

BUILDING RESILIENCE

*COVID-19 IMPACT & RESPONSE IN URBAN AREAS -
CASE OF KENYA & UGANDA*



DECEMBER 2020



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I. INTRODUCTION

The COVID-19 (C19) pandemic is evolving rapidly, both globally and in Africa. Case numbers are increasing across the globe, and the outlook remains uncertain at the time of writing (November 2020). In Africa, many governments took decisive actions early-on to contain the spread of C19, while making concerted efforts to improve healthcare capacity and sustain the economy and livelihoods. Governments have had to adapt their responses as the disease situation continues to evolve.

To date, significant impacts on health systems and economy have been observed across African countries, including in densely-populated urban areas. This underscores the need to strengthen pandemic resilience in many African cities in order to mount a robust response against the evolving C19 pandemic, while also preparing for potential disease outbreaks and economic shocks in the future.


As a longstanding development partner of African governments, the Japan International Cooperation Agency (JICA) aimed to establish a fact base for Kenya and Uganda that is sufficiently granular

and up-to-date for supporting data-informed decision-making by policymakers involved in the C19 response. Findings from this research will allow various stakeholders including governments, private sector players, non-profit organizations and development partners (including JICA itself), to understand the on-ground situation in Kenya and Uganda, thereby informing where attention may be well placed.

This paper shares those key findings across the following dimensions, based on a range of primary and secondary research conducted from September 2020 to November 2020 in Kenya and Uganda. Where relevant, dates are shown for when the data was collected or accessed, with the latest date being 23 November 2020.

- C19 disease progression
- Government policies
- Healthcare capacity
- Economic impact including on the informal sector
- Trade and logistics impact
- Impact on consumer sentiment and behaviour

INTRODUCTION



EXECUTIVE SUMMARY

II. EXECUTIVE SUMMARY

The COVID-19 (C19) pandemic continues to evolve rapidly, and the outlook remains uncertain both globally and in Africa as of 23 November 2020

At the time of writing, the disease has spread to nearly every country in the world with approximately 60 million cases and 1.4 million deaths confirmed globally, of which approximately 2 million cases (~3% of total) and 50,000 deaths (~4% of total) have been reported in Africa (~17% of total global population).^{1,2}

Testing levels vary significantly across African countries, but tend to be lower compared to other regions of the world, which obfuscates the true prevalence of C19

Limited testing capacity may have played a role in the relatively fewer cases per capita reported in Kenya and Uganda versus in other parts of the world. However, since October, the daily case count and case positivity rates have risen sharply in both Kenya and Uganda,³ and have yet to flatten out at the time of writing.

Encouragingly, mortality rates in both countries tend to be well below the global average

At this stage, no definitive research has been published on Africa's C19 mortality rates. However, demographics are a leading hypothesis, as ~75% of C19 deaths globally are of individuals over the age

of 65, and only ~2% of Kenyans and Ugandans are in this age range.⁴

While the disease outlook is indeterminate, C19 has unquestionably impacted urban areas in Kenya and Uganda, with regards to healthcare systems, economy, trade and logistics, as well as everyday consumer sentiment and behaviour.

Both the Kenyan and Ugandan governments took swift action shortly after the first case of C19 was confirmed in East Africa

After the first case was confirmed in the region on 12 March 2020, the governments of Kenya and Uganda announced a stringent set of Non-Pharmaceutical Interventions (NPIs) and healthcare policies to try to contain the virus, and delay its spread while preparing the healthcare system.⁵

Kenya's announced NPIs had a stringency index of approximately 76 (on a scale of 100) at 20 days after the first confirmed C19 case, while Uganda's was approximately 90 including a shelter-in-place lockdown and ban on public transport.⁶ These measures appear to have played a key role in keeping cases relatively low for several months in the early stages of the pandemic, but restrictions have been eased since July 2020.

¹ Johns Hopkins University. 2020. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer; [Accessed 4 November 2020].

² Mwai, P. 2020. 'Coronavirus; What's happening to the numbers in Africa?'. BBC. Retrieved from <https://www.bbc.com/news/world-africa-53181555> [Accessed 4 November 2020].

³ Roser, M., et al. 2020. 'Coronavirus Pandemic (COVID-19)'. Retrieved from <https://ourworldindata.org/coronavirus#licence> [Accessed 4 November 2020].

⁴ World Health Organization. 2020. 'WHO Coronavirus Disease (COVID-19) Dashboard.' Retrieved from <https://covid19.who.int/>; United Nations. 2020. '2019 Revision of World Population Prospects.' Retrieved from <https://population.un.org/wpp/> [Accessed November 2020].

⁵ Gubash, C. 2020. First cases reported in East Africa. NBC News. Retrieved from <https://www.nbcnews.com/health/health-news/live-blog/coronavirus-updates-live-dow-plunges-white-house-grapples-spreading-crisis-n1157551/ncrd1157691#blogHeader> [Accessed 13 March 2020].

⁶ Hale, T., et al. 2020. Oxford COVID-19 Government Response Tracker, Blavatnik School of Government. Retrieved from <https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker> [Accessed 4 November 2020].

Both countries announced healthcare policies aimed at optimising healthcare supply (i.e. Kenya mandated 300 ICU beds per county),⁷ and demand (i.e. free testing in densely-populated areas in Nairobi at mobile testing stations).⁸ However, new policies take time to implement, and the baseline health system is foundational to a country's ability to mount a robust pandemic response in a short period of time.

The onset of C19 highlighted persistent challenges facing the Kenyan and Ugandan healthcare systems

In both countries, limitations in the healthcare workforce (i.e. 0.03 and 0.06 lab technicians per 1000 population in Kenya and Uganda respectively versus the world average of 0.28),⁹ and healthcare infrastructure (21 and 9 laboratories capable of performing PCR testing along with 518 and 55 ICU beds in Kenya and Uganda respectively),¹⁰ constrain the immediate C19 response. This is exacerbated by a reliance on imported medical supplies (i.e. local manufacturers produce only ~25–30% of pharmaceuticals and less than ~10% of medical supplies consumed)¹¹, inconsistent public funding and ineffective health information systems.

Despite these pre-existing challenges, governments, private sector players and development partners have made concerted efforts to respond to C19, such as creating an accreditation process for laboratories to test for C19, and reducing turnaround time to approve local manufacturers of PPE. Although testing capacity has improved in both countries owing

to measures taken by the governments, at this stage it is unclear whether treatment capacity was increased sufficiently in the initial stages of the pandemic. Further research in the future will be needed to assess the relative success of initial measures taken in both countries.

Strengthening health systems requires a holistic, longer-term approach, particularly as these challenges impact not only the effective testing and management of C19 patients, but also other healthcare outcomes

HIV/AIDS, respiratory infections, maternal and child health-related conditions, and cardiovascular diseases are the main contributors to disease burden and mortality in both Kenya and Uganda.

Hard-earned gains for these diseases may be at risk, with countries allocating limited resources for a potential C19 outbreak scenario, and non-C19 patients changing health-seeking behaviour. The latter has already been observed. For example, ~62% of surveyed urban consumers in Kenya and Uganda who required regular or viral disease treatment reported reduced visits to health facilities since March 2020. Consumers reported that this was primarily due to fear of contracting C19 and improved health compared to the previous six months. In addition, policies that hinder access (i.e. no public transport to facilities, facilities encouraged to cancel or delay elective procedures), and reduced income (i.e. job loss from C19) have also contributed to this.

These findings are consistent with those from other reports, with the World Food Programme recording increased cases of child malnutrition in Kenya attributable to a reduction in health-seeking behaviour, and UNAIDS finding reduced testing for HIV/AIDS across sub-Saharan Africa between April and August 2020.¹²

C19 has already had significant impact on the Kenyan and Ugandan economies across various dimensions. While impact is felt across the board, its magnitude differs, with some sectors such as tourism and informal businesses getting relatively harder hit

Despite announcing emergency economic measures to cushion businesses and households (i.e. as of June 2020, announced stimulus packages are equivalent to ~0.6% and ~1.1% of GDP in Kenya and Uganda respectively), significant impact can be observed across several macroeconomic dimensions in both countries. For example, in October, the International Monetary Fund (IMF) revised its 2020 projection of real GDP growth rate from +6.0% down to +1.0% in Kenya, and from +6.2% to -0.3% in Uganda. Employment is severely affected too. In Kenya, the unemployment rate has doubled from ~5.2% to ~10.4% between the first and second quarters of 2020 with those aged 20-29 most affected. Greenfield FDI (Foreign Direct Investment) is much lower than in previous years, with a reported ~85% decrease in January - September 2020 compared to the average of the last five years for the same period in Kenya.

No Greenfield FDI was reported in Uganda in 2020 in January - September. The Kenyan shilling has seen record lows during 2020. Encouragingly, the Ugandan shilling has largely maintained its value at the time of writing. In addition, the informal sector which contributes ~34% and ~50% to Kenyan and Ugandan GDPs respectively, as well as the plurality of jobs, has been particularly hard hit with ~94% and ~86% of informal sector businesses in Nairobi and Kampala experiencing declines in revenue.¹³

While C19 negatively impacted exports of services in East Africa (e.g. tourism and transportation sectors), overall trade impact on goods has not been as significant as some models initially predicted¹⁴

Exports of services such as in the tourism and transportation sectors remain heavily impacted,¹⁵ while exports of some goods have been more resilient. For example, the Kenyan tea export volume has increased by approximately 12% year-on-year between September 2019 and September 2020, partially owing to increased global demand for tea (driven by home consumption), and supply chain disruptions caused by C19 in India, a leading exporter of the good. Ugandan gold exports have also increased in value year-on-year, partially owing to the higher global demand for gold with an approximate 26% increase in the price of gold between January and August 2020.¹⁶ These factors underscore the complexity of global supply chains, which continue to adapt to the evolving C19 situation and government policies.

⁷ Ratner, B. 2020. 'Kenya COVID-19 hospital gears up for surge in new infections.' Reuters. Retrieved from : <https://www.reuters.com/article/us-health-coronavirus-kenya-hospital-idUSKCN24P00M> [24 July 2020].

⁸ Ombur, R. 2020. 'Low turnout as Kenya offers free testing in feared Coronavirus hotspots'. Voice of America. Retrieved from <https://www.voanews.com/covid-19-pandemic/low-turnout-kenya-offers-free-testing-feared-coronavirus-hotspots> [4 May 2020].

⁹ World Health Organization. 2020. World Health Data Platform. Retrieved from <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/4549> [Accessed October 2020].

¹⁰ Ibid.

¹¹ Banga, K., et al. 2020. 'Africa trade and COVID-19: the supply chain dimension.' African Trade Policy Centre working paper 586. Retrieved from https://www.odi.org/sites/odi.org.uk/files/resource-documents/africa_trade_covid-19_web_1.pdf [August 2020].

¹² World Food Programme. 2020. 'WFP Global Response to COVID-19: September 2020.' [Retrieved from <https://docs.wfp.org/api/documents/WFP-0000119380/download/> [29 September 2020]; UNAIDS. 2020. 'COVID-19 impacting HIV testing in most countries'. Retrieved from https://www.unaids.org/en/resources/presscentre/featurestories/2020/october/20201013_covid19-impacting-hiv-testing-in-most-countries [13 October 2020].

¹³ JICA-BCG Nairobi (n=308) and Kampala (n=303), Informal Sector Survey, 19 October - 4 November 2020; Nairobi.

¹⁴ United Nations Trade Statistics. 2020. UN Comtrade database. Retrieved from <https://comtrade.un.org/> [Accessed October 2020].

¹⁵ Ibid.; World Trade Organization. Retrieved from https://docs.wto.org/dol2fe/Pages/FE_Search/FE_S_S005.aspx [Accessed October 2020].

¹⁶ Kenya Bureau of Statistics. 2020. Leading economic indicators. Retrieved from https://www.knbs.or.ke/?page_id=1591 [Accessed October 2020]; The Economist Intelligence Unit. 2020. 'Africa July update: modest rebound with heavy baggage'. Retrieved from <https://www.eiu.com/n/africa-july-update-modest-rebound-with-heavy-baggage/> [22 July 2020].

C19 has impacted the lives of urban consumers¹⁷ across various dimensions in Kenya and Uganda; many have had to adapt to the 'new reality', catalysing shifts in consumer sentiment and behaviour that may outlast the immediate crisis

C19 has impacted the lives of urban consumers in Kenya and Uganda across various dimensions including household income, health and wellness, mobility and digital adoption and many have had to adapt to changing circumstances.

- **Household financial strain:** Most surveyed urban consumers reported experiencing a decline in household income (~70% in Kenya and ~84% in Uganda), with ~47% in Kenya and ~67% in Uganda experiencing a decline of more than 50% of their income. This was primarily driven by job losses (with ~45% in Kenya and ~48% in Uganda losing their jobs), and reduced salary for those employed
- **Health and wellness:** ~28% of Kenyans and ~27% of Ugandans are unwilling to be tested for C19. Unwillingness has largely been driven by credibility concerns in Kenya (~38%) and affordability constraints in Uganda (~30%). In both countries, adherence to preventive measures has begun to waver, driven by reduced fear of the virus. Also, access to water has deteriorated during the pandemic with ~33% of Kenyan and ~25% of Ugandan urban consumers reporting significant disruption in water supply or higher cost of water
- **Mobility:** In urban areas in both countries, significant reduction in overall movement of people was observed for the first few months due to C19. For example, in April,

the movement from home to transit station declined by ~45% and ~82% in Kenya and Uganda respectively compared to pre-C19 baselines.¹⁸ Despite fears of contracting the virus, only ~33% of Kenyans and ~22% of Ugandans reported adopting new modes of transport, primarily due to affordability

- **Digital adoption:** Internet adoption across activities has increased in both countries with education (~66% in Kenya and ~52% in Uganda) and remote work (~62% in Kenya and ~55% in Uganda) driving increased use. However, lower income urban consumers are less likely to increase usage due to financial strain under C19

Encouragingly, many innovative solutions and multi-sectoral partnerships have emerged in response to C19 and may contribute to pandemic resilience in Kenya and Uganda going forward

One selected example in Kenya is Wheels for Life, a service launched for pregnant women to access free transport to health facilities during curfew hours. It was implemented as a joint effort between the Ministry of Health, private healthcare providers in Kenya, and technology companies such as TeleSky (digital call centre), Bolt (ride sharing), and Flare (emergency response dispatching), to ensure maternal health outcomes are not compromised.

In Uganda, an e-commerce platform to connect market vendors with consumers created by SafeBoda (motorbike ride sharing) and the United Nations Capital Development Fund was developed and implemented. Orders are placed on the SafeBoda app, paid using a mobile wallet feature, and then delivered to end-users.

Deliveries included groceries as well as medical goods after the National Drug Authority (NDA) joined this partnership.

Based on these findings and with the C19 situation continuing to evolve, four priorities emerge for policymakers and their partners in Kenya and Uganda to consider regarding response and recovery planning:

1. Accelerate health system strengthening:

Apply a holistic approach to strengthen health systems, building on them as the foundation for pandemic resilience. This includes capacity development for healthcare workers, progress towards universal health coverage, optimisation of supply chains, improved information management, and other areas that are important for both the ongoing management of high-burden diseases, and immediate outbreak response

2. Build resilience for vulnerable populations:

Make concerted efforts across various stakeholders to empower the most vulnerable populations by linking them with innovative solutions (e.g. onboarding to online marketplaces, improving financial access through data-driven risk assessment, improving access to safe water and sanitation, etc.)

3. Scale up high-potential homegrown solutions:

Create a platform to accelerate the development and adoption of innovative homegrown solutions in Africa. Emerging in response to C19, some of these solutions have the potential to generate sustainable at-scale impact if sufficiently supported (e.g. provide technical and financial support, match to strategic partners, etc.)

4. Take East African Community (EAC) regional harmonization to the next level:

Strengthen emergency response coordination mechanisms based on key learnings from C19 response, especially around cross-border movement of people and goods (e.g. early detection of potential disruption, data-driven collective decision-making, joint resource mobilisation, etc.)

¹⁷ JICA-BCG Kampala, Uganda Consumer Survey, 18 October - 7 November 2020; JICA-BCG Nairobi & Mombasa, Kenya Consumer Survey, 16 October - 5 November 2020.

¹⁸ Google Mobility

III. DISEASE PROGRESSION

Key takeaways

- Testing levels remain below each country's theoretical daily capacity and below global testing levels, which obfuscates the true prevalence of COVID-19
- While Kenya and Uganda have reported fewer cases per capita versus other parts of the world, case positivity rates are on a sharp rise at the time of writing in both countries
- Mortality rates remain well below the global average; while definitive research is yet to be published on why, demographics continue to be a leading hypothesis
- Overall, disease progression remains highly dynamic, and close monitoring through consistent and high testing levels is important

Methodology

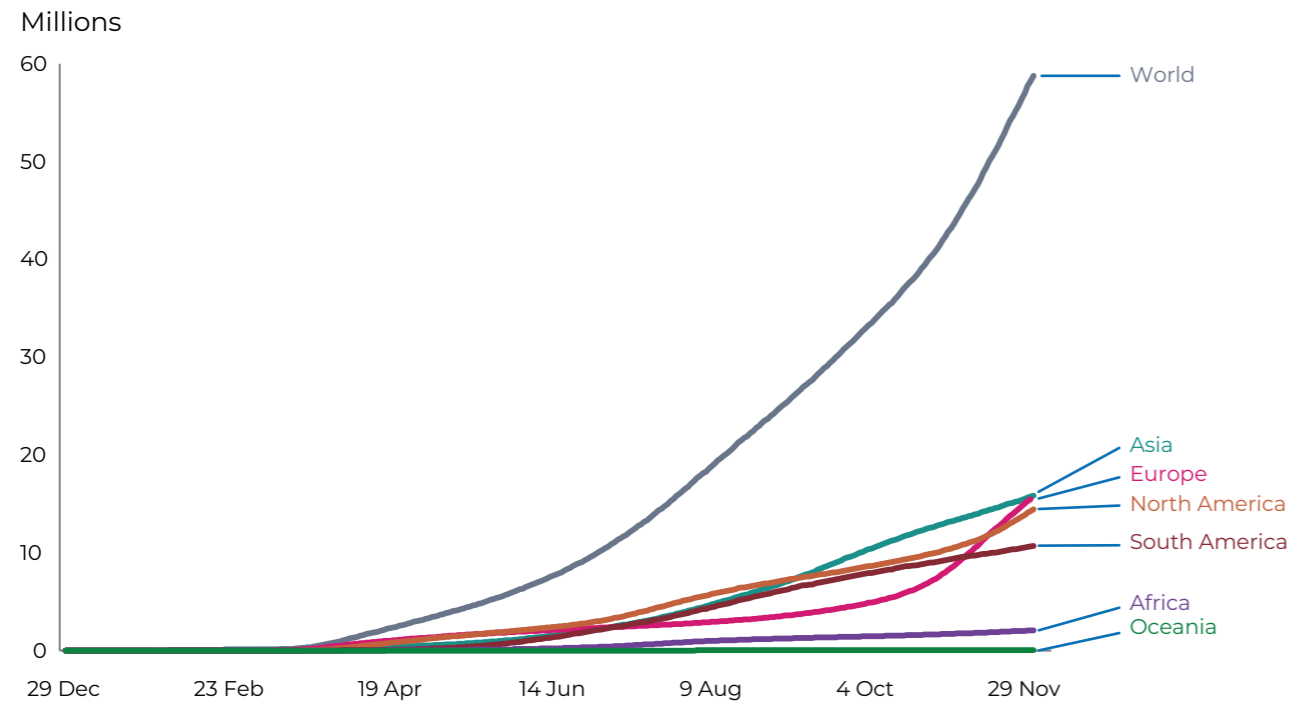
- Leveraged public databases on cases, testing, and mortality data from John Hopkins University, Our World in Data and Worldometer that are typically updated daily
- Triangulated with secondary research from government websites (i.e. press releases) and social media channels (typically updated daily)
- Supplemented with expert interviews with government officials, technical experts, healthcare providers and relevant private sector leaders



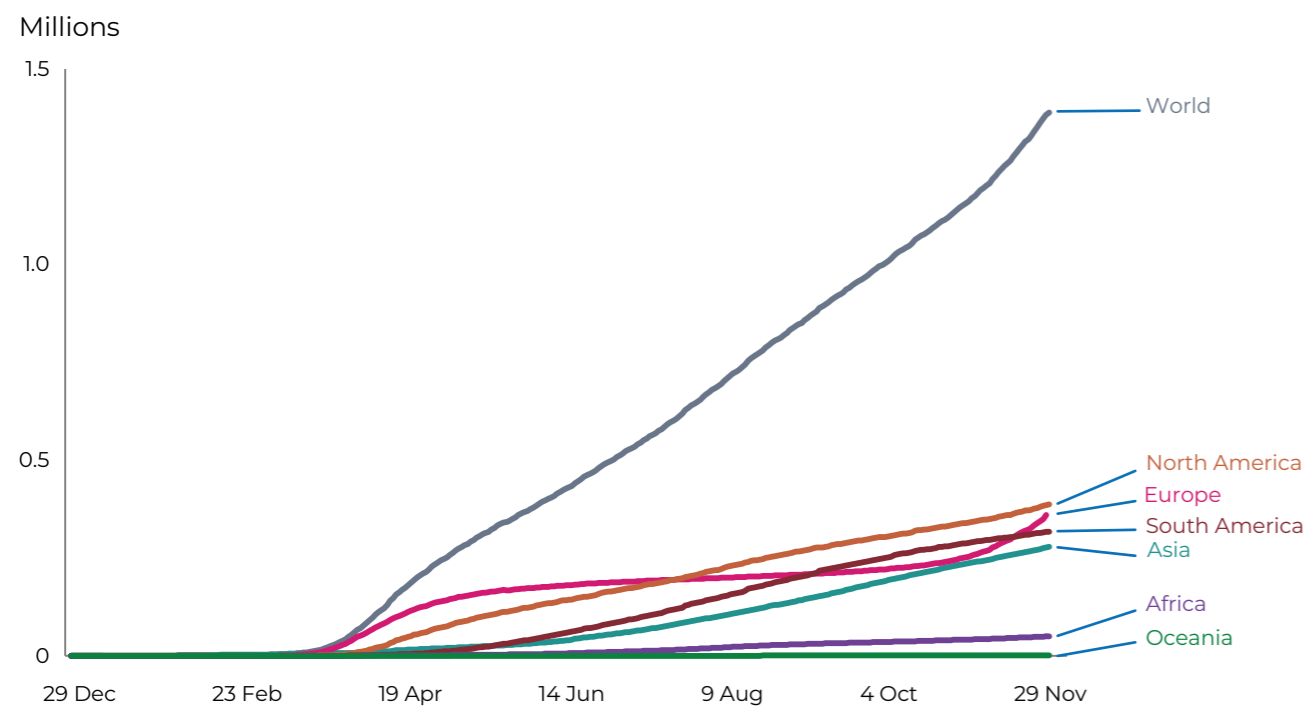
DISEASE PROGRESSION

EXHIBIT 1: TOTAL C19 CASES AND DEATHS BY REGION

Cumulative confirmed C19 cases



Cumulative confirmed C19 deaths



Source: Johns Hopkins University 2020. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer [Accessed 23 November 2020].



Disease progression in Kenya and Uganda

The COVID-19 (C19) pandemic continues to evolve rapidly, and the outlook remains uncertain both globally and in Africa as of 23 November 2020

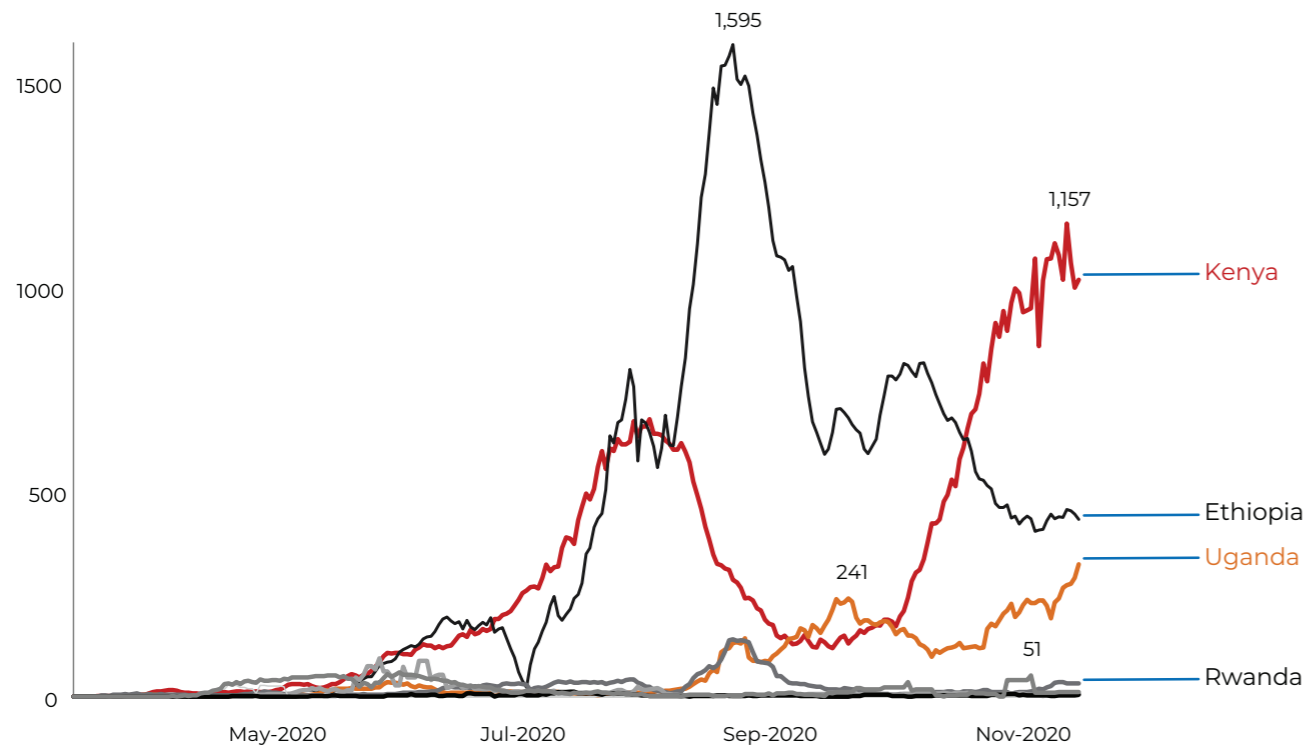
At the time of writing, the disease has spread to nearly every country in the world with approximately 60 million cases and 1.4 million deaths confirmed globally, of which approximately 2 million cases (~3% of total) and 50,000 deaths (~4% of total) have been reported in Africa (~17% of global population).^{19,20}

In East Africa specifically, the disease situation remains heterogeneous across countries and continues to evolve. For example, cases are increasing in Kenya and Uganda at the time of writing, while Rwanda remains relatively constant, and some countries in the region such as Tanzania do not publish C19 data publicly on a consistent basis.

¹⁹Johns Hopkins University. 2020. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer; [Accessed 4 November 2020].
²⁰Mwai, P. 2020. 'Coronavirus; What's happening to the numbers in Africa?'. BBC. Retrieved from <https://www.bbc.com/news/world-africa-53181555> [Accessed 4 November 2020].

EXHIBIT 2: DAILY CONFIRMED CASES BY EAST AFRICAN COUNTRY

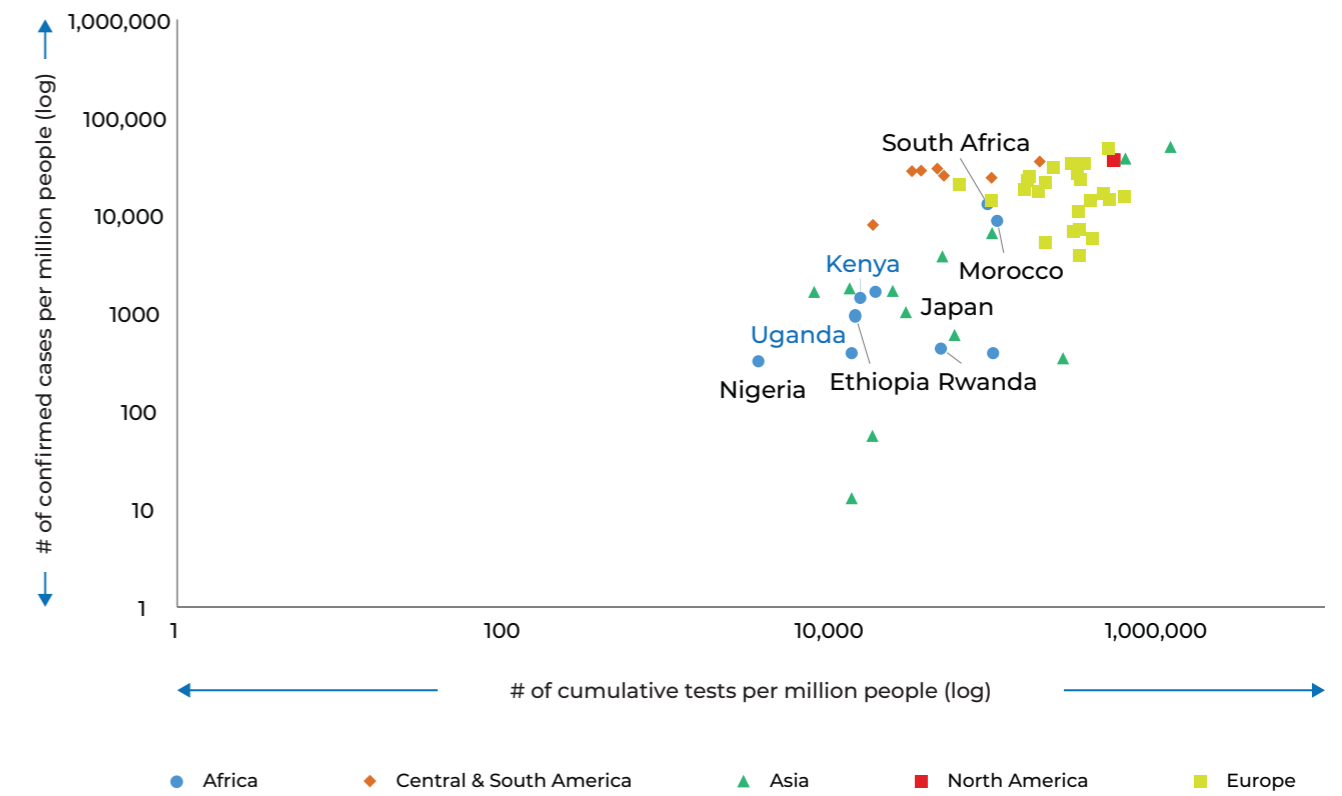
Daily reported cases by country in East Africa (7-day rolling average)



Note: Not all countries consistently publish public data (i.e. those that appear with lower case numbers). 2. On 21 May, an Ugandan presidential directive reduced total from 264 to 145 after removing foreign truck drivers who had left the country from the count
Source: Johns Hopkins University, 2020. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer [Accessed 4 November 2020].

EXHIBIT 3: CORRELATION BETWEEN NUMBER OF TESTS AND NUMBER OF CONFIRMED CASES IN DIFFERENT COUNTRIES

Tests per million vs. cases per million



Source: Johns Hopkins University 2020. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer [Accessed 4 November 2020].



Testing levels remain below each country's theoretical daily capacity and below global testing levels, which obfuscates the true prevalence of C19

The number of confirmed cases reported in a country is positively correlated with the number of tests being conducted, and thus countries with higher testing levels on a population basis tend to report higher C19 numbers (see Exhibit 3).²¹

Testing levels vary significantly across African countries, though tend to be lower compared to countries in other regions of the world. At the time of writing, Kenya has conducted 14.75 tests

per 1000 population and Uganda conducted 13.11 tests per 1000 population, compared to 45.86 tests per 1000 population in Rwanda, 87.91 tests per 1000 population in South Africa, 325.23 tests per 1000 population in Italy, and 27.89 tests per 1000 population in Japan.²²

Kenya has a theoretical daily testing capacity of 7,300 tests, according to Kenya's Targeted Testing Strategy²³, but has only achieved an average of ~4350 tests per day in the month of October; while Uganda achieved an average of ~2100 tests per day over the same time period (see Exhibit 4).²⁴

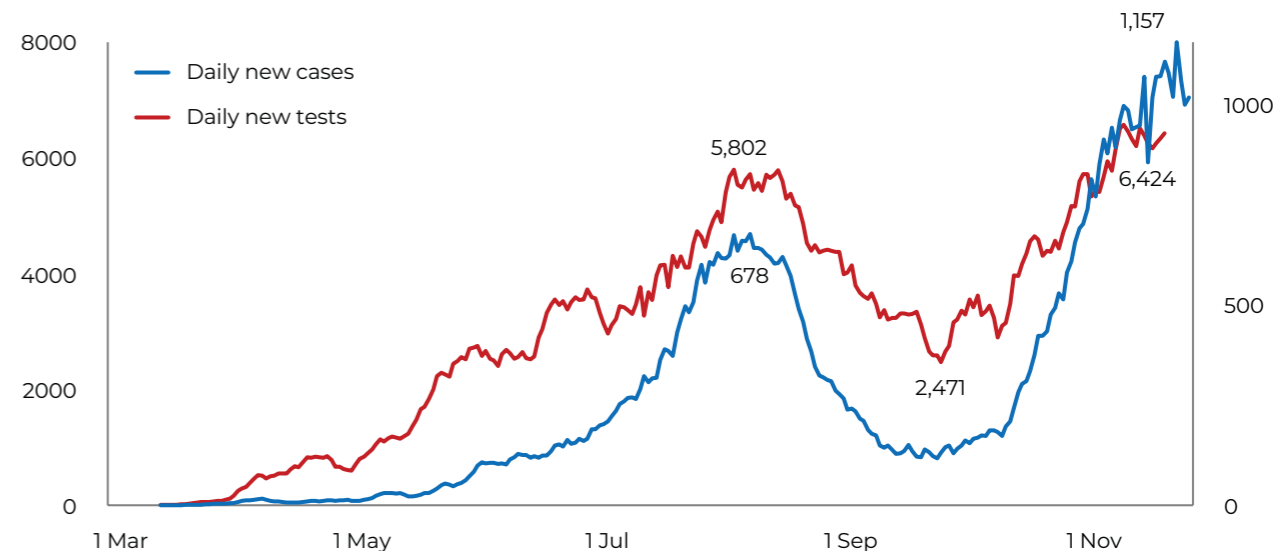
²¹ Johns Hopkins University. 2020. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer [Accessed 12 October 2020].
²² Hasell, J., et al. 2020. A cross-country database of COVID-19 testing. Sci Data 7, 345. Retrieved from <https://doi.org/10.1038/s41597-020-00688-8> [Accessed 4 November 2020].
²³ Kenya Ministry of Health. 2020. Targeted Testing Strategy for Corona Virus Disease 2019 (COVID-19) In Kenya. Retrieved from <https://www.health.go.ke/wp-content/uploads/2020/07/Targeted-Testing-Strategy-for-COVID-19-in-Kenya.pdf> [Accessed July 2020].
²⁴ Johns Hopkins University 2020. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer [Accessed 12 October 2020].

As of 23 November 2020

EXHIBIT 4: DAILY CONFIRMED CASES AND TESTS IN KENYA AND UGANDA

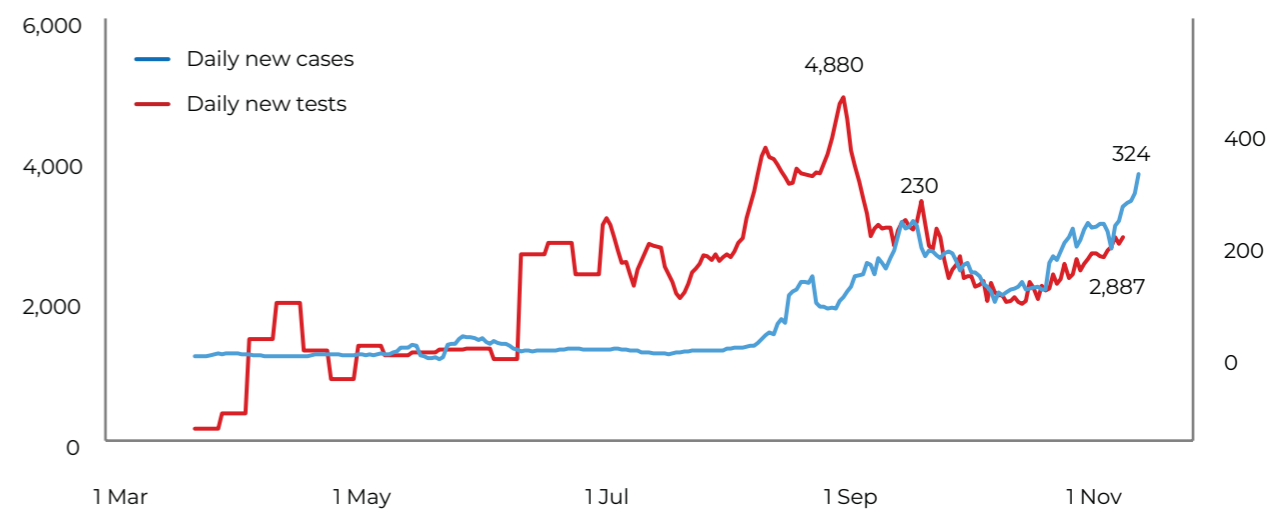
KENYA

Number of daily new cases (right Y-axis, 7-day rolling average) vs. daily new tests performed in Kenya (left Y-axis, 7-day rolling average)



UGANDA

Number of daily new cases (right Y-axis, 7-day rolling average) vs. daily new tests performed in Uganda (left Y-axis, calculated from weekly data)



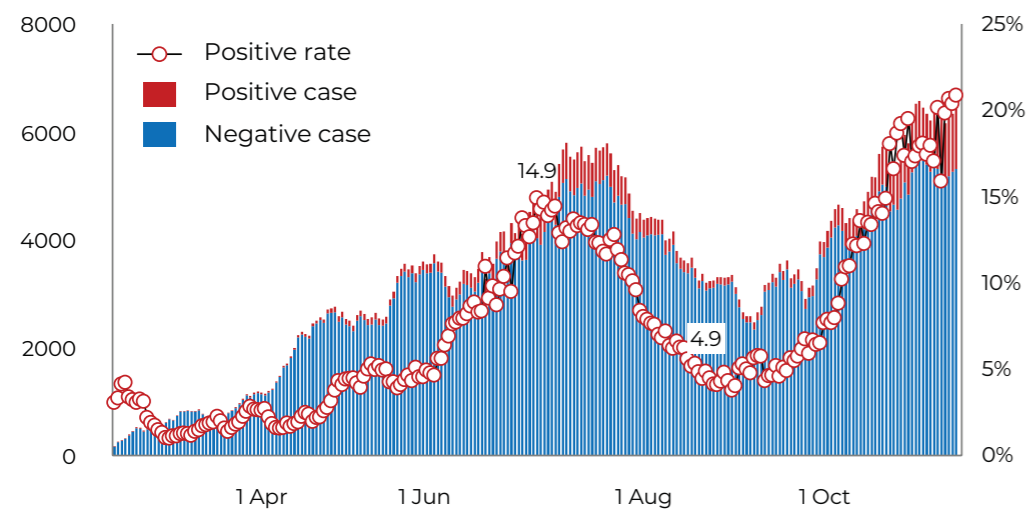
Note: Only weekly (no daily) statistics available until 7 July
Source: Kenya Ministry of Health; Our World in Data; Uganda Ministry of Health COVID-19 Response Info Hub. Retrieved from <https://-covid19.gou.go.ug/statistics.html>

EXHIBIT 5: DAILY TESTS AND POSITIVITY RATE IN KENYA AND UGANDA

KENYA

Daily positivity rate (% , right Y-axis) and number of positive and negative tests in Kenya (7-day rolling average, left Y-axis)

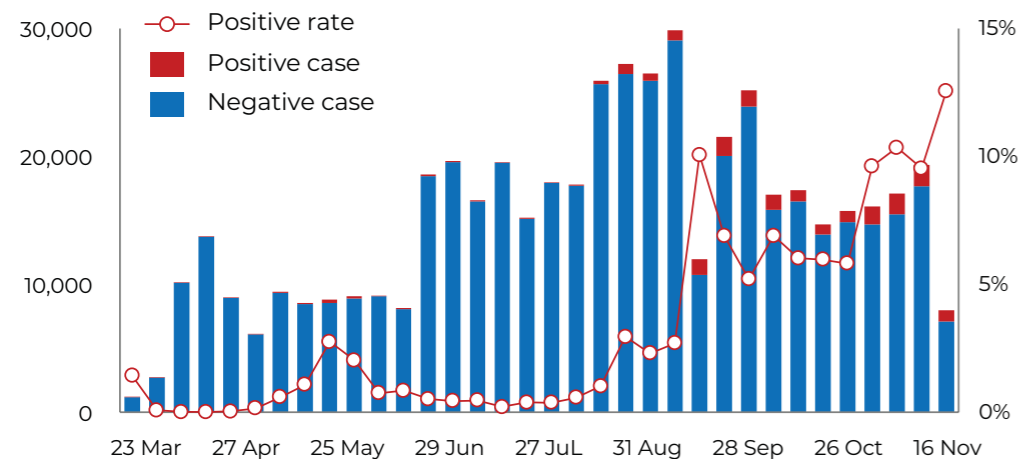
Overall positivity rate: 7.39%



UGANDA

Daily positivity rate (% , right Y-axis) and the number of positive and negative tests in Uganda (weekly total, left Y-axis)

Overall average positivity rate: 2.76%



Note: Uganda reports weekly testing numbers

Source: Johns Hopkins University. 2020. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer [Accessed 4 November 2020].

Acknowledging that limited testing obfuscates the true prevalence of C19, both Kenya and Uganda reported relatively low numbers of cases per capita compared to other parts of the world in the first few months after the first confirmed case in each country.²⁵ However, case positivity rates are on the rise at the time of writing in Kenya and Uganda, averaging more than ~15% since the end of September (see Exhibit 5).

According to the World Health Organization (WHO), a case positivity rate of below 5% is an indicator that the epidemic is under control.²⁶ In Kenya, this changed from ~3.6% on 16 September to ~20.84% on 20 November. In Uganda, this changed from ~5.7% on 16 September to ~12.55% on 16 November.²⁷

In terms of heterogeneity within a country, at the onset of the pandemic, cases in Kenya were overwhelmingly concentrated in the urban centres of Nairobi and Mombasa, while cases in Uganda were concentrated along the Kenyan and the South Sudan border crossings, in addition to Kampala. This is partially attributed to initial sources of importation (i.e. travellers into Kenya, truck drivers into Uganda), and where testing was being conducted in the country (i.e. in urban centres where laboratories with PCR machines and trained personnel tend to be concentrated).

Community transmission increased over the following months, and C19 cases were found throughout both countries. Nairobi and the surrounding metro area still account for more than 60% of all confirmed cases in Kenya,²⁸ while Kampala and major border crossings account for 60% of new cases in Uganda.²⁹

Mortality rates in both countries tend to be well below the global average

In Kenya, approximately 1,400 deaths due to C19 have been reported to date, while in Uganda the number sits at 170 deaths. The highest number of confirmed daily deaths is 14 in Kenya and 3 in Uganda.³⁰ Mortality rates remain significantly lower in many African countries, including Kenya and Uganda, than those in other parts of the world. At this stage, no definitive research has been published on Africa's C19 mortality rates. However, demographics are a leading hypothesis, as ~75% of C19 deaths globally are of individuals over the age of 65, and only ~2% of Kenyans and Ugandans are in this age range.³¹

Overall, disease progression remains highly dynamic at the time of writing, and the potential for a future outbreak scenario remains. Close monitoring through consistent and high testing levels is important given the uncertain outlook.

²⁵ Johns Hopkins University 2020. Coronavirus COVID-19 Global Cases by the Center for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer [Accessed 12 October 2020].
²⁶ Dowdy, D., & D'Souza, G. 2020. COVID-19 Testing: Understanding the percent positive.' Johns Hopkins School of Public Health Expert Insights. Retrieved from <https://www.jhsph.edu/covid-19/articles/covid-19-testing-understanding-the-percent-positive.html> [Accessed 10 August 2020].

²⁷ Johns Hopkins University. 2020. Coronavirus COVID-19 Global Cases by the Centre for Systems Science and Engineering (CSSE). Retrieved from <https://coronavirus.jhu.edu/>. Data validated by Our World in Data and Worldometer [Accessed 3 November 2020].

²⁸ Regional Centre for Mapping of Resource for Development. 2020. 'Kenya counties coronavirus total cases, demographic and social profile'. Retrieved from https://opendata.rcmrd.org/search?owner=rcmrd_online [Accessed 12 October 2020].

²⁹ Uganda Ministry of Health COVID-19 Response Info Hub. Retrieved from <https://covid19.gou.go.ug/statistics.html> [Accessed 12 October 2020].

³⁰ Roser, M., et al. 2020. 'Coronavirus Pandemic (COVID-19)'. Retrieved from <https://ourworldindata.org/coronavirus#licence> [Accessed 4 November 2020].

³¹ World Health Organization. 2020. 'WHO Coronavirus Disease (COVID-19) Dashboard.' Retrieved from <https://covid19.who.int/>; United Nations, 2019 Revision of World Population Prospects. Retrieved from <https://population.un.org/wpp/> [Accessed November 2020].



GOVERNMENT POLICIES

IV. GOVERNMENT POLICIES

Key takeaways

- Both the Kenyan and Ugandan governments took swift action after the first C19 case was confirmed in East Africa, announcing a stringent set of Non-Pharmaceutical Interventions (NPIs) and healthcare policies to try to contain the virus, while buying time to strengthen healthcare capacity
- The stringency of the announced NPIs appear to have played a key role in keeping cases relatively low for several months, but restrictions have been eased since July 2020
- Both countries announced healthcare policies aimed at optimising supply and demand for the testing and treatment of C19
- Both countries also announced a range of fiscal and monetary policy measures to cushion negative impact on businesses and households, some of which remain in place at the time of writing

Methodology

- Assessed NPIs according to Oxford Covid-19 Government Response Stringency Index, which includes policy measures such as social distancing, curfews, closure of public spaces, travel bans as well as fiscal and monetary measures
- Leveraged secondary research from government websites (i.e. press releases) and social media channels, as well as academic publications and news sources
- Supplemented with expert interviews with government officials, technical experts, healthcare providers and relevant private sector leaders

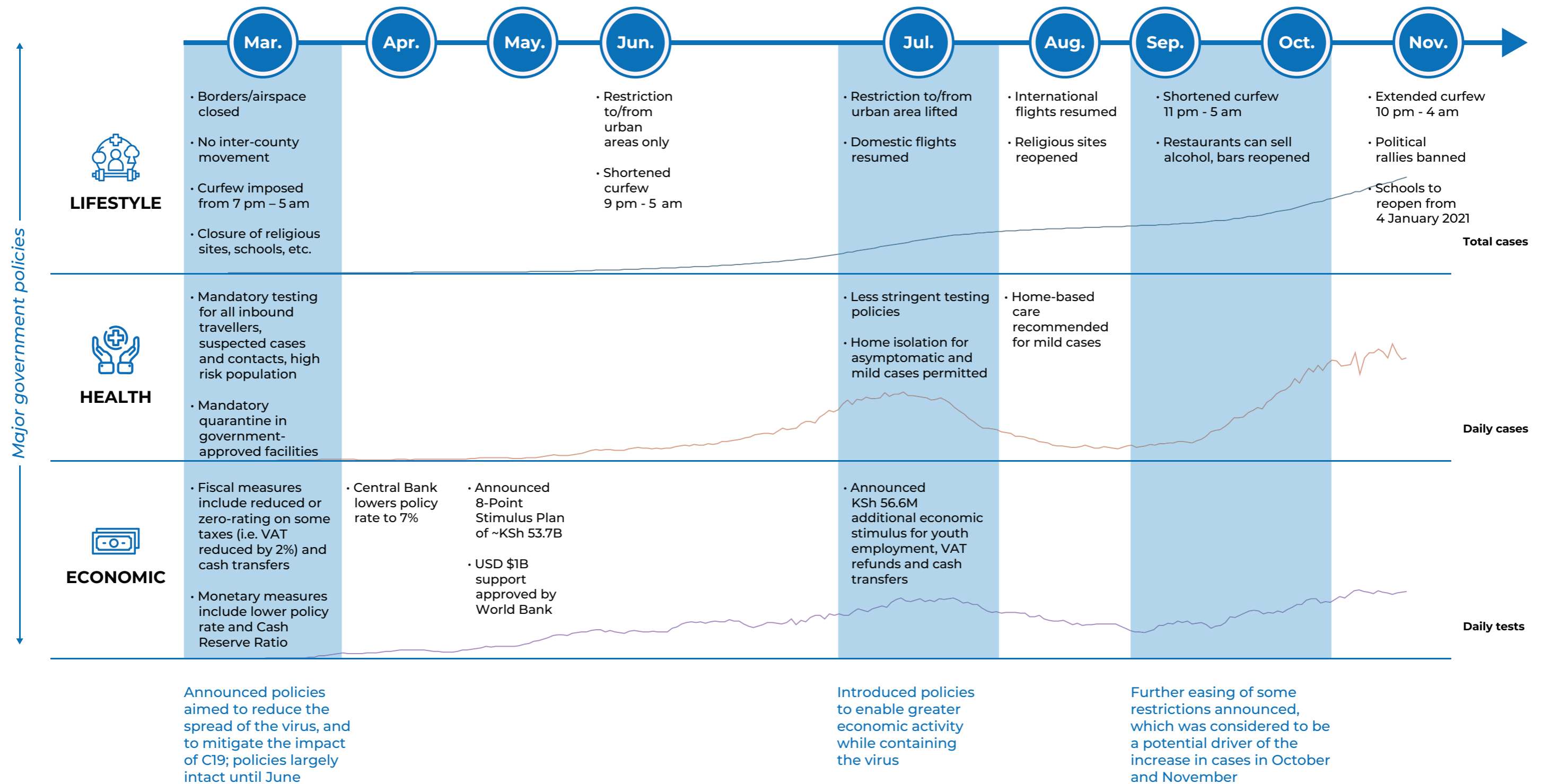
Overview of NPIs, health and economic measures in Kenya and Uganda

Both the Kenyan and Ugandan governments took swift action shortly after the first case of C19 was confirmed in East Africa on 12 March 2020

The governments of Kenya and Uganda announced stringent sets of Non-Pharmaceutical

Interventions (NPIs) and healthcare policies to try to contain and delay the virus progression while preparing healthcare capacity at the outset of the pandemic. They followed this with a set of emergency economic measures to cushion the negative impact on businesses and households.

EXHIBIT 6: OVERVIEW OF C19 GOVERNMENT RESPONSES IN KENYA (NON-EXHAUSTIVE)





Kenya's announced NPIs had a stringency index of 76.19 on day 20 after the first confirmed case in the country, while Uganda's was 89.81 on day 20 and included a shelter-in-place lockdown and ban on public transport.³² For reference, China had a 66.67 index after 20 days and Italy had a 28.57 index after 20 days. These swift and stringent measures appear to have played a significant role in keeping cases relatively low for several months at the outset of the pandemic, but started to be eased around July 2020.

Kenya announced a set of NPIs in March that were largely sustained through June. These policies included the closure of commercial airspace, restrictions on inter-county movement, night-time curfews with bans on large-scale gatherings, and closures of schools and religious sites. While stringent, it is noteworthy that Kenya never instituted a full shelter-in-place lockdown and allowed for continued economic activity, albeit at more controlled and reduced levels. In Uganda, a full shelter-in-place order was in effect and stringently enforced.

Over the same period, Kenya announced healthcare policies aimed at optimising healthcare supply and demand. For testing, supply-side policies aimed to accredit more labs to test for C19, while demand-side policies allocated finite testing capacity to inbound travellers, confirmed and suspected cases as well as their contacts.³³ For disease management, supply-side policies aimed to increase workforce (i.e. recruitment of 6,000 additional healthcare workers was announced in April)³⁴ and infrastructure (i.e. mandating 300 ICU beds per county),³⁵ while demand-side policies allocated finite capacity to potential C19 patients

in an outbreak scenario (i.e. elective procedures were cancelled or postponed). Given the limited testing capacity, healthcare policies allowed for asymptomatic cases to self-isolate with no requirement for testing at the end of the 14-day self-quarantine period for themselves or for their contacts.³⁶

At the same time, Kenya also announced an 8-Point Economic Stimulus Package of KSh 53.7 billion aimed at maintaining liquidity and preserving livelihoods. Fiscal and monetary policy measures included the reduction of VAT from 16% to 14%, reduction of the turnover tax rate from 3% to 1% for Micro, Small and Medium Enterprises (MSMEs), cash payments to vulnerable groups of individuals including the elderly and orphans, and lowering of the Central Bank Rate from 8.25% to 7.25%.³⁷

A second stimulus package that was announced in July focused on youth unemployment, Value Added Tax (VAT) refunds, and continued cash transfers to vulnerable populations.³⁸

As the worst outbreak scenario in terms of virus progression did not materialize and the economic toll worsened, the Kenyan government started easing some NPIs and healthcare policies like shortening curfew hours to between 9 pm and 5 am in June, permitting inter-county movement in July, permitting gatherings of 100 people by August, and allowing domestic flights from 15 July and international flights from 1 August.

NPIs were further eased in September, including shortening of curfew hours to between 11 pm and 5 am, reopening of bars and permitting restaurants to sell alcohol. This timing lines up with the recent sharp increase in the case positivity rate, as discussed in Section III.³⁹ In response, on 4 November, the Kenyan government extended the curfew for a further 60 days and changed the curfew to between 10 pm and 4 am and also banned political gatherings.

Uganda announced a set of stringent NPIs in March that were largely sustained through June. These policies included the closure of commercial airspace, closure of borders, suspension of public transport, nationwide curfews, and closures of schools, businesses and religious sites. Taken together, this significantly impacted day-to-day life for Ugandans. For example, some Kampala residents were observed to have left the urban centre as they were unable to work or move around the city. A leader in the public transport sector observed that *"~40% of our drivers went back to their villages, because they could not survive in the city without any income."*

Similar to Kenya, Uganda also announced healthcare policies aimed at optimising healthcare supply and demand. For testing, supply-side policies aimed to accredit more laboratories resulting in increased capacity at key border points. Demand-side policies mandated the testing of all individuals entering the country from all points of entry, paired with a 14-day quarantine in a government facility.⁴⁰

³² Hale, T., et al. 2020. Oxford COVID-19 Government Response Tracker, Blavatnik School of Government. Retrieved from <https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker> [Accessed 4 November 2020].

³³ Alfa Shaban, AR. 2020. 'Kenya coronavirus: Updates from March - April 2020'. Africanews. Retrieved from <https://www.africanews.com/2020/05/10/enforcement-of-coronavirus-lockdown-turns-violent-in-parts-of-africa/> [Accessed 4 November 2020].

³⁴ Kivuva, E. 2020. 'Covid-19: Kenya begins hiring of 6,000 more health workers'. Business Daily. Retrieved from <https://www.businessdailyafrica.com/bd/news/covid-19-kenya-begins-hiring-of-6-000-more-health-workers-2285910> [Accessed 2 April 2020].

³⁵ Ratner, B. 2020. 'Kenya COVID-19 hospital gears up for surge in new infections'. Reuters. Retrieved from <https://www.reuters.com/article/us-health-coronavirus-kenya-hospital-idUSKCN24P00M>

³⁶ Kenya Ministry of Health. 2020. 'Targeted Testing Strategy for Corona Virus Disease 2019 (COVID-19) In Kenya'. Retrieved from <https://www.health.go.ke/wp-content/uploads/2020/07/Targeted-Testing-Strategy-for-COVID-19-in-Kenya.pdf> [Accessed July 2020].

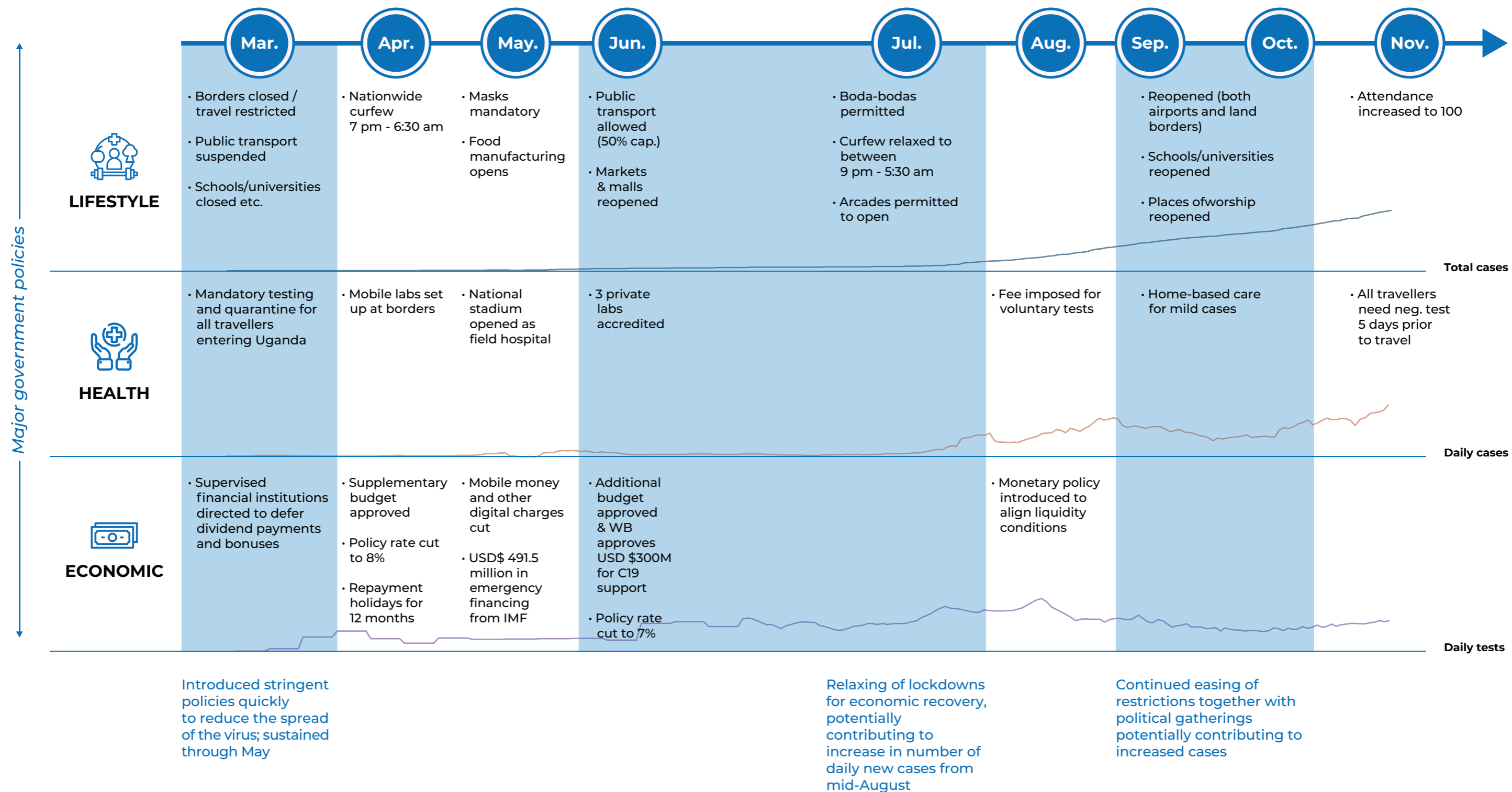
³⁷ International Monetary Fund. 2020. Policy Responses to COVID-19. Retrieved from <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> [Accessed 24 July 2020].

³⁸ International Monetary Fund. 2020. Policy Responses to COVID-19. Retrieved from <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> [Accessed 12 October 2020].

³⁹ Yusuf, M. 2020. 'Kenya reimposes COVID-19 measures amid surging cases'. Voice of America. Retrieved from <https://www.voanews.com/covid-19-pandemic/kenya-reimposes-covid-19-measures-amid-surging-cases> [Accessed 4 November 2020].

⁴⁰ Akumu, P. 2020. 'We Ugandans are used to lockdowns and poor healthcare. But we're terrified'. The Guardian. Retrieved from <https://www.theguardian.com/commentisfree/2020/mar/29/coronavirus-uganda-used-to-lockdowns-poor-healthcare-but-we-are-terrified> [Accessed 29 March 2020].

EXHIBIT 7: OVERVIEW OF C19 GOVERNMENT RESPONSES IN UGANDA (NON-EXHAUSTIVE)



For disease treatment, supply-side policies aimed to increase the number of beds available to isolate C19 patients (i.e. a national stadium was transformed into a field hospital), while demand-side policies allocated finite capacity to potential C19 patients in an outbreak scenario (i.e. elective procedures were postponed).⁴¹

To address the economic impact of the virus, Uganda announced two supplementary budgets to increase the spending envelope for critical sectors and vulnerable groups by USD \$370 million. Fiscal and monetary policy measures were initiated such as deferring the payment of PAYE (Pay As You Earn) tax by affected sectors like tourism and floriculture in April, cash payments to 500,000 people through the cash-for-work labour intensive programmes in June, and measures to reduce the policy rate from 9% to 8% to maintain liquidity.⁴²

The Ugandan government started easing some NPIs around June and July to foster greater economic activity as its population was feeling a stronger economic impact. In June, public transport began to be permitted in a limited capacity with malls and markets allowed to reopen and curfew hours shortened to between 9 pm and 5:30 am in July. Additional economic measures were also introduced, including further reduction of the policy rate from 8% to 7%, coupled with a USD \$300 million support programme from the World Bank.⁴³

Government policies will continue to adapt to evolving realities on-ground, and in turn, these policies will shape both C19 disease progression and economic recovery. The only certainty is that governments will have to continue balancing health, social and economic considerations in these policy decisions.



⁴¹ Himbisibwe, PA. 2020. 'Covid-19: Medics urge government to suspend surgeries'. Daily Monitor. Retrieved from <https://www.monitor.co.ug/uganda/news/national/covid-19-medics-urge-government-to-suspend-surgeries-1882396> [Accessed 25 March 2020].

⁴² International Monetary Fund. 2020. Policy Responses to COVID-19. Retrieved from <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> [Accessed 12 October 2020].

⁴³ International Monetary Fund. 2020. Policy Responses to COVID-19. Retrieved from <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19> [Accessed 12 October 2020].

V. HEALTHCARE CAPACITY

Key takeaways

- A country's health system is foundational to its ability to mount a rapid and robust pandemic response
- C19 highlighted persistent challenges facing the Kenyan and Ugandan health systems, including constraints in healthcare workforce and infrastructure, high reliance on imports for essential medical supplies, inconsistent public funding, and data systems that may not enable timely decision-making
- Governments, private sector players and development partners made concerted efforts to address these challenges, such as creating an accreditation process for laboratories to test for C19, and by reducing turnaround time to approve local manufacturers of PPE
- Strengthening health systems requires a holistic, longer-term approach, particularly as these challenges impact not only C19 but other high-burden diseases such as HIV/AIDS, respiratory infections, maternal and child health-related conditions and cardiovascular diseases
- Hard-earned gains for these diseases may be at risk, as countries allocate limited resources for a potential C19 outbreak scenario, and patients reduce health-seeking behaviour

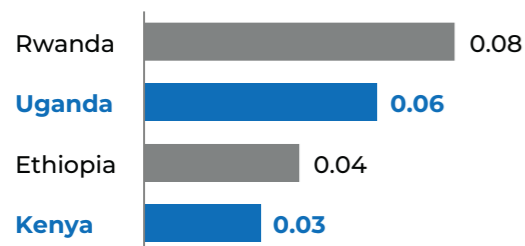
Methodology

- Assessed baseline healthcare capacity through the lens of the WHO's building blocks for health systems: healthcare workforce, service delivery (i.e. infrastructure), access to essential supplies, healthcare financing, data/health information systems and overall leadership and governance
- Conducted primary qualitative and quantitative research on consumer sentiment and changes in behaviour caused by C19 and the effects on health-seeking behaviour
- Leveraged secondary research from government websites (i.e. press releases) and social media channels, as well as academic publications and news sources
- Supplemented with expert interviews with government officials, technical experts, healthcare providers, and relevant private sector leaders

HEALTHCARE CAPACITY

EXHIBIT 8: HEALTHCARE WORKFORCES AND INFRASTRUCTURE IN KENYA, UGANDA AND OTHER AFRICAN COUNTRIES

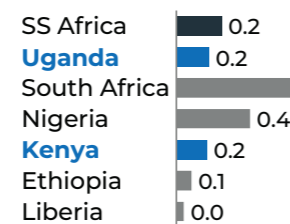
Testing: Lab professionals per 1K pop.



World average for reference: **0.28**

Disease management

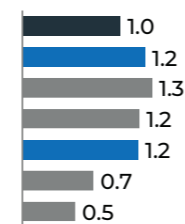
Physicians per 1K pop. 2018 or latest available



WHO recommendation to reach SDG threshold by 2030 for Africa

0.97

Nurses/midwives per 1K pop. 2018 or latest available

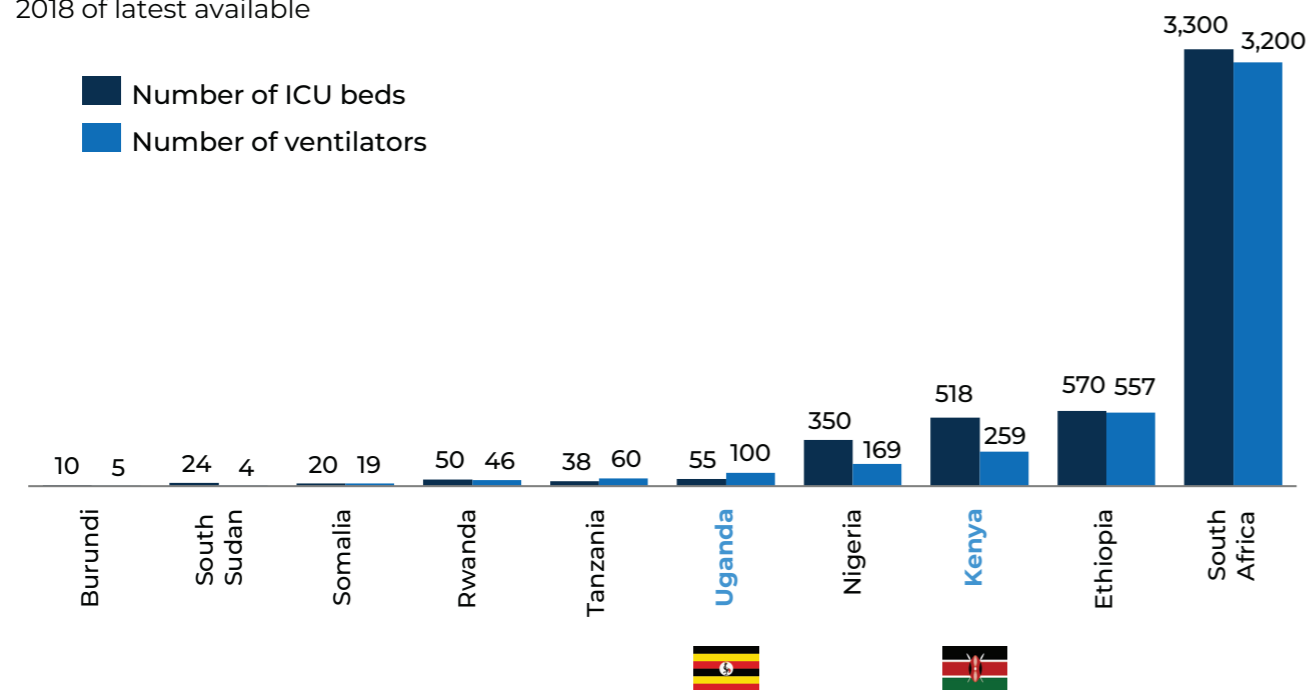


2.4

Disease management: number of ICU beds and ventilators in selected African countries

2018 of latest available

■ Number of ICU beds
■ Number of ventilators



Note: Based on 11 October 2020 data, assuming 1%, 3% or 5% of all new confirmed cases of the previous 14 days require critical care; does not consider demand for ICU beds for other medical reasons (~85% of existing ICU capacity)

Source: WHO; Kenya Ministry of Health, Barasa, et al, Expert interviews, BCG analysis; The Centre for Disease Dynamics, Economics and Policy. Retrieved from <https://cddep.org/publications/critical-care-capacity-africa/> [Accessed: October 2020].

A country's health system is foundational to its ability to mount a rapid and robust pandemic response

C19 highlighted persistent challenges faced by Kenyan and Ugandan health systems prior to the first cases of the virus being reported

After the first cases of C19 in East Africa in March, both Kenya and Uganda announced healthcare policies aimed at optimising the supply and demand for the testing and management of C19, which was discussed in more detail in Section IV. However, policies take time to implement, and the baseline health system is foundational to a country's ability to mount a robust pandemic response.

Limitations in both healthcare workforce and infrastructure constrained the capacity to test and manage C19 in Kenya and Uganda. When one assesses the key human capital indicators for health in these countries, they not only fall below WHO's targets but are lower than the sub-Saharan average in many cases. In Kenya, there are 0.2 physicians per 1,000 people (WHO target is 0.97),⁴⁴ 1.2 nurses per 1,000 people (WHO target is 2.4),⁴⁵ and 0.03 lab technicians per 1000 people (sub-Saharan Africa

average is 0.06).⁴⁶ In Uganda, there are also 0.2 physicians per 1,000 people (WHO target is 0.97),⁴⁷ 1.2 nurses per 1,000 people (WHO target is 2.4),⁴⁸ and 0.06 lab technicians per 1000 people (equivalent to the sub-Saharan Africa average).⁴⁹

Major infrastructure required for C19 testing and treatment is limited to and concentrated in urban centres, posing challenges for pandemic management. In Kenya, approximately half the counties have at least one ICU unit, with only ~20% of Kenyans living within two hours of an ICU.⁵⁰ In Uganda, resources are heavily concentrated in Kampala, which may exacerbate accessibility challenges considering the restriction of movement put in place for C19. For example, ~80% of ICU beds⁵¹ and six of nine testing laboratories are found in Kampala. In response to C19, mobile laboratories were set up at major border posts. However, turnaround time could be delayed given the need to transport samples to laboratories in Kampala owing to shortages of testing supplies at these mobile laboratories.⁵²

⁴⁴ World Health Organization. 2020. World Health Data Platform. Retrieved from <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/4549> [Accessed October 2020].

⁴⁵ Ibid.

⁴⁶ Ibid.

⁴⁷ World Health Organization. 2020. World Health Data Platform. Retrieved from <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/4549> [Accessed October 2020].

⁴⁸ Ibid.

⁴⁹ Ibid.

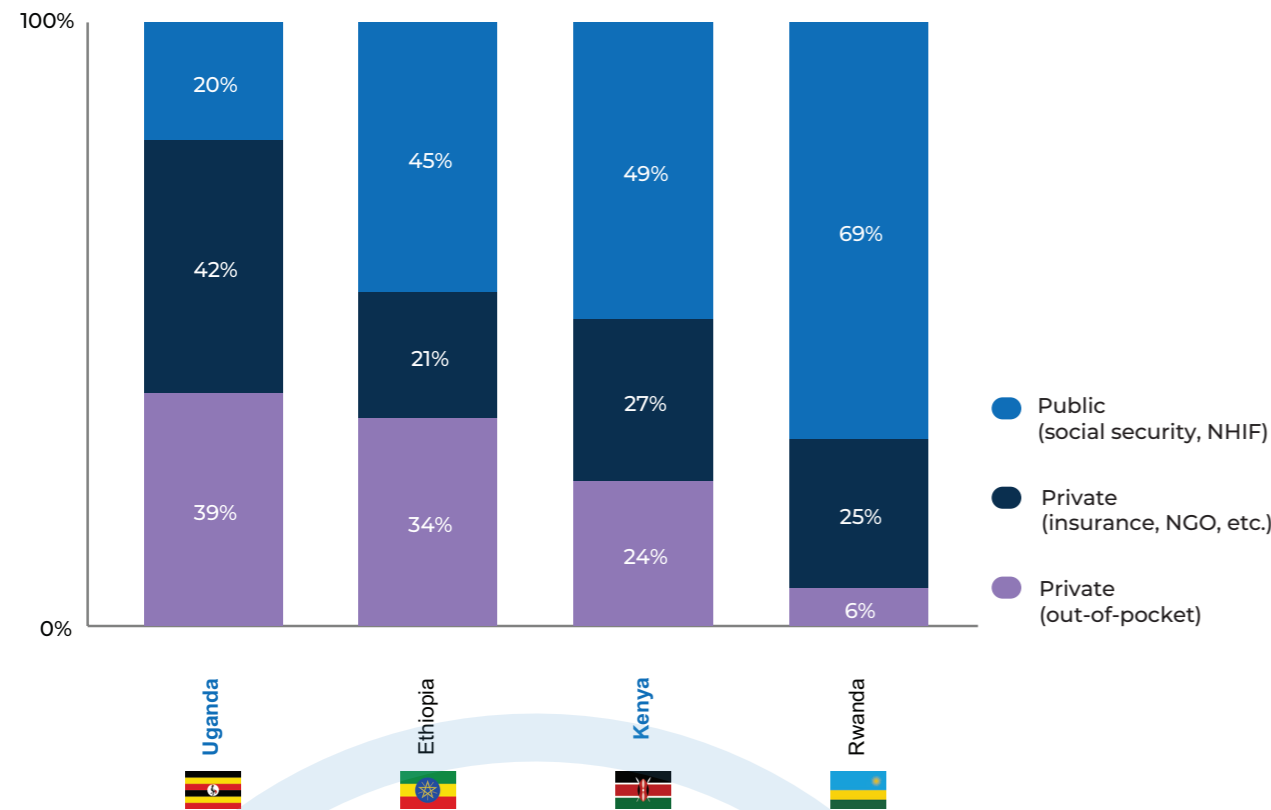
⁵⁰ Barasa, et al. 2018. 'Measuring progress towards Sustainable Development Goal 3.8 on universal health coverage in Kenya'. BMJ Global Health 3(3). Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6035501/pdf/bmjgh-2018-000904.pdf> [Accessed 2 June 2018].

⁵¹ Atumanya, et al. 2020. 'Assessment of the current capacity of intensive care units in Uganda; A descriptive study'. Journal of Critical Care, 55, 95–99. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/31715537/> [Accessed February 2020].

⁵² Nalwadda, H. 2020. 'Uganda launches mobile laboratories for COVID-19 testing.' New Vision. Retrieved from <https://www.newvision.co.ug/news/1522327/uganda-launches-mobile-laboratories-covid19-testing> [Accessed 9 July 2020].

EXHIBIT 9: HEALTH EXPENDITURE BY SOURCE IN EAST AFRICAN COUNTRIES

Source of health expenditure (2017)



Note: Estimates of current health expenditures include healthcare goods and services consumed each year; total health expenditure includes external funding
 Source: World Health Organization. 2020. Global Health Expenditure Database. Retrieved from <https://apps.who.int/nha/database> [Accessed October 2020].

High import dependency for essential medical supplies has posed another challenge in both countries. Disruptions to the global supply chains for medical supplies, and the global demand for finite resources needed for pandemic response has constrained testing and disease management capacity in both countries (67 countries placed restrictions on exports of PPE, ventilators, and certain pharmaceutical products in reaction to their own pandemic response).⁵³ In particular, the procurement of testing kits and reagents was a particular bottleneck and severe supply limitations hampered the testing capacity of both countries.⁵⁴

Furthermore, healthcare financing presents challenges, particularly in Uganda. Kenya has been increasing its total health expenditure. Per capita health expenditure has increased steadily from approximately USD \$20 in 2000 to an estimated USD \$76 in 2017, whereas Uganda has seen a steady decline from approximately USD \$63 in 2010 to USD \$38 in 2017, partially owing to high population growth. However, only about half of total health expenditure is publicly financed in Kenya, and this is only an estimated 20% in Uganda, where there is greater reliance on donor funding (growing at ~8% from 2007-2017 compared to only ~1% in sub-Saharan Africa).⁵⁵ Both Kenya and Uganda have relatively high out-of-pocket spending at 24% and 39% respectively, which presents a risk with household finances already strained from the economic impact of C19.

Moreover, going into the pandemic, the health information systems in place in both countries

did not support timely decision-making for on-ground operations. Data collection provides the critical input required to make key decisions during a pandemic, but proved challenging in both countries. In Kenya, for example, there was no standard process or template through which national and county governments collected critical data from public and private facilities, including the availability of ICU beds and ventilators. Data quality was not consistent as many facilities in both countries still rely on paper-based forms. This was particularly evident in Uganda where infrastructure limitations including the lack of internet connectivity and unreliable electricity supply hampered the use of any electronic data management system.⁵⁶ Data sharing mechanisms were not in place to consolidate the data and communicate a 'single source of truth' to disparate policymakers and healthcare providers (i.e. between counties and between public and private providers). Thus, key decision makers had to rely on different, incomplete or outdated information.⁵⁷

Governments, private sector players and development partners have made concerted efforts to address many of these challenges in the context of C19, such as creating an accreditation process for more laboratories to be able to test for C19 in Uganda, and reducing turnaround time to approve local manufacturers of PPE in Kenya. Disease fatigue is a risk at this stage of the pandemic, and all parties involved in pandemic response need to continue their efforts to build capacity, and improve health outcomes.

⁵³ Banga, K., et al. 2020. 'Africa trade and COVID-19: the supply chain dimension'. African Trade Policy Centre working paper 586. Retrieved from https://www.odi.org/sites/odi.org.uk/files/resource-documents/africa_trade-covid-19_web_1.pdf [Accessed August 2020].

⁵⁴ Mwai, P., Giles, C. 2020. 'Coronavirus: are African countries struggling to increase testing'. BBC. Retrieved from <https://www.bbc.com/news/world-africa-52478344> [Accessed 15 May 2020].

⁵⁵ World Health Organization. 2020. Global Health Expenditure Database. Retrieved from <https://apps.who.int/nha/database> [Accessed October 2020].

⁵⁶ Expert interviews conducted September 2020

⁵⁷ Expert interviews conducted September 2020

Case study: Mobile laboratories in Uganda

Effective C19 management at border posts are critical both for controlling the disease progression, as well as maintaining cross-border logistics flow

In Uganda, mobile laboratories were installed at key border posts to test long-haul truck drivers and to closely monitor the C19 situation to ensure that the disease can be contained, while maintaining the movement of cargo across East Africa. Two mobile laboratories were donated to and deployed at the Adjumani and Malaba border posts. These laboratories can test 94 samples in 2 hours, totalling 800 samples per day, with results that can be made available in 6 hours.⁵⁸ This helped save time and cost both for cross-border transport, and on the delivery of test results. In the absence of the mobile laboratories, samples would have to be delivered to the Uganda Virus Research Institute (UVRI).⁵⁹ However, shortages of reagents have affected the potential full testing capacity.

Impact of C19 on other health outcomes in Kenya and Uganda

Despite these concerted efforts, strengthening health systems requires a holistic, longer-term approach, particularly as these challenges impact not only C19 but also other health outcomes

HIV/AIDS, respiratory infections, maternal and child health-related conditions and cardiovascular diseases contribute to disease burden and mortality in both Kenya and Uganda. Many of these diseases are managed through routine care that may have been disrupted due to C19.⁶⁰ These conditions also tend to affect populations that are vulnerable to C19, including immunocompromised persons, pregnant women, infants, and diseases co-morbid with severe C19 cases.⁶¹

With countries allocating limited resources for a potential C19 outbreak scenario, hard-earned gains for these diseases may be at risk, combined with the change in health-seeking behaviour by non-C19 patients.

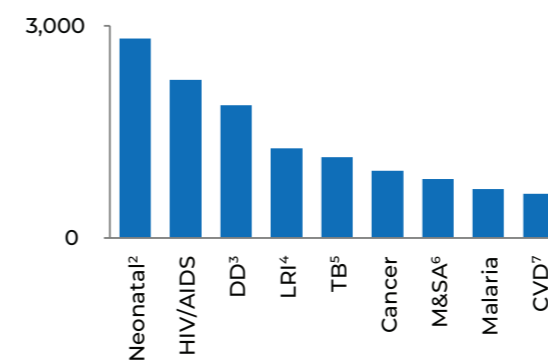
In Kenya, some primary health facilities saw a ~30% drop in patient numbers between April and June, while larger hospitals saw up to ~80% declines, leaving healthcare providers concerned about high-risk chronic patients.⁶²

EXHIBIT 10: MAJOR CAUSES OF DISEASE BURDEN AND MORTALITY IN KENYA AND UGANDA

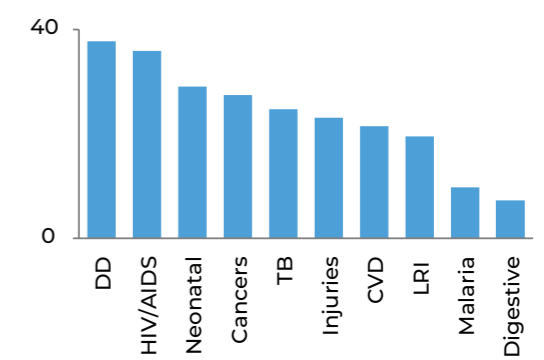
KENYA

Disease burden and leading causes of death

Thousands of estimated DALYs¹, 2016



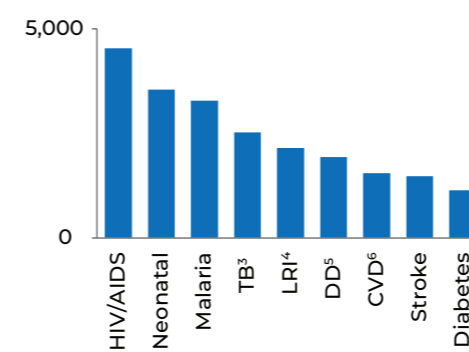
Thousands of deaths, 2016



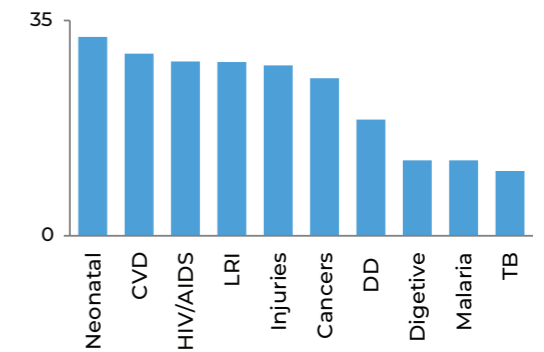
UGANDA

Disease burden and leading causes of death

Thousands of estimated DALYs¹, 2016



Thousands of deaths, 2016



⁵⁸ The Independent. 2020. 'Mobile Covid-19 testing laboratory in Adjumani runs out of reagents'. Retrieved from <https://www.independent.co.ug/mobile-covid-19-testing-laboratory-in-adjumani-runs-out-of-reagents/> [Accessed 28 August 2020].

⁵⁹ The East African. 2020. 'EAC agrees to deploy mobile lab test kits at borders'. Retrieved from <https://www.theeastafrican.co.ke/tea/news/east-africa/eac-agrees-to-deploy-mobile-lab-test-kits-at-borders-1440622> [Accessed April 2020].

⁶⁰ UNICEF. 2020. 'As Covid-19 devastates fragile health systems, over 6,000 additional children under five could die each day globally'. Retrieved from <https://www.unicef.org/kenya/press-releases/covid-19-devastates-fragile-health-systems-over-6000-additional-children-under-five> [Accessed 14 May 2020].

⁶¹ World Health Organization. 2020. Covid-19: Vulnerable and high-risk groups. Retrieved from <https://www.who.int/westernpacific/emergencies/covid-19/information/high-risk-groups> [Accessed 4 November 2020].

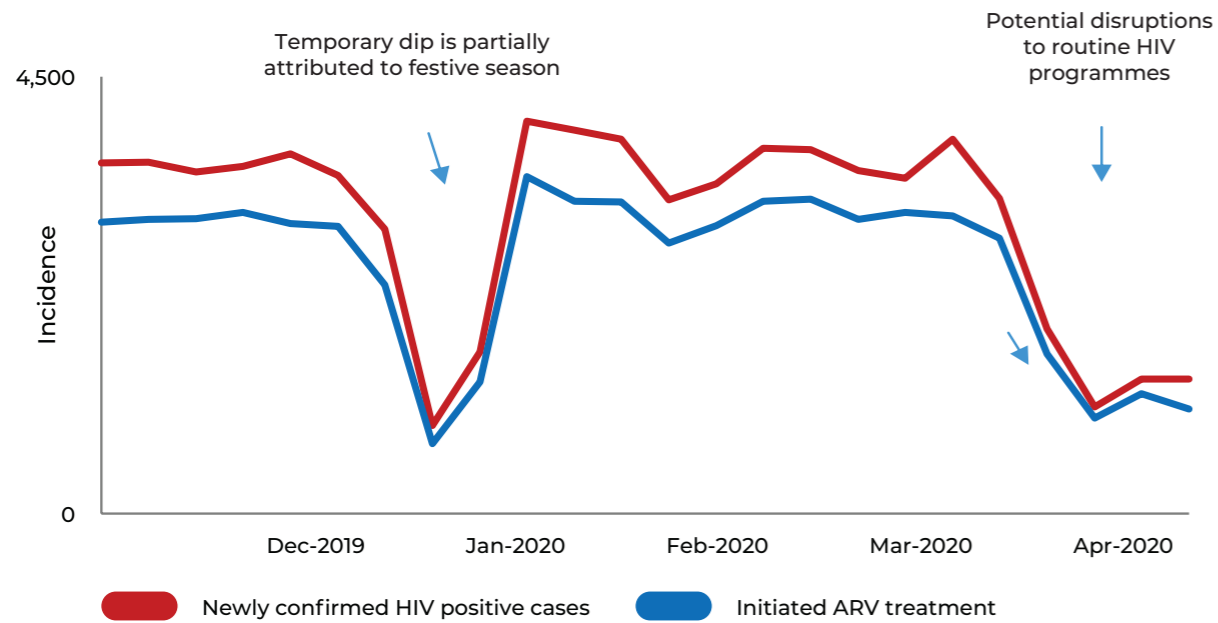
⁶² Expert interviews conducted September 2020; Kenya JICA Focus Groups and in-depth interviews conducted September 2020

*Non-communicable diseases; 1. Disability Adjusted Life Years, aged standardised per 100,000 2. Neonatal disorders refers to preterm birth complications, birth asphyxia and birth trauma, neonatal sepsis, and infections and other conditions 3. Diarrheal diseases 4. Lower Respiratory Infections 5. Tuberculosis 6. Mental health and Substance Abuse 7. Cardiovascular disease
Source: WHO Disease Burden and Mortality estimates 2000-2016; Our World in Data; BCG analysis

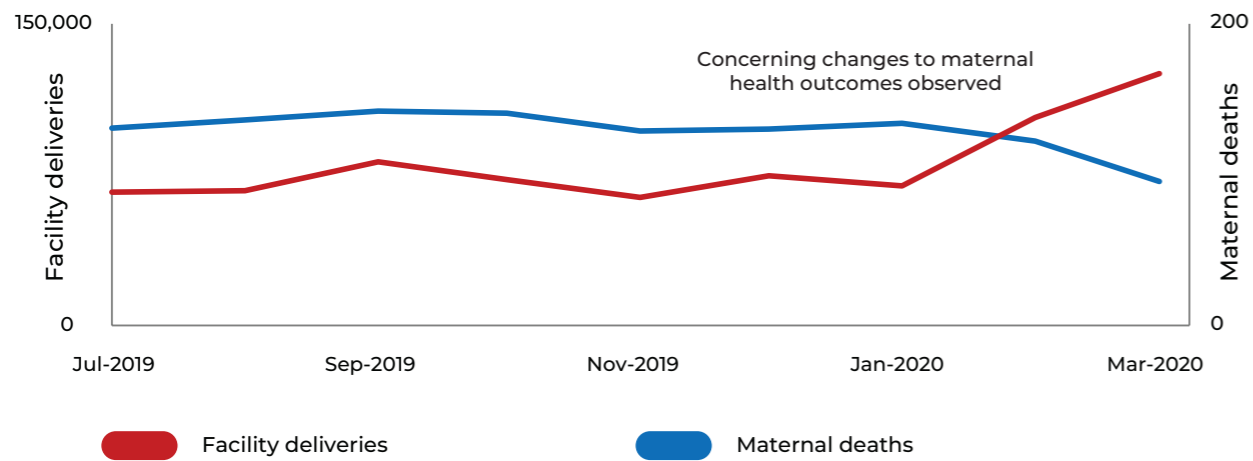
EXHIBIT 11: INITIAL RESEARCH SHOWING WORSENEED HEALTH OUTCOMES IN UGANDA

UGANDA

Number of newly confirmed HIV positive cases and initiated ARV treatments



Number of facility deliveries and maternal deaths



Note: Based on 11 Oct 2020 data, assuming 1%, 3% or 5% of all new confirmed cases of the previous 14 days require critical care; does not consider demand for ICU beds for other medical reasons (~85% of existing ICU capacity)
 Source: WHO; Kenya Ministry of Health, Barasa, et al, Expert interviews, BCG analysis; The Centre for Disease Dynamics, Economics and Policy. Retrieved from <https://cddep.org/publications/critical-care-capacity-africa/> [Accessed: October 2020].



A study in Uganda showed a ~75% decrease in individuals seeking testing and treatment for HIV/AIDS in the first two weeks of April, and an ~82% increase in maternal mortality in March as compared to January (Exhibit 11).⁶³

This is highlighted by our consumer survey conducted in October - November 2020 in urban areas of Kenya and Uganda (discussed in further detail in Section VII), where ~62% of surveyed consumers requiring regular or viral treatment have reduced visits to health facilities since March.

Encouragingly, improved health during the previous six months was the key reason for this behavioural change in Uganda. However, in Kenya, almost half the consumers cited the fear of contracting C19 as their primary reason for reducing visits to health facilities.⁶⁴

With countries allocating limited resources for a potential C19 outbreak scenario, hard-earned gains for these diseases may be at risk with non-C19 patients changing health-seeking behaviour.

⁶³ Bell, et al. 2020. 'Predicting the impact of Covid-19 and the potential impact of the public health response on disease burden in Uganda'. The American Journal of Tropical Medicine and Hygiene. Retrieved from <https://www.ajtmh.org/content/journals/10.4269/ajtmh.20-0546?crawler=true> [Accessed 2 September 2020].

⁶⁴ JICA-BCG Nairobi & Mombasa, Kenya Consumer Survey, 16 October - 5 November 2020



Case study: Wheels for Life initiative in Kenya

Encouragingly, innovative solutions have emerged in response to C19 in the form of public-private partnerships

One selected example in Kenya is Wheels for Life, a service launched for pregnant women to access free transport to health facilities during curfew hours. At the beginning of the pandemic, no public or private transport was available during curfew hours, which forced pregnant women to deliver at home. As one woman noted, *“I had many concerns about the health of the baby if she was delivered by the traditional caregiver. How hygienic is her place? Does she have personal protection gear to prevent the spread of C19? What if I need surgery?”*⁶⁵

The platform was launched on 28 April 2020 and allows pregnant women to call a toll free number to obtain medical advice from doctors. In the event that an emergency is

detected during the screening call, a free ride to the hospital is arranged irrespective of whether the curfew is in place or not.

The initiative was implemented as a joint endeavour between the Ministry of Health, private healthcare providers in Kenya, and technology companies such as TeleSky (digital call centre), Bolt (ride sharing), and Flare (emergency response dispatching). Initially available in Nairobi, the initiative was successfully expanded to five more counties in September.⁶⁶ With the support of the African Medical and Research Foundation (AMREF) and the European Union, the initiative is expanding to Machakos, Nyeri, Nakuru, Kiambu and Uasin Gishu counties.

The programme is expected to assist with the transportation of 3,500 pregnant women to health facilities and offer telemedicine support for a further 36,000 women across five counties.

⁶⁵ Odula, T. 2020. 'Pregnant women at risk of death in Kenya's COVID-19 curfew'. Washington Post. Retrieved from https://www.washingtonpost.com/world/africa/pregnant-women-at-risk-of-death-in-kenyas-covid-19-curfew/2020/07/25/4eb02416-ce43-11ea-99b0-8426e26d203b_story.html [Accessed July 2020].

⁶⁶ AMREF Health Africa. 2020. 'EU Supports Wheels for Life Expansion to Five Counties for Pregnant Women to Access Emergency Medical Care During COVID-19 Curfew Hours'. Retrieved from <https://newsroom.amref.org/coronavirus/2020/09/eu-supports-wheels-for-life-expansion-to-five-counties-for-pregnant-women-to-access-emergency-medical-care-during-covid-19-curfew-hours/> [Accessed August 2020].