Primary Health Care in the 2019 Coronavirus Disease pandemic. **Conclusions:** Initiatives aimed at creating surveillance and monitoring strategies in Primary Health Care for coping with the 2019 Coronavirus Disease pandemic are shown.

Descriptors: Public Health Nursing; Coronavirus; Pandemics; Primary Health Care; Review.

RESUMO

Objetivo: Identificar na literatura as implicações da pandemia da *Coronavirus disease* de 2019 sobre a Atenção Primária à Saúde (APS). **Método:** Revisão integrativa da literatura realizada em abril de 2021, utilizando-se os descritores indexados “Primary Health Care”, “Coronavirus” e “Pandemics”, a partir dos Descritores em Ciências da Saúde e *Medical Subject Headings*. Foram incluídos artigos na íntegra, sem recorte temporal. Excluíram-se estudos duplicados, relatos de caso, reflexões, manuais, recomendações, revisões e estudos de outras temáticas. **Resultados:** Foram selecionados 25 estudos de 768 publicações. Apontam-se para mudanças nas demandas de trabalho relacionadas a materiais, logística, padrão de atendimento, distanciamento social e estratégias de vigilância e monitoramento da atenção à saúde utilizadas na APS na pandemia da *Coronavirus disease* de 2019. **Conclusões:** Revelam-se iniciativas voltadas à criação de estratégias de vigilância e monitoramento na Atenção Primária à Saúde no enfrentamento da pandemia da *Coronavirus disease* de 2019.

Descritores: Enfermagem em Saúde Pública; Coronavírus; Pandemias; Atenção Primária à Saúde; Revisão.

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INTRODUCTION

The 2019 Coronavirus disease (COVID-19), caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) virus, was characterized as a pandemic in March 2020 with community transmission in Brazil according to Ordinance No. 454 of March 20, 2020[1-2]. This is a viral disease with manifestations ranging from asymptomatic infections to severe conditions that affect healthcare services[1,3].

Isolation and social distancing measures stand out among the recommended strategies to delay the spread of COVID-19[4-5]. The purpose is to reduce transmission and limit mortality from the disease, in addition to providing assistance to the growing number of people affected by it[6].

Among other challenges presented by the COVID-19 pandemic, is the adoption of measures that reduce inequalities in access to healthcare services[7]. In this sense, the importance of Primary Health Care (PHC) stands out, since it aims to reduce the risk of disease transmission through actions such as early diagnosis, follow-up and monitoring at the individual and collective level[8]. Added to this, is the reaffirmation of PHC to face the pandemic, considering that in Brazil more than 16,194,209 million cases and 452,031 deaths were confirmed at the beginning of 2021[9].

Primary Health Care is characterized as the entry point to healthcare services given its essential attributes of first contact; longitudinality; comprehensiveness; care coordination; and derivatives based on the centrality of the family[10]. Intersectoral work must be performed in PHC, based on the territory and with multidisciplinary teams working as backup for services and specialized teams, in addition to laboratory services in healthcare through sanitary actions and practices[11].

The COVID-19 pandemic brought challenges to PHC, which had to organize itself to face this demand, such as the entry point and surveillance and monitoring instance, as well as in general care services that were affected by the social distancing recommendations. Primary Health Care plays a central role in coping with COVID-19, as it is anchored in the principles of health protection, disease prevention and control[8]. During the pandemic and in its daily routine, PHC plays a fundamental role in resolving mild cases and in the early identification of severe cases that should be referred to specialized services, maintaining the coordination of care at all levels of healthcare[5]. Through community work in the context of the pandemic, PHC also works to reduce the spread of infection, support home isolation and social distancing, identify and guarantee access to healthcare and health surveillance with case notification[10].

In this way, PHC has the possibility to expand its response capacity by advising the population on forms of contagion, identifying individuals and families in situations of greater vulnerability, mobilizing resources from the community itself to recognize suspected cases[12].

Primary Health Care and the strengthening of its attributions were essential measures in the fight against COVID-19[10]. On the other hand, work in PHC should include the continuity of preventive actions, vaccination, monitoring of pregnant women and infants, care for minor emergencies and acute cases of chronic diseases[13].

Considering the wide variety of PHC responsibilities and its primary role in dealing with COVID-19, emerged the interest in performing a synthesis of knowledge on how PHC was organized in the face of demands arising from the pandemic. Thus, the study was developed with the objective to identify in the literature the implications of the 2019 Coronavirus disease pandemic on Primary Health Care.

METHOD

This is an integrative literature review study[14]. The aim of integrative reviews is to point out knowledge gaps and generate new perspectives on the phenomenon studied for the preparation of new studies[15]. Furthermore, it allows the synthesis of published studies and conclusions regarding a study theme[16]. In this study, the following research question was chosen: were there implications of the COVID-19 pandemic on PHC? The formulation of the question was structured with use of the PICO acronym[17], defined as P (Population): PHC users and workers, I (Interest): implications of the COVID-19 pandemic in the organization of care and Co (Context): PHC.

Six different steps were followed to perform this integrative literature review: identification of the theme and research question; criteria for inclusion and exclusion of studies; information to be extracted from selected studies; evaluation of studies included in the integrative review; interpretation of results; and presentation of the review and synthesis[14-15].

Online research articles in Portuguese, English or Spanish, available in full, without time frame were included. Duplicate studies between databases and the Scientific Electronic Library Online (SciELO) portal, case reports, reflections, manuals and recommendations were excluded, as well as reviews and studies focused on other themes. After the search, the procedures for reading titles and abstracts were followed to identify if the retrieved articles had potential for inclusion. The studies were grouped and presented based on their theme.

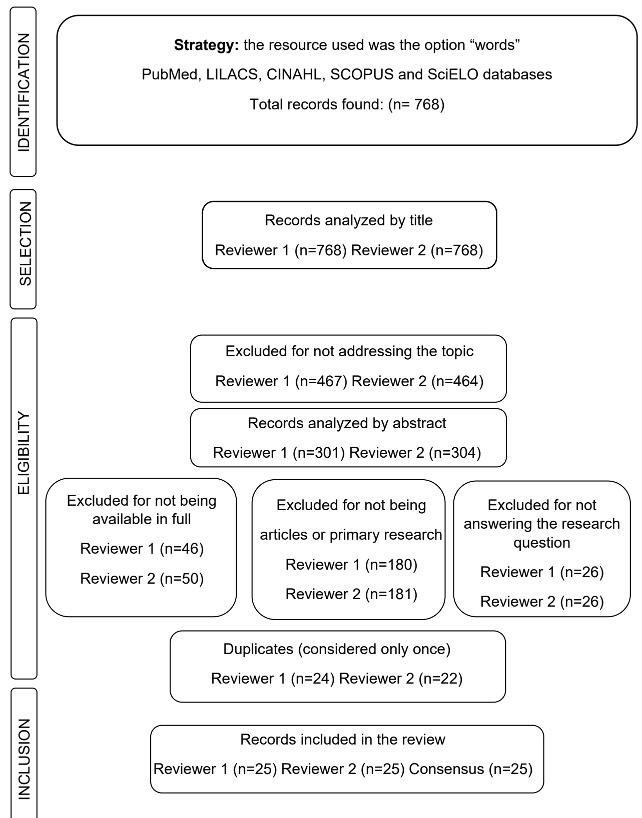
The databases used in the search were accessed through the Coordination for the Improvement of Higher Education Personnel (CAPES) website via the Federated Academic Community (CAFe): Latin American Literature in Health Sciences (LILACS), Medical Literature Analysis and

System Online (PubMed), SciVerse Scopus (SCOPUS) and Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Scientific Electronic Library Online (SciELO). The query to Subject Descriptors in Health Sciences (DECs) and Medical Subject Headings (MeSH) was used with the "indexed descriptor" option: "Primary Health Care" and "Coronavirus" and "Pandemics", associated with use of the Boolean operator AND.

The step of search and selection of articles included in the review was performed independently by a pair of reviewers in April 2021. An exhaustive reading of titles and abstracts was performed to ensure that the studies addressed the guiding question and met the inclusion and exclusion criteria. In case of doubt, the publication was selected and the decision on its inclusion was made after reading its content in full. Doubts at the end of the selection were discussed and resolved by a third reviewer with methodological experience in order to reach consensus.

Descriptive data analysis was performed with use of a synoptic table built by the authors to extract and synthesize data from each study, which allowed the comparison and organization of data according to their differences and similarities. For the selection of studies, an adaptation of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was performed[18], as shown in Figure 1.

Figure 1. Adapted from PRISMA flowchart[18], 2015



Considering the study design, the level of evidence was identified as follows: I for systematic reviews and meta-analysis of randomized clinical trials; II for randomized clinical trials; III for non-randomized controlled trials; IV for case-control or cohort studies; V for systematic reviews of qualitative or descriptive studies; VI for qualitative or descriptive studies; and VII for expert opinion and/or expert committee reports. Levels I and II are classified as strong, III to V as moderate and VI to VII as weak[16]. The precepts of research integrity and authorship were respected in the development of the study.

RESULTS

The search in the selected databases resulted in 768 references. After reading the titles and abstracts to find those addressing the topic of interest, 25 studies were selected for full reading.

Table 1 presents the articles included in the corpus of this integrative literature review in order to characterize each production, including title, publication journal, country and level of evidence.

The publication years of studies date from 2020 (21 studies) and 2021 (4). The countries of publication of articles were: South Africa (2), Belgium (2), Brazil (3), Canada (2), Singapore (1), Spain (1), United States of America (10), India (1), England (2) and Peru (1). Note that as a result of the period in which data for this study were collected, articles referring to year 2020 predominated.

The selected articles have a low level of evidence and are characterized by different data collection instruments and adopted designs. Most studies were conducted abroad, pointing to the lack of research on the subject in Brazil.

From the analysis of the selected articles, two empirical categories were constructed: "Changes in PHC work demands to face the COVID-19 pandemic" (14 studies) and "Surveillance, monitoring and healthcare strategies of PHC for coping with the COVID-19 pandemic" (13 studies). The selected articles were identified by Arabic numerals and included in each of the categories; articles number 29 and 33 belong to both categories, as shown in Table 2.

DISCUSSION

Changes in Primary Health Care work demands to face the COVID-19 pandemic

In this category, the main changes to the usual processes of meeting the classic demands of PHC and the creation of new processes to meet the demands of the COVID-19 pandemic are presented. The changes in PHC work demands in the COVID-19 pandemic are related to

Table 1. Articles that constituted the corpus of the integrative literature review, 2021

Reference	Title	Journal	Country	Level of evidence
19	Primary health care, the declaration of astana and COVID-19.	*Policy & Practice*	Canada	VII
20	Primary care in the time of COVID-19: Monitoring the effect of the pandemic and the lockdown measures on 34 quality of care indicators calculated for 288 primary care practices covering about 6 million people in Catalonia.	*BMC Family Practice*	Spain	IV
21	Pandemic notes from a Maine direct primary care practice.	*Journal of Ambulatory Care Management*	United States of America	VI
22	Use and Content of Primary Care Office-Based vs Telemedicine Care Visits During the COVID-19 Pandemic in the US.	*JAMA Network Open*	United States of America	III
23	Primary Care Population Management for COVID-19 Patients.	*Journal of General Internal Medicine*	United States of America	III
24	Access to primary healthcare during lockdown measures for COVID-19 in rural South Africa: An interrupted time series analysis.	*BMJ Open*	South Africa	IV
25	Strengthening the UK primary care response to covid-19.	*The BMJ*	England	VI
26	Access to Care During a Pandemic: Improving Planning Efforts to Incorporate Community Primary Care Practices and Public Health Stakeholders.	*Word Medical & Health Policy*	United States of America	VI
27	Reorganisation of primary care for older adults during COVID-19: a cross-sectional database study in the UK.	*British Journal of General Practice*	England	IV
28	Primary health care in times of COVID-19: what to do?	*Cadernos de Saúde Pública*	Brazil	VI
29	Organisation and characteristics of out-of-hours primary care during a COVID-19 outbreak: A real-time observational study.	*PLOS ONE*	Belgium	IV
30	Primary care management of the coronavirus (COVID-19).	*South African Family Practice*	South Africa	VI
31	Addressing Trauma and Stress in the COVID-19 Pandemic: Challenges and the Promise of Integrated Primary Care.	*APA PsycNet*	United States of America	VI
32	Primary healthcare response to COVID 19 in a district of Callao, Peru.	*Advances in Science, Technology and Engineering Systems Journal*	Peru	IV

Continue...

Table 1. Continuation

Reference	Title	Journal	Country	Level of evidence
33	Impact of the COVID-19 pandemic on the core functions of primary care: Will the cure be worse than the disease? A qualitative interview study in Flemish GPs.	*BMJ Open*	Belgium	VI
34	The covid-19 pandemic in Nijmegen, the Netherlands: Changes in presented health problems and demand for primary care.	*Annals of Family Medicine*	United States of America	IV
35	A tale of 3 Asian cities: How is primary care responding to COVID-19 in Hong Kong, Singapore, and Beijing?	*Annals of Family Medicine*	United States of America	VI
36	Differences in the use of telephone and video telemedicine visits during the COVID-19 pandemic.	*American Journal of Managed Care*	United States of America	IV
37	The international response of primary health care to COVID-19: Document analysis in selected countries.	*Cadernos de Saúde Pública*	Brazil	VI
38	Redesigning Primary Care to Address the COVID-19 Pandemic in the Midst of the Pandemic.	*Annals of Family Medicine*	United States of America	VI
39	COVID-19: Notes From the Front Line, Singapore's Primary Health Care Perspective.	*Annals of Family Medicine*	Singapore	VI
40	Patient Characteristics Associated With Telemedicine Access for Primary and Specialty Ambulatory Care During the COVID-19 Pandemic.	*JAMA Network Open*	United States of America	IV
41	New Coronavirus: (re)thinking the care process in Primary Health and Nursing.	*Revista Brasileira de Enfermagem*	Brazil	VI
42	Primary Health Care Facility Preparedness for Outpatient Service Provision During the COVID-19 Pandemic in India: Cross-Sectional Study.	*JMIR Public Health and Surveillance*	India	IV
43	Shifts in office and virtual primary care during the early COVID-19 pandemic in Ontario, Canada.	*Canadian Medical Association Journal*	Canada	IV

Table 2. Selected articles and their empirical categories. Porto Alegre, RS, Brazil, 2021

Empirical categories	Articles included
Changes in PHC work demands to face the COVID-19 pandemic	(19,20,25–26,28-30,32-34,38–39,41–42)
Surveillance, monitoring and healthcare strategies of PHC for coping with the COVID-19 pandemic	(21-24,27,29,31,33,35-37,40,43)

material and logistical support, changes in the standard of care and changes caused by distancing in the COVID-19 pandemic[19-20,25-26,28-30,32-34,38-39,41-42]. A study[19] highlights PHC as a space to contribute to the front line of service provision through its ability to face the challenges revealed by the COVID-19 pandemic.

Based on its expressive response to the health sector in the context of the pandemic, PHC covers a wide portion of the population that demands its services and is exposed to risks due to their living conditions[44]. Therefore, the pandemic presupposes a set of measures that, in addition to the immediate containment of transmission of the virus, makes it possible to think about the health system for the protection of lives of all citizens. In this sense, the role of PHC in the COVID-19 pandemic requires considering the problems arising from social isolation and the precariousness of social and economic life. The challenges imposed by the COVID-19 pandemic reveal vulnerabilities and also the importance of PHC in the functioning of the health service and its relationship with the realization of the right to health[44].

A study conducted with management professionals of PHC[42] highlighted the lack of appropriate personal protective equipment (PPE), as well as inadequate facilities from the point of view of hygiene and ventilation[42]. A study[30] addressing the management of primary care of the coronavirus describes the need for use of PPE by the health team, who must wear a surgical mask, gown and gloves. In addition, the study also highlights that the N95 mask, eye protection, apron and gloves must be used when performing aerosol-generating procedures, in addition to cleaning and disinfecting the equipment before it is used on another patient. The pandemic also requires physical infrastructure and human resources, the availability of supplies to qualify patient care, support to disease surveillance and contact tracing, and optimization of the use of resources[26].

A study conducted in PHC clinics[20] revealed that in the COVID-19 pandemic, the results of monitoring, control and tracking indicators in PHC were significantly reduced, with reduction or even suspension of outpatient care schedules, such as those of chronic diseases, and initiation of care of symptomatic people for COVID-19[42]. Protocols were created for the screening of patients, aiming to identify suspected cases. Non-suspected cases received a medical certificate and were followed up by telephone, while suspected cases were isolated and received medical care[39]. This was corroborated in a study[29] mentioning the importance of continuity of treatment for patients receiving a protocolized treatment, and reinforcing the need for further research to understand the best methods of care that use protocols.

A study[25] pointed out the need for care and rehabilitation of vulnerable patients affected by COVID-19 in communities. A Brazilian study[28] that analyzed the possibilities of PHC services in the Unified Health System (SUS) network also pointed to the need for health surveillance in territories, care to users, social support to vulnerable groups and continuity of actions in the context of the COVID-19 pandemic.

Primary Health Care is considered the front line of the pandemic, responsible for collecting and testing cases PHC, and for reducing mortality and health inequalities in the COVID-19 pandemic[34]. The work of health teams is developed from aspects related to knowledge of the territory, access, link between users and the health team, comprehensive care, need for support to professionals, monitoring of vulnerable families and monitoring of suspected and mild cases[44].

A study[29] found changes in the rate of in-person consultations per diagnosis, with an increase in demand for in-person consultations for psychological and cardiovascular diagnoses and a decrease in the number of in-person consultations for respiratory, ophthalmological, digestive and otologic diagnoses. Another study[38] portrayed the preparation of primary care in response to the pandemic through pandemic intervals, by quickly identifying each interval in the community meeting the speed to transform care, and protecting patients; these are essential actions to prevent exponential spread of the virus. Primary Health Care can contribute to the recommended practices of early isolation, with surveillance actions and containment of suspected cases, acting in the prevention and control of infections of health workers and users[18,29,31,34,37].

Research[33,41] reported the difficulty in deciding which follow-up contacts with patients can be safely postponed, since patients with comorbidities are at risk of complications from COVID-19. In addition, difficulties were faced with activities and care processes of PHC in times of a pandemic, bringing the importance of recognition and financial investment, considering that PHC is the entry point to Brazilian Health Care Networks (RAS).

In this sense, it is essential to ensure safe and quality care, the planning of actions, the (re)organization of services and the allocation of financial resources to meet the health needs of the population, enabling access and availability of healthcare services[44-45].

It is also necessary to strengthen the team working in PHC and improve the referral and counter-referral process to optimize resources, since primary care systems form the basis of emergency responses which, together with trained professionals, can provide care targeted to prevention and recovery, as well as participate in planning and action to manage the risks of health emergencies[32].

The creation of strategies to face the pandemic requires trained health workers in sufficient numbers; high number of diagnostic tests; complementary exams with results in a timely manner; adequate physical space for suspected cases;

medicine supplies; defined flows and protocols; community and home surveillance; adequate and sufficient PPE; and organization of work processes that allow access, assistance and health information, thereby strengthening the care provided to the population by PHC[44-45].

Surveillance, monitoring and healthcare strategies of Primary Health Care for coping with the COVID-19 pandemic

The healthcare surveillance and monitoring strategies used by PHC in the COVID-19 pandemic are related to the use of the telephone, video calls, teleconsultations, implementation of protocols, flow of care, detection and monitoring of COVID-19, as well as to the limits faced by PHC in the pandemic[21-24,27,29,31,33,35-37,40,43].

According to a study[21], after social distancing measures, patients used telephone, video and messaging options more often, reducing the number of home visits. In line with this finding, international studies[22,27] add that the number of telemedicine consultations increased with the COVID-19 pandemic compared to in-person consultations, as well as the number of telephone and video consultations, with consequent decrease in face-to-face consultations.

Regarding home visits, a management strategy was developed to optimize home care for patients with COVID-19, allowing the identification of those who needed care in a timely manner[23]. To this end, in-person consultations were changed to telehealth visits through telephone nursing screening in order to manage the high volume of calls from patients with questions about the new coronavirus; guide screening decisions, including frequency of contact with patients, depending on the day of symptoms and risk factors; and to identify clinical findings that indicated if the patient was safe to remain at home, the need for additional assessment or emergency intervention[23].

A study[24] conducted in PHC clinics found a reduction of more than 50% in child healthcare visits for children aged under one year and between one and five years. Another study[29] found that 57% of consultations were performed by telephone, of which 70% could be done only through this means of contact. In the same study, among patients with a diagnosis of risk for COVID-19 evaluated in face-to-face consultations, 70% had a previous consultation by telephone. In a study[40] of patients treated by primary care, young, female, white patients with a higher average family income were more likely to be assisted by telemedicine (video and/or telephone) than Asian patients and those older than 55 years. A similar finding highlighted that there were more virtual consultations among women, adults between 65 and 74 years of age and with higher incomes, while the groups with fewer virtual consultations were children and rural residents.

Likewise, a study[31] reported that telephone and video calls were often used in PHC to perform telehealth care, and patients with access to telephone and internet resources benefit from this innovation. On the other hand, more vulnerable people in communities continued to seek in-person consultations for healthcare during the pandemic, because of their lack of access to the use of telephone and the internet.

A study[33] cited adjustments to the performance of PHC, in accordance with government guidelines in relation to COVID-19. Among them, the primary contact with patients made by telephone and the restructuring of online schedule to discriminate between respiratory complaints and other complaints stand out. This was corroborated in a study[29] that also portrayed changes in the standard of care. The health centers began to perform triage and service by telephone, managing to solve most demands without the need for in-person assistance. Research shows that 71.1% of all consultations performed during the COVID-19 period were virtual, representing a large decrease in face-to-face consultations[43]. Even when face-to-face consultations were necessary, the number of patients in the waiting room was limited or patients were instructed to wait in their vehicle in order to reduce the chances of infections[33].

In Brazil, clinical protocols for the management of COVID-19, guidelines and documents on how to do teleconsultation through the country's computerized health system were created[37]. In addition, the same study highlighted that PHC must consider the regional context and local particularities to perform teleconsultations by establishing different operational flows[37].

With the regulation of telemedicine in Brazil for the context of the COVID-19 pandemic[46], teleservice was included in the national protocol for the clinical management of the disease in PHC, incorporating telemonitoring of people with suspected COVID-19 and remote surveillance of the clinical picture of symptomatic people[33-36]. Online and telehealth services are configured as an alternative to face the COVID-19 pandemic in PHC, considering the ease of contagion and spread of the disease in closed places and the need to avoid a great demand for health services[44,47]. Online service provides important guidance to users at an individual level and constitutes a tool for people with moderate or mild symptoms[47-48]. This strategy reduces the PHC burden, contributing to organize the flow of service users and allowing that professionals work remotely[44].

The aforementioned strategies can be adopted by PHC services to contribute to the integrality of health actions not only during a pandemic, therefore, it is important to

guarantee internet access in health services and expand computers and telephones for online service[44]. The remote consultation must be based on protocols with clear and objective messages, giving preference to video, aiming to reduce the number of users visiting health centers[49-50]. These actions demonstrate the potential of PHC to reformulate their practices with available resources, adapting new uses to the existing ones.

Despite the short period of the study, which can be considered a limitation, it was possible to observe the strategies to face COVID-19 in the context of PHC and to envision possible frontier areas of knowledge for further research. Research to evaluate the results of strategies adopted to face the COVID-19 pandemic and their applicability for use in meeting other demands is suggested. Additionally, the impact of changes resulting of the pandemic in the process of meeting the usual demands of PHC in the long term is a problem to be investigated in the future.

CONCLUSION

The study identified the implications of the COVID-19 pandemic on PHC, highlighting changes in meeting its usual demands in the direction of creating new processes and actions to prevent, control and manage COVID-19 cases. The evidence found shows the work demands and initiatives focused on creating surveillance and monitoring strategies used by PHC in facing the COVID-19 pandemic. The teams needed material and logistical support to face the pandemic, and the implementation of tools for service, detection and monitoring of the disease was observed among the strategies, with emphasis on teleservice. The limitation of access to the telephone and internet in vulnerable communities that impact the longitudinality of care stood out.

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