

## COMMENTARY

# MOVING AHEAD ON THE GLOBAL HEALTH SECURITY AGENDA

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Tom Inglesby and Julie E. Fischer

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ON FEBRUARY 13, 2014, A NEW Global Health Security (GHS) agenda was launched by more than 20 countries, in collaboration with the World Health Organization (WHO), the Food and Agriculture Organization (FAO), and the World Organisation for Animal Health (OIE).<sup>1</sup> This new effort aims to drive and coordinate action among these partners, as well as the international NGO community and the private sector, in a more dedicated effort to prevent epidemics, detect biological threats early, and respond rapidly. There is hope and expectation that many more countries will join the agenda in the year ahead. All countries are invited.

The specific objectives are organized around priority issues: antimicrobial resistance, food safety, laboratory biosafety and biosecurity, outbreaks, timely disease detection and reporting, sample sharing, effective diagnostics, emergency operations centers, rapid response teams, and ability to mobilize medicines and expertise during health emergencies.

What is compelling and potentially so valuable about this effort is that it gathers, elevates, and shines a bright light on a series of deeply important issues that do not necessarily receive the attention or the international collaborative effort they require. The agenda broadly encourages self-examination regarding the work that countries do on these issues, and asks countries and nongovernmental organizations to dig deeper and consider new commitments in the years ahead.

A review of the issues on this agenda makes clear how serious these challenges are. And a look at who is doing some of the leading work on these issues shows how important it will be to identify international best practices, to form new international collaborations, and to encourage

countries from around the world to offer their expertise and resources where they are needed.

## PREVENTING AVOIDABLE EPIDEMICS

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The first priority targeted in the new GHS agenda is antimicrobial resistance. In the US alone, an estimated 2 million people annually get serious infections with bacteria resistant to one or more antibiotics, resulting in 23,000 deaths.<sup>2</sup> Where data are available, trends in many places in the world look similar or even more dire. It is now conceivable that multidrug antimicrobial resistance in hospitals could become so widespread that it endangers safe surgical procedures. The GHS agenda calls for stronger surveillance to understand emerging microbial resistance and for better antibiotic stewardship in people and animals. In addition to what the agenda articulates, we are going to need to develop new therapeutics and do a better job at public communication about antibiotics. Lessons on how to succeed will come from different parts of the world. Scandinavian countries, for example, have substantially lowered their antimicrobial resistance rates through coordinated national action. In Taiwan, national steps that include public education and changed reimbursement strategies have been employed to lower antimicrobial resistance rates.

The agenda also prioritizes the promotion of laboratory biosafety and biosecurity. Success in this work means equipping laboratorians with the tools, skills, and practices needed to conduct rapid and reliable testing for dangerous

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Tom Inglesby, MD, is Director, UPMC Center for Health Security, and Associate Professor of Medicine and Public Health, University of Pittsburgh. Julie E. Fischer, PhD, is Associate Research Professor of Health Policy and Co-director of the Global Health Security Program, George Washington University, Washington, DC.

diseases while minimizing risks to themselves and the surrounding community and preventing deliberate diversion of pathogens. In recent years, “gain of function” research that has increased transmissibility of highly lethal mammalian viruses has raised international concerns about the consequences of such work in the event of a laboratory accident or the deliberate misuse of the pathogen or the knowledge of how to create it. Setting global norms around these issues should be a priority.

## DETECTING THREATS EARLY

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A central portion of the new GHS agenda is dedicated to the early detection and reporting of new biological threats. Timely public health surveillance requires that doctors, nurses, and health officials recognize emerging and epidemic-prone diseases and report events in time to alert their own governments, and that governments, in turn, inform the WHO and the global community. This sequence of events requires clinical and scientific competence, good communication practices, and support from political leaders. China’s ongoing reports on H7N9 influenza demonstrate the value of detecting threats early and communicating rapidly and transparently. China’s discovery of the virus and its frequent communications on investigation and control measures have allowed the global community to share information in real time—an advantage in predicting the risks that the disease might spread (as well as in building trust across international communities of practice).

Training programs like the US CDC’s Field Epidemiology Training Program have successfully trained more than 2,800 epidemiologists in more than 40 countries to detect and respond quickly to epidemics.<sup>3</sup> Key elements of early detection also include diagnostic tools and highly dependable laboratories. Stakeholders as diverse as PATH, the Gates Foundation, and the US Department of Defense have supported development of point-of-care diagnostics and laboratory capacity-building strategies based on local field conditions, offering great potential to help in other settings. Governments and NGOs have also partnered to demonstrate the feasibility of cross-border disease surveillance networks such as Mekong Basin Disease Surveillance (MBDS), EARS-Net, CORDS, and the East African Integrated Disease Surveillance Network (EAIDNet).

The sharing of pathogen samples at the start of and throughout an outbreak is important to keep the global community informed and to allow scientific understanding to deepen and evolve. How best to accomplish this remains deeply contentious. Adapting relevant principles from WHO’s Pandemic Influenza Preparedness Framework<sup>4</sup> as a foundation for a framework with wide global consensus on pathogen sharing would be a sensible way to move forward.

The movement of people around the world and the gathering of large numbers for special events pose particular disease surveillance challenges. Special surveillance efforts to

look for disease outbreaks in mass gatherings are worth broader recognition and understanding. For example, the Kingdom of Saudi Arabia (KSA) has developed programs that monitor disease outbreaks in mass gatherings of travelers during annual religious pilgrimages, leading to establishment of a WHO Collaborating Center for Mass Gathering Medicine in KSA.<sup>5</sup> Other efforts, such as the experience gained in the UK during extensive and systematic monitoring for public health emergencies during the London Olympics, offer lessons that may be broadly useful.<sup>6</sup>

## RESPOND RAPIDLY AND EFFECTIVELY

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Detection of emerging public health threats is only the first step. To prevent the spread of disease to vulnerable populations, reports of priority diseases should trigger immediate action by personnel with the training, equipment, and resources to investigate and contain outbreaks. Managing cases and preventing the further spread of disease may require extensive coordination—not only among clinical and public health personnel, but with partners in animal health, environmental health, and public safety and services.

Many countries face serious challenges in coordinating this multisectoral response to public health events. The GHS agenda emphasizes the importance of establishing emergency operations centers where health leaders can collect information from multiple sources, coordinate decision making, communicate across levels and sectors, and mobilize rapid response teams and resources—including materials and expertise offered by international partners when needed.

Uganda’s experiences in coping with Ebola virus outbreaks illustrate the importance of such coordination. Ebola virus outbreaks in 2000 and 2007 resulted in hundreds of cases and deaths over weeks, with transmission in hospitals leading to cases among healthcare workers and the community before national and international partners could get training, materials, and equipment into place for case management and infection control. In 2011, when a newly established reference laboratory created in partnership with CDC confirmed a single case of Ebola virus infection, Ugandan officials mobilized a rapid response team that integrated national and international partners in a coordinated effort, moving the necessary personnel and resources to the community level within 1 day.<sup>7</sup>

## DISCUSSION

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The GHS agenda should provide momentum to move forward with the revised International Health Regulations (IHR), a legally binding agreement among 196 States Parties to protect against the international spread of disease with WHO coordination. The success of IHR depends on national capacities to detect, assess, report, and respond to public health events before they cross borders. Only 40

States Parties reported achieving the required core capacities by the target date of June 2012.

One of the challenges in helping the 118 additional countries that requested and received a 2-year extension to implement IHR action plans lies in the scope of the agreement. WHO has developed guidance to help national officials define and monitor progress, which requires strengthening public health surveillance and response systems nationwide, as well as at points of entry. Self-assessment tools focus on high-level attributes and indicators—useful in providing flexibility for every country context, but difficult to package for domestic and international funders seeking immediately measurable outcomes. Major bilateral donors have begun working with partner nations to build IHR capacities in areas such as safe and reliable laboratory testing, but serious gaps remain, and countries will face challenges in sustaining their gains after the final IHR reporting deadline in June 2016.

The GHS agenda can help lead to more substantial national commitments to these issues, more unity of purpose in the NGO community, and more financial support from governments and foundations. As governments and NGOs become more dedicated to these issues, the results should be a global community more capable of avoiding the preventable spread of infectious disease, of detecting epidemics earlier, and of responding much more effectively to outbreaks.

## REFERENCES

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Address correspondence to:

Tom Inglesby, MD

Director

UPMC Center for Health Security

621 E. Pratt St., Ste. 210

Baltimore, MD 21202

E-mail: [tinglesby@upmc.edu](mailto:tinglesby@upmc.edu)