A series of infection control measures have been implemented by the Government of Cameroon, including hygienic measures (eg, systematic hand washing), physical distancing, closure of all educational facilities and international borders, interministerial consultations that included the input of development partners, and financial measures allocated to implement this response. The university research community and national media outlets helped to develop and implement these measures alongside medical practitioners.[3]

Despite this mobilisation, the progression of the pandemic indicates the weaknesses of some of the selected approaches. For instance, in early March, the first cases were reported only in the Centre Region of Cameroon, and 10 days later a small number of cases were identified in the Littoral and West Regions.[4] This was the time to seal off these three regions, which are the most economically active and populated parts of our nation, but no restrictions on movement were introduced. Of note, the general state of hospital infrastructure in Cameroon is similar to that of many other African countries—that is, far from the standards required internationally. Moreover, although Cameroon has many highly qualified professionals in the fields of medicine and social science, regrettably, these experts were not always consulted on meeting the challenges of the unfolding pandemic. Finally, society-wide acceptance of prescribed rules and regulations must be achieved if public health measures are to be effective, and this was not the case in this instance. Many Cameroonians are slow to acknowledge the potential danger of the pandemic.

Improving the response to COVID-19 in both Cameroon and the rest of the continent is crucial. In view of the projected number of cases, which differs so greatly from the officially known figures, a total confinement of the entire population seems inevitable. Public support for the confinement process will be imperative, and could be encouraged by conveying the message that the stronger the adherence to complete confinement, the shorter the period of that confinement and the sooner people can return to normal life. Given the economic precarity of most households in Cameroon, including vulnerable groups such as people with HIV infection, an allocation of special financial allowances to households could encourage compliance with confinement measures.[5] Similarly, financial support should be provided to the medical personnel at the forefront of this fight and business owners for whom operations will be restricted throughout a period of confinement. Contact tracing, wearing of masks in public places, and self-isolation of individuals who have symptoms are crucial. Finally, the use of scientific developments (including newly developed rapid diagnostic tests and treatment options) and allocation of more resources to the fight against COVID-19 would lead to a greater capacity for the diagnosis, rapid isolation, treatment, and care of infected individuals. These actions will help save millions of lives and make it possible to restart the economy as quickly as possible. This is the time to show solidarity, compassion, and leadership.

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See Online for appendix

COVID-19 on the African continent

As of April 20, 2020, 14 068 people have been infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in Africa, of whom 3158 (22·4%) are in South Africa.[1] The transmissibility of SARS-CoV-2, combined with the scarcity of crucial health equipment and the challenges of implementing widespread physical distancing and case isolation, poses a grave threat to the continent.

To illustrate the potential burden of SARS-CoV-2 epidemics within the most vulnerable countries in Africa, we simulated a SARS-CoV-2 outbreak in DR Congo in the absence of interventions. Using an age-structured epidemiological model (appendix p 1), and assuming a basic reproductive number of 2·72 (95% CI 2·56–2·87),[2] we estimate that there would be 76 213 155 infections (95% CI 74 156 965–77 800 029) and 319 441 deaths (313 079–324 175) in the absence of physical distancing (figure). Although individuals younger than 20 years account for 42 752 770 (95% CI 41 551 696–43 683 014; 56·1%) of these simulated SARS-CoV-2

infections, individuals aged 50 years and older constitute 280 623 (275 356–284 509; 87·8%) of the deaths in our model prediction. Given the high prevalence of comorbidities in DR Congo, as there is in Africa more broadly, the death toll could even be much higher.[3]

Sparse testing capacity makes assessing the true burden of coronavirus disease 2019 (COVID-19) and implementing effective case isolation difficult. For example, by mid-April 2020, DR Congo was only doing around 200 tests per day,[4] Senegal around 300 tests per day,[5] and Ethiopia around 400 tests per day.[5] In addition, there are scarce resources for treating critically ill patients with COVID-19. Compared with the USA, a country with more than 120 000 ventilators, there are fewer than 2000 ventilators spread across 41 African countries, only five of which are in DR Congo.[6,7]

Physical distancing and other control measures have been implemented in some parts of African countries, including in the capital of DR Congo. However, authorities in Ghana and South Africa have already begun to consider lifting restrictions.[8] Given the dearth of health-care facilities and equipment across Africa, we urge investing heavily in prevention, including lockdowns focused on densely populated areas and shelter-in-place orders for the most vulnerable. Simultaneously, the socioeconomic considerations of the population and the disparate local realities of the 54 African countries must be taken into account. Mitigation strategies must be implemented in conjunction with social protection measures, such as price controls, the waving of utility bills and taxes, and targeted cash transfers.[9] A concerted international effort is both moral and pragmatic for achieving this goal. However, on April 14, 2020, the US President announced that the USA will suspend its funding of WHO. Such action would be shortsighted, imperilling the containment of SARS-CoV-2. Protecting Africa is essential, not only for the continent itself, but also to safeguard the rest of the world. Given the potential for SARS-CoV-2 to reseed, even as some countries extinguish their current epidemics, the worldwide population is only as safe as its most vulnerable nations.

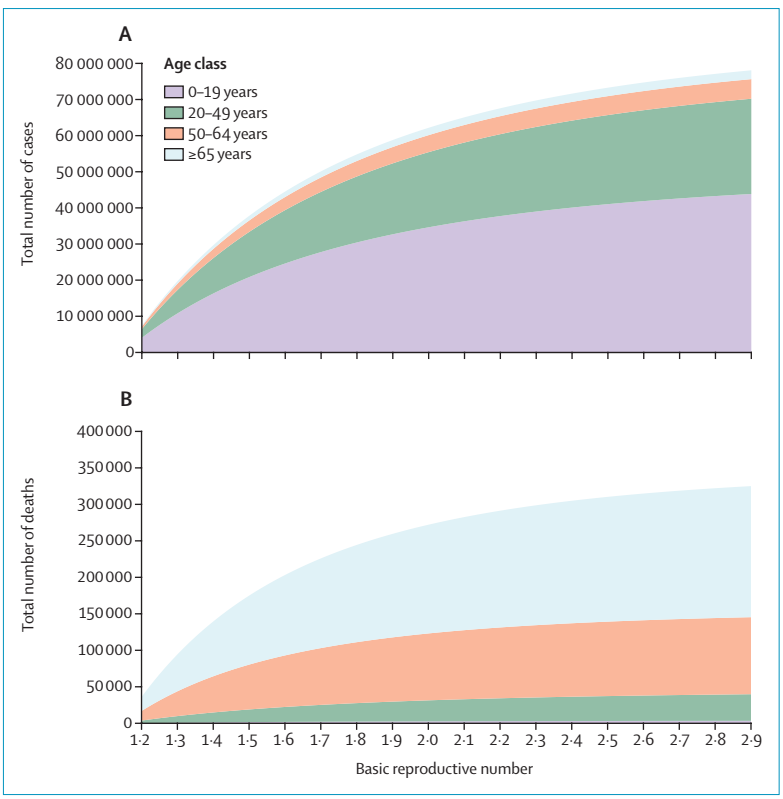

***Figure*: Projected burden of COVID-19 in DR Congo in the absence of any control measures for a range of basic reproductive numbers**

The total number of COVID-19 cases (A) and deaths (B) estimated for basic reproductive numbers between 1·2 and 2·9. Details on how we calculated the basic reproductive numbers can be found in the appendix (p 1). COVID-19=coronavirus disease 2019.

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SARS-CoV-2 epidemic in African countries—are we losing perspective?

In their Correspondence, Chad Wells and colleagues[1] wrote about COVID-19 in the African continent, proposing more rigorous measures of prevention and lockdown and predicting a total death toll of greater than 300 000 for DR Congo alone. We question the appropriateness of the mathematical model used by the authors and of the conclusions drawn. A more accurate prediction must go beyond this model and encompass long-term health strategies of the country, as well as death tolls attributable to the prevention measures themselves.

We know little about the dynamics of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in African countries, including its infectiousness and the proportion of infected people who develop symptoms. Confined exposure of 2010 people on an aircraft carrier resulted in an infection rate of just 50%, and only 50% of infected people developed symptoms.[2] Under less confined conditions, and similar to other circulating viruses that cause acute respiratory infections, SARS-CoV-2 might cause infection rates well below 30%, thus unable to provoke herd immunity but most probably causing recurring annual infections.

Estimated infection fatality rates of around 0·3%[3] draw a much less dramatic picture of COVID-19-related deaths than predicted by Wells and colleagues, who presumed 95% of all Congolese will be infected, with an infection fatality rate of over 4%.[1] In DR Congo, we might thus estimate fewer than 40 000 attributable deaths compared with 800 000 Congolese people dying each year in the country.[4] Such estimates put the prioritisation of this disease over other health threats on the continent immediately into question.

Country-specific age structures and infrastructure in Africa differ greatly from higher-income settings. In DR Congo and Malawi, for instance, 63% and 67% of the population, respectively, are younger than 25 years, and in both countries only 2·69% of the population is older than 65 years.[5] Although densely populated, except for in major cities, neither DR Congo nor Malawi has the infrastructure or population clustering to drive an epidemic in the country as projected by Wells and colleagues.

The lockdown measures proposed by Wells and colleagues do not appear applicable to the African continent and might cause more harm than SARS-CoV-2 itself.[6] We have already seen the cumulative effects of psychosocial, economic, and health damage, including hunger, altered health-seeking behaviour, and postponed treatment.[7] Other interventions proposed by the authors, such as price controls, waving of taxes, and cash transfers, are not effective in countries where prices depend on dealers and intermediate traders, only a minority of the population pays taxes, and cash transfers can be an open invitation to fraud.

Africa, a collection of 54 independent states with different population and economic parameters, requires a differentiated look. Between the two seemingly unachievable polarities—herd immunity and eradication—it seems likely that we must accept living with the virus, as we have done with many viruses before. At the very least, we need to define a goal for control policies, assess side-effects of those, and incorporate various sociocultural aspects. We must balance COVID-19-directed control measures with other challenges following a well established public health principle: equal attention to equal health threats.

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