Experiences On Learning To Live With Corvid-19: Survival And Coping Mechanisms: Exploring The Ugandan Case

Luwemba Musa Maswanku
Faculty of Arts and Social Sciences
Department of Political Science, Islamic University In Uganda

Abstract

Pandemics continue to evade and affect societies across the globe in social, political, and economic ways. The unpredictable nature of pandemics deserves coping and survival mechanisms that are responsive to the pressure and demands posed by such pandemics. The emergence and spread of infectious diseases with pandemic potential occurred regularly throughout history. Major pandemics and epidemics such as plague, cholera, flu, severe acute respiratory syndrome coronavirus (SARS-CoV), and Middle East respiratory syndrome coronavirus (MERS-CoV) have already afflicted humanity. The scale and unpredictability of this global event may bring up experiences of uncertainty and danger, which can evoke feelings of shock, confusion, frustration, and worry. An analysis of the aftermath as well as how societies can survive within and after such pandemics as they also get ready for the future, given that the chances of re-occurrence are higher given the complicated nature of the pandemics.

Keywords: Survival, Third World, Domestic Violence, Pandemic, Coronavirus, Household

Introduction

Understanding the survival and coping mechanisms requires one to understand the nature of the attack. The terms endemic, outbreak, epidemic, and at times called pandemic relate to the occurrence of a health condition compared to its predicted rate as well as to its spread in geographic areas (Grennan, 2019:90). An endemic condition occurs at a predictable rate among a population. An outbreak corresponds to an unpredicted increase in the number of people presenting a health condition or in the occurrence of cases in a new area. An epidemic is an outbreak that spreads to larger geographic areas. A pandemic is an epidemic that spreads globally sometimes at the same time or even moves at different pace across the world.

Pandemics pose challenges and thus require coping. Such coping and survival has been done differently by societies. Over the last few decades, the Government of Uganda has transformed its response strategy to public health emergencies. The Uganda government initiated many legal as well as well statutory resolutions to handle the situation. 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 .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 analyse information on health emergencies and natural disasters in real-time.

The latest draft of the corvid-19 Preparedness and Response Plan was structured on the following eight pillars:

–Pillar 1—Leadership, Stewardship, Coordination, and Oversight[1]: Leadership and stewardship are critical to provide strategic direction and mobilize resources, while coordination catalyses processes. Leaders and managers at all levels were required to keep proper and effective communication with all stakeholders.

–Pillar 2—Surveillance and Laboratory[2]: COVID-19 surveillance was conducted within the integrated disease surveillance and existing response framework to detect infectious diseases.. Institutional quarantine centers had also been established at the district level. Sample analysis were primarily conducted at the Uganda Virus Research Institute (UVRI) and mobile labs had been deployed at two border posts.

–Pillar 3—Case Management: Given that there is no effective treatment or vaccine for COVID-19, emphasis was put on prevention and strengthening infection prevention and control (IPC)practices, including WASH in health facilities, institutions, and communities. All confirmed cases were managed in designated isolation facilities. Mildly ill or asymptomatic patients were isolated at homes, non-traditional facilities, general hospitals, or health centre IVs .

It should be remembered that over 12 patients were hospitalized in designated COVID-19 treatment centers with the capacity for high dependence units (HDU) and ICUs. –Pillar 4—Strategic Information, Research, and Innovation: A number of innovations have been initiated by

[1] 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

[2] 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

local factories to produce commodities (e.g., surgical masks, face shields, coveralls, and aprons) to support COVID-19 interventions. Conducting research is critical to understanding the novel Coronavirus 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 were expected to support timely and appropriate responses as well as sharing and use of information[3].

–Pillar 5—Risk Communication and Social Mobilization: Key messages would 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 would 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 was essential for targeting the 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 poorest 40%of the population.[4] Efforts needed 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 was always conducted to inform forecasting and guide the deployment of logistics. –

Pillar 8—Continuity of Essential Services: There was urgency to maintain uninterrupted essential services and sustain the response to Ebola, Yellow fever and Cholera of The World Health

[3] Conducting research is critical to understanding the novel Coronavirus 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 were expected to support timely and appropriate responses as well as sharing and use of information

[4] This pillar is essential for targeting the 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

Organization (WHO)'s March 11 recognition of COVID-19 as a global pandemic had removed any doubt about the threat that the virus posed to every country in the world[5].

Africa as a continent was not as affected as other parts of the world. While the relatively low number of cases on the continent so far is good news, African policymakers should not be complacent. They were required to use this as an opportunity to take cautious as well as decisive steps to protect their citizens and economies from the pandemic. This would also give us lessons on management, survival as well as coping with the new pandemic era.

To achieve these goals, three possible recommendations were key in a three-step approach:

(1) Contain the spread of the virus;

(2) Swiftly treat identified cases;

(3) Cushion the economy from the effects of the pandemic.

If these measures were implemented, the human casualties would be limited, and Africa's economic growth would decline by around 1 percentage point or possibly less. If, on the other hand, the measures to contain the pandemic were not swift, the number of deaths would soar, and economic growth could drop by 2.1 percentage points or more. This was both necessary and sufficient for the proper survival of the communities.

With regards to Containment of the spread of the virus, many African countries have relatively weak health care systems and therefore proactive measures to prevent the spread of the virus would be critical. Countries needed to step up campaigns to educate the public on best practices, including promoting good hygiene and social distancing, discouraging large public gatherings, and encouraging employers to protect the jobs of employees who require quarantine or treatment. It

[5] The virus by this time had been detected in 152 countries, with more than 180,000 infected and more than 7,000 killed. Though Africa remained one of the regions with the fewest cases, the number of countries affected had increased within the shortest time possible. This was seen with an increase in the number of infections as well as the death toll rise. The interventions thus became timely and quite necessary.

was also prudent for the ccampaigns to elicit the help of religious and civil society leaders for maximum effect. Rwanda, which had set up portable sinks throughout public areas to encourage handwashing in its capital, Kigali and this was to provide a good example of how some of these measures can be undertaken. The strictness in the implementation of such measures would make it too effective and possibly followed[6].

The international community made progress toward preparing for and mitigating the impacts of pandemics. Taking another case, the 2003 severe acute respiratory syndrome (SARS) pandemic and growing concerns about the threat posed by avian influenza led many countries to devise pandemic plans (U.S. Department of Health and Human Services 2005). Delayed reporting of early SARS cases also led the World Health Assembly to update the International Health Regulations (IHR) to compel all World Health Organization member states to meet specific standards for detecting, reporting on, and responding to outbreaks (WHO 2005:54). The framework put into place by the updated IHR contributed to a more coordinated global response during the 2009 influenza pandemic (Katz 2009:23). It became important for the international donors to invest in improving preparedness and survival programs through refined standards and funding for building health capacity (Wolicki et al 2016:34).

However, ddespite these improvements, significant gaps and challenges still exist in global pandemic preparedness, coping, and survival of the communities. Progress towards meeting the IHR had been uneven, and many countries had been unable to meet basic requirements for compliance as widely reported (Fischer and Katz 2013; WHO 2014). Multiple outbreaks, notably the 2014 West Africa Ebola epidemic, have exposed gaps[7] related to the timely detection of disease, availability of basic care, tracing of contacts, quarantine and isolation procedures, and

[6] Rwanda's preparedness and response to the COVID-19 pandemic were robust and rapid from strengthening health systems to mitigating socio-economic impact through ensuring proper survival and coping up of communities. In collaboration with the government of Rwanda and development partners, the UN efforts to fight the COVID-19 pandemic is continuous. Currently, the Government of Rwanda with support from WHO is undertaking intra-action reviews of the work done so far.

[7] These gaps are especially evident in resource-limited settings and have posed challenges during relatively localized epidemics, with dire implications for what may happen during a full-fledged global pandemic. This calls for future planning and pandemic preparations through designing frameworks of survival.

preparedness outside the health sector, including global coordination and response mobilization (Moon and others 2015; Pathmanathan and others 2014:77).

In addition, governments suspended all international travel to or from the most-affected countries, and quarantine citizens who had travelled to or through those areas for at least two weeks. Several countries, including Ghana, Kenya, Morocco, Senegal, and South Africa, had already taken these measures and the Others had to emulate them[8].

Health as a service industry was thus a necessary and sufficient requirement for the welfare of the society. Its thus imperative for societies to ensure that health systems are prepared to treat those affected. Pandemics check the health systems of countries to the latter and how prepared they are, determines their response nature to such pandemic**.**

A case in point is the 2014 Ebola crisis[9] which lasted two and a half years and resulted in more than 28,600 cases and 11,325 deaths exposing the inadequacy of health care systems in Africa.

[8] Corvid-19 affected travels differently but numerously across the globe. The impact of the coronavirus disease (COVID-19) pandemic on global air transport was without precedent. Airports had seen a 28.4 per cent decline in global passenger traffic volumes for the first quarter of 2020, equivalent to a reduction of 612 million passengers in absolute terms. For airlines, the revenue of passenger kilometers flown (RPKs) worldwide were down by 94% on the previous year. International RPKs were down 98%, as the passenger side of the industry was virtually grounded. With second waves of the virus impacting various countries and leading to renewed travel restrictions, international air travel remains minimal at -88% down on last year in August. These volumes (domestic and international traffic) were expected to decrease by 50.4 percent for 2020 as a whole as compared to 2019 figures. ICAO estimated that, by the end of 2020, the COVID-19 impact on scheduled international passenger traffic had reached reductions of up to 71 percent of seat capacity and up to 1.5 billion passengers globally. Airlines and airports faced a potential loss of revenue of up to 314 billion USD and 100 billion USD, respectively, for 2020. This was a huge loss to the companies. Other forms of transport were no different.

[9] On March 23, 2014, the World Health Organization (WHO) reported cases of Ebola Virus Disease (EVD) in the forested rural region of South Eastern Guinea. The identification of these early cases marked the beginning of the West Africa Ebola epidemic, the largest in history. The scope of this outbreak, both in terms of cases and geography, can be attributed to the unprecedented circulation of EVD into crowded urban areas, increased mobilization across borders, and conflicts between key infection control practices and prevailing cultural and traditional practices in West Africa. Engaging local leaders in prevention programs and messaging, along with careful policy implementation at the national and global level, helped to eventually contain the spread of the virus and put an end to this outbreak. Liberia was first declared Ebola-free in May 2015. Additional cases were found and treated, and the country was again declared Ebola-free in September 2015. More cases were discovered in November 2015. On January 14, 2016, Liberia again announced it was Ebola-free; however, cases were detected in March and April of 2016, and Liberia made its final declaration on June 1, 2016.

Although important lessons were learned from past outbreaks, and health systems have been strengthened since then, there are still critical gaps in preparedness. Governments and health specialists must learn to work in collaboration with the WHO and other partners to ensure that hospitals and clinics have adequately trained personnel and enough capacity for testing and treating the virus. In this case, both Germany and South Korea had developed fast, extensive, and free testing mechanisms that are good examples of what efficient testing looks like.African countries thus need to borrow a leaf from such countries.[10]

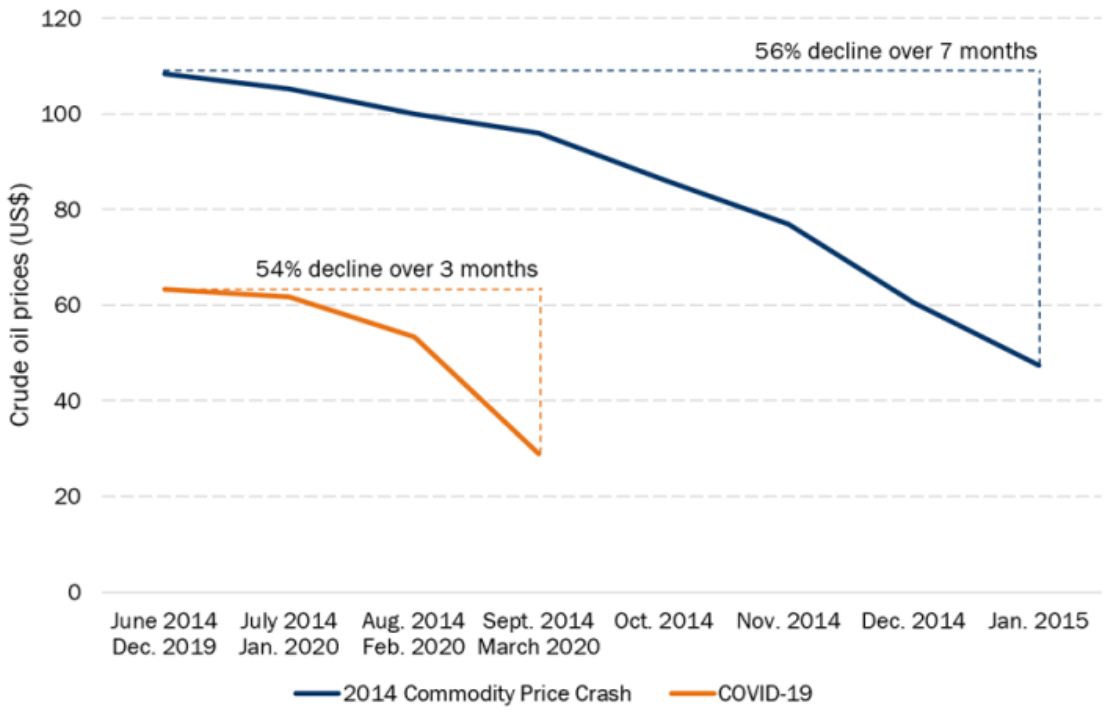
It goes without mentioning that pandemics have economic effects. For countries to overcome this, there is need to pprepare to cushion the economic effect of the pandemic. Africa started 2020 with a positive economic outlook, as outlined in annual Foresight Africa report. However, the COVID-19 pandemic will have significant effects on economies in several countries as trade, tourism, remittances, financial markets, and consumer and business sentiment are all disrupted.

Commodity prices and trade

The late 2014 drop in oil prices contributed to a significant decline in GDP growth for sub-Saharan Africa from 5.1 percent in 2014 to 1.4 percent in 2016. During that episode, crude oil prices fell by 56 percent over seven months. The current decline in oil prices has been far more rapid, with some analysts projecting even more severe price declines than in 2014. Already, crude oil prices have fallen by 54 percent in the three months since the start of the year, with current prices falling below $30 per barrel. Non-oil commodity prices have also declined since January, with natural gas and metal prices dropping 30 percent and 4 percent, respectively.

[10] Testing capacity for COVID-19 is the key to controlling Coronavirus. Robust Coronavirus testing provides a snapshot of the COVID-19 situation within the community and indeed, without testing, contact tracing becomes a mirage. Like elsewhere, control efforts in Africa are limited by insufficient test kits, thus compelling African governments to restrict testing to individuals that met specifically narrowed criteria. In April, while the USA was approaching 4 million tests, Nigeria, Africa's most populous country, was just nearing 7000 tests. At the outset of the pandemic, only a few African countries had COVID-19 testing capacity, some had none. South Africa was supporting some neighbouring countries with testing. Since then, testing capacity has considerably improved across the continent, but access is still inequitable.

Figure 1. Drop in crude oil prices in 2014 vs. COVID-19



Source: IMF Primary Commodity Price System.

BROOKINGS

Because of these price drops, the largest disruption to trade will be for commodity-sensitive economies, with Algeria, Angola, Cameroon, Chad, Equatorial Guinea, Gabon, Ghana, Nigeria, and the Republic of the Congo among the most affected. Oil exports range from 3 percent of GDP in South Africa to as high as 40 percent in Equatorial Guinea and are a key source of foreign exchange earnings. Furthermore, the shock comes at a particularly bad time for three of the largest economies—Angola, Nigeria, and South Africa—which already had weak growth outlooks, with South Africa already in recession. Nigeria is now facing U.S. dollar shortages due to the oil price crash and is expected to devalue its currency by 10 percent by the end of June. We expect similar stresses to surface in some other countries.

Tourism and remittances

Tourism, an important sector of economic activity for many countries, will be heavily affected by COVID-19 as countries begin to place restrictions on travel and encourage social distancing. The

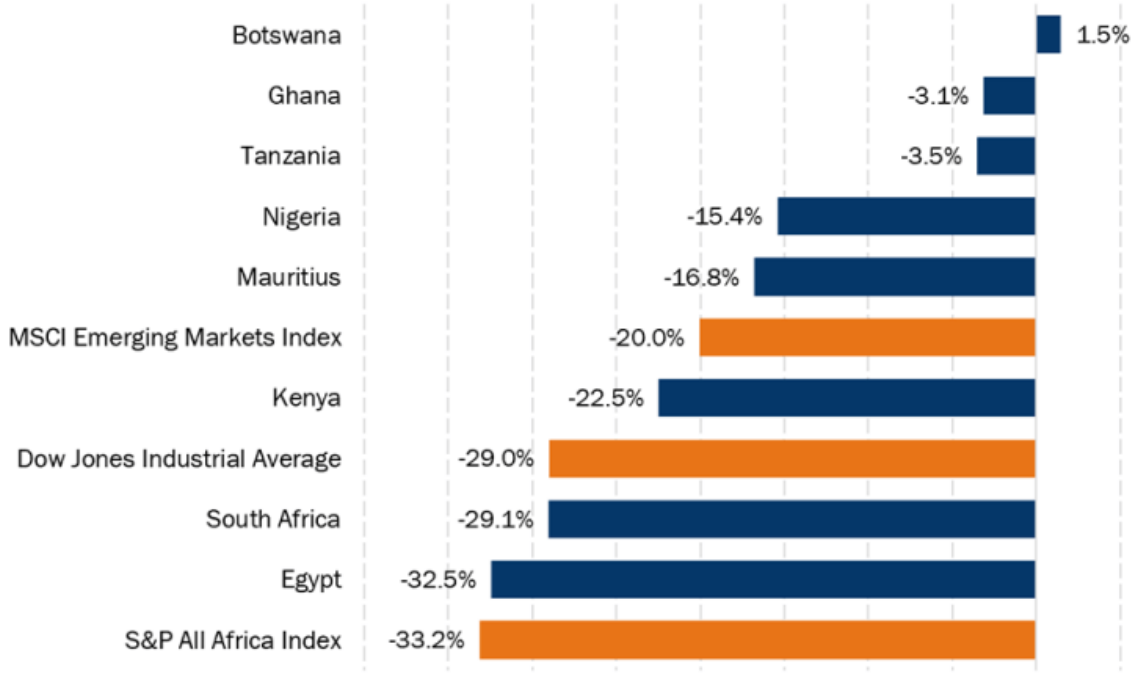
sector contributes over 10 percent of GDP in the Seychelles, Cape Verde, and São Tomé and Príncipe, and over 5 percent in The Gambia, Morocco, Mauritius, Tunisia, Lesotho, Madagascar, Egypt, and Rwanda. Tourism employs more than a million people in each of Nigeria, Ethiopia, South Africa, Kenya, and Tanzania, and tourism employment comprises more than 20 percent of total employment in Seychelles, Cape Verde, São Tomé and Príncipe, and Mauritius. In past crises, including the 2008 financial crisis and the 2014 commodity price shock, African tourism experienced losses of up to $7.2 billion.

Similarly, with economic activity in the doldrums in many advanced and emerging market countries, remittances to Africa could experience significant declines. Remittances as a share of GDP exceed 5 percent in 13 African countries, and range as high as 23 percent in Lesotho and more than 12 percent in Comoros, The Gambia, and Liberia.

Tighter financial conditions

The COVID-19 pandemic has severely disrupted financial markets, with equity indices in major economies dropping significantly. Equity markets plunged by over 20 percent in the U.S. and experienced the largest single-day drop of the Dow since “Black Monday” in 1987. African equity markets have not been immune, with S&P All Africa index returns dropping by 30 percent since the beginning of the year, and large drops in Egypt, South Africa, Kenya, Mauritius, and Nigeria.

Figure 2. Select stock market equity index year-to-date returns



Source: Bloomberg LP.

BROOKINGS

The pullback from African markets as well as a projected decline in export revenues has led to depreciations of local currencies. These exchange rate depreciations will push up local inflation and trigger monetary policy and financial tightening. In addition, exchange rate depreciations inflate local currency values of foreign currency debt and make debt management and servicing more challenging, a particular threat in Africa, where an estimated one-third of countries are either in or at high risk of debt distress.

Additionally, the risk-off sentiment in global markets will push up the cost of external financing for African countries. According to Euromoney, the yield on Nigeria's 2031 eurobond nearly doubled from 6.8 percent on February 21 to 12.1 percent on March 13. Similarly, the yield on Ghana's 2029 eurobond shot up by 400 basis points to 11 percent, and that for Angola doubled to 14.2 percent. Furthermore, investor pull will cause delays in planned eurobond issuance by several countries. Already, Nigeria has announced a delay in the issuance of $3.3 billion eurobond, and

Côte d'Ivoire, Benin, and South Africa are all expected to postpone issuances until markets stabilize. These delays will pose challenges for public finances in several countries.

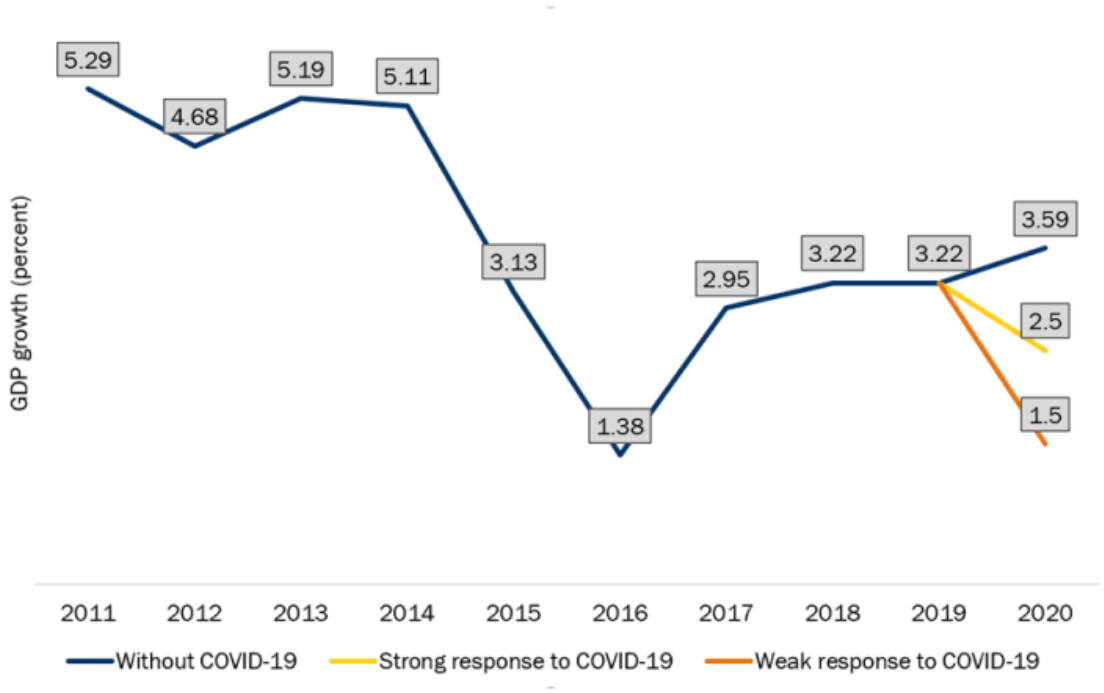
Deteriorated consumer and business sentiment

The other channel through which COVID-19 will affect economic activity is through consumer and business sentiment. According to a survey by KASI Insights, in seven African countries, consumer sentiment for February dropped over COVID-19 concerns, a signal of reductions in consumer spending. Faced with lower and uncertain demand, business confidence will decrease and cause declines in investment.

Effect on economic growth

We estimate that the COVID-19 related disruptions outlined above will lower sub-Saharan Africa's GDP growth in 2020 to between 1.5 percent and 2.5 percent, down from the projected 3.6 percent pre-COVID-19 projections. Under a scenario where African governments quickly take the appropriate steps to contain the spread of the virus and global conditions stabilize, the regional GDP growth will decline by around 1 percentage point, to 2.5 percent. In a scenario where the responses are not swift, the pandemic lasts longer, and global conditions take more time to normalize, the disruption will be more severe, resulting in a 2.1 percentage point reduction in growth, to 1.5 percent.

Figure 3. Effect of COVID-19 on regional GDP growth



Source: World Economic Outlook database, October 2019, and author's calculations. BROOKINGS

While the health of those affected by the virus is clearly of paramount concern, business owners, consumers, and governments must also prepare for the pandemic's economic effects to ensure that their countries emerge from the crisis stronger than before. Strong measures taken in several—but not all—countries are positive steps which will help reduce the human and economic impact of the virus in Africa.

The global community must come together to collaborate, coordinate, share lessons learned, and assist each other to combat the pandemic. Until every country is safe, no country will be safe. The outbreak should serve to highlight the extent to which countries are interconnected and interdependent and should be a call to strengthen global institutions and the global governance system.

The direct health impacts of pandemics can be catastrophic. During the Black Death, an estimated 30–50 percent of the European population perished (DeWitte 2014). More recently, the HIV/AIDS

pandemic has killed more than 35 million persons since 1981 (WHO Global Health Observatory data, http://www.who.int/gho/hiv/en).

Pandemics can disproportionately affect younger, more economically active segments of the population (Charu and others 2011). During influenza pandemics (as opposed to seasonal outbreaks of influenza), the morbidity and mortality age distributions shift to younger populations, because younger people have lower immunity than older people, which significantly increases the years of life lost (Viboud and others 2010). Furthermore, many infectious diseases can have chronic effects, which can become more common or widespread in the case of a pandemic. For example, Zika-associated microcephaly has lifelong impacts on health and well-being.

Dr. Luis Antonio Gorordo del Sol, who heads the Intensive Therapy of COVID-19 areas of the Juárez Hospital, sees information as an important part of the fight. People must be aware of the disease and reject false information because both COVID-19 and myths about it put thousands of lives at risk. Following health authorities' recommendations is absolutely essential to avoid more infections and complications, he says.

"What I see here every day is a reflection of those outside the hospital who ignored the recommendations. Staying at home, continuing good hand hygiene, getting medical attention promptly and not trying to self-medicate is what people should do at this time,"

Above all, teamwork is essential to face the pandemic.

"We are all part of a team. As a society, those outside are helping to save lives by staying at home. Those here in the hospital are helping those who are already sick. We are a synergy and we must work as a team. Allowing ourselves to be divided in this global crisis has consequences that are often deadly."

The indirect health impacts of pandemics can increase morbidity and mortality further. Drivers of indirect health impacts include diversion or depletion of resources to provide routine care and decreased access to routine care resulting from an inability to travel, fear, or other factors. Additionally, fear can lead to an upsurge of the "worried well" seeking unnecessary care, further burdening the health care system (Falcone and Detty 2015).

During the 2014 West Africa Ebola epidemic, lack of routine care for malaria, HIV/AIDS, and tuberculosis led to an estimated 10,600 additional deaths in Guinea, Liberia, and Sierra Leone (Parpia and others 2016). This indirect death toll nearly equaled the 11,300 deaths directly caused by Ebola in those countries (WHO 2016a). Additionally, diversion of funds, medical resources, and personnel led to a 30 percent decrease in routine childhood immunization rates in affected countries (UNDP 2014). During the 2009 influenza pandemic, a greater surge in hospital admissions for influenza and pneumonia was associated with statistically significant increases in deaths attributable to acute myocardial infarction and stroke (Rubinson and others 2013). However, during a pandemic, distinguishing which deaths are attributable to the pandemic itself and which are merely coincidental may be impossible.

During the 2014 West Africa Ebola epidemic, facilities closures as a result of understaffing and fear of contracting the disease played a large role in lack of access to or avoidance of routine health care. One study of 45 public facilities in Guinea found that the Ebola outbreak led to a 31 percent decrease in outpatient visits for routine maternal and child health services (Barden-O'Fallon and others 2015). Among children under age five years, hospitals witnessed a 60 percent decrease in visits for diarrhea and a 58 percent decrease in visits for acute respiratory illness (ARI), while health centers saw a 25 percent decrease in visits for diarrhea and a 23 percent decrease in visits for ARI. In Sierra Leone, visits to public facilities for reproductive health care fell by as much as 40 percent during the outbreak (UNDP 2014).

The availability of health care workers also decreases during a pandemic because of illness, deaths, and fear-driven absenteeism. Viral hemorrhagic fevers such as Ebola take an especially severe toll on health care workers, who face significant exposure to infectious material:

- *During the first Ebola outbreak* in the Democratic Republic of Congo in 1976 (then called Zaire), the Yambuku Mission Hospital—at the epicenter of the outbreak—was closed because 11 out of the 17 staff members had died of the disease (WHO 1978).
- *During the Kikwit Ebola outbreak in 1995* in the same country, 24 percent of cases occurred among known or possible health care workers (Rosello and others 2015).

- *During the 2014 West Africa Ebola epidemic*, health care workers experienced high mortality rates: 8 percent of doctors, nurses, and midwives succumbed to Ebola in Liberia, 7 percent in Sierra Leone, and 1 percent in Guinea (Evans, Goldstein, and Popova 2015).

Even if health care workers do not die, their ability to provide care may be reduced. At the peak of a severe influenza pandemic, up to 40 percent of health care workers might be unable to report for duty because they are ill themselves, need to care for ill family members, need to care for children because of school closures, or are afraid (Falcone and Detty 2015; U.S. Homeland Security Council 2006).

Economic Impacts

Pandemics can cause acute, short-term fiscal shocks as well as longer-term damage to economic growth. Early-phase public health efforts to contain or limit outbreaks (such as tracing contacts, implementing quarantines, and isolating infectious cases) entail significant human resource and staffing costs (Achonu, Laporte, and Gardam 2005). As an outbreak grows, new facilities may need to be constructed to manage additional infectious cases; this, along with increasing demand for consumables (medical supplies, personal protective equipment, and drugs) can greatly increase health system expenditures (Herstein and others 2016).

Diminished tax revenues may exacerbate fiscal stresses caused by increased expenditures, especially in LMICs, where tax systems are weaker and government fiscal constraints are more severe. This dynamic was visible during the 2014 West Africa Ebola epidemic in Liberia: while response costs surged, economic activity slowed, and quarantines and curfews reduced government capacity to collect revenue (World Bank 2014).

During a mild or moderate pandemic, unaffected HICs can offset fiscal shocks by providing increased official development assistance (ODA) to affected countries, including direct budgetary support. However, during a severe pandemic where HICs confront the same fiscal stresses and may be unable or unwilling to provide assistance, LMICs could face larger budget shortfalls, potentially leading to weakened public health response or cuts in other government spending.

The direct fiscal impacts of pandemics generally are small, however, relative to the indirect damage to economic activity and growth. Negative economic growth shocks are driven directly by labor force reductions caused by sickness and mortality and indirectly by fear-induced behavioral changes. Fear manifests itself through multiple behavioral changes. As an analysis of the economic impacts of the 2014 West Africa Ebola epidemic noted, "Fear of association with others . . . reduces labor force participation, closes places of employment, disrupts transportation, motivates some governments to close land borders and restrict entry of citizens from affected countries, and motivates private decision makers to disrupt trade, travel, and commerce by canceling scheduled commercial flights and reducing shipping and cargo services" (World Bank 2014). These effects reduce labor force participation over and above the pandemic's direct morbidity and mortality effects and constrict local and regional trade.

The indirect economic impact of pandemics has been quantified primarily through computable general equilibrium simulations; the empirical literature is less developed. World Bank economic simulations indicate that a severe pandemic could reduce world gross domestic product (GDP) by roughly 5 percent (Burns, Van der Mensbrugghe, and Timmer 2006). The reduction in demand caused by aversive behavior (such as the avoidance of travel, restaurants, and public spaces, as well as prophylactic workplace absenteeism) exceeds the economic impact of direct morbidity- and mortality-associated absenteeism.

These results align with country-specific estimates: an analysis of pandemic influenza's impact on the United Kingdom found that a low-severity pandemic could reduce GDP by up to 1 percent, whereas a high-severity event could reduce GDP by 3–4 percent (Smith and others 2009). The World Bank's estimates from the 2014 West Africa Ebola epidemic suggest that economic disruption in low-income countries (LICs) could be even greater. For example, the 2015 economic growth estimate for Liberia was 3 percent (against a pre-Ebola estimate of 6.8 percent); for Sierra Leone, it was −2 percent (against a pre-Ebola estimate of nearly 9 percent) (Thomas and others 2015).

Finally, estimates of fiscal and growth shocks are significant but do not include the intrinsic value of lives lost. Fan, Jamison, and Summers (2016) consider this additional dimension of economic loss by estimating the value of excess deaths across varying levels of modeled pandemic severity,

finding that the bulk of the expected annual loss from pandemics is driven by the direct cost of mortality, particularly in the case of low-probability, severe events.

During a severe pandemic, all sectors of the economy—agriculture, manufacturing, services—face disruption, potentially leading to shortages, rapid price increases for staple goods, and economic stresses for households, private firms, and governments. A sustained, severe pandemic on the scale of the 1918 influenza pandemic could cause significant and lasting economic damage.

Social and Political Impacts

Evidence suggests that epidemics and pandemics can have significant social and political consequences, creating clashes between states and citizens, eroding state capacity, driving population displacement, and heightening social tension and discrimination (Price-Smith 2009).

Severe premodern pandemics have been associated with significant social and political upheaval, driven by large mortality shocks and the resulting demographic shifts. Most notably, deaths arising from the introduction of smallpox and other diseases to the Americas led directly to the collapse of many indigenous societies and weakened the indigenous peoples' institutions and military capacity to the extent that they became vulnerable to European conquest (Diamond 2009; see table 17.1). Subsequent pandemics have not had such dramatic effects on political and social stability, primarily because the potential mortality shock has been attenuated by improvements in prevention and care.

Evidence does suggest that epidemics and pandemics can amplify existing political tensions and spark unrest, particularly in fragile states with legacies of violence and weak institutions. During the 2014 West Africa Ebola epidemic, steps taken to mitigate disease transmission, such as the imposition of quarantines and curfews by security forces, were viewed with suspicion by segments of the public and opposition political leaders. This led directly to riots and violent clashes with security forces (McCoy 2014). Latent political tensions from previously warring factions in Liberia also reemerged early in the epidemic and were linked with threats to health care workers as well as attacks on public health personnel and facilities.

The Ebola epidemic also greatly amplified political tensions in Guinea, Liberia, and Sierra Leone, with incumbent politicians accused of leveraging the crisis and disease control measures to cement political control and opposition figures accused of hampering disease response efforts (ICG 2015). Whereas growing tensions did not lead to large-scale political violence or instability, they did complicate public health response efforts. In Sierra Leone, quarantine in opposition-dominated regions was delayed because of concerns that it would be seen as politically motivated (ICG 2015). In countries with high levels of political polarization, recent civil war, or weak institutions, sustained outbreaks could lead to more sustained and challenging political tensions.

Pandemics also can have longer-term impacts on state capacity (Price-Smith 2001). The HIV/AIDS pandemic offers one notable example. The 1990s and early 2000s saw extremely high HIV/AIDS prevalence rates among African militaries, leading to increased absenteeism, decreased military capacity, and decreased readiness (Elbe 2002). Similar effects may occur during shorter, more acute pandemics, reducing state capacity to manage instability. The weakening of security forces can, in turn, amplify the risk of civil war and other forms of violent conflict (Fearon and Laitin 2003).

Large-scale outbreaks of infectious disease have direct and consequential social impacts. For example, widespread public panic during disease outbreaks can lead to rapid population migration. A 1994 outbreak of plague in Surat, India, caused only a small number of reported cases, but fear led some 500,000 people (roughly 20 percent of the city's population, including a disproportionately large number of clinicians) to flee their homes (Barrett and Brown 2008). Sudden population movements can have destabilizing effects, and migrants face elevated health risks arising from poor sanitation, poor nutrition, and other stressors (Toole and Waldman 1990). Migration also poses the risk of further spreading an outbreak.

Finally, outbreaks of infectious disease can cause already vulnerable social groups, such as ethnic minority populations, to be stigmatized and blamed for the disease and its consequences (Person and others 2004). During the Black Death, Jewish communities in Europe faced discrimination, including expulsion and communal violence, because of stigma and blame for disease outbreaks (Cohn 2007). Modern outbreaks have seen more subtle forms of discrimination, such as shunning and fear, directed at minority populations linked with disease foci. For example, Africans in Hong

Kong SAR, China, reported experiencing social isolation, anxiety, and economic hardship resulting from fears of their association with Ebola (Siu 2015).

Whereas some interventions clearly fall under the purview of a single authority, responsibility for implementing and scaling up many critical aspects of preparedness and response is spread across multiple authorities, which play complementary, interlocking, and, in some cases, overlapping roles (Brattberg and Rhinard 2011). The governance of pandemic preparedness and response is complex, with authority fragmented across international, national, and subnational institutions, as well as among multiple organizations with functional responsibility for specific tasks (Hooghe and Marks 2003). Pandemic preparedness requires close coordination across public and private sector actors: vaccine development requires close coordination between government and vaccine producers; whereas critical response measures—such as managing quarantines—requires engagement between nonprofit organizations (hospitals, clinics, and nongovernmental organizations), public health authorities, affected communities and civil society groups, and the security sector.

Historical pandemics offer only a partial view to guide preparedness and response activities. Many countries and organizations have used the historical influenza pandemics in 1918, 1957, and 1968 to estimate the potential morbidity and mortality burden during a future pandemic (WHO 2016c). However, using these moderate-to-severe events to plan for a mild pandemic (for example, the 2009 influenza pandemic) can lead to an overzealous response—such as widespread mandatory school closures—that may create unintended negative economic consequences (Kelly and others 2011). And although the 1918 influenza pandemic is sometimes considered a "worst-case scenario" for planning purposes, possible scenarios today could be far more damaging—such as if a highly transmissible, highly virulent influenza virus were to emerge. Especially in LMICs, intensive care unit (ICU) beds and therapies for acute respiratory distress syndrome are in short supply, which could lead to many casualties (Osterholm 2005).

To understand the etiology of pandemics, important One Health activities include the surveillance of zoonotic pathogens of pandemic potential at the human-animal interface, the modeling of evolutionary dynamics, the risk assessments of zoonotic pathogens, and other methods of understanding the interplay between environmental changes and pathogen emergence (Paez-

Espino and others 2016; Wolfe and others 2005). For example, the PREDICT project of the U.S. Agency for International Development (USAID) has invested a significant amount of resources in understanding and characterizing zoonotic risk (Anthony and others 2013).[2]

Countries can focus their spark mitigation efforts on policies designed to control animal reservoirs; monitor high-risk populations such as people working at the animal interface (for example, those involved in animal husbandry, animal slaughter, and so on); and maintain robust animal health infrastructure, biosecurity, and veterinary public health capacities (Jonas 2013; Pike and others 2010; Watts 2004; Yu and others 2014).

Risk communications can play a significant role in the control of an emerging epidemic or pandemic by providing information that people can use to take protective and preventive action (WHO 2013c). The dissemination of basic information (such as how the pathogen is transmitted, guidance on managing patient care, high-risk practices, and protective behavioral measures) can rapidly and significantly reduce the transmission of disease.

The way in which risk communications are framed and transmitted matters a great deal; they must be clear, simple, timely, and delivered by credible messengers. Factors such as literacy rates, cultural sensitivities, familiarity with scientific principles (such as the germ theory of disease), and reliance on oral versus written traditions all have implications for how messages should be designed and delivered (Bedrosian and others 2016).

Public health officials also need to identify and address misinformation, rumors, and anxieties. This can be a significant challenge. During the 2014 West Africa Ebola epidemic, many communities reached for culturally familiar explanations of disease transmission and rejected disease control practices that clashed with their traditional healing and burial practices (Roca and others 2015). Still other individuals spread rumors about the source of the infection; for example, in Liberia some community leaders claimed that the disease was created by the government (Epstein 2014).

Preparing for a pandemic is challenging because of a multitude of factors, many of which are unique among natural disasters. Pandemics are rare events, and the risk of occurrence is influenced by anthropogenic changes in the natural environment. In addition, accountability for preparedness

is diffuse, and many of the countries at greatest risk have the most limited capacity to manage and mitigate pandemic risk.

Unlike most other natural disasters, pandemics do not remain geographically contained, and damages can be mitigated significantly through prompt intervention. As a result, there are strong ethical and global health imperatives for building capacity to detect and respond to pandemic threats, particularly in countries with weak preparedness and high spark and spread risk.

Investments to improve pandemic preparedness may have fewer immediate benefits, particularly relative to other pressing health needs in countries with heavy burdens of endemic disease. Therefore, characterizing pandemic risk and identifying gaps in pandemic preparedness are essential for prioritizing and targeting capacity-building efforts. Thinking about risks in terms of frequency and severity, notably using probabilistic modeling and EP curves, can quantify the potential pandemic risks facing each country and clarify the benefit-cost case for investing in pandemic preparedness.

References

D. S. Schneider, J. S. Ayres, Two ways to survive infection: What resistance and tolerance can teach us about treating infectious diseases. *Nat. Rev. Immunol.* **8**, 889–895 (2008).

K. Kupferschmidt, J. Cohen, Race to find COVID-19 treatments accelerates. *Science* **367**, 1412–1413 (2020).

H. K. Siddiqi, M. R. Mehra, COVID-19 illness in native and immunosuppressed states: A clinical-therapeutic staging proposal. *J. Heart Lung Transplant.* (2020).

J. S. Ayres, N. Freitag, D. S. Schneider, Identification of Drosophila mutants altering defense of and endurance to *Listeria monocytogenes* infection. *Genetics* **178**, 1807–1815 (2008).

Bose, A. (2020). India's domestic abuse survivors are in lockdown with their monsters, but helplines are not ringing. *News 18 Buzz.*

Campbell, A. M. (2020, December). An increasing risk of family violence during the Covid-19 pandemic: Strengthening community collaborations to save lives. *Forensic Science International: Reports, 2*, 10000

EPW Engage . (2020). COVID-19, domestic abuse and violence: Where do Indian women stand? *EPW Engage*

Godin, M. (2020). As cities around the world go on lockdown, victims of domestic violence look for a way out. *Time*.

Halim, N. (2020). Integrating domestic violence prevention and mitigation into global COVID-19 preparedness and relief efforts. *BMC Series Blog*.

Haneef, C., Kalyanpur, A. (2020). *Global rapid gender analysis for Covid-19*. CARE + IRC Global RGA for COVID-19.

Konokkara, A. (2020). Lockdown and domestic violence: As NGOs struggle to support women at risk, government plays catch up.

The Karvan.

Lancet . (2020). The gendered dimensions of COVID-19. *The Lancet, 395*, 1168.

Magnus, A., Stasio, F. (2020). *COVID-19 is creating another public health crisis: Domestic violence*. WUNC 91.5—North Carolina Public Radio.

Mukhtar, S. (2020). Pakistanis' mental health during the COVID-19. *Asian Journal of Psychiatry*, 102127.

NDTV . (2020). *Decline in domestic violence calls since lockdown: Delhi Women's Panel*.

Nicola, M., et al (2020). The socio-economic implications of the coronavirus and COVID-19 pandemic: A review. *International Journal of Surgery*.

Ratnam, D. (2020). Domestic violence during Covid-19 lockdown emerges as serious concern. *Hindustan Times*, New Delhi.

UN Women . (2020a). *The shadow pandemic: Violence against women and girls and COVID-19*.

UN Women . (2020b). *COVID-19 and ending violence against women and girls*.

UN Women . (2020c). *In focus: Gender equality matters in COVID-19 response*.

United Nations . (2020). *UN chief calls for domestic violence 'ceasefire' amid 'horrifying global surge'*.

Vincent, C. (2020). Covid-19 and domestic violence: Another public health emergency. *Socialist Alternative*.

Women's Aid UK . (2020). *The impact of COVID-19 on women and children experiencing domestic abuse, and the life-saving services that support them*.

World Health Organization . (2020a). *COVID-19 and violence against women: What the health sector/system can do*. WHO.

World Health Organization . (2020b). *WHO Director-General's opening remarks at the media briefing on COVID-19*.

https://apps.who.int/iris/bitstream/handle/10665/331699/WHO-SRH-20.04-eng.pdf

https://thediplomat.com/2020/04/chinas-hidden-epidemic-domestic-violence/

https://www.devex.com/news/opinion-coronavirus-is-driving-a-domestic-violence-pandemic-97028