UGANDA REPORT 2

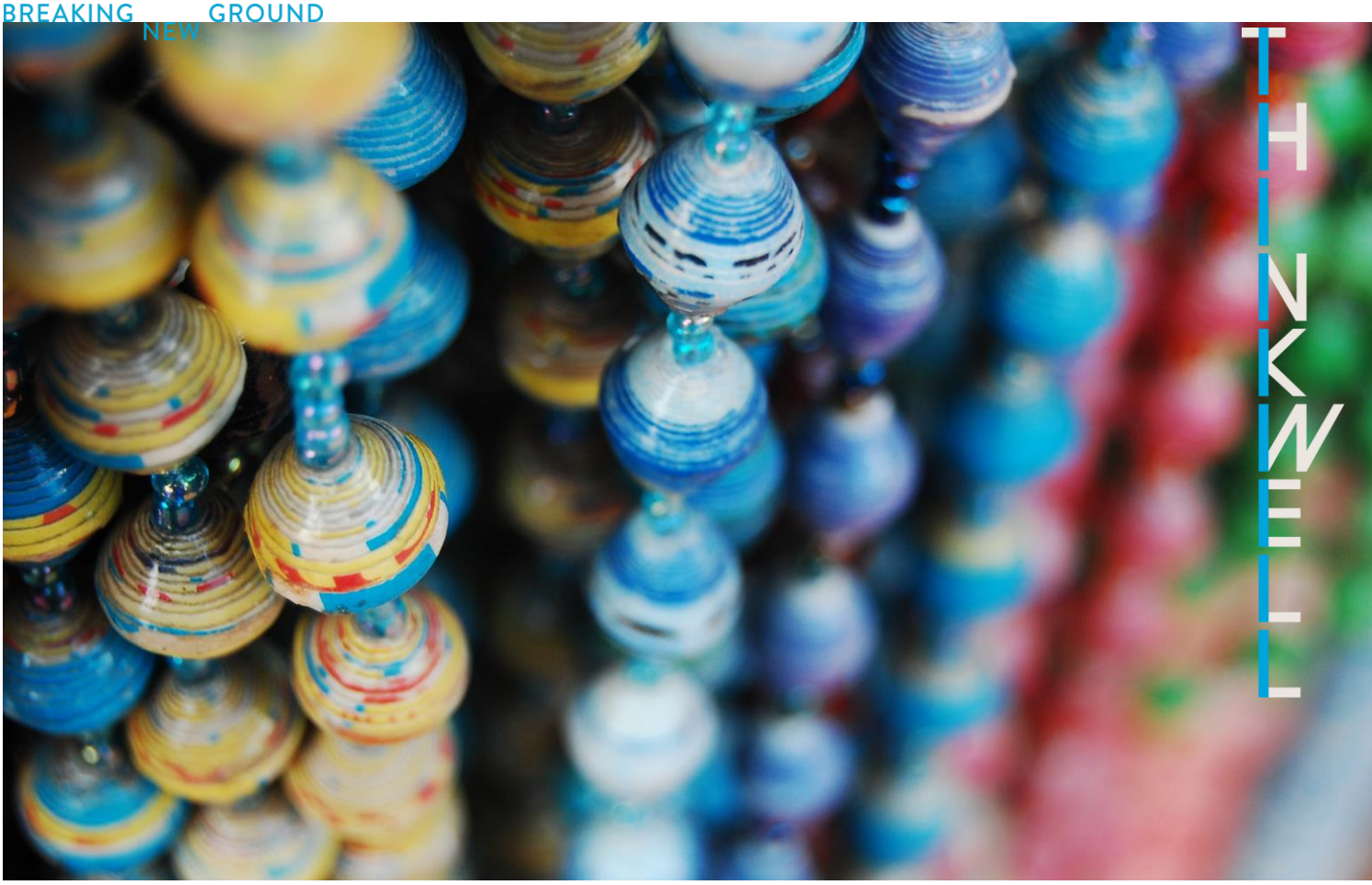
THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

SP4PHC
Strategic Purchasing for Primary Health Care

Uganda's Emergency Response to the COVID-19 Pandemic: A Case Study

September 2020

BREAKING NEW GROUND



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ABBREVIATIONS

ANC	antenatal care
CHE	current health expenditure
DHIS	District Health Information System
DHO	district health officer
DRC	Democratic Republic of Congo
DTF	district task force
FP	family planning
GBV	Gender-based violence
GDP	gross domestic product
GoU	Government of Uganda
HDU	high dependency unit
HMIS	health management information systems
ICT	information and communication technology
ICU	intensive care unit
IMS	incident management structure
IPC	infection prevention and control
JTF	joint task force
KCCA	Kampala Capital City Authority
LC	local council chairman
MOH	Ministry of Health
NCD	noncommunicable disease
NHA	national health accounts
NTF	national task force
OOP	Out-of-pocket
OPM	Office of the Prime Minister
PCR	polymerase chain reaction
PFM	public financial management
PHC	primary health care
PHEOC	Public Health Emergency Operations Centre
PHEOIC	Public Health Emergency of International Concern
PHE	public health emergency
PNC	postnatal care
PoE	point of entry

PPE	personal protective equipment
RDC	resident district commissioner
RRH	regional referral hospital
RSCM-CE	Risk Communication and Social Mobilization and Community Engagements
SSA	Sub-Saharan Africa
UNICEF	United Nations International Children's Emergency Fund
UPDF	Uganda Peoples' Defense Forces
UHF	Uganda Healthcare Federation
UVRI	Uganda Virus Research Institute
WHO	World Health Organization

EXECUTIVE SUMMARY

This case study provides a preliminary review of the Government of Uganda's initial response to COVID-19 from March to June 2020 across institutional, financial, and operational dimensions. It seeks to capture the priorities and investments made early in the trajectory of the outbreak and can inform both immediate adaptations of the response and long-term reforms that improve the resiliency of its health and emergency response systems. The corresponding response by the Government of Uganda to COVID-19 will need to follow suit. The case study provides a baseline for key stakeholders in the country to build upon.

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has spread rapidly around the world and has presented a tremendous challenge for governments to quickly respond to mitigate the impact. On January 30, 2020, the WHO declared the COVID-19 outbreak that started in Wuhan (Hubei Province, China) a public health emergency of international concern. Soon after, countries started to scale up COVID-19 preparedness and response strategies.

The Ugandan government rapidly mobilized to respond to COVID-19 in early March, using their considerable previous experience with other outbreaks, such as Ebola. The government's response included the quick development of institutional arrangements, rapid pooling and allocation of funds, and the development of operational guidance to health system stakeholders on how to respond.

The government appointed an emergency response team to coordinate the response across six pillars. These are: governance and leadership; surveillance and laboratory; case management; logistics; risk communication, social mobilization, and community engagement; and mental and psychosocial support. While the Ministry of Health (MOH) was responsible for policy and strategy, it coordinated with the Office of the Prime Minister on the strategic and operational command of the response, as well as a series of cross-cutting functions, such as planning, budgeting, and partner coordination. The already existing district surveillance teams and District Task Forces (DTF) were immediately called into play to respond to the virus in their jurisdictions.

A multisectoral approach financed, managed, and combatted the response. Funds for surveillance, sample collection, and contact tracing for districts were channeled through local governments, while those for enforcing lock-down measures and quarantine were channeled through Ministry of Internal Affairs, Department of Defense.

The health sector was given a smaller proportion of total funding for the response than expected. As a result, important challenges impeded full implementation of COVID-19 preparedness and response activities.

Of the money that was allocated to health, most was used to strengthen the treatment capacity of referral hospitals rather than primary health care providers for testing. Funding for contact tracing (UGX 165 million or USD $ 45,000) was instead channeled through the local governments. In late 2019, there were only 55 intensive care unit (ICU) beds in the country, which translated to one ICU bed per 1.3 million people. Thus, the investment in ICUs was understandable, but the limited domestic funds for testing and tracing has created challenges to effectively test and trace cases and contacts as they are identified, a strategy that has proven highly effective against the virus. The funds allocated to referral hospitals would have been more strategic if greater flexibility and autonomy had been granted to subnational authorities and providers to adapt their response as the situation evolved on the ground.

The MOH has developed considerable operational guidance for the response by building on previous successful experience handling other epidemics such as Ebola and Marburg. This guidance has ranged from testing and screening strategies to isolation and treatment procedures. Much of this guidance is

based on what has been shared by the WHO, with efforts to contextualize this guidance for implementation by the national and district task forces in Uganda. For instance, there have initially been challenges to understand how to best engage with the private sector in urban areas such as Kampala, where the private sector comprises most of the health delivery system. Not operationalizing this guidance could be a significant risk if the virus proceeds to community transmission.

While the initial response has been effective in keeping cases to a minimum, there have been serious secondary impacts on routine essential services and socioeconomic well-being. According to the initial health management information system (HMIS) data analysis produced by UNICEF, use of routine services such as family planning and maternal health services has dropped between March and April 2020. This resulted possibly from changes in the health-seeking behavior. The response measures have also had a significant impact on people's ability to work and earn an income, especially as a large proportion of the population works in the informal sector and over 40% of the population was already living below the poverty line of US$1.90 a day.

Moving forward, we recommend that the Government of Uganda prioritize key adaptations within each dimension:

- To further contextualize the response to the situation on the ground using operational district response plans.
- For funding across government and external donors to be more aligned and focused on building the capacity of primary health care systems to test and trace cases.
- For the operational guidance to be contextualized for the unique capacities and needs of Uganda and for authorities to provide more information on how these will be implemented.

INTRODUCTION

Despite strong economic development, Uganda still has high poverty rates and rapid population growth and is largely rural. Uganda has a gross domestic product (GDP) growth rate of 6.1%, which is higher than the sub-Saharan Africa (SSA) average of 2% (World Bank 2019). Yet a large proportion (41%) of the population lives on less than US$1.90 a day, and more than half of children (56%) experience multidimensional deprivations and a low standard of living (UNICEF and Uganda Bureau of Statistics 2019). Over 75% of the population is below 30 years of age, and the population is growing at a rate of 3.7%. Most of the population (76%) lives in rural areas (World Bank 2019).

Uganda is one of the largest recipients of refugees in the world. There are currently 1.4 million refugees living in Uganda and a monthly influx of roughly 30,000 new refugees, coming primarily from South Sudan (61.8%) and the Democratic Republic of Congo (DRC) (29.1%). Uganda has an "open door" refugee policy, aimed at integrating refugees within host communities. Refugees are concentrated in 12 districts of the country.

The country faces a dual burden: a high level of communicable diseases, coupled with an increasing prevalence of noncommunicable diseases (NCDs). Neonatal disorders, AIDS, malaria, lower respiratory infections, and tuberculosis account for most deaths. Estimated adult HIV prevalence varies significantly across the country, ranging from 3.1% in West Nile to 8.0% in Central 1 Region (Ministry of Health Uganda 2017b). A rapid increase in NCDs and their associated risk factors has been registered over the past few years, with NCDs now estimated to account for 35% of country's deaths (Ministry of Health Uganda 2014).

Uganda is highly vulnerable to infectious diseases with epidemic potential. The proximity to the biodiversity of the Congo basin, climate change pressure on ecosystems, and the influx of refugees have compounded this vulnerability (Ario et al. 2019). However, in recent years it has managed to successfully contain cross-border public health emergencies, including cholera, Ebola, Marburg virus disease, Rift Valley Fever, plague, and yellow fever.

During the 2001 Ebola outbreak, the Government of Uganda (GoU) played a vital role in coordinating both local and international support. The National Task Force (NTF), the corresponding district committees, and community-based sensitization through members of Parliament provided a significant contribution to control the outbreak (Okware et al. 2002).

Over the last few decades, the GoU has transformed its response strategy to public health emergencies. The 1995 Constitution put the President in a central role for disaster response management. It grants him the right to declare, in consultation with the Cabinet, a state of emergency in Uganda (Government of Uganda 1995). In 2011, the Department of Disaster Preparedness and Management of the Office of the Prime Minister (OPM) developed a National Policy for Disaster Preparedness and Management aimed at "establishing institutions and mechanisms that will reduce vulnerability of people, livestock and wildlife to disasters" (Government of Uganda 2011). In 2013, the Public Health Emergency Operations Centre (PHEOC) was established as the central coordinating unit tasked to receive and analyze information on health emergencies and natural disasters in real time.

To respond to this disease profile, the Uganda health system is structured across seven levels. There are four levels of health centers at the community and subdistrict levels, general hospitals, and regional and national referral hospitals. As of 2018, there were 6,937 health facilities, 55% of which were owned by private providers. Private providers play an outsized role in the urban areas of Uganda, making up 99% of the facilities in the capital city of Kampala. Most facilities and ICUs are concentrated in the central region (Ministry of Health Uganda 2018).

The GoU spends less on health than donors and individuals out-of-pocket (OOP) in Uganda. According to the latest National Health Account (NHA), the GoU contributes to only 15% of current health expenditure (CHE), while donors comprise over 40% of CHE. Uganda is also characterized by a high burden of OOP spending**,** which accounts for over 40% of the CHE (Ministry of Health Uganda 2015; 2016; 2017a).

The GoU purchases health services, staff wages, and commodities largely via input-based budgetary allocations, while donors largely purchase off budget, directly to providers. Most government funding of health services is allocated through primary health care (PHC) grants, which encompass a variety of public financing mechanisms for staff salaries, essential medicines and health supplies, facility operations, and other investments. External development partners largely provide resources off budget, and this has resulted in fragmentation of the health purchasing system, as well as a limited impact of off-budget funding on the sector priorities, and a number of mixed signals sent to providers. In the current environment, there are limited ways for the GoU to coordinate and align donor financing and priorities with public ones.

OBJECTIVES

The purpose of this document is to provide a preliminary analysis of the immediate response to the COVID-19 pandemic in Uganda. Specifically, the objectives are to:

- Outline the timeline of the events linked to the COVID-19 response in Uganda.
- Analyze the organizational structure, funding modalities, and operational elements of the response.
- Identify the secondary health and socioeconomic implications of the measures taken to prevent and respond to the pandemic.
- Provide recommendations to strengthen the COVID-19 response as it evolves to other stages and optimize current investments to strengthen the health system in the long term.

METHODS

To inform this review, the study team conducted a secondary desk review of key policies, guidelines, and documents on the response to the COVID-19 outbreak in Uganda from March to June 2020. The team also contacted 32 key individuals from the Ministry of Health (12) and development partners (20) at the forefront of the COVID-19 response

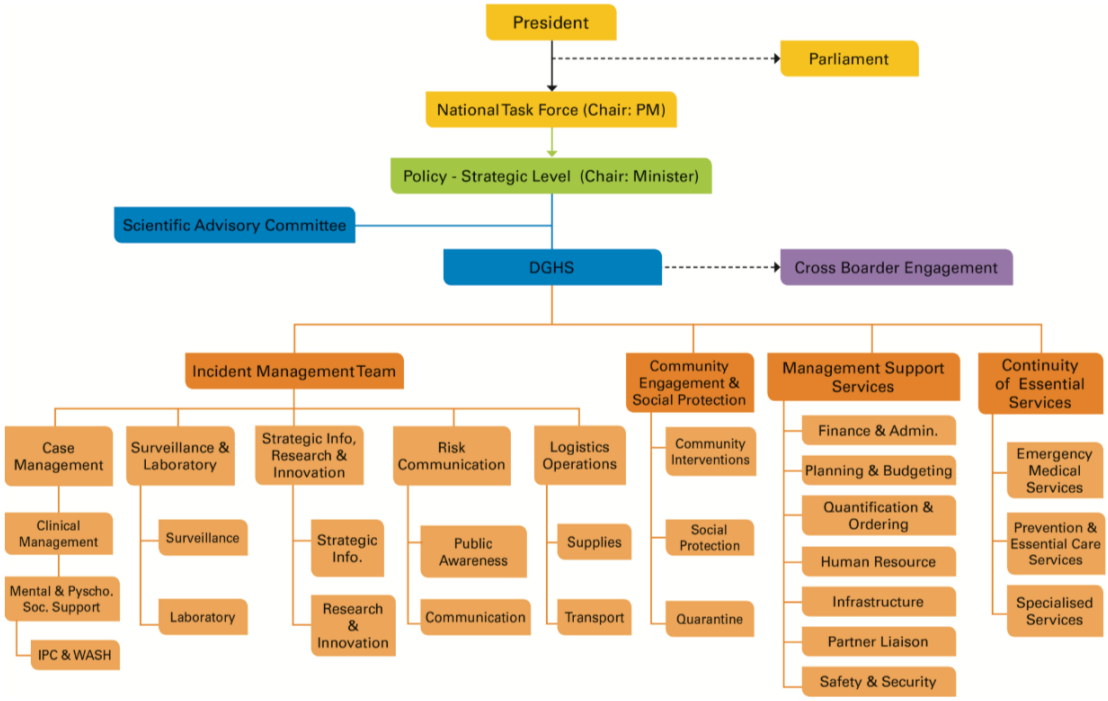
INSTITUTIONAL RESPONSE NARRATIVE

Figure 1: COVID-Related Response Timeline

When COVID-19 first arrived in Uganda in early March, the GoU rapidly took a series of measures to minimize the risk of it entering the country. These included closing entry points into the country, banning public gatherings and the use of public transport, closing schools and places of worship, and declaring a national lockdown and curfew. Figure 1 illustrates a timeline of these events.

Once the lockdown was initiated, the GoU quickly proceeded to set up the institutional arrangements needed to adequately respond to COVID-19. As seen in Figure 2 below, the Ugandan National Security Council set up a multisectoral National Task Force (NTF), with representatives from the Office of the Prime Minister, Health, Internal Affairs, Defense, Works and Transport, and Trade and Industry, as well as information and communications technology sectors, Kampala Capital City Authority (KCCA), and the private sector.

Figure 2: COVID-19 Response Structure



Source: Ministry of Health Uganda 2020b, adapted by ThinkWell

This NTF is led by the His Excellency the President of Uganda and deputized by the Prime Minister. The Incident Management Team (IMT), the DTFs, and the related subcommittees have been activated and play a critical role in implementing and overseeing the response.

The Ministry of Health (MOH) has a prominent role in the health response, which is structured around the Government's six pillars of the response: case management; surveillance and laboratory; strategic information; research and innovation; risk communication; and logistics operation. While the Honorable Minister is responsible for providing policy guidance and strategic directions, there is close collaboration with the Uganda People's Defense Forces (UPDF) on the operational command of the response through the IMT.

The IMT is replicated at the *district level*. The resident district commissioners (RDCs) lead the response, with the support of the district health officers (DHOs) and district chairmen under the DTF. At the *community level*, the local council chairman (LC I) is responsible for managing the village populations and ensuring compliance with national regulations.

The MOH, in close collaboration with partners in the NTF, provides technical guidance to the entire health sector (national and subnational) in its COVID-19 response efforts. In this role, the MOH has developed the national *COVID-19 Preparedness and Response Plan.* This is modeled on the guidance of WHO for country-level preparedness and response. This technical guidance document underwent extensive revisions and is yet to be released. Initially, the plan covered activities between January and June 2020, but was extended until September 2020. While the cost of the implementation of the initial plan was estimated to be UGX 25,316,923,751, (US$6.84 million), the estimate was subsequently revised to UGX 531,900,488,507 (US$143.75 million) (Ministry of Health Uganda 2020b; 2020c).

The latest draft of the *COVID-19 Preparedness and Response Plan* is structured on the following eight pillars:

- **Pillar 1—Leadership, Stewardship, Coordination, and Oversight:** Leadership and stewardship are critical to provide strategic direction and mobilize resources, while coordination catalyzes processes. The oversight function ensures transparency and timely accountability, which requires the involvement of Parliament, whose oversight activities are overseen by the Office of the Speaker through the various parliamentary structures. Leaders and managers at all levels keep proper and effective communication with all stakeholders.
- **Pillar 2—Surveillance and Laboratory:** COVID-19 surveillance will be conducted within the integrated disease surveillance and existing response framework to detect infectious diseases. It will be conducted through all surveillance systems in the country (i.e., point of entry, community-based, facility-based, laboratory-based, and sentinel surveillance). Surveillance and reporting capacities have been scaled up at all points of entry. Mandatory testing has been introduced for all people coming into the country, and isolation in designated facilities for any confirmed case, whether or not there are any clinical signs. Institutional quarantine centers have also been established at the district level. Sample analysis will be primarily conducted at the Uganda Virus Research Institute (UVRI), and mobile labs have been deployed at two border posts.
- **Pillar 3—Case Management:** Given that there is no effective treatment or vaccine for COVID-19, emphasis shall be put on prevention and strengthening infection prevention and control (IPC) practices, including WASH in health facilities, institutions, and communities. All confirmed cases will be managed in designated isolation facilities. Mildly ill or asymptomatic patients will be isolated at homes, non-traditional facilities, general hospitals, or health center IVs. Moderately to severely ill

patients will be hospitalized in designated COVID-19 treatment centers with capacity for high dependence units (HDU) and ICUs.

- **Pillar 4—Strategic Information, Research, and Innovation:** A number of innovations have been initiated by local factories to produce commodities (e.g., surgical masks, face shields, coveralls, and aprons) to support COVID-19 interventions. Conducting research is critical to understand the novel Corona virus and its socioeconomic implications for the population of Uganda. Implementation of the data management and analytics will build on the existing frameworks in the health sector. Use and adaptation of technology will support timely and appropriate response as well as sharing and use information.
- **Pillar 5—Risk Communication and Social Mobilization:** Key messages will come from Presidential directives, the MOH, and relevant ministry development agencies and other press releases. Risk communication and social mobilization and community engagement (RCSM-CE) interventions will be tasked to raise awareness among the public through the implementation of activities adapted from the national pandemic influenza plan.
- **Pillar 6—Community Engagement and Social Protection:** This pillar is essential for targeting delivery of health services and addressing the social needs of the population. COVID-19 is bound to disrupt essential health and social services and exacerbate gender-based violence (GBV), with a particularly severe impact for the poorest40% of the population. Efforts need to be made to minimize the multifaceted impacts of this rapidly evolving situation. Communities will be put at the center of the delivery of key basic services and essential public health functions.
- **Pillar 7—Logistics and Operations**: Supplies to deliver all the services outlined by the various subcommittees still need to be quantified and procured. A routine needs assessment will be conducted to inform forecasting and guide deployment of logistics.
- **Pillar 8—Continuity of Essential Services:** There is urgency to maintain uninterrupted essential services and sustain the response to Ebola, Yellow fever and Cholera outbreaks.

Table 1 below describes the key actions that will be implemented in three transmission scenarios, as outlined in the draft *COVID-19 Preparedness and Response Plan*.

Table 1: Coronavirus Disease 2019 (COVID-19) Preparedness and Response Plan Scenarios

Scenario 1 (best-case scenario): *No cases reported in Uganda.*
– Continued surveillance and routine screening at points of entry – Pre-positioning of logistics at points of entry and regional referral hospitals – Risk communication and community engagement – IPC and WASH – District categorization and preparedness focused in high-risk districts
Scenario 2 (most likely scenario): *Confirmed cases in one geographical location, enhanced preparedness across the country*
– Management of confirmed cases – Enhanced surveillance – Risk communication and community sensitization and engagement – IPC and WASH – Psychosocial support activities – District categorization and preparedness focused in high-risk districts and response in affected areas
Scenario 3 (worst-case scenario): *Confirmed in multiple locations, or overwhelming numbers of cases*
– Cross-pillar response at community level, COVID-19 response capacity is scaled at points of entry

- Escalation of response activities to the National Emergency Coordination and Operations Centre under the OPM
- Surge teams (including the UPDF and international medical teams)
- Implement communitywide quarantine measures based on risk

Source: Ministry of Health Uganda 2020b

The MOH has also provided guidance on other aspects of the response. These include the *Guidelines for Quarantine of Individuals, National Guidelines for Management of COVID-19,* and a *Preparedness and Response Plan Laboratory Manual for COVID-19.*

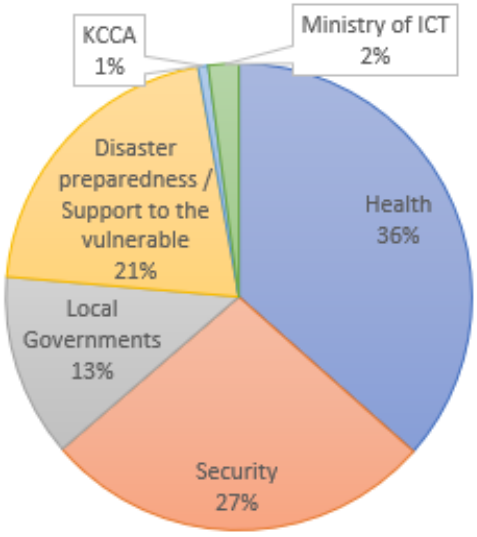
FINANCIAL RESPONSE NARRATIVE

Financing the response is equally as important as planning it and setting up the institutional architecture. This section will review not only the size of the response funds, but the prioritization of these funds and how the funds have been allocated.

Uganda's response to COVID-19 was partially financed through domestic resources and through a recently signed loan. On March 31, 2020, the Ministry of Finance, Planning, and Economics Development requested an additional UGX 284 billion (US$75 million) from Parliament to finance response activities across health, security, local government, Kampala Capital City Authority (KCCA), and disaster and preparedness. These resources were drawn from a recently approved Euro 600 million loan from international banks to provide budget support for FY 2019/2020, as several activities originally projected under Q4 will not be implemented (Parliament of Uganda 2020).[1]

The budget allocation to the health sector was smaller than requested and prioritized treatment. Since the outset of the epidemic, the government adopted a multisectoral response, as the preparedness and response efforts were regarded as a shared responsibility. Out of an initial request from the of UGX 464 billion (US$123 million) request to manage the health response, only UGX 104 billion (US$27 million) was allocated to the health sector for the initial three months of the response (refer to Figure 3) (Parliament of Uganda 2020). These funds for health primarily catered to *recurrent* and *development expenditures* at the referral hospital level. *Recurrent expenditures* were for salaries of contracted staff recruited to strengthen current staffing levels, for allowances for staff used for surveillance, funds for those under quarantine, and provision of blood and medical supplies (e.g., gloves, masks, and sanitizer). *Development expenditures* were for purchasing 38 ambulances personal protective equipment (PPE), ICU beds, ventilators, and oxygen for referral hospitals (Parliament of Uganda 2020). Funding to the districts was disbursed to implement a multisectoral response. The second largest allocation was made to the security sector to conduct surveillance, case detection, and management, as well as to enforce lockdown measures.

Figure 3: Domestic Budget Supplementary Allocation by Area



Source: Parliament of Uganda 2020

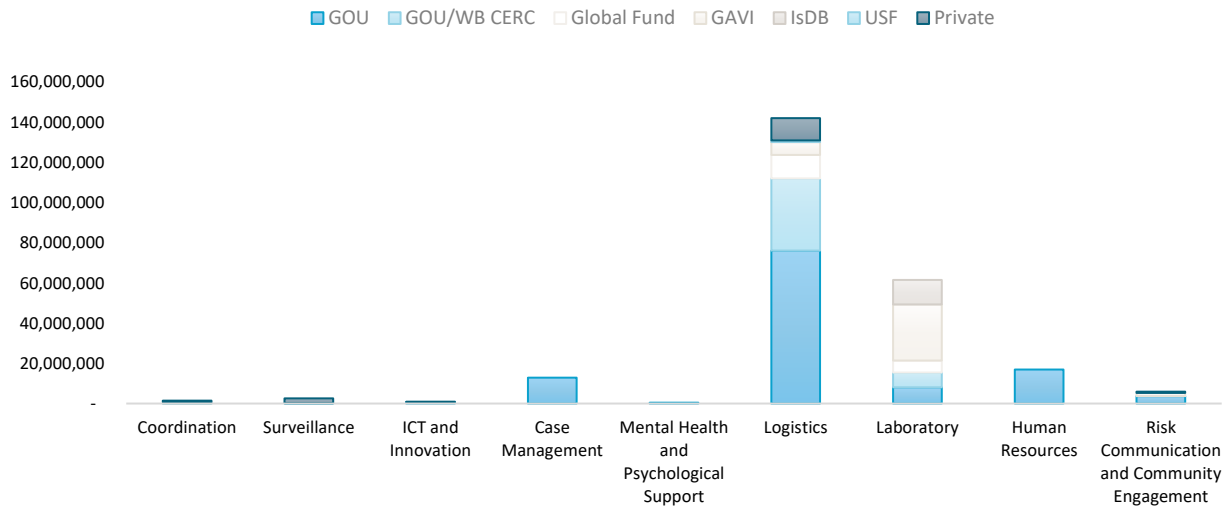
[1] The financial year starts on July 1 and ends on June 30.

Supplementary budgets were allocated to national and regional referral hospitals using a rather prescriptive activity-based approach. Development funding was primarily aimed at scaling up the critical treatment capacity at national and regional referral hospitals. Recurrent funds went to these referral hospitals to conduct specific preventive and responsive activities. This approach to budget formulation may complicate reallocations if they were required by the changing nature of the outbreak. District hospital and lower-level facilities received PPEs and IPC commodities, which were centrally procured.

Supplementary funding provided to the districts was aimed at conducting coordination activities. Each of the 134 districts received an additional UGX 165,530,299 (US$44,385) to provide fuel for cars, set up 20 isolation centers, fund five surveillance teams, ensure coordination by the RDC Secretariat and DHOs, and cover operation expenses. Despite the varying needs, capacities, and risks of COVID-19, districts received the same amount of resources. This could affect the district's capacity to prevent and contain COVID-19 if it spreads extensively at the community level. Districts at the borders and along highways as well as those hosting refugees are especially at greater risk of transmission.

Development partners have provided significant financial and technical assistance to the response. Although it is hard to track the overall donor funding for the response since most of it is provided off-budget in Uganda, the evidence available suggests that there is little coordination of investments across the health sector and with the GoU. In fact, as seen in Figure 4 below, there seems to be donor crowding in logistics and laboratory, while other areas appear to be underfunded. It was not possible to retrieve information on the off-budget allocations.

Figure 4: Development Partners' Funding for COVID-19, by Topic Area



Source: Ministry of Health Uganda 2020b

H.E. the President also established a National Response Fund for COVID-19 to collect private contributions. The purpose of this initiative is to raise UGX 170 billion (US$45 million) to purchase test kits, PPE, and vehicles, as well as provide relief to the most vulnerable. The President himself donated UGX 1.4 million (US$372) per month for six months to the fund and nominated a committee of 15 people to oversee the fund (Office of the Prime Minister 2020).

Apart from the rapid fund release, there have not been any substantial changes in public financial management (PFM) processes. Uganda could potentially leverage the unprecedented need presented by COVID-19 to improve its PFM systems. For example, preventive actions could be taken to improve budget execution rates, especially foreseeing the reduction of activities conducted under certain grants.

Or greater autonomy to ascertain subnational health authorities and frontline providers could be granted during the response to allow for more flexibility to adapt the response to local needs. This experimentation could then be documented and potentially incorporated into the post-COVID health system. This could be an area of improvement as the response proceeds.

Areas for cuts and reallocations were recently identified for the budget of FY 2020/21. Table 2 outlines the proposed sector budget reduction for FY 2020/21. Health and Agriculture had the lowest reduction, having a percentage cut of 5.6% and 3.5%, respectively, while public sector management, and ICT and national guidance received a 74.1% and 50.4% reduction (Government of Uganda 2020).

Table 2: Proposed Sector Budget Reallocations FY 2020/21

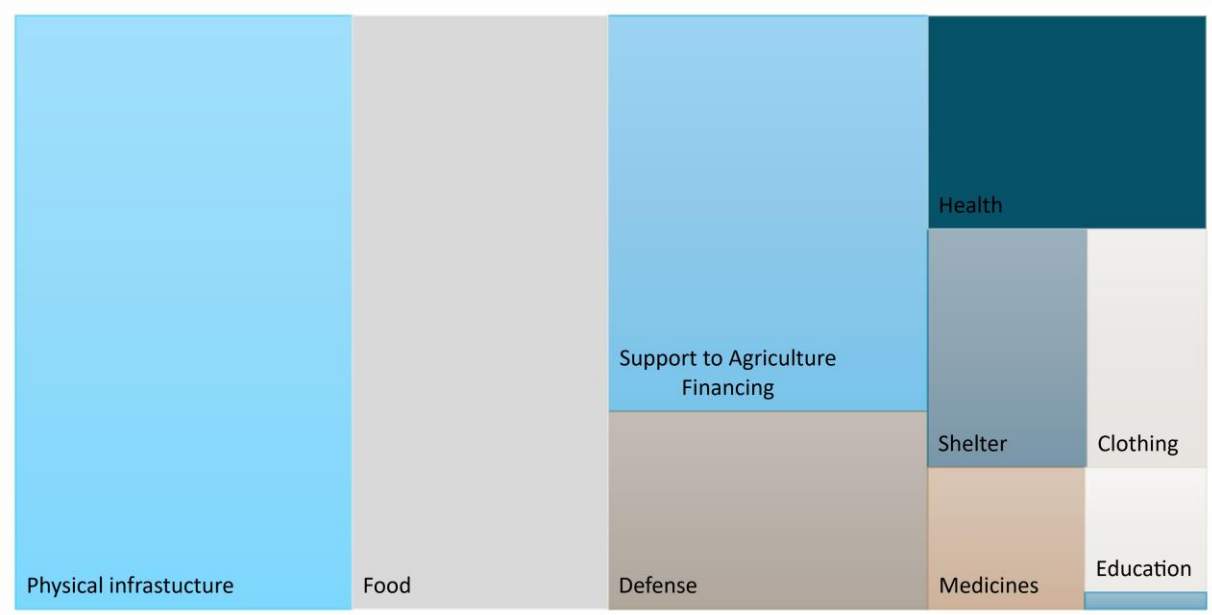
Sector	Draft Budget FY 2020/21 (UGX in billions)	Funds Reallocated (UGX in billions)
Public Sector Management	675.18	340.25
ICT and National Guidance	162.90	120.68
Public Administration	1,321.70	350.57
Accountability	2,106.80	448.76
Trade and Industry	171.80	43.06
Tourism	198.03	30.27
Health	2,772.90	156.15
Science, Technology, and Innovation	264.50	55.66
Works and Transport	5,885.49	259.25
Agriculture	1,317.68	618.73
Water and Environment	1,690.74	1,262
Education	3,514.47	121.64
Lands, Housing, and Urban Development	213.68	202.84
Social Development	172.36	17.85
Energy and Mineral Development	2,631.84	989.62
122 KCCA	500.00	150.83
Total	**23,600.07**	**5,167.95**

Source: COVID-19 Task Force on Food Security Under the Coordination of OWC 2020

As part of the economic recovery stimulus package, the GoU will provide support to nine areas. The proportional allocations are showed in Figure 5. The largest investment is to strengthen the country's

physical infrastructure, specifically, to upgrade waterways, establish a stop hub in the inland port at Tororo, improve data collection, rehabilitate railways, and improve cold storage at the airport. The next largest investment will be made in food systems, aimed at increasing production and ensuring safe food storage. Health and medicines are set to receive smaller investments.

Figure 5: Proportional Investments by Topic in the Latest Economic Stimulus Package (UGX billion)



Source: COVID-19 Task Force on Food Security Under the Coordination of OWC 2020

OPERATIONAL RESPONSE

This section provides a summary of the primary aspects of the operational measures planned in Uganda, from risk communication, testing, and tracing, to isolation and treatment.

RISK COMMUNICATION AND HEALTH PROMOTION

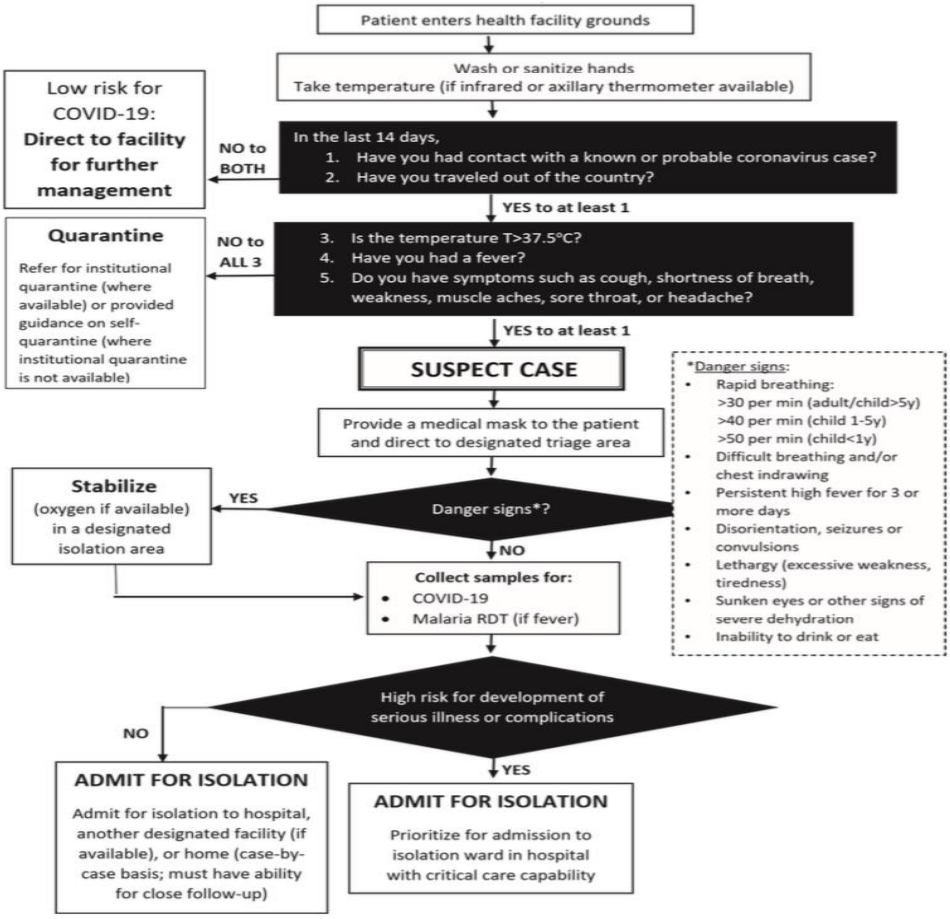
The MOH has stressed the importance of communication for COVID-19 and has shared information via presidential speeches, television and radio broadcasts, posters, and social media. They have also set up a COVID-19 communication resources page ttps://www.health.go.ug/media/, where all these materials are uploaded. This includes information about the risks of the disease and risk-mitigating activities, such as handwashing, social distancing, and mask-wearing.

The MOH published specific guidelines on the use of masks and social distancing. All adults and children above six years must wear masks in public places, especially when social distancing in difficult-to-practice areas. Masks do not need to be worn when practicing physical activities or when alone. The MOH has provided guidance that the minimum two-meter social distancing shall be maintained even when wearing masks (Ministry of Health Uganda 2020d). Guidance was also provided about how homemade masks should be 100% cotton, double layered, and wide enough to cover the nose and mouth. When they are worn out or develop holes, the guidance directs that they be burned or thrown into a pit latrine.

SCREENING AND TESTING

The MOH has developed a flowchart (Figure 6) to guide health workers to handle any patient showing COVID-19 symptoms. Alternatives have been developed if community-based transmission starts and for case detections (i.e., for village health and district surveillance teams).

Figure 6: Health Facility Triage Flowchart



Source: Ministry of Health Uganda 2020d

Aside from testing those entering the country (which has already started), the MOH introduced targeted testing to assess the prevalence of COVID-19 in key communities on April 28, 2020. The GoU initially targeted market vendors, truck drivers and communities along popular routes and border crossing points, religious leaders, the Local Defense Unit, Army officials, and traffic police officers. They were prioritized because they were deemed to be at greater risk given their frequent interaction with people. The first rapid assessment identified only two local cases out of the 20,000 people randomly sampled (Nangonzi 2020). However, the number of cases rapidly increased in late May, rising from 253 to 794 between May 26, 2020, and June 11, 2020 (World Health Organization African Regional Office 2020). In early June, all staff were also tested. Community-based transmission, according to the WHO definition, has not yet been declared in Uganda.

The GoU has made special stipulations for protecting and testing health workers. Health workers are at higher risk of contracting the virus. Therefore, the GoU has stipulated that they be actively screened at the beginning of their shift with temperature measurement and symptom checklist, tested if

symptomatic, and isolated until results have been released. The GoU also provided a budget to purchase PPE to protect health workers at all levels.

While initially test samples were exclusively analyzed at the UVRI, testing is now also being done at the National Public Health Laboratory (NPHL) at Butabika, Tororo General Hospital, Mutukula Point of Entry (PoE), and Makerere University College of Health Sciences Laboratory at Mulago. At PoEs, GeneXpert (a widely used tool for testing) was put in place to ensure truck drivers receive their results before proceeding into the country (Kakwezi 2020). Although current figures are not yet alarming, the GoU is concerned about the potential start of community-based transmission in Uganda, especially given the extent of the epidemic in neighboring Tanzania (Awami 2020).

Testing is financed through a mix of input- and activity-based budgetary allocations. It seems that less operational guidance and financing have been dedicated to testing due to the low number of cases in Uganda thus far. Most likely, significant funding for testing is also provided off-budget by health development partners. Hence, there is limited transparency around the allocations to this critical area of the response. In response, the MOH published a list with the procurement price of test kits they have used for public providers, shown in Table 3. At this time, a similar price list for the procurement of test kits for private providers could not be found.

Table 3*:* Costs of Different Types of COVID-19 Tests for Public Providers

Tests	Unit Price (USD)
Rapid diagnostic tests (RDTs)	5
Antigen test kits	25
Altona PCR kits	25
GeneXpert kits	19.8
ABI tits	17.2
COBAS 6800/8800 kits	18.9

Source: Ministry of Health Uganda 2020d

Every test includes PPE, costing US$2.5. Further requirements for polymerase chain reaction (PCR) tests include sample collection, transportation media, and triple packaging. As of June 2020, the MOH and health development partners had purchased and placed orders for USD$36 million worth of test kits.

CONTACT TRACING

The GoU has released operational guidance on how contact tracing should work in Uganda, but so far there is less information that thoroughly describes the implementation process. Based on the experience in KCCA, it is believed that health partners have been providing extensive support to conduct contact tracing. The information below outlines the operational guidance released thus far on this topic.

The following definition has been developed by the MOH to identify contacts: "Any person who experienced any one of the following exposures during the 2 days before and the 14 days after the onset of symptoms of a probable or confirmed case:

1. Face-to-face contact with a probable or confirmed case within 2 meters and for more than 15 minutes;
2. Direct physical contact with a probable or confirmed case;
3. Direct care for a patient with probable or confirmed COVID-19 disease without using proper personal protective equipment

For confirmed asymptomatic cases, the period of contact is defined as the 2 days before through the 14 days after the date on which the sample was taken which led to confirmation."

The MOH has also developed a COVID-19 Contact Listing Form. The form gathers information on name, surname, sex, age, relation to case, date of last contact with case, and contact type. This includes:

- A person having face-to-face contact or in a closed environment with the COVID-19 case.
- A health worker or a person providing direct care to a COVID-19 case without wearing PPE.
- A person they traveled with in a car/aircraft/bus/taxi sitting within five seats.

ISOLATION AND QUARANTINE

Institutional quarantine has been mandated for all travelers and patients testing positive, notwithstanding the clinical manifestation of symptoms. Given that mild cases may overwhelm health facilities, the need to identify secondary isolation sites within the communities was identified. The following minimum requirements were given to such locations:

- Proximity to a health facility with readily available transport
- Ability to monitor case progression, that is, human resources in a recommended ratio of one health team (a nurse and nursing aid) to every 100 patients
- Transport plan in case of disease progression
- Access to running water, toilets, and bathrooms
- Provision of food
- Security personnel
- Psychosocial support for the patients

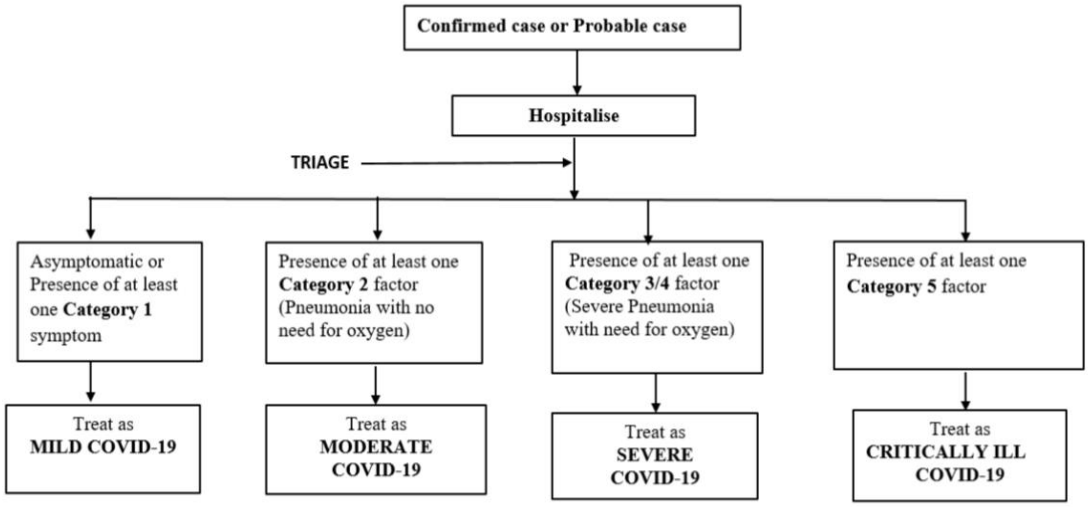
Porous borders create further difficulties for disease containment efforts. Concerns have been raised about unofficial infiltrations in the country, which puts border districts at even greater disease containment risk. The influx of South Sudanese refugees has continued in Uganda despite the border closure, posing unique challenges to disease containment efforts. As mentioned in the background, Uganda is one of the highest recipients of refugees in the world, with refugees in 12 districts of the country. In line with GoU guidelines, quarantine measures have been put in place at all PoEs, including refugee arrival centers. There have been accounts of severe overcrowding in the quarantine centers in Yumbe, Obongi, and Moyo districts, where even early childhood centers have been turned into quarantine centers. This poses serious risks for the spread of the virus through these densely packed centers and to the population beyond if there is leakage.

TREATMENT STRATEGY

Most of the domestic financing in Uganda has been channeled toward strengthening the health system's very low capacity to treat severe cases. This was evident in the priorities of the government, as most funds dedicated to health were allocated to national and regional referral hospitals. However**,** building up the system's capacity to effectively treat COVID-19 patients is a significant challenge. According to an assessment conducted in late 2019, there are only 55 ICUs in the country, the majority of which are located in the Central Region.

Currently, there is no therapeutic treatment with proven effectiveness for COVID-19. Treatment is mainly supportive, and patients should at minimum have frequent monitoring to evaluate disease progression. The latest clinical guidelines recommend the use of hydroxychloroquine and existing adjunctive therapeutics with potential antioxidant, anti-inflammatory, and immune-modularity effects. Figure 7 outlines the clinical management flowchart for confirmed COVID-19 cases.

Figure 7: Clinical Management of Confirmed COVID-19 Patients



Source: Ministry of Health Uganda 2020d

Different criteria have been developed for patients' discharge. Table 4 outlines the procedures to be followed according to case severity. Isolation continues if any PCR test is positive. One week after discharge, patients should be followed up by phone.

Table 4. Discharge Criteria for COVID-19 Infection

Category	Time to perform Discharge PCR 1	Time to perform Discharge PCR 2	Action required
Asymptomatic Cases	At **14 days** after initial confirmed laboratory tests	**24-72** hours after Discharge PCR1	Discharge if both tests are negative
Mild Symptomatic Cases	At **14 days** after symptom onset	**24-72** hours after Discharge PCR1	Discharge if both tests are negative
Severe Symptomatic Cases	1. At **14 days** after symptoms onset **AND** 2. Patient has been fever free for 72 hours (without antipyretics). 3. Patient's respiratory symptoms have markedly improved.	**24-72** hours after Discharge PCR1	Discharge if both tests are negative **PLUS** Patient is fever free for 72 hours (without antipyretics). Patient's respiratory symptoms have markedly improved.

Source: Schmidt-Sane et al. 2020

CONTINUITY OF ESSENTIAL SERVICES

The MOH published guidelines on Continuity of Essential Health Services. A series of health services were prioritized based on the primary health care package. Furthermore, a program criticality matrix identifying services to continue and discontinue was developed in four different scenarios (no COVID-19 cases, sporadic cases, clusters of cases, and community transmission).

Immediate actions to reorganize and maintain access to essential high-quality services were identified. These include:

- Orientation of health facility personnel, dissemination of information on critical services, services continuity, and health-seeking behaviors to the public.
- Ensuring triage and screening of patients upon arrival at facilities.
- Establishment of mechanisms for isolation of suspected and confirmed COVID-19 cases and referral of those presenting severe symptoms.
- Enhancing IPC and applying stringent standard precautions to ensure continuity of essential services and protect health workers.
- Establishment of mechanisms to maintain availability of essential medications, equipment, and supplies.
- Redistribution of health workers' capacity, including re-assignment and task sharing.
- Ensuring continuity of care through the optimization of community health platforms and linkages to static points of care.

Data on 13 HMIS indicators will be used to monitor access to essential services.

IMPLEMENTATION OF THE OPERATIONAL RESPONSE

The MOH national-level staff has been extensively involved in the implementation of the response. Several field visits were conducted to regional referral hospitals to supervise the establishment of isolation wards and testing facilities. Several wards were identified for repurposing as part of the response activities.

Government facilities have been at the center of the preparedness efforts. Domestic resources were initially channeled only to public facilities, largely to national and regional referral hospitals, which were expected to play a central role in the disease response, specifically for the treatment of mild to severe cases. While initially the cost of quarantine was borne by individuals entering the country, the GoU is now taking charge of all the costs related to quarantine and isolation.

A clear private sector role was not articulated during the initial phases of the COVID-19 crisis response. The private sector is continuously engaged through their representation on the Health Policy Advisory Committee (HPAC) and the Public-Private Partnership in Health technical working group (PPP/H TWG). However, these pre-existing private sector engagement frameworks are weak and led private not-for-profit hospitals to decline the offer to operate as COVID-19 centers due to earlier challenges engaging with the MOH as a health purchaser. As a result, the private sector organized themselves and initiated data collection on resource availability across private facilities. Subsequently, a constructive dialogue between the MOH and the Uganda Healthcare Federation (UHF) was initiated, and representatives from the private sector started to join the NTF.

UNINTENTIONAL IMPACT OF THE COVID-19 RESPONSE

Despite lockdown measures being pivotal to slow down disease transmission and scale up response capacity, questions have emerged about the right balance between these measures and the impact on routine services and economic well-being.

Evidence indicates that there have already been secondary health effects since the advent of COVID-19 that require monitoring. As fewer people feel comfortable accessing routine services at facilities where COVID-19 patients may be treated, use of key health services has already declined in Uganda. Retrospective analysis by UNICEF of District Health Information System (DHIS2) between February and March 2020 showed there was a decline in individuals testing for HIV (16%), linkage to HIV care (20%), antenatal care (ANC) visits, (14%), and facility-based deliveries (6%), and an increase in deliveries by cesarean section (4%), neonatal deaths (7%), perinatal deaths (9%), maternal deaths (43%), and GBV cases (6%) (UNICEF 2020). Due to these declining use numbers, budget execution rates for these services are expected to be lower compared to previous years. Although it is not possible to attribute this trend exclusively to COVID-19, the data are concerning. It is therefore critical to continue monitoring health indicators and use this information for future activity-based budget allocations. Care needs to be taken not to reverse the gains made in recent years in areas such as family planning, maternal and newborn health, and HIV/AIDS.

The MOH acknowledged that the emphasis on its COVID-19 response may result in other routine essential services being underdelivered. Therefore, a coordination mechanism chaired by the Director of Clinical Services was established to ensure continuity of essential services. Moreover, the *Guidelines for Continuity of Essential Services during the COVID-19 Outbreak* were developed to support the work of DHOs, hospital directors, and health facility managers. The recently published guidelines identify a series of interventions that can either be continued or discontinued depending on the three transmission scenarios. Successes and challenges related to implementation of the guidelines will need to be assessed to inform future health services provision.

The GoU recognized in late March that the lockdown would have a severe negative impact on household earnings, especially the urban poor, who depend on daily income in the informal sector. Therefore, on March 31, a request for UGX 59.4 billion (US$15 million) was presented to provide food for 2 million poor people living in urban centers. The approach differs from cash transfers, which have been promoted by many global agencies and countries as the most effective mechanism to expand access to health and other social services.

While the distribution of food has undoubtedly been vital to help some Ugandans, the demand for assistance outstrips supply. The sudden food price increase is having a severe impact on the lives of the urban poor. Peri-urban and rural poor are also affected by the transport restrictions and struggle to find food (Nayiga et al. 2020). The effect is particularly pronounced for people living along the border with the DRC. These borders are normally open and fluid, but now people are unable to reach their farms on either side where they work (Baluku et al. 2020).

As social and economic tensions get worse, the GoU will face even greater challenges in ensuring adherence to infection prevention and control practices. This is a particular concern in the districts bordering DRC, where people already showed limited trust in the GoU's efforts to prevent the spread of Ebola in 2018. Thus, it is crucial that systems are adequately built up before community transmission occurs to ensure that it can deal with any viral spread.

DISCUSSION AND RECOMMENDATIONS

Since mid-March, the GoU has responded swiftly and strongly with a series of measures to prevent and minimize the risk of COVID-19 spread in Uganda. These included rapid lockdown measures, setting up institutional arrangements based on responses to previous outbreaks such as Ebola, quickly sourcing and allocating funds to the response, and developing operational guidance across its six priority pillars. While this response kept cases and transmission of the virus to a minimum thus far, there are a few

areas in the response that could be exposed if the virus spreads to community transmission, as it has been quickening pace since mid-May.

The first potential challenge is that the governance of the COVID-19 response has been centralized at the national level, putting pressure on existing systems at the top. This approach, which is comparable to how Uganda managed the Ebola crisis, seems most appropriate for the early stage of containment. However, as the outbreak progresses and the risk of community-based transmission increases, it is important to note the different nature of this virus and adapt the response as the trajectory of the disease changes. COVID-19 spreads in a much more dynamic way than Ebola; the virus can spread via asymptomatic cases and exhibits a much lower-case fatality rate. Moreover, lockdown measures may not be sustainable in the long term. Therefore, a key question remains about how the GoU will adapt its response to increase testing, identify and isolate cases, and then provide treatment. This will likely require a more pointed GoU financing, as well as ramping up implementation to a wider, decentralized scale.

The bulk of GoU financing for the response has concentrated on strengthening the capacity of referral hospitals to treat critical COVID-19 cases. Initially, there was an urgent need to scale up the intensive care treatment capacity because the existing capacity was not enough to absorb the expected patient caseload. However, the disease trend in Uganda, where only mild cases and preliminary evidence from other countries have been reported to date, indicate that only 5% of COVID-19 patients require ventilation and 15% needed oxygen therapy (Wu and McGoogan 2020). Therefore, it could be beneficial for the GoU to consider investing more in their PHC systems to bolster their testing and tracing capacity as well. Strengthening basic emergency care and IPC may not only result in a more effective approach in curbing COVID-19, but these investments could reinforce the health system and its goals of universal access to basic essential services moving beyond the pandemic. Additionally, budget allocations could be amended in a way to empower subnational authorities and these frontline providers levels to respond to their needs on the ground.

Preliminary evidence suggests that donor funding has been provided outside of public budgets and is not aligned with GoU priorities. There could be more focus on ways to help donors align and channel their resources through certain GoU processes to reduce duplication of efforts. Institutional arrangements between public and external agencies around financing could be experimented with during this crisis, which in turn can be learned from and potentially adopted in post-COVID Uganda. External funds comprise a hefty proportion of health spending in Uganda and are not likely to change any time soon. Perhaps this response can thus provide an implicit testing of these methods.

On the operational level, the MOH has released a series of documents to guide both the prevention and containment efforts. The actions outlined, despite being highly comprehensive, could be contextualized and prioritized based on their relevance and the Ugandan system's capacity. Once this is done, the roles and responsibilities could be assigned across system actors at the national, district, and community levels. Guidelines should be regularly updated as new evidence is published and the nature of the outbreak in Uganda evolves.

At the provider level, COVID-19 has severely disrupted the continuity of essential services. The unique nature of the crisis could require a unique response. Service delivery may need to be reconfigured to counteract the changes in health-seeking behavior through outreach, telemedicine, and home-based delivery of such services as family planning methods, ANC, postnatal care, and immunizations.

The COVID-19 crisis could provide a window of opportunity for the GoU to leverage the untapped capacity of the private sector to provide essential and COVID-related services, as they are a significant source for those who live in Ugandan cities. For example, the COVID-19 response provides an

opportunity to lay the foundations to establish *hub and spoke* mechanisms to optimize service delivery pathways (Pattnaik et al. 2020). Private providers could also be contracted to deliver services directly to households, patching the gap of continuity of essential services.

More communication to and involvement of the community in the response could be key to increase adherence to prevention strategies and build trust. Open and clear communication through various mechanisms on activities the community can control, such as handwashing, mask-wearing, and social distancing, is essential. The relatively low case fatality rate of COVID-19, at least compared to Ebola, poses challenges to adherence. Community engagement could be further enhanced via the support of local council members to make sure that community concerns are considered in the implementation of the response strategy and that they improve adherence to guidelines.

Vulnerable populations are at greater risk to suffer both direct and secondary consequences of the response to the COVID-19 crisis. On top of implementing several social assistance programs (e.g., cash transfers), the GoU and development partners can work together to implement strategies that shield the most at-risk populations, especially in refugee settings and where social distancing is harder to practice. Effective and realistic strategies can only be implemented through the active engagement of community members. Different approaches could be required across the country, depending on the makeup of that jurisdiction.

The international dimension of the crisis and current transmission routes, primarily linked to truck drivers traveling across the East Africa Community, calls for a regional response. Cross-border collaboration is needed to improve contact tracing as well as the living conditions of truck drivers stuck for days at the over-crowded border points that seem to have optimal conditions for disease transmission. The Kenyan president, ***H.E.*** Kenyatta already proposed testing truck drivers at the respective points of origin twice a month in Uganda, Rwanda, Kenya, Tanzania, DRC, and South Sudan to avoid delays at the border points. Greater cross-country transparency, collaboration, and trust are paramount to implement this approach.

The initial measures the GoU has taken to respond to COVID-19 have been strong, rapid, and effective. The authorities could consider the recommendations above to make the response even more robust and adapt it as the virus evolves in its spread within and across Uganda's borders. The GoU will naturally play a prominent coordination and technical role to guide the response to the crisis, but health development partners also share the responsibility to align their substantial response activities and financial investments. The GoU has responded strongly and effectively in these fluid times of crisis. With some of these adaptations, the GoU can keep COVID-19 at bay, while at the same time bolstering its health system to be more resilient to future pandemics.

LIMITATIONS

The study was developed based only on a limited set of information. Given the acute nature of the crisis, it was not possible to conduct key informant interviews to gather more in-depth information on the response and informant assessments of the response strengths and weaknesses.

This report represents a preliminary review of the initial response. Future adaptations and changes in the response as the virus proceeds will also be documented, and feedback will be received. This document, however, aims to capture what has happened thus far in Uganda's immediate response.

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