

# How Can We Prevent COVID-19 from Exacerbating Other Epidemics in Low- and Middle-Income Countries?

Series | COVID-19 & response strategy

**ISGlobal** Barcelona  
Institute for  
Global Health

**Authors:** Laura de la Fuente Soro and Elisa López Varela (ISGlobal)\*

[This is the fifteenth document in a series of discussion notes addressing fundamental questions about the COVID-19 crisis and response strategies. These documents are based on the best scientific information available and may be updated as new information comes to light.]

18 June 2020

Cover photo: Ton Rulkens

The effects of the COVID-19 epidemic on health systems have been **devastating**: crowded and overwhelmed facilities, patients unable to see a doctor, and shortages of medical supplies, staff, hospital beds and even essential treatments such as oxygen. **High-income countries**, where until recently infectious diseases did not pose the greatest threat, managed to relieve the pressure on overloaded health systems in a matter of weeks. Non-emergency follow-up care for chronic diseases was suspended, temporary hospital wards were set up to accommodate the exponential increase in the number of patients requiring hospitalisation, ventilators were purchased, intensive care units were expanded, and medical specialists were reassigned to cover new needs. This large-scale deployment of resources was needed to deal with the devastating impact of an unprecedented pandemic and to allow hospitals and the health system as a whole to gradually return to normal—or rather, the “new normal”.

Unfortunately, the **response has not followed the same pattern in every country**. More than half of the world’s population lives in countries whose health systems do not even have the capacity to deliver essential services. These perennially overstretched systems struggle to maintain a delicate balance, which can be disrupted by any destabilising event, causing deaths to skyrocket. **Most of the conditions endemic to these countries are infectious** diseases, whose control requires the effective implementation of preventive measures—often community-based—and the uninterrupted delivery of individualised care. In the context of a pandemic such as COVID-19, this is the greatest challenge of all ●

\* Laura de la Fuente Soro is a Research Assistant and Elisa López Varela is an Assistant Research Professor, both at the Barcelona Institute for Global Health (ISGlobal).

# 1. What Happens in a Poor Country When an Emergency Like the Coronavirus Interrupts Health Care and Prevention Programmes?

“Over the next five years, an estimated 1.5 million people will die of tuberculosis worldwide as a direct consequence of COVID-19.”

In 2018, the **Democratic Republic of the Congo (DRC)** saw the **second deadliest Ebola virus outbreak in history** after the 2014–2016 epidemic in West Africa. Although the DRC outbreak has not yet officially ended, the number of new cases has declined in recent months. Early last year, when the attention and resources of government agencies and humanitarian organisations were focused on the Ebola outbreak, the DRC faced a tragic dilemma. To prevent human-to-human contact and reduce the spread of the Ebola virus, **community-based child vaccination campaigns were scaled back**. In 2019, the region saw its **largest measles outbreak in recent years**. More than 300,000 infections were reported and over 6,000 children died from this disease, which is curable and easily preventable through vaccination. For the same reason, **mosquito nets** were not distributed to communities, resulting in more than **16 million malaria infections and 17,000 deaths** in 2019. Cholera claimed three times as many lives as it did in 2009.

The DRC Ebola crisis illustrates this conflict of priorities and shows how a serious outbreak can upend a country’s national health strategy. Some obvious questions arise: **What could happen if this situation were to occur on a global scale? If our attention is diverted entirely to COVID-19, how might the control of other epidemics be affected?**

Anticipating these questions, experts have used **mathematical models** to try to predict how **human immunodeficien-**

**cy virus (HIV), tuberculosis (TB) and malaria** would be affected by the interruption of prevention and treatment services as a consequence of COVID-19<sup>1,2,3</sup>. The results could be **devastating**, especially in sub-Saharan Africa: a six-month interruption in the distribution of antiretroviral drugs would be enough to cause more than half a million extra deaths from AIDS-related causes, including TB, in one year. In the case of malaria, the annual death toll could reach 770,000—twice as high as last year—with children and pregnant women being the most severely affected groups.

Since the beginning of the **HIV epidemic** in the 1980s, about 75 million people worldwide have been infected and 32 million have died of AIDS-related causes. However, since UNAIDS launched its **90-90-90 strategy** in 2014, **great progress** has been made in controlling this global epidemic. The target of this strategy is testing and sustained lifelong therapy for everyone on the planet living with HIV. Although progress has been made towards these objectives, COVID-19—and the social distancing measures and health care restrictions that have come in its wake—could cause AIDS-related deaths to rise once again, **setting us back more than a decade**<sup>4</sup>:

- **The supply of antiretroviral drugs could be interrupted** by the closure of HIV centres, supply chain disruptions or even by shortages caused by the use of these drugs for experimental coronavirus treatment.

<sup>1</sup> Hogan AB, Jewell BL, Sherrard-Smith E, et al. The Potential Impact of the COVID-19 Epidemic on HIV, TB and Malaria in Low- and Middle-Income Countries. doi: <https://doi.org/10.25561/78670>.

<sup>2</sup> Jewell BL, Mudimu E, Stover J, Kelly SL, Phillips A. Potential effects of disruption to HIV programmes in sub-Saharan Africa caused by COVID-19: results from multiple mathematical models. 2020 [cited 16 Jun 2020]. doi:10.6084/M9.FIGSHARE.12279914.V1.

<sup>3</sup> Developed by Stop TB Partnership in collaboration with Imperial College, Avenir Health, Johns Hopkins University and USAID. [The potential impact of the COVID-19 response on tuberculosis in high-burden countries: a modelling analysis](#). 2020. [cited 1 Jun 2020].

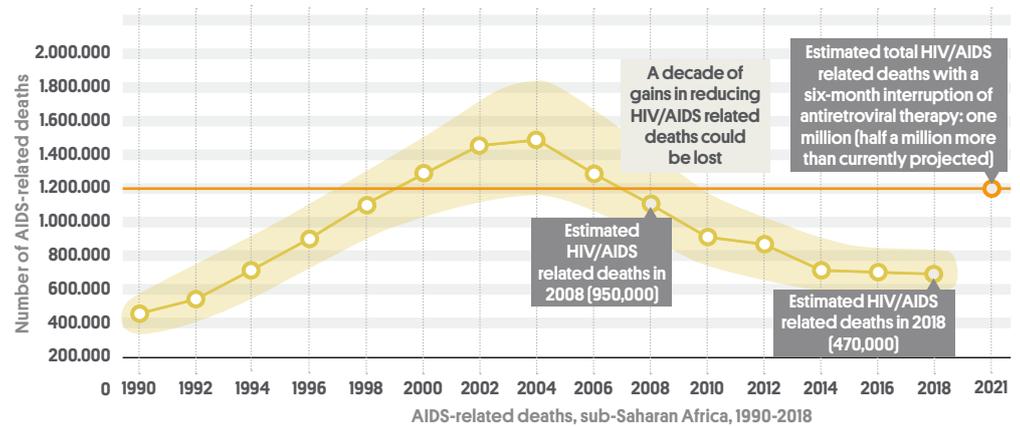
<sup>4</sup> Jewell BL, Mudimu E, Stover J, Kelly SL, Phillips A. Potential effects of disruption to HIV programmes in sub-Saharan Africa caused by COVID-19: results from multiple mathematical models. 2020 [cited 16 Jun 2020]. doi:10.6084/M9.FIGSHARE.12279914.V1.

- **Health facilities could be overwhelmed** by the competing needs of the COVID-19 response.
- **Community-based HIV testing campaigns**, which bring health care to poorly served rural areas, could be threatened. These campaigns play a critical role in controlling the HIV epidemic. If they are scaled back as a result of COVID-19, access to di-

agnosis and treatment could be jeopardised for everyone affected by HIV and many associated diseases, including TB.

- **Intimate partner sexual assault and rape** may become more common when the emergency situation forces people to spend more time at home; the risk of HIV transmission would increase accordingly.

**Figure 1. The Cost of Inaction: Interruption of HIV Treatment Services Due to COVID-19 Could Lead to More Than 500,000 Extra Deaths in Sub-Saharan Africa.**



**Source:** UNAIDS, using data from the study [Potential effects of disruption to HIV programmes in sub-Saharan Africa caused by COVID-19: results from multiple mathematical models](#).

In some places, the combination of factors seems like a perfect epidemiological storm. **South Africa**, for example, has **the continent's highest reported number of COVID-19 cases** and some of the **highest rates of HIV and TB prevalence in the world**. With less than 200 confirmed cases of COVID-19, South Africa declared a national emergency and imposed strict containment measures, which remain in place to this day. These restrictions on people's movements have, at least for now, kept the spread of the disease below the levels seen in Europe, where the authorities took longer to impose radical containment measures. However, the emergency restrictions, combined with the population's fear of seeking medical care and the limitations of the health system, have in recent weeks led to a **48% decrease in diagnostic testing for TB**, the leading cause of death in the country.

Over the next five years, an estimated **1.5 million people will die of TB worldwide as a direct consequence of COVID-19**. In addition, the BCG vaccine, which plays a key role in preventing severe TB in young children, could potentially confer protection against COVID-19. If the vaccine is scientifically confirmed to be effective against COVID-19, its availability as a preventive measure against TB could be threatened. The direct consequence would be a decrease in child immunisation coverage and a dramatic increase in the incidence of TB meningitis and child mortality ●

# 2. How Can We Minimise the Impact of COVID-19 on the Control of Other Epidemics and What Lessons Can We Learn From Previous Crises?

**“The response to COVID-19 should be integrated into the existing prevention, diagnosis and treatment protocols for known diseases, thereby ensuring that everyone is on the same page and strengthening health systems across the board.”**

Although there is no precedent for global response to the COVID-19 pandemic, past disasters can teach us important lessons and help us anticipate potential problems. We know that diverting all of our attention to the coronavirus could have dire consequences, and that interrupting treatment and prevention services would cause a spike in TB, HIV and malaria deaths that would far exceed the deaths caused by COVID-19 itself. But even in times of crisis, it is possible to **strengthen essential elements of the health system** to shore up the fragile balance maintained by most systems across the globe.

A number of organisations and alliances—including the World Health Organisation (WHO); Gavi, the Vaccine Alliance; UNICEF; the Global Fund to Fight AIDS, Tuberculosis and Malaria; UNAIDS; the International AIDS Society; and the Stop TB Partnership—have published strategy documents containing recommendations for health systems<sup>5,6,7,8,9,10</sup>. They all agree that **the response to COVID-19 should be integrated** into the existing prevention, diagnosis and treatment protocols for known diseases, thereby ensuring that everyone is on the same page and strengthening health systems across the board. In particular, these documents call for collaboration among health ministries, funding bodies, civil society, and national and international organisations to ensure a coordinated response to the pandemic.

The measures proposed to minimise the impact of COVID-19 on other health strategies include the following:

**1. Adapting health care services:** National health systems need to be flexible and responsive so that they can continue to safely provide care to patients and health workers (including with regard to mental, economic and social health). New technologies and platforms can help to minimise unnecessary visits to health care facilities. Now is the time to promote differentiated service delivery to optimise how, when, where and by whom care and treatment are provided for HIV and, potentially, for TB and malaria. In Senegal, for example, the national HIV control programme set up a WhatsApp network for HIV care site managers that provides timely recommendations on how to adapt the way health care is delivered.

**2. Maintaining the continuity of basic prevention and care services for other endemic diseases:** To ensure that no patient is left behind, it is important to ensure the continuity of child immunisation, maternal and reproductive health, and HIV, TB and malaria care programmes. Since the continuing availability of these services is a matter of life and death, it is essential that they be provided by all health centres. Special attention should be paid to vulnerable groups and people who have the most difficulty accessing the health system, including those affected by humanitarian emergencies. Recently, at its successful replenishment conference, Gavi pledged to ensure the continuity of these basic services.

**3. The relationship between the coronavirus response and other diseases:** A central element of the strategy against COVID-19 is to maintain and strengthen the basic

<sup>5</sup> UNICEF. Protecting the most vulnerable children from the impact of coronavirus: An agenda for action. 2020.

<sup>6</sup> World Health Organization Regional Office for Europe. Guidance on routine immunization services during COVID-19 pandemic in the WHO European Region. 2020.

<sup>7</sup> World Health Organization. COVID-19: Considerations for tuberculosis (TB) care. 2020.

<sup>8</sup> Developed by Stop TB Partnership in collaboration with, Imperial College, Avenir Health JHU and U. The potential impact of the COVID-19 response on tuberculosis in high-burden countries: a modelling analysis. 2020. [cited 1 Jun 2020].

<sup>9</sup> World Health Organization. Tailoring malaria interventions in the COVID-19 response. 2020 [cited 8 Jun 2020].

<sup>10</sup> UNAIDS. Rights in the time of COVID-19 — Lessons from HIV for an effective, community-led response. 2020.

care structures and systems that handle the health system's other priorities. This involves, among other measures, coordinated adherence to strategic plans for controlling each disease; the orchestration of logistics and supply chains for basic health products (tests, treatments, medical supplies, etc.); and the strengthening of health management information and epidemiological surveillance systems. Structures such as GeneXpert diagnostic platforms for TB can be useful in SARS-CoV-2 diagnostics and in the response to COVID-19, provided that TB diagnostics are not displaced.

**4. Social participation:** Experience with HIV has taught us that civil society participation and community leadership are essential for a robust and sustained response. It is important to involve affected citizens from the outset in all response measures, thereby building trust and guaranteeing frequent information-sharing, with the imperative of protecting human rights. For example, the Red Cross has been analysing community feedback from ten African countries on a weekly basis since the start of the pandemic. This programme contributes to the fight against COVID-19 by compiling the most common questions, rumours and fears in different sectors of civil society; creating easy-to-understand educational materials; and answering frequently asked questions on social media. By debunking fake news that has spread through the community, the programme eliminates barriers to the use of health services.

**5. Scientific research needs:** Despite the urgent need for solutions to COVID-19, the continuity of clinical research and programmes targeting diseases such as HIV, TB and malaria must also be guaranteed, since these activities are considered an extension of basic health care services. If clinical trials assessing new biomedical interventions for the prevention and treatment of these diseases were to be interrupted, the collection of key evidence to improve health care could be delayed or halted. Such an interruption would also have a direct impact on patient care. Moreover, research on how COVID-19 interacts with these other diseases will inform the design of context-appropriate, evidence-based strategies designed to mitigate the impact of future pandemics ●

---

## TO LEARN MORE

- [Low- and middle-income countries face up to COVID-19](#). News feature, Miriam Shuchman. *Nature Medicine*. 21 May 2020.
- [Ebola, Measles And Now COVID-19: DR Congo In Crisis](#). *Forbes*, 13 April 2020.
- [As COVID-19 devastates already fragile health systems, over 6,000 additional children under five could die a day, without urgent action](#). UNICEF, 13 May 2020.
- [COVID-19: A double emergency](#). UNICEF, accessed 17 June 2020.

---

**ISGlobal** Barcelona  
Institute for  
Global Health

A partnership of:

 **"la Caixa" Foundation**

**CLÍNIC**  
BARCELONA  
Hospital Universitari

 UNIVERSITAT DE  
BARCELONA

 Generalitat  
de Catalunya

 GOBIERNO  
DE ESPAÑA

 Parc  
de Salut  
MAR

 upf  
Universitat  
Pompeu Fabra  
Barcelona

 Ajuntament de  
Barcelona