

Isn't it about time?

Opinion

Recent natural and man-made disasters have shown the readiness of FEMA, the National Guard, trained and experienced emergency professionals, as well as citizen volunteers, to mobilize in the face of physical calamities. Since Hurricane Katrina devastated New Orleans and vicinity, considerable progress has been made as exemplified by the recent responses in the face of abrupt and severe flooding in Baton Rouge and its surroundings. The Baton Rouge flooding strengthened the call for research aimed at improving our ability to meet those challenges in more rapid and effective ways.

Unfortunately, when we are struck by epidemics, to say nothing about pandemic outbreaks caused by unknown infectious agents or those for which we are not prepared, we must follow a wait-and-see mode. In that age-old model, we identify the pathogen and its vectors; wait for the Congress to recognize risks and danger and provide funds for scientific research aimed at developing vaccines to prevent and agents to treat, both of which take time and are not always successful; and then, finally, clinical research to determine effectiveness and safety of new medications and methods before application to the suffering. As a result, months or years pass before definitive effective action is available. So, until that time, we are effectively functioning at the scientific level of a nineteenth century society.

We are now in the midst of a pandemic outbreak caused by the Zika virus (ZIKV). Although that virus was originally identified in 1947, the first human outbreak to be recognized did not occur until 2007, with the current outbreak starting in Brazil in 2015, at which time the World Health Organization declared it a Public Health Emergency of International Concern in 2016.

Is it difficult to understand how/why a pandemic disease occurring in twenty regions of the Americas and in Africa, Asia, and the Pacific for almost a decade has not led to the development of a vaccine and medicinal treatment? Well, the same has been true for dengue fever, chikungunya, and Ebola for even longer; however, outbreaks of those three have stimulated research and development of experimental vaccines for all; clinical trials are ongoing, so none is ready for widespread application.

Consider Ebola, a deadly disease caused by a virus; we have neither a preventive vaccine nor an effective pharmacological treatment for Ebola at this point, and survival is contingent upon intense nursing care and coordinated medical and community activity associated with prodigious economic cost. However, there has been one case in which an experimental device was effective in reducing the overwhelming, circulating viral load, allowing the inundated immune system to recover and combat the infection.

The device in that application, the Hemopurifier (HP), is a product of Aethlon Medical, Inc. The HP is placed into a circuit similar to that

used in hemodialysis and, by a patented, proprietary mechanism that can be adapted for each specific virus or other pathogen, removes them (and other specified pathogenic materials) from circulating blood. It has been found effective against HIV, HVC, Ebola, dengue, and chikungunya and is cleared for use against the latter three in the USA. However, its use in the battle against Zika is limited due to the vast number of Zika victims and the finite availability of the hemodialysis systems that would contain the HPs, systems that are used daily in treating patients with End stage Renal Kidney Disease. However, the use of the HP as a clinical research tool can yield important data in defining the natural history of the disease.

The National Institute for Allergy and Infectious Diseases of the National Institutes of Health leads in the search for means of prevention and treatment of infectious agents both in-house and through funding of external research facilities. Isn't it about time to increase the Institute's budget so that when the next epidemic or pandemic outbreak occurs, we are better prepared to meet it rapidly and effectively?

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Franklin David Nash

Center for Scientific Analysis of Policy, USA

Correspondence: Franklin David Nash, Principal, Center for Scientific Analysis of Policy, LLC, 7500 Hoover Road Indianapolis, IN 46260, Tel 844-870-7870, Email admin@scipolicy.org

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