COMMENTARY

How a Primary Health Care Clinic in Brazil Faces Coronavirus Treatment within a Vulnerable Community: The Experience of the Morro da Conceição area in Recife

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Worldwide, through September, Brazil has had the second-highest number of both confirmed cases of Covid-19 and deaths, and one of the lowest per-capita test rates. In the face of such hardship, some local primary care physicians are experiencing successes in caring for vulnerable populations. This case study describes how a primary health care center in Recife, a city of 4 million, took the lead in developing culturally tailored interventions, changing its work process, and enhancing telehealth and remote-monitoring capabilities to become an example of care delivery in the municipality. The PCP leadership was essential to engage co-workers and guarantee the needed medical equipment and personal protective equipment while enhancing territory-based surveillance and ensuring continuity of care. The actions of clinical leaders are essential when responding to health care crises that have substantial public health aspects, and successful experiences are needed to guide innovative strategies that prioritize vulnerable populations.

KEY TAKEAWAYS

» Health care professionals’ engagement with and commitment to community-based primary health care (PHC) were vital to intervention success.
The ability to engage medical residents and their mentors gave the PHC Center an advantage to rethink the work, curate strategies, and create tailored tools.

A slow municipal response and lack of support for medical supplies and PPE were barriers to sustaining the locally designed strategies.

Telehealth care and monitoring should be incorporated into PHC, although there is a need to improve and expand it because it serves people with many health needs, beyond conditions related to the pandemic.

Referral systems coordinated by the city health department need to be improved; the new communication tools available, including smartphone apps and electronic records can help.

Vulnerable populations need a caring and tailored approach that empowers them to make decisions about health and safety without being deceived by false information.

The Challenge

After starting in China and moving from Europe to the United States of America, the novel coronavirus pandemic expanded to Latin America, driven by Brazil’s high number of SARS Cov-2 confirmed cases. After confirming the first case on February 26, 2020,1,2 even with one of the lowest performed tests per-capita worldwide,3 as of September 4, 2020, the country recorded nearly 4 million confirmed cases and 124,000 deaths.2 At that time, Brazil’s average daily test rate was just 37 per 100,000 population, with a daily positivity rate of 50.07% and average daily confirmed cases exceeding 15,000. By comparison, in the United States, the average daily test rate was 139 per 100,000 population, with a daily positivity rate of 8.87%, and more than 27,000 daily confirmed cases.3 However, Brazil’s failure, mainly caused by the lack of federal leadership, hides many strengths and successful experiences. Health care workers and local leaders use the structure and benefits of the universal health system,4 a tradition in public health programs, previous epidemic experiences, and extensive coverage of community-based primary health care (PHC)5 to control the crisis. Exploring local Brazilian experiences can be useful to highlight opportunities and challenges for PHC to fight Covid-19 in developing countries’ contexts.

The World Health Organization recommends strengthening PHC and community-based approaches as appropriate strategies to contain disease outbreaks,6 as observed in previous health crises.7 The empirical evidence reiterates that community strategies are relevant in the outbreak responses to epidemics.8 Public health interventions aimed at early diagnosis, isolation, and contact tracing are known to effectively break the transmission chains and mitigate the impact of infectious outbreaks on the population.9

The Family Health Program (FHP) is Brazil’s lead policy tailored to the country’s public health system known as the Unified Health System (SUS). The FHP program promotes family-centered clinical care integrated with the prevention, health promotion, and surveillance based on a defined territory.10 Under this model, the PHC provides the care management for vulnerable populations, such as the shanty towns present in the urban periphery of large Brazilian cities. One of those
shanty towns is Morro da Conceição in Recife, the capital of Pernambuco State. The Morro da Conceição is a low-income community with multiple social vulnerabilities, and the population accesses care exclusively through SUS. Overall, Recife was not efficient in limiting community spread of the Covid-19 virus; despite the stay-at-home orders, the population continued to circulate around town, achieving only 58% of mobility trends reduction, an insufficient rate to halt the virus dissemination considering the 70% recommendation. The Morro da Conceição has 10,182 habitants in 38 hectares (93.86 acres), all residents are considered vulnerable and low income (median household/family monthly income: $201.11 USD) and are especially impacted by the economic downturn associated with the stay-home orders, considering the prevalence of unregulated jobs (generally those informal forms of commerce that occur on the street and are not protected by legislation). There are challenges in keeping safe social isolation with adequate hygiene measures considering the precarious housing situation and lack of sanitary structure. To many of those who live in a shanty town, the threat of an unknown infectious disease that spreads quickly and kills some seems relatively small when facing more significant social inequality problems such as violence, poverty, and hunger (Figure 1).
FIGURE 1

High-Visibility Community Disinfection Efforts
Community Health Workers were involved in cleaning/disinfecting places with high circulation in the community to decrease environmental contamination. The equipment and disinfection products were made available by the Department of Health through the direct request of the PCP. This activity happened first at Morro da Conceição by the initiative and leadership of the PCP and later was adopted and implemented through the city of Recife.

Source: The authors
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The Goal
This case study describes the role of the family health team (FHT), led by a primary care physician (PCP), while facing the pandemic. Historically, vulnerable groups have their health needs neglected during a health crisis12; therefore, understanding the clinical leaders’ role when responding to
health care crises with strong public health aspects in developing countries is essential to guide innovative strategies that prioritize vulnerable populations.

**The Team**

Morro da Conceição has three PHC Centers, and the described intervention was implemented in one of them, located in the middle of the low-income community. That Center has two FHTs, which together are responsible for 12 regions (or districts), covering about 5,500 people. The two teams, combined, include two PCPs, two nurse practitioners, one dentist, two nurse auxiliaries, and 10 community health workers (CHW). Each CHW is designated to support one district, and the Center has two of its districts currently (as of September 15, 2020) without an assigned CHW. The Center has additional support teams, such as the rehabilitation professionals, such as psychologists, social workers, pharmacists, physiotherapists, speech therapists, nutritionists, and occupational therapists. The Center is also an education entity, training future health professionals, including medical doctors, dentists, and nurse undergrad students. Also, it trains 13 medicine residents (Medical clinic; Family and community health; Pediatrics, Neurology; Psychiatry), and rehabilitation residents per year. The Center is fully run and operated by the city government; but it does accept students and the health professionals there are part of those students’ training.

Primary Care Health Center is one of the field of practices for medical students and residents of many specialties. The students are there as part of an agreement between the Department of Health and the University.

**The Execution**

The beginning of March 2020 marked the last of in-person meetings among the health center staff. The teams identified the need to reorganize the work process and establish new care pathways for patients, considering the pandemic scenario. The teams have vast local knowledge of the community culture, habits, and epidemiological characteristics. For that reason, they could foresee other common seasonal challenges would overlap with the Covid-19 pandemic: the flu immunization campaign, which reaches thousands of people annually; the flu season after the Carnaval, a cultural street party celebration during which the city received 2 million visitors over 5 days; and the rainy season, which places many citizens in areas at risk of landslides. Another worry was the expected increase cases of arboviruses diseases, confirmed with the current increase of Chikungunya and Zika cases.

Even though, internationally, well-structured health systems faced overflow capacity with Covid-19, many health professionals did not believe that Brazil would suffer such a massive impact from the pandemic. But a lack of national guidelines — and a lack of a clear governmental message of how severe the disease is — promoted false information and led to the disbelief of the need for changes among health professionals and citizens. Nonetheless, our PCP took the lead and embraced the responsibility to engage co-workers, disseminate correct information, and advocate with upper-level management to provide the necessary equipment for the new work process. Further, considering the Center’s educational role, it was necessary to ensure that all students were
safe while actively developing new strategies to keep the community informed, adapt the clinical care protocols, and maintain the bond with the patients (Figure 2).

FIGURE 2

Sharing and Disseminating Best-Practices Information

A Covid-19 health education activity with teenagers from Morro da Conceição included information on risks and prevention. The teenagers are volunteers tasked to support the Community Health Workers in disseminating correct information related to the pandemic. This activity happened first at Morro da Conceição by the initiative and leadership of the PCP and later was adopted and implemented through the city of Recife.

The first measure taken was to reorganize the Center, considering its small size by square footage and a precarious physical layout. The offices closest to the entrance, previously used by the dentistry and CHW, were transformed into screening rooms: one for symptomatic and another for asymptomatic patients. A new care pathway was established to welcome and treat patients, which did not wait for the municipality guidelines. The flow was created using the health workers’ experience and observation of available protocols. A set of questions was included to improve the screening. It was not a smooth implementation process; the unknowns of the pandemic created
a mix of denial, confusion, and panic feelings among health care workers. The hardship was enhanced with the challenge of using personal protective equipment (PPE) appropriately, primarily among administrative workers, security, and cleaning staff. But within 15 days the care pathway was successfully incorporated into the work routine because it had meaning for the workers and was tailored to the Center’s available infrastructure. Organization and adherence to the plan helped increased the team’s self-confidence and the belief that it was possible and needed to continue taking care of patients with whom they had developed a bond and trust.

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The PCPs knew that there was a need to decrease the number of people within the unit to allow the team to absorb Covid-19 symptomatic cases and decrease the chances of contamination. Thus, community activities such as health prevention groups were suspended. An active search of medical records indicated which scheduled appointments should be anticipated or postponed, and which patients had prescriptions that could be extended with longer renewal intervals. This ensured the continuity of care. The team defined non-postponing demands and committed to making them as safe as possible. Consultations for cases of diabetes, hypertension, tuberculosis, leprosy, and cancer patients were maintained to ensure chronic disease management continued. Prenatal and childcare consultations and infant emergencies were not suspended to prevent unnecessary hospital visits. In addition, home visits were made as needed. Home visits are typically done regularly by FHT or rehabilitation professionals for different reasons, such as lack of patient mobility, and CHW ordinarily visits all families in the district monthly. During the pandemic, home visits were assessed case by case, considering the CHW perceptions, family/patient situation, or clinical conditions.

New tools were introduced, such as telehealth care and remote monitoring. (Brazil had a telehealth system in place before Covid-19, but it was used for second opinions and has not been adapted for health surveillance.) Patients began to be screened, monitored, and attended by cell phone messages and phone calls either from the worker’s personal cell phone or the center landline. The unit’s telephone number was widely disseminated, and the demands were met in an agile manner. The residents established a curatorship for information sharing and used tools such as short videos with community leaders, religious leaders, and local artists. The videos communicated about the importance of social isolation and stay-at-home orders, approaching the community reality, and using simple language. Health education was identified as an urgent demand, and the CHW had a central role in this action. They walked the streets daily, encouraging the population to stay at home, gathering information on health care demands, and identifying people in need of an in-person consultation or home visit. The biggest hurdle to implementing the effort was the two districts without assigned CHW. Despite that, the team knew no patients could be left behind; it was a shared effort to reach an additional 420 people in those districts. All providers also incorporated into each appointment an explanation related to Covid-19 and sanitation measures.
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The teams adopted active territory surveillance. Telehealth was used to monitor suspected patients with Covid-19 or confirmed patients with mild cases. A spreadsheet kept track of the patient’s status, and any health professionals could access it. Contact was done every 24/48 hours, identifying the need for home visits, appropriated referral to hospitals, and encouraging the continued quarantine. Some patients were monitored using a geolocation cellphone app. Any resident could use the app to get information related to Covid-19 and answer a self-assessment regarding symptoms. When the symptoms suggested possible Covid-19 infection, the patient was contacted by an emergency support team to discuss options. Geolocation was not used for contact tracing, but would indicate if the patient was in a high-risk area, and also be used to direct the patient to the proper health clinic, hospital, or diagnostic center. The Primary Care Health Center received information related to the patient in its districts and could contact this patient to monitor health status and determine appropriate action.

Challenges to implementing the district surveillance were the difficulty of access to tests and the slow referral process of confirmed cases to the FHT.

The Center’s experience became a reference for the city, which later incorporated the guidelines to develop local culture strategies. Despite the city support to the Center’s protagonist role, the workflow for symptomatic patients had to be altered. While patients had relied on the Primary Care Health Center as the place to go to be assessed and treated for flu symptoms, during the pandemic, because of the shortage of PPE and limited test availability, patients were directed to a central diagnosis site to be diagnosed and get initial care there. This meant that people had to dislocate from their neighborhood Primary Care Health Center to access the central diagnosis unit. This unusual care pathway demanded a new health education effort and created access barriers, considering that PCPs were reallocated to cover shifts in the central diagnosis unit. However, the centralized unit was able to absorb only 5% of the demand, creating a need for additional referrals — sending patients back to the Primary Health Care Center or an urgent care facility or a hospital — which is not an agile way to ensure continuity of care.

Metrics

At the beginning of the pandemic, many primary care centers suspended all direct patient contact, especially as authorities did not make it clear what role primary care would have to control the pandemic and instead focused on hospital infrastructure. Despite that, the Family Health Teams at Moro da Conceição understood they needed to design their own role during the pandemic to ensure continuity of care. Rethinking the workflow and care pathway, adapting to the pandemic demand, and ensuring safety involved
• 29 health professionals engaged in rethinking the care pathway to create a safe environment;
• 16 residents learning the core principles of PHC.

Although elective clinical appointments, group activities, and regular home visits were suspended, the center continued to work at full speed, as the numbers show. The FHT offers, on average, 20 scheduled and 20 walk-ins appointments daily during regular circumstances; during the pandemic, the non-Covid demands that could not be postponed generated an average of 15 individual appointments a day, including urgent care, monitoring chronic diseases, mental health, and screening of patients with respiratory infection symptoms. Between March and July, over about 100 workdays, one FHT had 1,575 individual appointments; among those, 130 were prenatal care and 205 urgent dental care.

In addition to the routine care that could not be postponed, the demands from the Covid-19 monitoring were incorporated to the FHT routine. Some 174 families suspected or diagnosed with Covid-19 were monitored through telehealth, which included 1,200 calls to patients made by residents and one FHT in the space of 5 months.

As expected, the cases of arbovirus diseases increased, overlapping with the Covid-19, amounting to 115 patients diagnosed by the FHT with one of the arbovirus diseases (64 cases of Dengue; 50 cases of Chikungunya and one case of Zika).

Where to Start

Identify the leadership, know the community, and maintain the continuity of care and surveillance, all while establishing a new safe workflow. All strategies need to be supported through a bond with patients and sustained by the knowledge of the community’s habits, cultural aspects, and epidemiological characteristics, including how the telehealth and home-visit strategies can be effectively deployed within the community. The FHT’s ability to foresee that Covid and non-Covid health care needs would require significant effort, dedication, and staff time as the pandemic approached is critical to the strategy’s success, ensuring continuity of care and maintaining social distance. Patients monitored by their known PCP are more likely to maintain quarantine and collaborate with contact tracing. Finally, strong leadership is an underlying asset to sustain the changes.

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Next Steps

The Covid-19 pandemic in Brazil has not shown signs of improving, and the prospect of new waves of infection indicated the need to rethink the clinical work. It is necessary to develop strategies aimed at vulnerable communities. Community-based Primary Health Care needs to reinforce the bond with the community generally and patients individually, while supporting disease prevention and hygiene measures. Online technologies are welcome and need to be further developed, ensuring all patients have equal access. More than ever, community-based actions need to incorporate an environmental perspective that protects the population from infectious diseases and strengthens mental health care. In June, almost 40% of all clinical appointments included mental illness–related issues. These efforts are important for population health care under any circumstance, and even more during a global pandemic.

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