



Perspective

Partnerships, Not Parachutists, for Zika Research

David L. Heymann, M.D., Joanne Liu, M.D., and Louis Lillywhite, M.B., B.Ch.

When the director-general of the World Health Organization (WHO) declared that the recently reported clusters of microcephaly and other neurologic disorders represent a

Public Health Emergency of International Concern (PHEIC), she called for increased research into their cause, including the question of whether the Zika virus is the source of the problem.¹ The declaration provides an opportunity to step up the pace of research in order to find the answer to some important questions more quickly. It could not only facilitate the accumulation of knowledge about the relationship between the Zika virus and microcephaly, but also accelerate the study of newer technologies for mosquito control, which could have far-reaching effects on global health security beyond controlling Zika infections.

But to answer these research questions effectively and maximize their contribution to enhancing health security, we believe it

is critical that research be conducted collaboratively. Building and strengthening public health capacities (in part through collaborative research) are central to the International Health Regulations, an international agreement of all WHO member countries designed to strengthen health security.

Yet collaborative research is not a given. Collaborative clinical and vaccine research during the recent Ebola epidemic helped some West African researchers hone their skills and bring them up to global standards for good practice. And many of the laboratories and other installations provided by donor countries during the Ebola outbreak remain in place and are becoming a focus for development aid targeted at improving public health. But in

general, collaboration during that crisis was suboptimal; in too many cases, West Africa became a playground for researchers allegedly appropriating and transporting specimens and data to their home laboratories, sometimes without the knowledge or permission of the countries in which they were collected.² An initiative to create a coordinated network of biobanks and data-sharing platforms for Ebola and other emerging pathogens has been launched by Médecins sans Frontières (Doctors without Borders), but it remains to be seen whether it will be accepted by the research community and contribute to increased sharing of data and specimens.

Research during other recent outbreaks and emergencies has also been fraught with failures to collaborate. Consider the current outbreaks of Middle East respiratory syndrome (MERS). The coronavirus that causes MERS was identified nearly 3 years ago, and scientists have suggested trans-

mission links to bats and to camels, but it is still not understood how the MERS coronavirus is periodically transmitted to humans from these or other sources in nature. Studies that could help answer such questions have not yet been completed, nor have their results been shared in a way that could lead to preventive measures. In some instances, scientists have taken back specimens from the Middle East to study in their own laboratories, creating misunderstandings among researchers and accusations of publishing data without permission from the country of origin.

These practices have been pejoratively labeled “parachute” research: fully equipped research teams from other countries arrive at the site where research is needed, conduct their research independently of others, and then leave. Parachute researchers reduce the effectiveness of emergency responses by neglecting to share their data with the public health teams from the affected country in which they’re working, while also missing an opportunity to enhance the capacity of host-country scientists, which could help prevent future outbreaks.

There have already been rumors of nonsharing of virus specimens and other information during the current outbreaks of Zika and clusters of neurologic disease, and researchers in Brazil who posted Zika virus genome sequences in an online depository believe that a Slovenian research group did not adequately credit them when it used the data in its own article.³ Nevertheless, a consortium of journals, nongovernmental or-

ganizations, research funders, and institutes recently committed to sharing data and results related to the Zika outbreak “as rapidly and widely as possible” to ensure better public health, indicating that such data could still be accepted for publication at a later date.⁴ It is too early to tell, however, whether the important research recommended under the PHEIC will be truly collaborative, as some of the Ebola work done in West Africa was, or will end up being as uncoordinated as research on MERS.

A panel discussion on health held at the Munich Security Conference in February — the first time that health security has been included in the conference’s main program — reflects a new recognition that health is a critical aspect of human security. The panel did not discuss collaborative research. But we believe the experience with recent outbreaks makes clear that if open sharing of data and specimens becomes the norm among scientists and epidemiologists around the world, we will be far more likely to succeed in improving international public health capacity and strengthening our collective health — and human — security.

To avoid having to make this argument again every time we face an outbreak with the potential for becoming a global crisis, we believe the global health community should develop and agree on a framework of principles for sharing data and biologic samples during any such public health emergency. It would be best if the researchers themselves developed such a framework, as

the genomics community did in the Human Genome Project.⁵ Any attempt to develop a best-practices framework will face many potential but resolvable obstacles, ranging from political considerations and ethical standards to technical feasibility and academic requirements for publication; and international agreements on virus ownership such as the Nagoya Protocol from the Convention on Biological Diversity would have to be respected. But implementation of such a framework would be a first step toward new rules of the game for all.

Disclosure forms provided by the authors are available with the full text of this article at NEJM.org.

From the Centre on Global Health Security, Chatham House (D.L.H., L.L.); Public Health England (D.L.H.); and the London School of Hygiene and Tropical Medicine (D.L.H.) — all in London; and Médecins sans Frontières, Geneva (J.L.).

This article was published on March 9, 2016, at NEJM.org.

1. WHO statement on the first meeting of the International Health Regulations (2005) (IHR 2005) Emergency Committee on Zika virus and observed increase in neurological disorders and neonatal malformations. February 1, 2016 (<http://www.who.int/mediacentre/news/statements/2016/1st-emergency-committee-zika/en>).
2. Steenhuyzen J. Exclusive: U.S. Ebola researchers plead for access to virus samples. Reuters. November 5, 2014 (<http://www.reuters.com/article/us-health-ebola-usa-research-exclusive-idUSKBN0IP1DZ20141105>).
3. Barchfield J, Savarese M. Brazil considers reforming biosecurity law amid criticism, February 5, 2016 (<http://bigstory.ap.org/article/1a2aed40971d42638f325fd2822f43a9/after-criticism-brazil-transferring-zika-samples-us>).
4. Zika virus: sharing data in a public health emergency (<http://www.nejm.org/page/zika-virus>).
5. Yozwiak NL, Schaffner SE, Sabeti PC. Data sharing: make outbreak research open access. *Nature* 2015;518:477-9.

DOI: 10.1056/NEJMp1602278

Copyright © 2016 Massachusetts Medical Society.