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Commentary

The Multi Sectorial Approach to COVID-19 Pandemic in Limited-Resource Settings: Discussing Rwandan Experience

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Abstract

COVID-19 has unprecedentedly shaken the health systems across the globe. Rwanda, a low-income country in East Africa, has succeeded to contain the first wave but is struggling to curb the second wave in the wait for a massive vaccination program. The national committee composed of different ministries and a COVID-19 Joint Task Force was established as a Multi-sectoral approach in the early days of the pandemic. The approach together with transparent communication to the population has been effective. However, much more tailored and cost-effective measures against the drivers of cluster outbreaks are needed to save both the economy and more lives. It is challenging to produce evidence about behaviors attributable to the surge of infections, and their hardship, and how to allow the population to live their lives with less risk. With important research, policymakers will be able to think locally and provide easy and inexpensive recommended behaviors while awaiting the vaccine.

Keywords:
C0VID-19; Multi-sectoral interventions; Healthcare system; Rwanda

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Introduction

Since December 2019 when the coronavirus disease (COVID-19) was first identified, it has been spreading all over the world affecting more than 100 million people and taking the lives of more than 2 million so far[1]. In March 2020 when the World Health Organization (WHO) declared COVID-19 as a global pandemic [2], Rwanda on its high-level alert decided to handle the pandemic employing a multi-sectoral approach. The national committee was established on 9 March 2020, chaired by the Prime Minister, right before the country recorded its first COVID-19 case[3]. The committee is composed of different ministries (Ministry of Health, Ministry of Finance and Economic Planning, Ministry of Defence, Ministry of Local Government, and Ministry of Internal security), and a COVID-19 Joint Task Force (JTF) which was established to implement the preparedness and response plan. This is known in other countries as the One-Government approach. On 14 March 2020, Rwanda confirmed its first COVID-19 case which ranked Rwanda the 19th African country to report the existence of the disease on its land[4].

More tough decisions were yet to come as after the first few cases, schools and churches were closed, and other mass gatherings were prohibited. On 22 March 2020 total country lockdown was imposed, which later was eased on 4 May 2020[5]. During that time, a series of preventive measures were mandated including frequent hand hygiene, avoiding handshaking, avoiding unnecessary travels,

staying at home, and avoiding mass gathering among others. The population was educated on the mode of transmission of COVID-19 and precautionary measures to be undertaken.

Rwanda is a low-income state with limited resources, a situation that would have made it vulnerable to the impact of COVID-19; however, the country has been pivotal in combating the current global pandemic. Even though different African states have been proactively trying to contain the virus, by adopting the preventive and precautionary measures similar to those implemented in the developed world[6], different factors like political instability, limited resources, and security-related issues have failed the approaches taken. Thus, in this commentary, we will discuss approaches adopted by the government of Rwanda when responding to COVID-19 and highlight challenges that impede the containment of the virus during this wait for vaccination.

Risk Communication and Community Awareness

Since the possible duration of the current pandemic is not known, the continued upsurge in the number of new COVID-19 cases can threaten the population. The emotional contagion developed can erode the population's trust in their governments, leading to serious social and economic disturbance[7]. Timely information sharing in transparent as well as effective communication channels can lead to prompt compliance with preventive measures. Thus, the government of Rwanda adopted a bimonthly cabinet meeting chaired by the President of the Republic of Rwanda to assess the country's COVID-19 situation and to evaluate the population compliance to existing COVID-19 preventive measures. The Cabinet meeting resolutions are publicly shared as a centralized source of policies and regulations and officials transparently explain the measures in different media such as the state radio and television channels, social media (Twitter, Instagram, and Facebook), where they also address the public concerns and doubts that may hinder the compliance with COVID-19 preventive measures.

The Ministry of Health shares daily updates on COVID-19 to the public with an emphasis on: sample tests done, new cases identified and their respective location, number of people treated, and new COVID-19 related deaths. Several community awareness and rumor management campaigns are organized, including a call to "stay at home" (GumaMuRugo) to limit the spread or catching the virus, and the "Let it not be me" (NtabeAriNjye) who spreads or catches the COVID-19 virus. Both aim to encourage the limitation of disease transmission at the individual level [3]. Rwanda National Police (RNP), as the leading law enforcement organ, has adopted the use of drones with speakers that fly all over different towns and remote areas, reminding people to stay at home, wash their hands, and wear properly the facemasks. Furthermore, billboards widely spread across the cities are used to communicate basic information on transmission and prevention of COVID-19.

Prevention and Protection

As COVID-19 is very contagious, it is paramount to maintain reasonable preventive and protection measures all the time. It is in this regard that wearing facemasks in public became mandatory when total lockdown measures were eased on 4 May 2020. Public and private services were greenlighted to resume activities, but using only essential employees while others worked from home [5], [8]. The Rwanda Ministry of Health provided health guidelines and other government boards such as the Rwanda Development Board (RDB) or Rwanda Utilities Regulatory Authority (RURA) approve a good implementation and grant authorization to resume businesses. These guidelines include but not limited to establishing hand hygiene stations at the entrance, temperature-monitoring services, maintaining a one-meter distance between individuals, avoiding overcrowding, and recording key information for tracing clients in designated registries. In order to reduce the interaction time, a curfew from 8:00 PM to 4:00 AM was imposed, and these measures are continuously revised every 15 days. The country's borders were closed except for essential goods, and Rwandan citizens returning home are subjected to present a negative PCR test for COVID-19 and undergo a new test while quarantined in designated hotels in Kigali. Those with a negative test before traveling and on arrival are allowed to continue their businesses[5]. Rwanda introduced the use of high-tech robots at different treatment centers to limit the interaction between health workers and COVID-19 patients. They check the vital signs of COVID-19 patients, monitor their status, as well as keep their medical records[3]. Those robots also serve for increasing awareness and remind good prevention practices in some key places such as Kigali

International Airport. Electronic questionnaires were introduced at different borders to screen all people entering the country. Cashless payments were encouraged among the public, and a team of youth volunteers was created to monitor the population's compliance to preventive measures. RNP has established fining methods for people who challenge the preventive measures, and local leaders are involved to evaluate the compliance[9]. Rwanda has expressed a strong desire to acquire and properly administer the vaccine as soon as it is available [10]. There is no doubt that vaccine coverage will be successful in Rwanda given the previous experience in vaccination coverage for other vaccine-preventable diseases at the national level.

Control and Surveillance System

In public health, a strong surveillance system has a reputable record in being essential for assessing the disease progression, as well as guiding and proving prompt strategic responses. It is in this regard that the Rwandan government established command posts chaired by district mayors in all districts across the country[3,11]. This was to strengthen communication and community awareness, ensure effective coordination of resources, active case finding, enforce the surveillance systems, as well as ensuring preparedness at both district and provincial levels if there is a local outbreak. The Rapid Response Teams (RRT) were created at all districts and they monitor and report all the activities to the central level on a daily basis. Screening activities were introduced at key entry points. Several digital solutions were introduced including the use of GPS tracking systems to monitor the movement of drivers crossing the borders and to minimize the time spent by Rwanda National Police when escorting them from borders to isolation sites[11]. Monitoring devices and applications were introduced to help asymptomatic people or those with mild symptoms to be tested using breathing tests or screened using different questions[12]. All resumed public and private services are obliged to record the names and contact addresses of their clients, for easing contact tracing.

Case Treatment

Until recently, all positive patients were taken to the centralized treatment centers available in different regions of the country. Treating COVID-19 in designated centers has played a key role in protecting health care providers from massively contracting the infection. Keeping patients with COVID-19 away from regular health facilities has provided an opportunity for the health system to continue providing care to already existing and naturally occurring diseases. On 8 January 2021, Rwanda opened a brand-new hospital to solely serve as the national referral center for COVID-19 treatment. However, not all COVID-19 positive patients need to be followed up in treatment centers. The country has developed a national protocol for taking care of COVID-19 patients according to the severity and has trained enough healthcare providers for additional support in case the toll of infections would surpass the capacity of the current treating team. A 24/7 toll-free line (114) was introduced and anyone with the suspected signs of COVID-19 is encouraged to contact the response teams using the line. The Ministry of Health through Rwanda Biomedical Centre developed a guideline for Home-Based Care which the Community Health Workers (CHW) will adopt after being trained. However, there are other digital-based solutions being tested for home-based treatment of mild cases.

Laboratory and Mass Testing

Early case detection leads to early medical intervention. With mass testing, the disease progression, affected groups, and regional variation can be well understood [13]. In Rwanda, the National Reference Laboratory (NRL) was the initial COVID-19 testing hub with the daily outputs ranging between 1000-2500 samples[11]; however, the testing capacity has increased after being decentralized to peripheral laboratories in different districts which mainly use rapid diagnostic tests. The high priority for testing is given to contacts of confirmed cases, suspected cases, and high-risk groups. In some cases, mobile PCR platforms (Thermo Cycler) are deployed in the high-risk areas to test the populations. The pooling approach is being used to save resources as the Reverse-Transcription Polymerase Chain Reaction (RT-PCR) tests are very expensive for individual testing[11], [14]. The pooling approach is a mathematical model used to test multiple samples by combining 20-50 samples and carrying out a single test and if the results are positive, all the samples are re-tested individually, and the identified

COVID-19 patient is isolated for further follow-up. This approach retains the clinical accuracy of the test and is more helpful in resource-limited settings.

Outcome Summary

Early detection of cases, rapid isolation, testing, and contact tracing became the cornerstone of the RRT activities[11]. There have been 9,650 confirmed COVID-19 cases, of which 125 have died as of 12 January 2021[15], and the majority of these cases are found in urban parts of the country. More than 80% of all deaths happened in the last 30 days (10 December 2020-10 January 2021). The first wave was sufficiently contained and when it was ending at the end of October 2020, the country had recorded 5,713 infections from almost a half-million tests done in high-risk areas. Among these cases, 4,879 had recovered (95%), and 35 has died (0.7%). In the second wave that the country is currently fighting, the test positivity rate has increased from 1.1% to 7.1%, and the recovery rate has reduced from 91% to 72.4% in the last 30 days[15]. The mortality rate has doubled within two months, and some preventive measures are being re-introduced with strict follow-up to hinder any further upsurge in the number of new infections.

Conclusion and Recommendations

The first wave of COVID-19 in Rwanda has put to a test all adopted strategies and has proven them to be working, even though no evidence has been produced on their side effects. With all economic and health loss due to COVID-19, Rwanda as a low-income country must look into the second wave with strategic lenses to curb the pandemic smoothly. It is crucial for the national committee in charge of COVID-19 to seek to understand the population behaviors that could potentially lead to the surge of the infection while avoiding too stringent measures such as the second national lockdown which could lead to pandemic fatigue[16].

The government adopted a top-down approach in managing the pandemic, and this did not provide enough space for non-government organizations (NGOs), and other civil societies to play other roles apart from funding and implementation of the measures. Therefore, further researches are needed to explore the involvement of the private sector in the fight against the COVID-19 pandemic in Rwanda. Furthermore, community awareness and education on different precautionary measures and behaviors should be practiced to enhance good compliance to existing directives.

Policymakers need collaboration with public health researchers, psychologists, or behavior specialists for a collaborative collection and use of evidence for targeted, tailored, and effective future policies, interventions, and communication. Acknowledging the hardship that the COVID-19 pandemic is having on different people is key to sustaining behavior change habits. That will be achieved by engaging people as part of the solution, targeting the most infection spreaders, and involving communities at every level of prevention. It is crucial to allow people to live their lives but at a reduced risk of COVID-19 infection. The country should deploy the use of technology solutions to speed up the responses, uplift the existing efforts, as the wide-ranging restrictions may not be feasible for everyone in the long run.

Competing Interests

The authors have declared that no competing interests exist.

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