COVID-19 research in Africa

When two French doctors recently discussed the ease of conducting clinical research on coronavirus disease 2019 (COVID-19) in African nations, with an insinuation that ethical and safety standards for testing vaccines and treatments in these nations are lower than in other countries, anti-African research sentiments flared on social media and in news reports. Suggesting that clinical trial conduct is at a lower standard in Africa is unacceptable. Africa has innovated and implemented health solutions with high ethical regard for its people. In March, the Academy of Science of South Africa stressed the importance of research and development on COVID-19 in Africa as “key to the response to outbreaks of emerging and re-emerging pathogens.” The expertise and infrastructure of African clinical research sites, along with African nations’ engagement of their communities who wish to contribute to effective solutions, are ready to be leveraged to tackle this pandemic emergency.

So far, COVID-19, caused by severe acute respiratory syndrome–coronavirus 2 (SARS-CoV-2), has infected ~5 million people worldwide and caused ~328,000 deaths. Africa now has over 95,000 cases of infection across the continent and more than 3000 deaths, with Egypt (14,000) just behind South Africa (18,000) in reported infections. But Africa has long grappled with the morbidity and mortality of communicable diseases including endemic tuberculosis (TB), Ebola virus disease, and malaria. Sub-Saharan Africa has borne the brunt of the HIV/AIDS epidemic, with half of the annual global infections. Once again, Africa confronts a new pandemic and must help find solutions, both for the continent and for the global community.

Africa, a consumer of health products, has played a key role in developing new medical products. Driven by the need to improve local public health, highly collaborative partnerships have been established between international research teams that involve African scientists, clinicians, and community-based advocates. For example, at the turn of the millennium, HIV/AIDS was a death sentence throughout Africa; that is no longer the case. Today, many antiretroviral drugs used worldwide were tested in Sub-Saharan Africa and found to be lifesaving for people with advanced AIDS. The extensive involvement of African women in clinical HIV/AIDS research underpinned the establishment of new preventive tools. Also developed in Africa were the guidelines for treating AIDS and TB coinfection, cryptococcal meningitis infection, immune reconstitution syndrome, the timing of pediatric antiretroviral therapy initiation, and the evaluation of new therapeutic regimens for treating drug-resistant TB. Vaccines for malaria and Ebola virus disease were also tested across Africa. Recently, vaccine candidates for TB prevention were tested in East, West, Central, and Southern Africa, a necessary prerequisite before deployment across the continent.

The key components to Africa’s contributions in these endeavors have included robust community engagement with clinical research, the ethical conduct of this research, and ensuring that the research is regulated, monitored, and analyzed within Africa. These principles must also guide the partnerships needed to address COVID-19 effectively. For example, local communities should be considered partners in clinical research. All research should have ethical and regulatory approval in-country. And the highest international and national standards of treatment and prevention for COVID-19 should be maintained.

Several countries in Africa are now preparing for clinical trials of COVID-19 therapies and vaccines with multiple international partners. Cameroon, Zambia, Zimbabwe, Uganda, and South Africa are applying for ethical and regulatory approval for the Chloroquine Repurposing to Health Workers for Novel Coronavirus Mitigation Trial (supported by Washington University School of Medicine and the Bill and Melinda Gates Foundation). Nigeria, Tunisia, Egypt, and South Africa have signed up for the Solidarity Trial [supported by the World Health Organization (WHO) and partners] to rapidly determine whether treatment options slow COVID-19 progression or improve survival. National regulatory authorities and national ethics committees from across Africa have agreed to combine their expertise to expedite clinical trial review and approvals for new multinational preventive, diagnostic, and therapeutic interventions for COVID-19. Although each country is solely responsible for granting regulatory approval, this agreement was reached during a virtual meeting convened by the WHO on 1 April 2020 under the platform of the African Vaccines Regulatory Forum.

As with so many other diseases, COVID-19 trials will be carried out in Africa, under the highest ethical and safety standards. To exclude Africa would be a life-threatening mistake.

―Linda-Gail Bekker and Valerie Mizrahi*

*Tentative editorial decision: this paper meets our criteria for important work since the research focuses on a disease that has a significant impact on human health and/or animal health. It is also linked to recent events, such as COVID-19. This paper may be subject to editorial changes. The discussion and conclusions are tentative at this stage.

Linda-Gail Bekker is deputy director at The Desmond Tutu HIV Centre, University of Cape Town, Cape Town, South Africa. linda-gail.bekker@hiv-research.org.za

Valerie Mizrahi is director at the Institute of Infectious Disease and Molecular Medicine, University of Cape Town, Cape Town, South Africa. valerie.mizrahi@uct.ac.za

*Acknowledgments are in the supplementary materials (science.sciencemag.org/content/368/6494/919/suppl/DC1).

10.1126/science.abc9528
COVID-19 research in Africa
Linda-Gail Bekker and Valerie Mizrahi

Science 368 (6494), 919.
DOI: 10.1126/science.abc9528