Fostering collaboration on post-Ebola clinical research in Liberia

Despite evidence pointing to the pre-2014 existence of Ebola virus disease (EVD) in west Africa,[1] the current outbreak is the largest and longest yet.[2,3] The urgent need to contain the epidemic focused the global research response on vaccines, therapeutics, and diagnostic tools. Yet the epidemic overstretched and outpaced the capacity of affected countries' health systems to respond to the health needs of its citizens; the global call for researchers to conduct clinical trials similarly overwhelmed ethical and regulatory capacities. Here we describe a successful research partnership set up during the outbreak between Liberia and the USA.

In August, 2014, Walter T Gwenigale, then the Minister of Health of Liberia, wrote to the US Department of Health & Human Services (DHHS) requesting assistance to foster collaboration over research on promising vaccines and therapeutics for EVD. DHHS Secretary Sylvia Burwell affirmed the need to initiate an Ebola research partnership. US National Institutes of Health (NIH) Deputy Director for Clinical Research and Special Projects Clifford Lane then presented a concept to Liberia's Ministry of Health for the establishment of a Joint Liberia–US Clinical Research Partnership Program. Two key research agencies were identified by the respective governments to spearhead this proposed initiative: the Liberia Institute for Biomedical Research (LIBR) and the US NIH.

This initial concept led to the establishment of the Partnership for Research on Ebola Virus Disease in Liberia (PREVAIL), with an initial focus on EVD vaccines and therapeutics, and a long-term goal of establishing a clinical research centre of excellence. From October to December, 2014, Liberian and US researchers established the appropriate partnership platforms, including an operational plan and support-system-based organogram, to commence a clinical trial during the Ebola outbreak in Liberia. To jump-start the proposed clinical research programme and simultaneously address the need to combat the prevailing EVD epidemic, three clinical studies were designed and approved by Liberian and US researchers, and rapidly implemented as the beginning of a sustainable long-term collaborative partnership between the two countries: PREVAIL I, an Ebola vaccine clinical trial; PREVAIL II, a multicountry Ebola treatment clinical trial; and PREVAIL III, an Ebola natural history study of EVD survivors and their close contacts.

Experience from Liberia shows that high-quality clinical trials, based on rigorous research methods, can be effectively implemented during outbreaks.[4] However, they must be grounded within the framework of a collaborative research partnership that strengthens ethical and regulatory systems, harnesses cultural competencies via communication and social mobilisation, and supports infrastructure and capacity enhancements.

Moving forward, there is an urgent need to evaluate and address Liberia's capacity to appropriately benefit from the upsurge in research opportunities during the post-EVD period. Funding should be dedicated to developing a critical mass of skilled researchers who can lead clinical research programmes that are locally relevant, ethical, and methodologically sound.

We acknowledge the contributions of the researchers, technical team members, and operational staff of the Joint Liberia–US Partnership for Research on Ebola Vaccines in Liberia (PREVAIL). We also recognise the overwhelming support and cooperation from the respective collaborating lead partners—the Liberia Institute for Biomedical Research and the US National Institutes of Health.

We declare no competing interests.

*Moses B F Massaquoi, *Stephen B Kennedy, Jemee K Tegli, Fatorma K Bolay, Francis N Kateh*
kennedys@lpgmc.org

Partnership for Research on Ebola Vaccines in Liberia (PREVAIL), Liberia–US Joint Clinical Research Partnership Program, Sinkor, Montserrado County, Monrovia, Liberia (MBFM, SBK, JKT, FKB); Incident Management System, Emergency Operations Center, Ministry of Health, Congo Town, Montserrado County, Monrovia, Liberia (MBFM, SBK, FNK); Liberian Institute for Biomedical Research, Charlesville, Margibi County, Liberia (FKB); and Ministry of Health, Congo Town, Montserrado County, Monrovia, Liberia (FNK)

1 Dahn B, Mussah V, Nutt C. Yes, we were warned about Ebola. http://www.nytimes.com/2015/04/08/opinion/yes-we-were-warned-about-ebola.html?_r=0 (accessed Feb 25, 2016).
2 Kennedy SB, Nisbett RA. The Ebola epidemic: a transformative moment for global health. *Bull World Health Organ* 2015; **93:** 2.
3 Wong G, Kobinger GP. Backs against the wall: novel and existing strategies used during the 2014–2015 Ebola virus outbreak. *Clin Microbiol Rev* 2015; **28:** 593–601.
4 Kennedy SB, Neaton J, Lane HC, et al. Implementation of an Ebola virus disease (EVD) vaccine clinical trial during the Ebola epidemic in Liberia: design, procedures, and challenges. *Clin Trials* 2016; **13:** 49–56.