

## PERSPECTIVE

### **CORONAVIRUS DISEASE-2019 (COVID-19) PANDEMIC: AN EERIE CHALLENGE TO THE GLOBAL COMMUNITY**

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Named after the crown-like spikes on their surfaces, it is established that coronaviruses (CoVs) constitute a large group of viruses, most of which circulate among animals such as pigs, camels, bats and cats (1). The history of human coronaviruses began in 1965, and we know that new coronaviruses appear to emerge periodically in humans, primarily due to the high prevalence and wide distribution of these viruses, the large genetic diversity and frequent recombination of their genomes, and the increase of human-animal interface activities (2). It is fascinating to see that ongoing research using serologic techniques has resulted in a considerable amount of information regarding the epidemiology of the human coronaviruses. We recognize that the enormous infusion of energy and activity around the expanding field of veterinary virology has deepened our knowledge about the virology and pathogenesis of coronaviruses (3).

It is perplexing and, in a way, also daunting, that at least five new human coronaviruses have been identified over the last two decades alone, including a very new severe acute respiratory distress syndrome coronavirus (SARS-CoV), which emerged in 2002–2003 causing significant morbidity and mortality in 29 countries in North and South America, Europe and Asia (4). Then, we had the middle east respiratory syndrome corona virus (MERS-CoV), starting in 2013, which, by 2020, claimed many lives globally (5). We now have severe acute respiratory distress syndrome coronavirus-2 (SARS-CoV-2), which despite all the signals over the last two decades, has unfortunately caught us of guard, causing coronavirus disease 2019 (COVID-19), and turning into a public health emergency of international concern (6).

It is well recognized that the magnitude and impact of an epidemic depends on the number of persons infected, the infection's transmissibility and the spectrum of clinical severity (7). We know that the full spectrum of COVID-19 severity ranges from asymptomatic, to symptomatic-but-mild, to severe, to requiring hospitalization, to fatal (8). The disease has spread to many countries within weeks to become a pandemic, which has swept the globe, and to date (as June 29) stands at over 10 million cases and has caused over 500,000 deaths, as well as massive socio-economic disruption. Governments and health authorities across the continent, like others across the globe, are striving to limit widespread infections. Response however looks frantic and uncoordinated, each country grappling with a herculean challenge largely on its own.

Africa has so far been largely spared the kind of impact COVID-19 has thrown the United States, and Europe into chaos (9), but the pandemic is steeply rising, particularly in some of the countries in the continent. Overall, in the African continent, as of June 29, 2020, a total of over 382,190 confirmed cases and over 9,500 deaths have been reported (10), which constitutes a small proportion. In a Continent with a population of over 1.2 billion the spread of COVID-19 could have devastating health and socio-economic consequences. Efforts to control the disease will themselves come with an enormous economic and social price. The weak health system plagued with inadequate surveillance and laboratory capacity will contribute to loss of lives. Population displacement, which is rampant in the continent, coupled with substantial disruptions to humanitarian operations, will compound the challenge posed by the pandemic across the continent.

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The pandemic has created unprecedented disruption for the global health and development and is complicated by unprecedented challenges of access, safety, supply chain logistics, and financial stress (11). Health workers, who are at the front line in response to the pandemic, are highly exposed to hazards associated with COVID-19, including pathogen exposure, long working hours, psychological distress, fatigue, occupational burnout, stigma, and physical and psychological violence. There is an utter need for implementation of occupational safety and health management systems to identify risks to health and safety, institution of infection prevention and control measures, and zero-tolerance policies towards workplace violence and harassment.

The short-term implications of this global challenge are evident everywhere. The long-term consequences of the COVID-19 pandemic, how it will reshape health and development institutions, occupations, and priorities, are still difficult to imagine (12). This global crisis, if not managed by coordinated global response and in a substantial way, will inevitably increase and deepen the divide between North and South, challenging the multilateral system and global solidarity on a large scale. Anecdotal observations suggest that each country has realized its fragility and reflected on its dependence on the rest of the world. Countries have experienced isolation and loneliness to a various level, when attempting to respond single handedly to such a major exogenous shock. The COVID-19 pandemic will surely test the resilience of nations, businesses, and communities. It has become evident that no single county, agency or organization can respond to such the pandemic on its own. Response to the pandemic calls for a comprehensive approach and must take a whole-of-society and whole-of-government approach. We need to draw on our experience with other major outbreaks such as Ebola, HIV, SARS, Tuberculosis (TB) and malaria. There is a dire need to urgently and effectively respond to COVID-19 pandemic (13) and translate knowledge into action that can guide efforts in developing context-specific national and regional operational plans.

The uphill battle against the COVID-19 pandemic is anticipated to go a long way. We may draw much lesson and inspiration from the HIV pandemic for the response to COVID-19 pandemic. No vaccine is available for either and there are no licensed pharmaceuticals for COVID-19 when the outbreak started, just as there was no drug for HIV infection in the early years of the epidemic. Population behavior will determine the pandemic trajectory of COVID-19 just as it did for HIV. A severe COVID-19 epidemic in low-income and middle-income countries (LMICs) with weak health systems has a sobering prospect. As humanity it is a serious mistake to go the same path that led us pay 32 million lives from the HIV pandemic. HIV transmission accelerated among mobile, well-connected networks, but the burden shifted to poorer people and countries, young women, and marginalized groups (14). We have witnessed with HIV that new advances often rapidly benefit the better off, increasing inequalities. Fast, decisive political leadership is crucial and is imperative to avoid falling in the same trap.

Observations to date show that displaced populations, including refugees, have been stigmatized, scapegoated and neglected in the emergency response to COVID-19 pandemic. Affected populations often experience substandard living conditions, overcrowding, limited access to safe water and sanitation, and poor health and nutrition, thus substantially increasing their risk of infection (15). In addition, they may face greater difficulties than the general population in accessing health services and may disproportionately bear the burden of pandemic-control measures, including restrictions on movement and border closures. In humanitarian contexts, conflict, political instability, resource limitations, and poor governance, further constrain the ability to detect and respond effectively to outbreaks.

We believe, though it is mind boggling and somewhat arguable, we have learnt enough from SARS that started in China in 2002-2003, then from the 2012 MERS epidemic which started in Saudi Arabia and Jordan. We might have also learnt form epidemics caused by other virus species - swine flu (H1N1) in 2009, bird flu (H7N9) in 2013 and 2017 as well as other pathogens such as Zika and Ebola (still active in Africa). For decades, experts from the science community have warned about the need to prepare for another pandemic like the 1918 Spanish flu (“the Great Influenza”), which killed at least 50 million people worldwide. However, never has a virus stopped the entire

world's gears quite like SARS-CoV-2, which has led to a situation where over one-third of humanity is under lockdown.

Stigmatization of people infected with SARS-CoV-2 will inevitably have a negative impact on others. We may count here on innovative approaches we employed in our HIV response, including structured community mobilization, targeted social protection, and differentiated health-care delivery (16). As countries take different approaches to control the pandemic, they must be aware of this and be alerted to averting unintended effects. The COVID-19 pandemic is a wake-up call to global citizens and their authorities, particularly that the pandemic viciously affects humans without any prejudice as to their education, socioeconomic status, race and ethnicity, religion, gender, age, abilities or disabilities, national origin, and other factors (17). That is why solidarity across the world is an absolute necessity in the battle against this unprecedented pandemic.

As part of the prospects for an exit strategy, lifting of restrictions to curtail the impact of coronavirus is beginning to emerge, but may be premature when we have not even yet settled on a long-term control strategy. On the positive side, we might get a useful serological test within the next months, and we will be able to gradually get better at treating people who have acute illness. Relaxing distancing measures will have to be done, not because it is the best way to conquer COVID-19, but because the costs, in terms of human health and welfare, will eventually outweigh the benefits. But even then, the process of relaxation will probably take many months or years. Assuming we will eventually succeed in developing a reliable antibody test, it might be possible that people who have significant antibodies to COVID-19 will be able to circulate more freely than people who do not. Currently, more than hundred vaccines are under trial. Only if a useful vaccine is developed will there be a possibility for most people to be immunized and return to the kind of normal mobility (18).

Looking forward, it is paramount to have a detailed understanding of how an animal virus jumps species boundaries to infect humans so successfully in order to design and effectively implement prevention of future zoonotic events. Irrespective of the exact mechanisms by which SARS-CoV-2 originated, the ongoing surveillance of pneumonia in humans and other animals is clearly of utmost importance. In this early period of COVID-19 pandemic, high-quality research is needed to provide valid and reliable ways to manage this kind of public health emergency in both the short- and long-term. Currently, the most viable option is enforcing strict preventive and control measures that minimize the risk of possible disease transmission. Efforts on repurposing broadly acting antiviral drugs may be encouraged. It cannot be overstated, as has also been emphasized by others (19), that in the wake of the pandemic basic health services viz. maternal and child health, Tuberculosis (TB), HIV and non-communicable diseases, are sidelined causing increases in mortality and morbidity from other major public health problems.

The COVID-19 pandemic has provided us, once more, with an opportunity to re-think why the economic models which have dominated for the past 50 years have done so little to care for each other. The rapid global spread of a novel coronavirus must have taught us that we are all interconnected in terms of our health and well-being. In the age of COVID-19, protecting the most vulnerable among us is not just a moral imperative but an urgent public health objective: the health of one is the health of all. The COVID-19 pandemic will be controlled eventually through prevention measures and the technology of medications and vaccines and shockwave from the pandemic will end at one point. Meanwhile, we need to seriously re-think about the interconnected global economy. As has been expressed cogently by others (20), there could be a silver lining to the collapse of the current economic systems and the phoenix that emerges could be much better for future generations even if the cost right now is high. We cannot let this opportunity pass.

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