

EQUITY & INNOVATION

THE RESPONSE TO COVID-19 IN RWANDA: A CASE STUDY

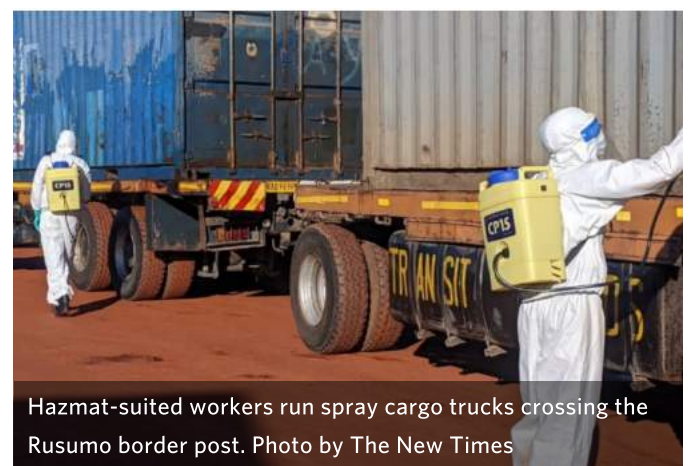


Rwanda deployed state-of-the-art humanoid robots to aid its efforts against COVID-19.
Photo by Rwanda Biomedical Centre

RWANDA & IT'S PUBLIC HEALTH SYSTEM

Rwanda, known as the country of a thousand hills, is a landlocked country in the Central/Eastern region of Africa and is bordered by four countries: Uganda, Burundi, the Democratic Republic of the Congo (DRC), and Tanzania. Rwanda's current public health system was rapidly built after the tragic 1994 Genocide Against the Tutsi that left the country ravaged, with one million dead and an entirely broken health system (Nsanzimana, 2017). At that time the public health crisis was impacting all, but with particularly dire consequences for the most vulnerable populations. Today Rwanda has been transformed.

Twenty-six years later, Rwanda's current population stands at 12.7 million, with a median age of 19.7 years, 17.4% of the population living in urban areas, and with a physician density of 0.13 physicians/1,000 population. The country has since prospered as a result of decisive, adaptable, compassionate and evidence-based leadership, that has driven remarkable socioeconomic and human development progress since 1994. Rwandans have benefited from inclusive economic growth, reducing poverty, more equality and increased access to essential services delivery.



Hazmat-suited workers run spray cargo trucks crossing the Rusumo border post. Photo by The New Times

The Government of Rwanda (GoR) has made notable strides to rapidly accelerate economic and social development of the population through a number of home-grown initiatives. These include; the Vision 2020 Umurenge Programme (VUP), an integrated local development program designed to accelerate poverty eradication, rural growth, and social protection; the Girinka Program, established in 2006 as a pro-poor program to tackle widespread malnutrition and stunting among Rwandan children, and help vulnerable families improve their welfare. The GoR, working with civil society, has also committed to an equity agenda, by opening up equitable access to education, employment, and health services especially for women, and proactively promoting female leadership across different sectors, and at every societal level.

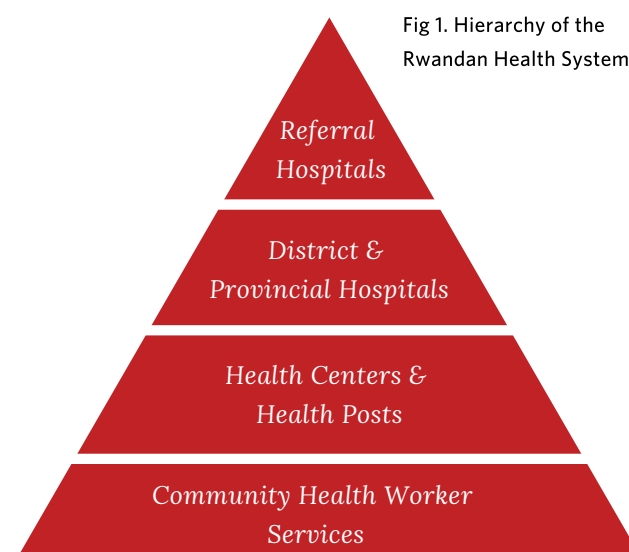
To formalize this commitment, in 2003, a constitutional requirement was enacted that a minimum of one-third of Parliament positions, as well as within all public institutions, must be held by women. Rwanda has since consistently had the highest female representation, proportionally, of parliamentarians in the world; currently 61 percent in the lower house, and with four of the nation's seven supreme court justices as women, including the deputy chief justice. Investing in the next generation of female leaders has been a critical strategy. In medical school admissions in Rwanda, female candidates have been prioritized, with female enrollment rates increasing from 20% in 2017 to 48% in 2018. As a result of these cross-cutting efforts, the World Economic Forum report ranks Rwanda the most gender-equal country in sub-Saharan Africa, and ninth-most gender-equal country globally.

In early 2000, Rwanda began the implementation of decentralization to address social, political and economic problems. The country is divided into 4 provinces led by governors and Kigali City led by a Mayor. There are 30 districts led by a Mayor, 416 sectors led by an Executive Secretary, 2148 cells and 15,000 villages that comprise 150 to 200 houses led by an elected head of the village. The decentralization has improved economic growth averaging 10% since the early 2000s, reduced regional inequalities, increased community participation, improved service delivery and made local government more responsive and accountable to citizen needs. A top-down accountability framework has been built into the structure of the Rwandan political system to ensure that corruption, negligence and mistakes, harming the lives and development of the population, are not tolerated on any level and leaders across every sector remain responsible for their actions.

The Rwandan Health system is built around the administrative decentralization of the country to ensure geographic equity and access, with 4 Community Health Workers (CHWs) elected by their peers in each of the 15,000 villages totalling a catchment of 150 to 200 houses. CHWs receive compensation for their work from performance based financing (PBF) through formally established local cooperatives. There is a health post in the majority of cells, a minimum of one health center with nurses in each sector and one district hospital with medical doctors (MDs) by district.

Some district hospitals are upgraded to provincial hospitals with specialists and Rwanda has 3 public teaching hospitals and no private ones.

The services that are provided at different levels of the healthcare system are regulated and are similar across the country to ensure geographic equity in the services given by CHWs, nurses, MDs and specialists. Approximately 30% of health facilities in Rwanda belong to private-for-profit and NGOs, but the government and NGOs have a legal agreement that the NGO gives the same services at the same cost and in exchange the government pays for the majority of the staff and equipment. At all levels of health facilities there are administrative structures (Boards or Committees comprising customer representatives).



Rwanda's success in fighting the COVID-19 pandemic, is the result of existing programs and financing initiatives built by the Ministry of Health and the GoR over more than two decades. For example, COVID-19 prevention measures around hygiene and handwashing practice in homes, health facilities and public places have been built on the foundations of Rwanda's comprehensive water and sanitation hygiene (WASH) program, first implemented in 2009 in rural areas of four low-WASH access districts by the GoR. This includes the distribution of clean water to households, schools, and public places such as health facilities and markets, across dry and rainy seasons, as well as a similar distribution of sanitary products and efforts to reduce the rate of people practicing open defecation. Rwanda has since set ambitious WASH targets: achieving universal access to basic water supply and sanitation by 2024, and providing safely managed WASH services by 2030. Progress has been made, but more needs to be done.

Another pillar of Rwanda's health strategy is universal health coverage (UHC). Rwanda has significantly advanced UHC with its mandatory community-based health insurance program (CBHI) called Mutuelles de Santé, a solidarity health insurance system, alongside other health insurance schemes including La Rwandaise d'Assurance Maladie (RAMA) for people in formal employment sector, and Military Medical Insurance (MMI).

The CBHI and other insurances significantly reduced levels of out-of-pocket across Rwanda. Yet some challenges remain with transportation costs and non-essential drugs and services that are not covered by the scheme; but this is mitigated by the government providing free services to protect the population during public health crises. This was made possible because of the Rwandan laws that align all development partners with the government's priorities.

Rwanda's health system has benefitted from significant investments in and efforts around quality improvement to ensure equitable access to health services for the population, and to contribute to great improvements in several key health indicators, including maternal mortality and other health outcomes. In 2012, the MoH established a national health care accreditation program to guide the expected quality of care in facilities across the country. Other monitoring and assessment strategies contributed to quality improvement, including making improvements to the collection and management of health service data to support informed decision-making. In 2009, the maternal mortality audit process was implemented and routinely carried out at hospital level throughout Rwanda.

Rwanda has also made huge strides in regards to vaccination; prevention of diseases preventable by vaccination is one of priorities set by the GoR to reduce infant and child mortality. Following the 1994 Genocide Against the Tutsi, the national immunization coverage was very low (less than 30% in 1995) and incidence of vaccine preventable diseases was high. With the rapid mobilization of financial, human, logistic and technical resources to support immunization service delivery, Rwanda has now increased equitable immunization coverage to more than 95% and successfully introduced 6 new vaccines into routine immunization programmes.

Rwanda has seen some of its greatest successes in its reduction of under-5 mortality. In 1994, Rwanda had the highest child mortality rate and the lowest life expectancy anywhere in the world. Between 2000-2011, the probability that a child dies by the age of 5 years decreased by 70.4% — falling below half of the regional average. Rwanda's Ministry of Health will remain committed to identifying factors associated with childhood mortality to strengthen interventions to reduce it further.

“Rwanda's established, strong public health system from the grassroots level up meant when the pandemic hit, the country was ready to act.”

---Prof. Agnes Binagwaho,
Vice Chancellor, UGHE

The 2014 Ebola outbreak in West Africa and more recently in the Democratic Republic of the Congo (DRC), motivated Rwanda to increase surveillance and control cross border movements as well as to build capacity in health personnel and health facilities. As a result, Rwanda prevented the introduction of Ebola which had been in Goma, DRC, a city that borders the western province of Rwanda. Rwanda strengthened its preparedness against the COVID-19 pandemic under the supervision of high-level authorities of the government. Mistakes were not tolerated, which was demonstrated when the Minister of Health was replaced due to not ensuring there were sufficient testing kits in place. This strict organization and discipline, as well as the established strong public health system from the grassroots level up, allowed Rwanda to effectively prepare and when the pandemic hit, the country was ready to act.



Community Health Workers disseminating house-to-house Ebola prevention messaging in 2019 in Umwidagaduro Village, Musanze, Rwanda
Photo by Laura Wotton

RWANDA'S SURVEILLANCE & RESPONSE SYSTEMS

Coordination of resources, surveillance, communication and response capability

Over the last decade, the world has experienced numerous crises including infectious disease outbreaks and natural disasters. The Great Lakes region in Africa has been impacted by a large proportion of these outbreaks due to emerging and re-emerging infections such as HIV/AIDS, novel influenza virus diseases, cholera, measles, and Viral Hemorrhagic Fevers such as Ebola, Marburg and Yellow Fever. Rwanda, by virtue of location in this region, is continually at risk of these health crises, particularly emerging and re-emerging infectious diseases outbreaks.

The Integrated Disease Surveillance and Response (IDSR) System is a comprehensive framework for strengthening national public health surveillance and response systems, was implemented by the Government of Rwanda in 1998 and now 23 priority diseases are under surveillance in the country.

Through its four main pillars of (1) coordination; (2) surveillance and laboratory; (3) response preparedness capability and (4) risk communication, the IDSR prepared Rwanda to react quickly to COVID-19, as well as to previous infectious disease outbreaks. Rapid response teams, built from the existing National Disaster Executive Committee composed of 9 government ministries, were quickly established and coordinated at the central and district hospital levels.

To manage the surveillance of infectious diseases, Rwanda has a well-functioning electronic system in all public and private health facilities to facilitate early detection, reporting and timely response. Laboratories are decentralized across the country and this network of sample collection and transportation feeds from the peripheral level into the national reference laboratory. The response preparedness capability pillar of the IDSR consisted of clear emergency management guiding documents, a procurement system that can facilitate procurement and shipment during emergencies, and the stockpiling of emergency vaccines and materials.

The last pillar, risk communication, is led by the Rwanda health communication centre who is in charge of all health related communications and awareness strategies and is leading all efforts related to risk communication and community engagement.

In December 2019, the Ministry of Health, the lead of the COVID-19 response in Rwanda, strengthened leadership and governance of the response by activating the country's IDSR system and leading the Joint Task Force Committee (JTFC). The JTFC, created under the leadership of the Prime Minister, is an expert advisory committee to the government and is composed by the Ministry of Health, Ministry of Defense, Ministry of Finance and Economic Planning, Ministry of Internal Security and Ministry of Local Government. The Ministry of Health has the mandate to inform the JTFC of relevant, accurate and up-to-date information in order to facilitate planning, budgeting and planning processes. Regular meetings to review publications were conducted and media notices were organized to inform decision makers.

“

In Rwanda we are well equipped in the fight against COVID-19. We currently have enough resources for contact tracing, but we will continue to build our capacity around prevention - now, and for the future.”

**--- Lt Col Dr Tharcisse Mpunga,
Minister of State for Health, Rwanda**

Rwanda's national response to COVID 19, was built on this existing surveillance and response infrastructure and human resources, under the coordination of the office of the Prime Minister and the National Epidemic Preparedness & Response Coordination Committee, which set in motion a quick and well-coordinated response.



The President of Rwanda, His Excellency Paul Kagame thanks members of the COVID-19 Joint Task Force who are coordinating activities around COVID-19 prevention. Photo by the Ministry of Health, Rwanda

AN EARLY & DECISIVE RESPONSE

Protecting Rwanda's existing health system and the lives of all, with a focus on the most vulnerable.

On January 30, 2020 the World Health Organization (WHO) declared COVID-19 a Public Health Emergency of International Concern ("Statement" 2020 Conclusions section para. 5), and a day later Rwanda began 24-hour screening for all arriving passengers at the Kigali International Airport. Passengers were checked for temperature and contact information was collected to facilitate follow-up if any passengers developed symptoms of COVID-19. In partnership with the Ministry of Health (MoH), the Rwanda Biomedical Center (RBC), which is a Government Organization that implements policies and strategies of the MoH, also opened a tracking and testing facility.

Subsequently, on March 11, the WHO declared COVID-19 a pandemic, and three days later, the first case of the virus was confirmed in Rwanda ("WHO" 2020, "First case", 2020). Prior to the first case of COVID-19 in Rwanda, His Excellency Paul Kagame, The President of Rwanda reassured the country that the response team is ready to act and urged all citizens and residents to take precautions such as avoiding unnecessary travel and following the instructions of health authorities. Guidelines were developed on social distancing and handwashing, hand washing stations were installed outside major buildings, bus stations and shopping centers and testing began early in February, 1 month before the first case was confirmed in Rwanda.



Bus passengers in Kigali wash their hands in Rwanda's portable washbasins for COVID-19 prevention. Photo by The New Times

“The rapid, strict and effective nation-wide lockdown was a well-coordinated collaborative effort between sectors and with Rwandan citizens demonstrating the critical importance of an interdisciplinary and community-based approach.”

---Dr. Phaedra Henley,

Director and Assistant Professor | One Health
UGHE

The day after the first positive case was confirmed, churches and worship places, public gatherings and events such as weddings and sports were shut down. All students were required to go home, and non-essential workers were required to work remotely from home.

By the end of the week there were 17 confirmed cases and subsequently, the Government of Rwanda announced the closing of Kigali International Airport and its borders, the first country in Africa to go into a full country lockdown, a lockdown that would continue for 6 weeks.

The Cabinet meeting of government officials convenes every 2 weeks to reassess the situation in the country and readjust the measures as the epidemiological situation evolves. Bi-weekly surveys are also conducted in high risk groups to inform the spread of the virus and the consequent response measures needed.

Over the 6-week lockdown, restrictions increased including that all public and private institutions were required to close except for health services, grocery stores, restaurants that provide take-away only, and other sellers of essential items. Internal movements in the country were suspended (including between provinces) and every citizen was required to stay home, except for essential needs. Instructions and regulations from the Ministry of Health, the local government, the police, and other high officials were broadcasted through the media such as radio, television and social media. Drones were used to broadcast messages to hard-to-reach communities.

Higher education institutions quickly transitioned to online learning, and lessons were regularly broadcasted on radio and television for primary and secondary students. The Rwanda Education Board also uploaded e-learning materials per the national curriculum for primary and secondary school students that were also made accessible online and for free.

Rwanda's public health response to COVID-19 has been robust and rapid, and backed by high-level government officials led by His Excellency, President Kagame. The main priority was containment of COVID-19 as Rwanda's healthcare system can not handle a large number of critical cases and the existing health system needed to be protected in order to continue care for other health conditions.



Nicole Jabo, UGHE MGH '19 working in the contact-tracing unit at Rwanda Biomedical Centre.

Photo by Rwanda Biomedical Centre.

ASSESS, ACT, REASSESS, ADAPT

Innovations to communication, testing and tracking

The National Emergency Response plan includes rapid diagnosis of suspected cases (imported cases and contacts of positive cases), effective and timely contact tracing, determining hotspots and ramping up interventions in those locations and increasing capacity for care to treat cases. Many sectors of the Government, as well as supporting organizations, were involved in the National Emergency Response Plan including the Ministry of Health, Ministry of the Local Government, Ministry of Finance, Rwanda Revenue Authority and the Rwanda National Police.

To improve management and containment, Rwanda also included a strong focus on innovations and digital solutions, solutions that are not only contributing to fighting the current pandemic but that are strengthening the overall health system. At country level, the Ministry of Health is encouraging scientists and researchers to double their efforts to document and test local innovations which may have a potential benefit in combating the spread of COVID-19, working alongside the RBC and the Ministry of ICT and Innovation. IT solutions have supported medical personnel in the fight against the pandemic, such as the development of five robots named Akazuba, Ikirezi, Mwiza, Ngabo, and Urumuri, donated by the United Nations Development Programmes, to support medical staff by alleviating some of the workload (through taking and tracking temperatures and relaying this information to the doctors), and reducing human risk of exposure. Soon, the robots will be programmed to do more tasks such as taking blood pressure and delivering food and medications. Home-grown solutions have been generated rapidly and effectively to combat COVID-19, and its threat to population health. The first made in Rwanda ventilators were manufactured by young engineers from Integrated Polytechnic Regional Center. The prototype took 8 days to complete and is undergoing appropriate approvals.

Rwanda is one of the countries leading the world in use of drone technology, where it uses drones to deliver blood in record time and for vector control. Drones are now being utilized during the pandemic to continue care such as the delivery of cancer drugs as well as to broadcast messaging on COVID-19 prevention, particularly in areas that do not have access to internet or TV. The RBC's website has a dashboard with live data that displays in an accessible way the current data on COVID-19 cases in Rwanda such as confirmed and active cases, daily testing rates as well as breakdowns by age, sex, imported vs. local and by geographic area.

The government also launched a toll free number if a person believes they were in contact with someone who is being evaluated for follow-up. As the number of contacts of positive cases continue to rise, follow-up was adjusted to use a web-based, wellness check system called "WeTel" that allows daily exchange using messages and video calls between the command post management and individuals in quarantine or isolation sites (Orton, 2020). The testing and tracking facility that opened before the first case of COVID-19 was developed locally in Rwanda, grew massively in scale, and was set up to track, test and isolate new cases using data and investigation and to identify all people and gatherings that the person interacted with prior to their positive diagnosis. Rwanda's contact tracing has shown to be effective, with both a comprehensive and strong approach (many positive cases have 12-50 contacts that are all traced) as well as one that is compassionate with the contact tracer providing reassurance including providing a status of the patient who is often a friend or family relation.

“The infectious nature of COVID-19 calls for technological innovations to tackle the pandemic. This is why Rwanda has introduced robots and drones and other high-tech initiatives to enhance efficiency in the fight.”

---Paula Ingabire,
Minister of ICT and Innovation, Rwanda

The contact tracing center has a close and coordinated response between different departments such as communications, mental health, police and immigration representatives as well as the rapid response team who take symptomatic contacts into quarantine for 14 days, where they must test negative before discharge.

After continued country-wide assessments, it was announced that the 6-week strict lockdown was easing and that private and government businesses could operate again while respecting social distancing, the use of masks and allowing only 50% of workers at their workplace at a time. Large social gatherings like weddings, churches, and bars remained closed and a curfew from 8PM to 5AM was put in place (which was later extended to 9PM).

Public buses re-opened with guidelines including the mandatory use of face masks, washing hands before and after disembarking the bus, maintaining 1-meter distance between passengers and the use of cashless payment to avoid hand to hand money exchange. One of the last easing of restrictions was allowing motos (a common form of transportation in Rwanda) to resume business, which occurred almost 2 months from the initial lockdown. Moto drivers had to observe strict hygiene measures including redesigning passenger's helmets, wearing a mask, ensuring passengers wear a head covering under the helmet, having and using hand sanitizer and having their moto equipped with a meter to facilitate cashless payments. As a high-risk population, moto drivers also have to be regularly tested for COVID-19.

There are repatriation flights for Rwandan citizens, with an initial priority given to students studying abroad, who underwent 14-day quarantine upon arrival at a government facility, with the costs covered by the government. All passengers into Rwanda are tested on arrival for COVID-19 and if positive, they will be transferred to a treatment facility for care. If negative, they will remain in quarantine for 14 days and will only be discharged after a second negative test result.

“Until we get zero cases, for us the fight against COVID-19 continues. Nothing has changed, we continue with the same effort.”

---Dr. Sabin Nsanzimana,

Director General of Rwanda Biomedical Centre

After 1.5 months since the lockdown, all costs for quarantine for incoming citizens and permanent residents are now paid by the individual at their place of choice among designated ones of varying costs and amenities. However, the government will continue to pay for those who cannot afford to pay as well as health services and COVID-19 testing. The 14-day mandatory quarantine was subsequently adjusted to 7-days based on available data showing that 2 PCR tests within a 72-hour interval would provide a true negative test similar to 14-day waiting time. Rwanda is the first country to adapt such a change and 1 month later, there fewer positive cases in a 7-day quarantine period compared to the 14-duration previously used.



A commuter paying a taxi-moto operator digitally in Kigali, Rwanda.
Photo by Dan Nsengiyumva



Dr Sabin Nsanzimana, Director-General of Rwanda Biomedical Centre (Right) and Dr Daniel Ngamiye Hon. Minister of Health (Left). Photo by The New Times

Approximately 3 months after the first positive case, on June 16, domestic and international tourism resumed in compliance with Rwanda Development Board guidelines including allowing international charter flights where passengers must have tested negative for COVID-19 within 72 hours.

Local tourism is being promoted with discounted package deals being announced for citizens and foreign residents such as deals on permits to see the famous gorillas. All visitors to the National Parks of Rwanda must have a negative test result within 48 hours of their visit, a rule which is facilitated with private clinics now operating in Kigali for testing. Religious ceremonies for weddings and burials were now able to resume with an attendance of no more than 30 people as long as they can respect the health measures put in place.



A Rwandan police officer checks the temperature of a motorist in Kigali, Rwanda. Photo by Agencies

PRIORITIZING THE MARGINALIZED

Rwanda's prioritization of adaptable social protection systems to protect the vulnerable.

Using decisive, adaptable, compassionate and evidence-based leadership, the Government of Rwanda effectively implemented a public health response and mobilized the population (Binagwaho, 2020). A majority of the Rwandan population abide by the enforced measures, which highlights their continued trust in the government and health sector. The strict and significant response such as the 6-week lockdown that while putting the economy at risk, it also prioritized all of its citizens, especially those most vulnerable. As an example, the government has begun dedicated testing of the elderly and those with existing illnesses in one of the more hard-hit districts, as those populations have a greater risk of fatality if infected from the virus (Xinhua, 2020).

COVID-19 has highlighted the need for adaptable social protection systems for countries to protect those most vulnerable and the Government of Rwanda was prepared for and acted on this. The Ministry of Local Government distributed food relief including rice, flour, beans and oil to tens of thousands of households that were determined to be vulnerable, those who were mainly living from hand to mouth. Support including this provision of food relief are channelled through local governments to ensure a comprehensive, equitable and well-coordinated response.

“We are working to minimize the economic hardship on our citizens while protecting their health. So long as any member of our community is vulnerable, we are all at risk. Therefore, we must work very closely together in the months ahead, to face this challenge as a community.”

--- His Excellency Mr. Paul Kagame, President of the Republic of Rwanda speaking at EAC Consultative Meeting with Heads of State of Uganda, Kenya, and South Sudan on the regional response to COVID-19.

People were identified through local committees at the sector cell and village local government levels and the provisions were delivered door-to-door to reduce exposure to COVID-19. This approach also contributed to preventing the virus from spreading to the rural areas, by supporting the urban poor to stay where they are. As well, the local telecommunications companies implemented zero charges on mobile money transfers to encourage the use of digital money transfer and commercial banks eased loan repayment conditions.

One Health is a multisectoral, interdisciplinary, and collaborative approach to attain optimal health for animals, humans and the environment, and is a priority of the Government of Rwanda as is demonstrated with its One Health Steering Committee consisting of sectors across the government, One Health policy and One Health Strategic Plan. By operationalizing the One Health approach at the level of the government, Rwanda was well-prepared to launch a multi-sectoral and integrated response that holistically examines and reacts to all factors contributing to the spread of the virus.



The Government of Rwanda initiated the distribution of relief items early to households across the country as part of efforts to sustain vulnerable people during lockdown. Photo by The New Times



Sanitation workers in Rwanda disinfect cargo-carrying vehicles at border posts. Photo by The New Times

IMMEDIATE AND LONG-TERM CHALLENGES

The sustained social, economic and health ramifications of COVID-19.

During and after the lockdown, Rwanda's main economic activities such as tourism, minerals and commodity markets were primarily affected. As well, many Rwandans work in the informal sector with no savings. Mandatory isolation and lockdown, the loss of jobs and social distancing means many of these people have lost their income that is needed to survive day-to-day. This will disproportionately impact children who will miss meals, have to work to contribute to the family income or take care of other children.

With the world undergoing a recession, serious economic challenges are forthcoming in Rwanda. The International Monetary Fund (IMF) Executive Board gave \$109.4 million to the Government of Rwanda to support the economic impact from COVID-19 from the loss from trade and tourism; the Ministry of Finance launched a fund for small to medium enterprises to access capital and deadlines for tax filing were extended ("IMF" 2020). Other donors have also given supplies and funds to Rwanda such as Chinese billionaire Jack Ma who donated supplies to African countries including Rwanda such as test kits, thermometers, personal protective equipment including suits, face shields and gloves.

Senior Government of Rwanda officials forfeited their salaries during the month of April to contribute to COVID-19 initiatives. This demonstrates the importance of global partnerships and as well as solidarity in combating pandemics and other global health crises.

Some neighboring countries have implemented strict regulations between borders which have created long lines at crossings, and the stigmatization of truck drivers. Clusters of cases have surfaced in Rusizi District in western Rwanda on the border with the Democratic of the Congo (DRC) and in Rusumo, in Kirehe District on the border with Tanzania, which caused the number of confirmed cases to spike from 370 at the end of May to 1,001 by the end of June. Truck drivers delivering goods between borders highlights another challenge of continuing supply chains and trade with neighbouring countries who have had different outbreaks and responses to COVID-19. Borders within the East African Community (EAC) continue to be a key driver of spread of the coronavirus but are also critical for supplies and trade between the countries.

Responding to these clusters, the government has increased testing capacity, and conducted tests door-to-door in the district. The EAC has also developed and implemented a EAC digital surveillance and tracking system for truck drivers, which contributes to a stronger regional response allowing more efficient, timely and safe trade between countries including supplies to fight COVID- 19. There is regional collaboration within the EAC with their public health networks and laboratories.

“ I think one of the things COVID-19 is really teaching us right now is scientific humility”

**---Dr. Joel Mubiligi,
Executive Director, Inshuti Mu Buzima,
as Partners in Health is known in Rwanda**

Overall, the Rwanda Biomedical Center (RBC) increased its testing capacity 15-fold in 4 months, with approximately 3,000 tests conducted per day, and as of the end of June, 140,249 tests have been done nationwide. The RBC shifted from manual to automated analysis, which created a shorter turnaround time to get results, and allowed more people to get tested. The RBC also decentralized laboratories, and have set up a testing centers in four other districts to get results more quickly. Some of the neighbouring countries have implemented strict regulations between borders which have created long lines at borders, and the stigmatization of truck drivers. The EAC has developed and implemented a EAC digital surveillance and tracking system for truck drivers, which contributes to a stronger regional response allowing more efficient, timely and safe trade between countries including supplies to fight COVID-19.

Another challenge is that many Rwandans (77% of people living in the nation's capital, Kigali) reside in unplanned settlements where overcrowding and shared water and hygiene sources are common. This makes handwashing and social distancing a challenge in these areas. As well, staying at home, particularly during financial stress, creates increased risk for women and children who may experience domestic abuse and gender-based violence.

When lockdown began there was a decline in the number of children receiving vaccinations, which is an important secondary impact of the lockdown and in of itself could cause outbreaks outside of COVID-19. For example, the second dose of measles vaccines had dropped from 92% to 82% coverage over the lockdown. Despite these challenges, Rwanda has a stock of vaccines for the next 6 months, has country-wide as well as a community-based vaccine delivery and has an electronic registry for immunizations to be able to track which specific children are or will be behind on their routine vaccinations.



A nurse immunises a baby at Kacyiru Hospital, Rwanda
Photo by The New Times

“All around the world, there is a huge demand for the kits and few countries are producing and exporting them. The addition to our stock is timely has put our capacity at a good level to respond to the situation,”

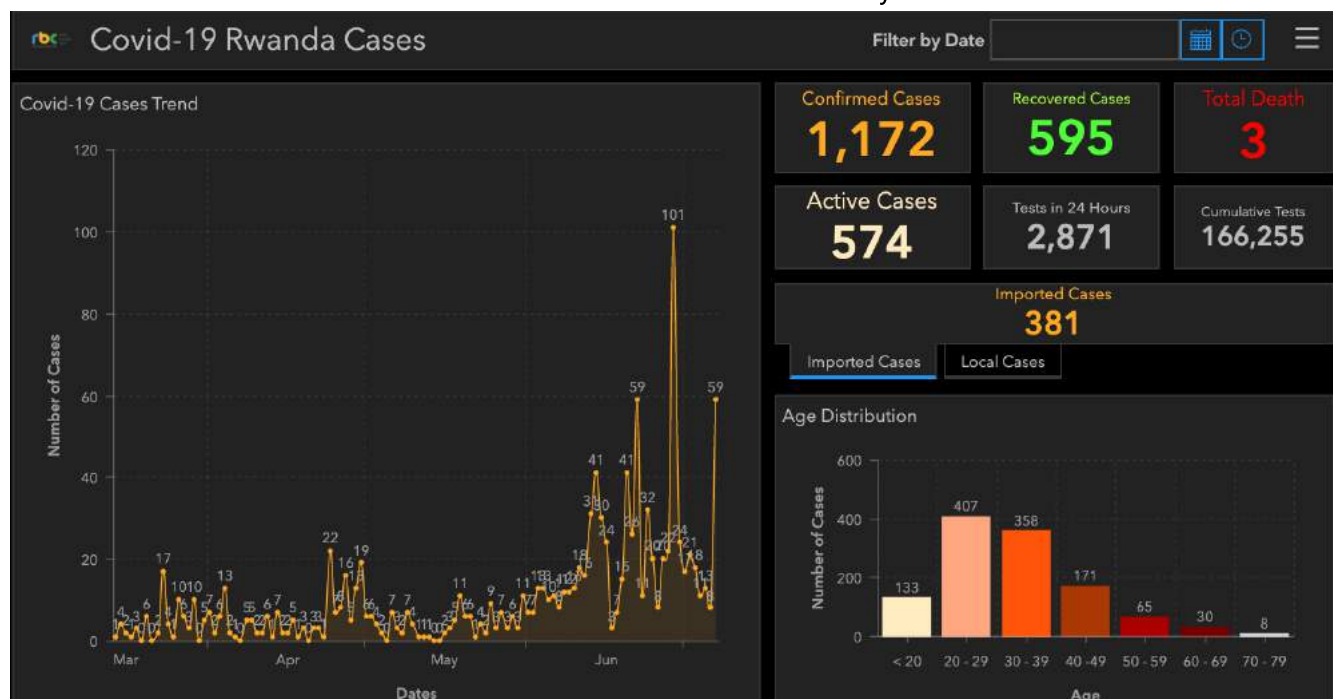
---Dr. Jean Baptiste Mazarati

**Head of the Department of Biomedical Services
Rwanda Biomedical Centre, speaking on the Jack Ma
Foundation donation of COVID-19 test kits**

At the end of June, Rwanda saw its highest number of new cases recorded in one day. Of these 101 cases, 72 came from a cluster at a police station's detention center in Ngoma District, as a result of contact with the Rusumo cross-border cluster. Rwanda is mass testing in the province where the cluster is located, including at all detention centers.

This highlights the ongoing challenge of cross-border movements. Twenty-two of the 101 were in the central capital Kigali, and two days later, Rwanda implemented a random, drive-through street testing survey in the City and its entry points and had previously re-instated lockdown in certain areas of Kigali where cases were found.

Fig 2. The trend of COVID-19 cases in Rwanda, recorded by the Rwanda Biomedical Centre





People social distance as they wait to travel after nationwide lockdown was lifted in Kigali, Rwanda,
Photo by Simon Wohlfahrt/AFP via Getty Images

NEXT STEPS

As of the end of June, COVID-19 in Rwanda has infected 1,001 people and killed 2 people, both who had arrived in Rwanda in critical condition. The success Rwanda has seen so far to curb the spread of COVID-19 have been recognized in different media across the world where for example Oxford University study ranked Rwanda among the top 10 countries in the world that were well prepared for this pandemic (Webster, 2020). By the end of June, the Robert Koch Institute designated Rwanda as a country, the only in Africa, that is not a COVID-19 risk area due to the country's containment measures (Taboro, 2020). Rwanda was also designated as one of four African countries who can enter the Schengen Area, comprising 26 European countries (Adler, 2020).

Adaptions to Rwanda's response will continue as new evidence and innovations emerge. For example, turnaround time and cost for testing will be reduced by using pooling techniques where field trials are occurring in Rwanda and the health management information system will be connected to tablets for the collection, processing and return of results (Mutesa et al., 2020). As an alternative to strict quarantine in a dedicated place, there will be

implementation of a voluntary use of bracelets to monitor home quarantine.

Geographic Information System (GIS) mapping will be utilized to map and trace contacts such as truck drivers. Rwanda will continue to prioritize equity, of all of its citizens, in its response. Food distribution will continue for poor families, there will be free testing and treatment for all, access to loans post-COVID recovery and the alleviation of charges from money transfer companies.

Ongoing challenges include increased testing and the global demand, as well as mobility and risks from other countries. Behaviour change is a challenge, particularly in a society with strong social cultural attachments which makes social distancing difficult. There are beliefs and denial from some people about the severity of the disease. To address these challenges, until a vaccine and/or therapy is made available, Rwanda will continue to strengthen the four pillars of the response: (1) proper use of face masks; (2) social distancing of 1.5-meters; (3) handwashing and (4) continued testing, as well as prioritizing equity, innovation and evidence-based decisions.

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