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Structure and responsiveness: are Primary Health Care Units prepared to face COVID-19?

Estrutura e responsividade: a Atenção Primária à Saúde está preparada para o enfrentamento da Covid-19?

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ABSTRACT The COVID-19 pandemic reinforced the need for global efforts to grant universal health coverage and access, which imposes management challenges for Primary Health Care (PHC). This study aimed to develop and apply an instrument to assess the PHC Units' responsiveness to COVID-19, based on co-production efforts between university researchers and PHC technical teams. The instrument composed of two modules, included identification, operating hours, workforce, work process, structure, equipment, furniture, supplies, Personal Protection Equipment (PPE), Symptomatic Respiratory Patient (SRP) examinations and follow-up, information, surveillance, integration, communication, and management. All the 165 PHC Units in Brasília were invited to complete the instrument. Main results: there was physical structure adaptation (adequate configuration of waiting rooms, internal and external spaces allowing safe distance); provision of PPE and COVID-19 tests; active search for SRP/COVID-19 suspects by phone, mobile or home visits; monitoring flows of patient transfer and telehealth implementation. In conclusion, the PHC Units reorganized their services to meet the demands of the pandemic context. Providing information about structure and responsiveness of PHC Units may subside health systems for planning and decision-making at different levels of management, which is crucial to determine strategies to empower and reinforce PHC responsivity in situations of pandemics and other calamities.

KEYWORDS COVID-19. Primary Health Care. Structure of services. Evaluation study. Health services research.

RESUMO *A pandemia de Covid-19 reforçou a necessidade de esforços globais para garantir cobertura e acesso universal à saúde, impondo desafios na gestão da Atenção Primária à Saúde (APS). Este estudo objetivou desenvolver e aplicar um instrumento de avaliação da responsividade das Unidades Básicas de Saúde (UBS) diante da Covid-19, baseado na coprodução entre pesquisadores universitários e equipes técnicas da APS. O instrumento, dividido em dois módulos, incluiu identificação; horário de funcionamento; processo de trabalho; estrutura física, equipamentos, mobiliário, suprimentos e Equipamentos de Proteção Individual (EPI); atendimento, exames e acompanhamento de Usuários Sintomáticos Respiratórios (USR); vigilância, integração, comunicação e gestão. Todas as 165 UBS foram convidadas a completar o instrumento. Principais resultados: houve readequação da estrutura física (salas de espera, espaços internos/externos); fornecimento de EPI e de testes Covid-19, busca ativa de USR/suspeitos Covid-19 por telefone/visitas domiciliares, monitoramento de fluxos de transferência de pacientes e telessaúde. Concluindo, as UBS reorganizaram seus serviços para atender necessidades da pandemia. Fornecer informações sobre estrutura e capacidade de resposta das UBS pode subsidiar sistemas de saúde para planejamento e tomada de decisões, em diferentes níveis de gestão, crucial para determinar estratégias para reforçar a responsividade da APS em situações de pandemias e outras calamidades.*

PALAVRAS-CHAVE *Covid-19. Atenção Primária à Saúde. Estrutura de serviços. Estudo de avaliação. Pesquisa de serviços de saúde.*

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Introduction

Health systems in high and low-middle income countries have faced the challenge of dealing with the existing high prevalence of chronic non-communicable diseases, along with pandemics that represent a global risk. Spread worldwide, COVID-19 has reinforced the need for joint efforts aimed at strengthening Universal Health Coverage (UHC) and access to health services, which imposes management challenges to Primary Health Care (PHC) Units[1-4]. Investing in PHC is a priority for improving access to health.

The COVID-19 pandemic highlights the role of PHC as the preferred entrance door integrated into a wider healthcare network within the scope of the Brazilian Unified Health System (SUS). Similarly, other countries, such as the United Kingdom, Australia, and Iceland, have PHC as the preferred gateway and filter for more complex levels of care[5]. Considering that primary care is where most healthcare takes place, it is essential to find ways to best sustain its services to provide the necessary responses to pandemics[6].

The availability of tools may subsidize health managers and direct the investments needed to allow the implementation of appropriate strategies towards improving PHC. The complexity of PHC evaluation is recognized and the importance of information production before defining interventions towards PHC services[7] is highlighted. To tackle the challenges imposed by local reality, especially in the context of extreme situations as the pandemic scenario, it is even more relevant to have elements to optimize quick responses. That way, constructing instruments based on existing experiences, but also dialoguing with local reality, may be innovative and useful to health services.

Evaluating health services from the perspective of the concept of responsiveness may bring the opportunity to guide reorientation of practices with greater chance to have adherence and commitment and consequently better respond to the actual needs. Responsiveness is a measure of how health systems address expectations of people in a legitime way[8].

The aim of this study was the development and application of an instrument to analyze the structures and responsiveness of PHC Units to COVID-19, in order to identify resource availability and gaps, enabling the necessary adjustments.

Material and methods

Background

An instrument was developed as part of the activities related to the ongoing PHC Qualification Program (QualisAPS), implemented in Brasília, Federal District (DF), the capital of Brazil. This PHC is based on the Family Health Strategy (FHS), as defined by the local government directive since 2017[9]. The QualisAPS Program, implemented in 2019, aims to qualify management and health care to improve the PHC services provided. It involves the use of innovative methods for coproduction and the development of participatory assessment for healthcare teams, scientific dissemination, and diffusion and incorporation of knowledge.

The structure is an important component of health systems. In this study, structure is defined as the physical, technical, and organizational aspects considered essential for the quality of health service provision[10].

Methodology for instrument development

The instrument was developed according to the general guidelines for PHC services, in addition to the Contingency plans and Technical Notes that dealt specifically with adaptations and reorganization of PHC to tackle the COVID-19 pandemic at the local level.

Initially, a literature review was performed using the documentary analysis method. The review included norms and technical documents from the Ministry of Health and the local Health Secretariat, such as guides, manuals, and guidelines for clinical and organizational support of PHC, elaborated in the context of the pandemic (*box 1*).

Box 1. Regulations and technical documents used to prepare the instrument for analyzing the structure and response capacity of the Primary Health Care Units to COVID-19

Regulation/ Technical Document	Description	Source
National Program for Improving Access and Quality in Primary Care	The PMAQ/AB intends to increase the transfer of funds from the Federal level to participating municipalities, aiming at improving the quality of health services through the qualification, monitoring, and evaluation of work processes.	(a_1) (a_2)
Self-assessment for improving access and quality of primary care	The AMAQ/AB instrument was developed in the context of the 'Health Closer to You' program, from which the PMAQ was developed, with the objective of encouraging the evaluation of primary care.	(b)
Physical structure manual of Primary Health Care Units	It aims to assist in the conception and strengthening of the Family Health Strategy (FHS), suggesting the elaboration of renovation, construction, and expansion of PHC Units projects to enable the physical structure to facilitate the improvement of health practices.	(c)
Ordinance No. 77, of Feb 14, 2017, which establishes the PHC Policy of the Federal District. DODF No. 33, Section1, 2, and 3, Feb 15, 2017.	Establishes the Federal District´s Primary Health Care Policy: principles, guidelines, administrative organization of teams, PHC Units, management of PHC and organization of services in the territory, planning, monitoring, and evaluation of health actions, patient access, reception, and risk classification. The organization of the work schedule and agenda, the supply of medicines and health products, collection of tests, organization of vaccination, regulation for specialties, transport, permanent health education and health surveillance.	(d)
DF Contingency Plan for Human Infection by the Novel Coronavirus	Characterizes the degree of response and the organization of command to be made at each level of response to human infection by the Novel Coronavirus.	(e)
Technical Note COAPS/SAIS/SES. COVID-19 No. 01/2020 v2	Clinical and organizational support in addressing the Patient with Suspected Coronavirus Disease (COVID-19) in the PHC of the State Department of Health of the DF.	(f)
CONASS Healthcare network service during COVID-19 pandemic	It aims to provide instruments, guidance, management, and control of conditions in the healthcare service network during the COVID-19 pandemic.	(g)
WHO case management of COVID-19 in health facility and community	Intended for decision-makers, aiming at improving the care of patients with COVID-19 regarding treatment, without compromising the actions of public health services and health professionals.	(h)
Health Care Protocol: PHC Nursing Guide	Description of Standard Operating Procedures and their flowcharts in nursing care in PHC.	(i)
Technical Report of Primary Care No. 01 Brasília, Aug 4, 2020	Characterization of the role of Family Health Teams in the prevention, control, and management of COVID-19.	(j)

Source: Self elaborated.

(a_1) http://189.28.128.100/dab/docs/publicacoes/geral/manual_instrutivo_pmaq_site.pdf

(a_2) http://189.28.128.100/dab/docs/portaldab/documentos/Manual_Instrutivo_3_Ciclo_PMAQ.pdf

(b) http://189.28.128.100/dab/docs/geral/amaq.pdf

(c) http://189.28.128.100/dab/docs/publicacoes/geral/manual_estrutura_ubs.pdf

(d) http://www.sinj.df.gov.br/sinj/Norma/b41d856d8d554d4b95431cdd9ee00521/ses_prt_77_2017.html

(e) https://www.saude.df.gov.br/tag/plano-de-contingencia/

(f) http://www.saude.df.gov.br/wp-conteudo/uploads/2020/02/NOTA_TECNICA-APS-COVID19___2-versao_27032020-1.pdf

(g) https://www.conass.org.br/wp-content/uploads/2020/04/ATENDIMENTO-DA-REDE-DE-ATENCAO-A-SAUDE-PANDEMIA.pdf

(h) https://apps.who.int/iris/bitstream/handle/10665/331492/WHO-2019-nCoV-HCF_operations-2020.1-eng.pdf?sequence=1&isAllowed=y

(i) https://www.saude.df.gov.br/wp-conteudo/uploads/2018/04/ENFERMAGEM-1-Protocolo_Final_Parte_1.pdf

(j) SEI Process 00060-00149762/2020-41 (SES-DF).

From the document analysis, we identified and developed items to measure indicators for each of the structural axes of PHC during the COVID-19 pandemic: functioning during the COVID-19 pandemic, workforce, organization, and work processes of health teams. Thus physical structure, equipment, furniture and supplies; Personal Protective Equipment (PPE) and collective protection measures; follow-up of the patients and exams; and information, surveillance, integration, communication, and management of health services were considered.

The following step included a panel of experts composed of a group of specialists in PHC from the University of Brasília (QualisAPS members) and from Federal University of São Paulo – UNIFESP (invited member), and health professionals from the local of Health Secretariat. The group reviewed all items of the instrument for criteria of clarity, simplicity, objectivity, and technical and contextual adequacy and provided feedback on necessary items on each structure axis.

The expert panel technique has been utilized in a great variety of health research studies[11,12]. Its implementation in this study was based on the QualisAPS Program postulate that the best strategy to encourage the use of evaluation results is to build any instrument in the context in which it will be applied. Also, besides taking into consideration the literature reports, it is relevant to consider experiences, interests, and problems detected and seen as significant by health managers and professionals[13-15], in a co-production perspective[16-18].

METHODOLOGY FOR INSTRUMENT APPLICATION

We applied the software Research Eletronic Data Capture (REDCap), an open access platform, for data collection, developed by the Vanderbilt University, Tennessee, USA. REDCap allows storing and managing research and databases, as well as creating data collection instruments, managing reports, among other functionalities[19,20].

Before application, the instrument's axes were divided into two modules to be applied through telephone interviews and through self-completion, respectively. The axes that included information readily available by the PHC Unit managers were surveyed by telephone interviews. The axes that required searches from internal reports and information systems were allocated to the self-completion link and sent when the telephone interview was concluded.

At this stage, the instrument was pretested by health managers of two PHC Units in Brasília. The issues raised, mainly related to clarity and language adequacy, were modified. The average time for the instrument application was identified as 45 minutes for the telephone interview and 60 minutes for the self-completion instrument. The instrument was developed in June-July 2020, period of the first pandemic wave; data collection occurred from August 2020 to January 2021, before the second pandemic wave in Brasília, which happened in March 2021.

The units of analysis are the PHC Units of Brasília. The potential respondents are the Unit´s managers who were first contacted by telephone. After the arrangements for the interview, an email was sent to reinforce the information provided on the phone call. The informed consent form was sent by email and signed before the telephone interview date. This study was approved by the Ethical Committee from the Faculty of Health Sciences of University of Brasília (CAAE no.29640120.6.0000.0030).

Results and discussion

Instrument structure

The final version of the instrument designed to analyze the structure and responsiveness of PHC Units to COVID-19 was composed

of 11 thematic axes, with a total of 127 items, distributed in two modules. The telephone-based module consists of 60 items distributed between axis 1 (respondent identification), axis 2 (identification of PHC Unit), axis 5 (organization and work process), axis 6 (structure), axis 8 (PPE), and axis 11 (management) (*figure 1*). The self-completion module is composed of 67 items organized in axis 3 (functioning of PHC Unit during the COVID-19 pandemic), axis 4 (workforce), axis 7 (equipment, furniture and supplies), axis 9 (patient follow-up and examinations), and axis 10 (information, surveillance, integration, and communication) (*figure 2*).

The instrument was planned to encompass the PHC's attributions, and its different dimensions of organization and functioning to provide comprehensive care. Therefore, the evaluation included identification, functioning hours, workforce, work process, structure, equipment, furniture, supplies, PPE, Symptomatic Respiratory Patient (SRP)/ COVID-19 suspects' examinations and follow-up, information, surveillance, integration, communication, and management.

Figure 1. Telephone-based instrument module elaborated to evaluate structure and responsiveness of Primary Health Care Units to COVID-19. Brasília, DF, 2020

QualisAPS

AXIS 1 IDENTIFICATION OF THE RESPONDENT

1.1 Full name of the respondent at the Primary Health Care Unit (PHC Unit)_____

1.2 E-mail_____

1.3 Position of respondent_____

AXIS 2 IDENTIFICATION OF PHC UNIT

2.1 Health/ Administrative Region: _____

2.2 Name of PHC Unit:_____

2.3 Location? a.Urban area b.Rural area

2.4 Type of PHC Unit: a.Type 1 b.Type 2 c.Type 2 with extended hours (Saúde na Hora)

2.5 Is this a Sentinel Unit for surveillance of Influenza Syndrome and Severe Acute Respiratory Syndrome (SARS) and performs epidemiological surveillance through case identification and notification? a.Yes b.No

AXIS 5 ORGANIZATION AND WORK PROCESS

5.1 Are there health workers located at the entrance of PHC Unit to identify and assist the reception of symptomatic respiratory patients (SRP) or COVID-19 suspects? a.Yes, always b.Yes, sometimes c.No (skip to 5.2)

5.1.1 If yes, which workers are assigned to this duty?_____

5.2 Do health workers perform the SRP risk classification? a.Yes b.No (skip to 5.3)

5.2.1 If yes, which workers perform this duty?_____

5.3 Are there exclusive workers assigned to the SRP service scale? a.Yes b.No (skip to 5.4)

5.3.1 If so, which and how many workers perform this duty?_____

5.4 Does the PHC Unit welcome and listen actively to patients, even if they are not in the coverage area? a.Yes b.No

5.5 Is the pre-defined reception flow for the SRP used? a.Yes b.No (skip to 5.6)

5.5.1 If yes, is there physical space reserved for guidance on the use of masks and hand hygiene? a.Yes b.No

5.6 For cases in which hospitalization was not indicated, is home monitoring of the patient and his/her home contacts performed (active search)? a.Yes b.No (skip to 5.7)

5.6.1 If yes, what is the periodicity?_____

5.6.2 How is this home monitoring conducted? a.By phone or mobile b.By home visit

5.7 Are the teams conducting home visits, including active search for new SRP cases? a.Yes b.No (skip to 5.8)

5.7.1 If so, which team workers are conducting home visits? _____

5.8 In general, do workers prioritize situations of greater risk of clinical and social vulnerability in consultations and elective home visits? a.Yes b.No (skip to 5.9)

5.8.1 Which workers perform this duty? _____

5.9 Has the population included in the risk group for COVID-19 been mapped by the teams? a.Yes b.No

5.10 Do the teams advise the population about COVID-19 (preventive measures, signs and symptoms, others)? a.Yes b.No

5.10.1 If so, which team workers have carried out these guidelines? _____

Figure 1. (cont.)

5.11 What COVID-19 guidelines are offered to the population? a.Hygiene measures b.Proper use of gel alcohol and masks c.Social isolation measures d.Contagion prevention e.Measures of social distancing f.Procedures for suspected COVID-19 cases g.Signs and symptoms of COVID-19 h.Treatment guidelines for COVID-19
5.12 Are educational activities carried out at PHC Units for patient who are waiting for assistance? a.Yes b.No (Go to 5.13)
5.12.1 If so, which workers carry out these educational activities? _____
5.13 Is the population informed about the visits and exams performed at the PHC Units? a.Yes b.No (Go to 5.14)
5.13.1 If so, how? a.By telephone b.E-mail c.Message app d.During home visit e.At the reception
5.14 Are patients advised to arrive just 15 min. before consultation to avoid crowding the PHC Units reception and/or the teams' reception rooms? a.Yes b.No
5.15 How are elective appointments scheduled? a.By appointment b.By shifts c.By block of hours d.Not applicable
5.16 Are the psychosocial aspects of patients in situations of social isolation evaluated? a.Yes b.No (Go to 5.17)
5.16.1 If yes, by which workers?_____
5.17 Are there matrix support activities (psychology) at distance? a.Yes b.No
5.18 Have the professionals participated in team meetings during the COVID-19 pandemic? a.Yes b.No
5.19 Are there team meetings to discuss suspected COVID-19 cases? a.Yes b.No
5.20 Is vaccination organized to ensure little/no contact with patients who are at the PHC Units, to prevent COVID-19 transmission? a.Yes b.No
5.21 Does the pharmaceutical assistance accept the prescriptions with extension of validity to 60 days, without the need for renewal, in order to reduce the number of patients in PHC Units? a.Yes b.No
5.22 Does the pharmacy accept digitally certified prescriptions issued by telehealth?

AXIS 6 STRUCTURE

6.1 General characterization of the PHC Units ambience
6.1.1 Regarding the general characterization of the PHC Units' ambience, check if the following internal visible signs are present: The opening hours of PHC Units? List of services offered? The scale of professionals with names and working hours? PHC Unit contact(s) information: phone, email, WhatsApp, Instagram, Facebook? a.Yes b.No
6.1.2 Do signs, in your opinion, facilitate the orientation and circulation of patients and professionals? a.Yes b.No
6.1.3 Is there a service flow marked on the PHC Unit´s floor to maintain a 2 meters minimum distance? a.Yes b.No
6.1.4 Is there adequate external space for the SRP to wait for assistance? a.Yes b.No
6.1.5 Is there an internal space reserved only for the SRP, far from the service rooms of other patients? a.Yes b.No
6.1.6 Is there a screening area for the SRP? a.Yes b.No
6.1.7 Is the space for the SRP close and does it have a bathroom for individual use? a.Yes b.No
6.2 In relation to the offices destined to consultation of SRP:
6.2.1 Are there offices dedicated exclusively to the care of the SRP? a.Yes b.No
6.2.2 Does the office have curtains/blinds? a.Yes b.No
6.2.3 Does the office furniture have surfaces that can be disinfected? a.Yes b.No
6.2.4 Is the office(s)ventilated? a.Yes b.No
6.2.5 At the time of SRP consultations, the doctor´s office is maintained with:
a. Door ( )open ( ) closed ( )There is no door
b. Window ( )open ( ) closed ( )There is no window
c. Ventilator/fan ( )on ( ) off ( )There is no ventilator/fan
d. Air conditioner ( )on ( ) off ( )There is no air conditioner
6.2.6 Is there a sink with soap and water to allow frequent hand hygiene? a.Yes b.No
6.2.7 Are there physical barriers (PVC film, strip, etc.) to prevent transmission of COVID-19? a.Yes b.No
6.3 Is there a structure for managing contaminated waste at the PHC Unit? a.Yes b.No
6.4 Are there physical barriers or markings defining the distance between workers at the Unit? a.Yes b.No
6.5 Are there physical barriers or markings defining the distance between patients at the PHC Unit? a.Yes b.No

AXIS 8 PERSONAL PROTECTION EQUIPMENT (PPE)

8.1 Choose the option that best describes the availability of these PPE in the Unit:
a. Disposable surgical mask b.N95 or PFF2 mask c.Disposable hospital cap d.Safety glass e.Non-sterile latex proc gloves
f.Non-surgical nitrile procedure gloves g.Protective overalls h. Shoe covers
i. Face protector j.Disposable sterile surgical gown k.Surgical cap l.Disposable turban
( ) in sufficient quantity for the entire month
( ) in insufficient quantity for the entire month
( ) not currently available
8.2 Which PPE do workers use correctly and frequently?
a.Safety glasses or face shield b.Mask c. Disposable hat/cap/turban d. Waterproof surgical gown
e. Procedure gloves f. Closed shoes g.none
8.3 Which PPE are used by health workers while caring for patients suspect of having contracted COVID-19?
a.Safety glasses or face shield b.Mask c. Disposable hat/cap/turban d. Waterproof surgical gown
e. Procedure gloves f. Closed shoes g.none
8.4 Do health workers keep at least a one-meter distance while providing care for SRP? a.Yes b.No
8.5 Do health workers correctly use PPE while collecting test samples? a.Yes b.No
8.6 Do people with respiratory symptoms receive surgical masks when present at the PHC Unit? a.Yes b.No

Figure 1. (cont.)

8.7 Do health workers guide patients on the correct use a surgical/home-made masks, as well as explain care for mask hygiene? a.Yes b.No
8.8 Is 70% alcohol hand sanitizer available to patients suspected of having contracted COVID-19? a.Yes b.No
8.9 Is a person suspect of having contracted COVID-19 taken to an isolated and ventilated environment as a precaution to prevent transmission?
8.10 Are workers advised on the use of PPE and the maximum period masks may be used? a.Yes b.No
8.11 Do healthcare workers use N95, PFF2, or equivalent masks when performing aerosol-generating procedures (intubation or tracheal aspiration, non-invasive ventilation, cardiopulmonary resuscitation, manual ventilation before intubation, collections of nasotracheal samples)?
8.12 Do professionals correctly dispose of PPE? a.Yes b.No
8.13 Do workers wash their hands often? a.Yes b.No
8.14 Are objects and surfaces that have been touched cleaned and disinfected w/ 70% alcohol frequently? a.Yes always b.Yes sometimes c.No
8.15 Is there a routine established for waste management? a.Yes b.No
8.16 Regarding administrative staff, health visitors, or other workers who listen to patients at the reception: Do these workers maintain a minimum distance of 2 meters? a.Yes b.No Do they wear a mask? a.Yes b.No
8.17 Are support and cleaning workers advised on the correct use and disposal of PPE? a.Yes b.No
8.18 Do cleaning workers use PPE correctly and frequently during the sanitation process of contaminated areas? a.Yes b.No

AXIS 11 MANAGEMENT
11.1 Regarding the Unit's management team, does the team monitor and manage, within its competencies:
a.The strategic stock of laboratory inputs for the diagnosis of human infection with the COVID-19 virus? a.Yes b.No
b.The strategic stock of medication for the treatment of suspected and confirmed cases of COVID-19? a.Yes b.No
c.The strategic stock of PPE for PHC Unit professionals? a.Yes b.No
d.The structure for permanent access to the telephone network, internet, consumer material and administrative furniture, and telephone and computer equipment? a.Yes b.No
e.Does the team have the knowledge about Standard Operating Procedure to collect data from e-SUS AB for monitoring suspect/confirmed cases of COVID-19/SRP? a.Yes b.No
11.2 Does the Unit manager participate in team meetings? a.Yes b.No
11.3 Is there some difficulty in offering and/or supplying and monitoring the strategic stock of the following: a.Laboratory supplies b.Medicines c.PPE d.None
11.4 Do the Unit's managers have daily access to the report with confirmed cases of COVID-19? a.Yes b.No
11.5 Is there a regulation or protocol for the surveillance and monitoring process in your Health Region? a.Yes b.No
11.6 Are there workers who have had contact with a suspected or confirmed case and do not show symptoms monitored? a.Yes b.No

Source: Self elaborated.

Figure 2. Self-completion instrument module elaborated to evaluate structure and responsiveness of Primary Health Care Units to COVID-19. Brasília, DF, 2020

QualisAPS

AXIS 3 FUNCTIONING OF PHC UNIT DURING THE COVID-19 PANDEMIC
3.1 Have the PHC Unit face-to-face opening hours been modified due to COVID-19? a.Yes b.No (go to 3.2)
3.1.1 If so, what was the change? a.Expanded hours b.Reduced service hours
3.2 Currently, for which groups is the PHC Unit offering specific services? _____
3.3 Is the PHC Unit offering scheduled service? a.Yes b.No
3.3.1 If so, what percentage is used for these services? _____
3.4 Is the PHC Unit offering spontaneous demand service? a.Yes b.No
3.4.1 If so, what is the percentage of spontaneous demand? _____
3.5 Is the PHC Unit offering a telehealth service? a.Yes b.No
3.5.1 If so, which professionals are offering this service? _____
3.6 Is the PHC Unit offering telephone monitoring service for patients suspected of COVID-19? a.Yes b.No
3.6.1. If so, how many professionals are conducting telephone monitoring of patients suspected of having contracted COVID-19? _____
3.7 Is the PHC Unit working with priority care for patients who have respiratory symptoms? a.Yes b.No
3.8 Are other services being offered by the PHC Unit (in addition to those) during opening hours and days? a.Yes If so, which? _____ b.No
3.9 What is the population covered by the PHC Unit? _____
3.10 What is the population served by the PHC Unit? _____
3.11 Are there traditional people/communities in the area covered by the PHC Unit (indigenous, quilombolas, afro worship places, etc.)? a.Yes b.No

Figure 2. (cont.)

AXIS 4 WORKFORCE

4.1 How many Primary Health Care teams are there in the Unit? a.Family Health Strategy Team b.Oral Health Team c.Homeless Heath Team d.Rural Family Health Team e.Family Health support center f.Vaccine Team g.Reception Room Team h.Pharmacy Team
4.2 Do FHT have a NASF-AB to refer patients? 4.2.1 If yes, how many teams? _____
4.3 Are FHT registered in the CNES? a.Yes b.No
4.4 What is the total number of professionals in the PHC Unit and the number of hours per professional category?
4.5 In the last month, what was the total number of absences per professional category? _____
4.6 Have workers been asked to perform a different activity than usual in the last month?
4.6.1 If so, who and how many workers were affected?
4.7 Have any workers from another point of care been moved to work in this PHC Unit?
4.7.1 If so, who and how many workers were affected?
4.8 Are any workers telecommuting? a.Yes b.No (skip to 4.9)
4.8.1 If so, how many workers and in which tasks?
4.9 Have any of the PHC Unit workers left due to being identified as belonging to a COVID-19 risk group? a.Yes b.No
4.10 How many workers are on sick leave at the moment? _____
4.11 How many workers have been away on suspicion of COVID-19 since as the beginning of the pandemic by professional category? _____
4.12 Which workers were removed due to COVID-19 since the beginning of the pandemic by professional category? _____
4.13 Do workers with symptoms of COVID-19 remain in home isolation? _____
4.14 Are workers being tested at the PHC Unit? a.Yes b.No
4.15 For which of the following COVID-19 diagnostic tests did the PHC Unit train workers for sample collection?
( )Swab ( )Rapid Test ( )Swab and Rapid Test ( )None ( ) Not applicable
4.15.1 Which workers are trained for each test? _____
4.16 Did the teams receive training and/or guidance on the clinical management of COVID-19 in Primary Health Care? a.Yes b.No
4.17 Did the teams receive training on how to advise the population to prevent COVID-19? 4.17.1 How was the training on COVID-19 carried out?

AXIS 7 EQUIPMENT, FURNITURE AND SUPPLIES

7.1 Equipment and materials available at the PHC Unit
7.1.1 Are there phones in working condition and a telephone network available to teams? a.Yes b.No
7.1.2 Are computers in working order and available to teams?
7.1.3 Are there computers in the pharmacy in good condition? a.Yes b.No
7.1.4 Are printers available in good conditions of use? a.Yes b.No
7.1.5 What equipment those items that are available and in good conditions of use at the PHC Unit? (list of 24 equipments used in PHC)
7.1.6 Are there alcohol gel dispensers/gel holders available and in good condition for patients in sufficient quantity? a.Yes b.No
7.1.7 Are there alcohol gel dispensers/gel holders in good conditions of use and available for professionals in sufficient quantity? a.Yes b.No
7.1.8 Are antiseptic dispensers available and in good conditions of use at the PHC Unit in sufficient quantity? a.Yes b.No
7.1.9 Are antiseptic dispensers available and ready for use by professionals in sufficient quantity? a.Yes b.No
7.1.10 Are liquid soap dispensers available and in good condition for patients in sufficient quantity? a.Yes b.No
7.1.11 Are liquid soap dispensers available and ready for use by professionals in sufficient quantity? a.Yes b.No
7.1.12 Choose among the following materials, those that the PHC Unit has available for COVID-19 tests sample storage (list of 7 storage supplies)
7.2 Emergency cart
7.2.1 Does the PHC Unit have a emergency cart? a.Yes b.No
7.2.1.1 If so, does the emergency cart have all the necessary supplies and equipment in working order, medicines, and mandatory materials in each compartment, in line with PHC Protocol guidelines?
7.2.1.2 Does it have a seal?
7.2.1.3 Does it have a check list? a.Yes b.No
7.2.1.4 When was the emergency cart last checked?_____
7.2.1.5 Who was the professional responsible for the last check? ___
7.2.1.5.1 Does the PHC Unit have trained professionals to use the emergency cart supplies and equipment available? a.Yes b.No
7.3 Furniture
7.3.1 Does the PHC Unit have tarpaulins or tents on the outside area? a.Yes b.No
7.3.2 Does the PHC Unit have seats in good working condition that can be used in the patient's waiting room? a.Yes b.No
7.3.2.1 If so, the seats allow patients to maintain the recommended distance? a.Yes b.No
7.3.3 Does the PHC Unit have large waste bins with lids and pedals in good working condition? a.Yes b.No
7.4 Supplies
7.4.1 Availability of O2, sanitizer, syringes, gauze, cotton, etc. (list of 23 medical supplies)
7.5 Health tests
7.5.1 Availability of tests: (a)COVID-19 swab (TR-PCR test) (b)COVID-19 rapid test (antibody) (c)Dengue rapid test
7.6 Medicines for patients at the PHC Unit (list of 13 medicines)
7.7 Office supplies (list of 10 office supplies)
7.8 Vehicle
7.8.1 Is there an ambulance/transport vehicle to take suspected cases of COVID-19 that are not critical back to their home?
7.8.2 Is there an ambulance/transport vehicle to take serious suspected cases of COVID-19 that are critical to the referral unit? a.Yes b.No
7.8.3 The transportation of suspected cases is carried out by: a.SAMU b.Fireman ambulance c.SES ambulance d.patient´s own car
7.8.4 Is there transportation available for driving professionals who perform home care for people with respiratory symptoms? a.Yes b.No

Figure 2. (cont.)

AXIS 9 PATIENT FOLLOW-UP AND EXAMINATIONS

9.1.1 About home care and O2 supply: a.Does the team have access to the regulations that guide the risk classification for home care? b.Does the PHC Unit have a defined flow for monitoring patients eligible for the use of devices such as inhalers, vacuum cleaners, concentrators/cylinders for O2 therapy, non-invasive ventilation, and chronic care with tracheostomy? c.Does the team monitor patients in Long-Term Home Oxygen Therapy (LTOT) and Home Mechanical Ventilation (HMV)? d.Does the team monitor the O2 supply to patients eligible for LTOT and HMV? e.Is the team supported by the Regional Center for Home Care (RCHC) in the organization of home care? f.Does the FHT team have defined a flow with RCHC? g.Does the team follow protocols or guidelines for the management of inputs and medicines in home care?

9.2 Flow for laboratory tests:

9.2.1 Does the team know the MA-LACEN-0007 collection manual? (LACEN= Central Laboratory)

9.2.2 Is the collection for dengue testing sent to LACEN?

9.2.3 Is the collection of material for COVID-19 testing sent to LACEN?

9.2.4 Is upper respiratory tract secretion collected in COVID-19/SRP investigation?

9.2.5 How long does it take to send the collected material to the laboratory (average)?

9.2.6 Is there a defined flow to send samples to LACEN?

9.2.6.1 If yes, is there a vehicle available daily?

9.2.6.2 Is there a vehicle available within 48h of collection?

9.2.6.3 Does the vehicle follow a pre-established route between the PHC Units in the Health Region?

9.2.6.4 If not, how the samples are sent?

9.2.6.5 Is the vehicle made available to the PHC Unit after request by the Management of Primary Health Care Services? a.Yes b.No

9.3 Has the PHC Unit already attended to any patient diagnosed with COVID-19 with complications, after they were discharged? a.Yes b.No

9.4 If so, what were the complication(s)? a.Renal b.Hypertension c.Blood glucose changes d.Respiratory problem e.Others

AXIS 10 INFORMATION, SURVEILLANCE, INTEGRATION, AND COMMUNICATION

10.1 Does the team record clinical and production data in Information Systems systematically and within the established deadlines? a.Yes b.No

10.2 Does the PHC Unit team have any difficulties in recording data in the Information Systems? a.Yes b.No

10.3 Did the team receive guidance on the completion of care data of SRP and COVID-19, and their respective codes, in e-SUS? a.Yes b.No

10.4 Does the team record the information of patients with suspected or confirmed COVID-19 diagnosis in the medical record? a.Yes b.No

10.5 Does the team record the clinical monitoring of suspected/confirmed COVID-19 cases who are in home isolation in the information systems?

10.6 Does the team record teleconsultation data on e-SUS? a.Yes b.No

10.7 Does the team record the notifications of suspected cases of COVID-19 in the defined systems (e-SUS VE, SIVEP/Gripe)? a.Yes b.No

10.8 Does the team/PHC Unit have a record of the historical series of visits made? a.Yes b.No

10.9 Does the team analyze the demand and build a historical series of services? a.Yes b.No

10.10 Does the team use information generated by the databases for planning and scheduling the offer and organizing the agenda? a.Yes b.No

10.11 Is the percentage of SRP visits monitored in relation to the total number of visits made? a.Yes b.No

10.12 Is the percentage of suspected cases of COVID-19 monitored in relation to the total number of cases? a.Yes b.No

10.13 Do workers advise vulnerable families about the social benefits of the government? a.Yes b.No

10.14 Does the team currently develop intersectoral actions in your territory? a. If so, with which organizations? (list of 6 organizations)

10.15 Is the team mapping the elderly in the territory to the Adequate Housing Program during the COVID-19 pandemic in DF? a.Yes b.No

10.16 Is the team advising the elderly in the territory about the Adequate Housing Program during the COVID-19 pandemic in DF? a.Yes b.No

10.17 Are the notifications required by the Department of Health made within 24 hours? a.Yes b.No

10.18 Is the notification accompanied by the completion of the form available at "https://notifica.saude.gov.br"? a.Yes b.No

10.19 Is the notification form being completed in the e-SUS Epidemiological Surveillance? a.Yes b.No

10.20 Are the deadlines for returning laboratory results being met? a.Yes b.No

10.21 Is there sharing the care of patients with the secondary care? a.Yes b.No

10.22 When there are doubts about the management of the case, does the professional call the Epidemiological Surveillance and Immunization Center in your region? a.Yes b.No

10.22.1 If so, do they respond in a timely manner to resolve the case? a.Yes b.No

10.23 Are there agreed flow of patient care transfer to secondary level?

10.23.1 If so, are the rules available for professionals to know? a.Yes b.No

10.24 Are there agreed flow of patient care transfer to hospital level?

10.24.1 If so, are the rules available for professionals? a.Yes b.No

10.25 Are the agreed-upon flows adequate to address the transfer needs of patients? a.Yes b.No

10.26 Does the PHC unit have information material about COVID-19 aimed at the patient?

10.26.1 If so, what materials are available?

10.26.2 Is the material available in a visible location for patients?

10.26.3 Are these materials available in print for providing health education services?

10.27 Have health professionals had access, in a timely manner (whenever necessary), to the protocols and technical regulations designed to provide guidance on COVID-19? a.Yes b.No 10.27.1 If so, how can these documents be accessed? (list of 10 possibilities)

10.28 What Health Department publications have been used by PHC Unit workers to guide COVID-19 care? (list of 12 publications)

Source: Self elaborated.

Results of instrument application

All 165 PHC Units functioning in Brasília, DF completed the telephone-based instrument, whereas 159 filled the self-completion module, from August 2020 to January 2021. Application of the instrument to evaluate the structure and responsiveness was essential to describe the work process, structure and inputs' availability. Selected variables are presented in *tables 1 and 2*. The instrument covered other aspects related to the care of COVID-19 and Symptomatic Respiratory Patients (SRP), in addition to the ones presented in the following tables.

Table 1. Structure and responsiveness of Primary Health Care Units to COVID-19, as evaluated by telephone-based instrument module. Brasília, DF, August 2020-January 2021 (N =165)

Description of structure, inputs and procedures of Primary Health Care Units[a]	N	Proportion %
There are health workers at the entrance of PHC Units to identify and assist the reception of SRP/COVID-19 suspects	146	88.5
The professional assigned for SRP reception is the community health worker	118	80.9[b]
The health workers perform the SRP/COVID-19 suspects risk classification	135	81.8
There is an adequate external space for the SRP/COVID-19 suspects to wait for assistance	135	81.8
There is an internal space reserved only for the SRP/COVID-19 suspects, far from the service rooms of other patients	99	60.0
There are ventilated consultation offices dedicated exclusively to SRP/COVID-19 suspects care	134	81.2
The offices have a sink with soap and water to allow frequent hand hygiene	112	67.9
There are PFF2, or N95 masks in sufficient quantity for the entire month	144	87.3
There are disposable surgical masks in sufficient quantity for the entire month	155	93.9
The SRP receive surgical masks when they attend the Primary Health Care Unit	109	66.1
The health workers use procedure gloves correctly and frequently	146	88.5
The Family Health Teams conduct active search for new SRP/COVID-19 suspects	150	90.9
The active searches are conducted by phone or mobile	132	88.0[c]
The active searches are conducted by home visits	67	44.6[c]

Source: Self elaborated.

PHC = Primary Health Care

SRP = Symptomatic Respiratory Patients, that include COVID-19 diagnosed/suspected cases

[a] All the 165 Primary Health Care (PHC) Units operating in Brasília responded the survey

[b] Proportion relative to 146 PHC Units with reception procedures for SRP

[c] Proportion relative to 150 PHC Units with active search for new SRP.

Table 1 shows favorable adaptations in the work process within the PHC Units, as the majority of them (over 88%) assigned a health worker to identify SRP/COVID-19 suspects at the entrance, immediately performing risk classification and directing them to appropriate care. The structural configurations of PHC Units in Brasília also demonstrated availability of adequate external space for SRP/COVID-19 suspects to wait for assistance in almost 82% of them. On the other hand, in only 60% of the PHC Units there is internal space reserved only for those patients. Ventilated consultations offices dedicated exclusively to SRP/COVID-19 suspect cases were available in 81% of Units, but just 68% of the offices had a sink, water, and soap.

Results showed adherence to important aspects within the scope of PHC services, including actions to avoid the transmission of COVID-19, such as social distance, separation

of the areas of health services offered to SRP and other patients, the use of masks, frequent hand and surface hygiene, as pointed by other studies[21,22]. Recommendations include attending the SRP outside and in a ventilated area, the distance between patients and professionals, the use of physical barriers to maintain the distance, and changes in flows[1].

Most of the studied PHC Units reported to have PFF2, N95 and disposable surgical masks available for professionals, and 66% declared to offer surgical masks for SRP/COVID-19 suspects who attended the Unit, although the availability may vary throughout the month and among Units. Running out of PPE has been a great concern worldwide; shortages of visors, gowns, and facemasks mainly in care homes, community health facilities, and general practices were reported in the United Kingdom[23]. In Australia, some of the greatest concerns regarding teamwork and patient safety are related to the lack of resources, such as PPE[24]. The availability of PPE, its use, and measures to minimize the transmission of COVID-19 are necessary to ensure safe working conditions and protect workers, as well as the population, by reducing the dissemination sources of COVID-19[4]. A global challenge was the availability of PPE: high-income countries have rapidly guaranteed their own internal PPE supply, causing a shortage for low-and middle-income countries dependent on external supply chains side by side to a preferential allocation to hospitals, at the expense of PHC points[25]. Over 90% of the Family Health Teams conduct active search for new SRP/COVID-19 suspect cases. The majority of these contacts (88%) were done by telephone or mobile phone.

Table 2. Structure and responsiveness of Primary Health Care Units to COVID-19, as evaluated by self-completion instrument module. Brasília, DF, August 2020-January 2021 (N= 159)

Description of structure, inputs, and procedures of Primary Health Care Units[a]	N	Proportion %
COVID-19 rapid tests are available in sufficient quantity for the entire month[b]	103	64.8
COVID-19 swab tests are available in sufficient quantity for the entire month[c]	120	75.5
The PHC Unit has an emergency cart with all the necessary supplies and equipment in working order, with a checklist, and sealed.	142	89.3
The Family Health Teams received training and/or guidance on the clinical management of COVID-19 in PHC	137	86.2
The Family Health Teams received training on how to advise the population on COVID-19 prevention measures	141	88.7
The PHC Unit has information material about COVID-19 aimed at patients	110	69.2
The PHC Unit offers Telehealth services during the pandemic	91	57.2
There are established flows of patient transfer to the secondary care level	136	85.5
There are established flows of patient transfer to the hospital care level	149	93.7
The established flows are adequate to address the transfer needs of patients	108	67. 9
The teams notify suspected cases of COVID-19 in the defined surveillance systems (e-SUS VE, SIVEP/Gripe)	155	97.5
The percentage of SRP consultations in relation to the total number of consultations is monitored	112	70.4

Source: Self elaborated.

PHC = Primary Health Care

SRP = Symptomatic Respiratory Patients, that include COVID-19 diagnosed/suspected cases

[a] Number of UBS operating in Brasília that filled the survey: 159 (out of 165)

[b] Rapid test was the common name for COVID-19 antibody test in 2020

[c] Swab test was the common name for RT-PCR test in 2020.

Our results show that the reorganization necessary to ensure safe and quality care in the face of structural limitations seems to meet the requirements according to the COVID-19 epidemic. In the Brazilian context, Sarti et al.[26] cite, among the specific strategies and actions to face the pandemic, the presence of trained health professionals; adequate physical space to handle suspected cases of COVID-19; diagnostic tests in sufficient quantity; structure for requesting complementary exams and diagnostic support. Equally important are well-defined flows and protocols for accessing health services at different levels of healthcare; epidemiological surveillance; adequate and sufficient personal protective equipment for healthcare professionals and symptomatic individuals[26].

Regarding COVID-19 tests, at the time of data collection, rapid (antibody test) and swab (RT-PCR tests) were available in almost 65% and 75% of the Units, respectively. The accessibility of the rapid test was not ideal (65%) considering that the distribution of serological tests for COVID-19 was among one of the federal actions planned to occur to support and strengthen the fight against COVID-19[27]. The vast majority of PHC Units included in this survey had a complete emergency cart, with life support devices/medication in case of need for assistance to a critical SRP. Coping with COVID-19 requires logistical and operational equipment and materials. The monitoring of patients and tests, home care visits, O2 supply, and flows for laboratory tests is part of the PHC's role in confronting COVID-19. Depending on the severity of the cases, the supply of O2 is important, and the continuity of patient care must take place in an integrated manner in PHC through efficient communication channels and flows[4].

A recent study analyzed Primary Care provision in the context of the pandemic in six high income countries (Australia, New Zealand, Canada, Netherlands, UK, US) and reported that the lockdown severely reduced access and continuity of services in non-COVID-19 conditions, as managing the pandemic became a priority; in some ways, this limitation can be mitigated by telehealth support[6]. In the present study, out of the 159 PHC Units participants of the self-completion module, 57.2% reported to offer telehealth support. The professionals mostly involved in this service were physicians (39.6%), nurses (36.5%), community health workers (31.4%), and nurse technicians (22.6%). Teleconsultation is a strategy widely used elsewhere in the COVID-19 context[6], but hampered in the present study (57.2%) because not all PHC Units have proper access to telephone and the internet. Regarding the availability of communication equipment, more than 40% of the PHC Units evaluated reported to have insufficient telephone equipment and computer network for the teams (data not shown). In Brazil, the Telehealth Program (Programa Telessaúde) was implemented in 2011 within the scope of the SUS, and could be an important tool in the fight against COVID-19[27,28].

Teleconsultation should be encouraged as it makes services accessible to distant populations[2]. However, PHC Units must incorporate the SRP screening and classification protocols to subsidize both telehealth actions and face-to-face activities in the PHC Units[1].

In addition to the flow of care and reorganization of the PHC Units, it is crucial to have a defined flow of referral of serious cases to other levels of care, by means of exclusive ambulances for transportation[1]. It was reported in the present study that the flow of referral to secondary and hospital levels were established in more than 80% of the PHC Units assessed, of which 67% considered the service adequate to the needs of patients.

The great majority of respondents (97%) reported having notified suspected cases of COVID-19 in the appropriate information systems. It was also reported that the number of SRP consultations compared to the total number was monitored in 70.4% Units. The recording and the use of information systems for surveillance, supply planning, organizing

the agenda, and development of intersectoral actions by staff in the territory are key steps for tackling the pandemic in the context of PHC[4].

Especially when dealing with respiratory-transmitted agents, such as SARS-CoV-2, epidemiological surveillance strategies allow the identification and control of contacts and the reduction of new cases. As stated by Teixeira et al.[29], health and epidemiological surveillance teams must work in an integrated manner to correctly feed the surveillance system and carry out COVID-19 prevention actions, with guidance and support for the general population and vulnerable groups[29].

Despite the challenges mentioned, the monitoring of suspected cases of COVID-19 and working with priority care for patients who have respiratory symptoms were also strategies adopted by 91.8% of the Units to face the pandemic context. The use of these and other information and communication features such as social media and messaging applications has the potential to ensure attention to the enrolled population, to avoid discontinuity of treatment and worsening of diseases, and contributes to the reduction of access and social inequality barriers. COVID-19 mostly affects minorities and poor and vulnerable populations, due to its inequitable spread in areas of dense population with limited response capacity, due to poor access to health services and high prevalence of chronic conditions[30].

The consequences of COVID-19 pandemic in the PHC services working process should be considered. While it is essential to reorganize PHC services to face the pandemics, it is also necessary to maintain the regular offer of other activities and actions[4,21]. Services like renewal of prescriptions, attention to other acute and chronic diseases[1], monitoring of socially vulnerable populations and groups at risk, and regular vaccination activities ought to continue[1,4]. However, these actions must be organized in such a way to minimize the risk of transmission of COVID-19[4]. In the present study, from the total of 137 PHC Units where vaccination services were reported to continue regularly, 77% stated that these services were reorganized in order to guarantee the least possible contact among patients (COVID-19 vaccination was not available when we conducted this survey — it started in late January 2021). From the PHC Units where pharmaceutical assistance was offered (n=137), prescriptions with an extension of validity to 60 days, without the need for renewal, were accepted in the great majority (81%), in order to reduce the number of patients coming to the PHC Units.

An evaluation of COVID-19 Primary Care must consider technological support and remote approaches, which have been essential components of the health services delivered during the pandemic worldwide. For example, one Italian study suggested that everyone, worldwide, should have updated smartphone applications to facilitate communication between population and health professional teams[31]. One Indian study indicated that this is the right time to increase our knowledge about the multifaceted digital health interventions available[32]. Chinese general practitioners suspended elective procedures and outpatient clinics and adopted online consultation and teleconsultation services[33]. In a Greek study, it was found that the COVID-19 pandemic provided an opportunity to expand the telemedicine system to remote areas[34], and studies conducted with Australian health professionals found that telehealth services were an integral part of the practices adopted during the pandemic[24]. Spanish researchers have suggested that it is important to determine which factors are likely to influence the choice between telephone and video services, including the patient's access to technology, the telemedicine infrastructure of the services, and the preferences of the patient and the doctor[35].

In Brazil, the FHS, organized by territory and community oriented, is an appropriate model to support the population in the face of COVID-19 mitigation and containment measures[4]. There is evidence indicating that the PHC is the place where the majority of healthcare takes place and where trustworthy

and long-term professional and patient relationships can be established[6]. However, to reduce morbidity and mortality, in addition to the potential of the FHS, it is necessary to have a PHC that is organized and structured with qualified professionals that are able to attend to local health needs[1]. Permanent education and matrix support activities for professionals are also essential measures[4], as well as promotion and prevention activities for the population on the correct hand hygiene and social distance. According to the results obtained, in more than 85% of PHC Units, health teams received training or guidance on the COVID-19 clinical management and prevention measures to advise the population.

In some countries, actions for tackling the COVID-19 pandemic had, to a large extent, major focus on hospital care. PHC involvement to respond the emerged situation varied according to the organization of health systems in different countries. There were examples, such as in China, India, and Cuba, where PHC assistance went through immediate reorganization. On the other hand, in some places, such as Spain, PHC professionals were allocated to hospitals, affecting PHC assistance. Facing a pandemic require individual and community approaches based on comprehensive and articulated care towards populational needs[36]. It is relevant to consider that a great part of the population in Brazil have PHC Units as their reference for health assistance, and this continued during the COVID-19 pandemic. Also, considering that appropriate and early approaches may prevent worsening of health conditions, it is crucial to determine strategies to empower and reinforce PHC response to the pandemic[37].

The permanent challenges in health management is undeniable, which should focus on the population needs to facilitate timely responses during crises. In this way, adapting working processes and services structures to enhance the PHC provision becomes favorable not only for tackling COVID-19, but also for future challenges.

Managers' participation in the present study, assessing the structure and responsiveness of their PHC Units to COVID-19, has the potential for positive externalities. The participation may lead them to reflect on the strengths and weaknesses of PHC Units, as well as to drive them towards the best planning and management of activities, according to the needs of the current context and with the support of regional and central management of health services.

Conclusions

In addition to the challenges faced in responding to regular health services demands, the context of the COVID-19 pandemic brought the need for adaptation and new structural configurations in the provision of PHC services. The reorganization of the working process, health unit ambience, incorporation of equipment, laboratory supplies, and human resources, among other strategies, to mitigate the effects of the pandemic were in urgent need. This study demonstrated favorable adaptations and reorganization of working processes in PHC Units. In this context, it is relevant to highlight the power and capability of PHC workers to promote changes and adaptations in adverse scenarios. But the importance of the structural conditions provided to allow these initiatives must be emphasized. Interventions and tools designed to evaluate and monitor health services can contribute to planning and decision-making at different levels of management, which is crucial to determine strategies to empower and reinforce PHC response in situations of pandemics and other calamities.

Collaborators

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(0000-0002-3600-4009)* and Santos LMP (0000-0002-6739-6260)* contributed to the conception and planning, to the analysis and interpretation of data; to the writing and review of the article; critical review of the intellectual content. Cavalcante FV (0000-0002-8706-0457)*, Oliveira A (0000-0002-3084-6491)*, Santos RR (0000-0003-1202-3579)*, Leite TA (0000-0001-9307-4807)* and Poças KC (0000-0002-1254-8001)* contributed to the interpretation of data; to the writing and review of the article; critical review of the intellectual content. All the authors approved the final version of the manuscript. ■

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