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LESSONS LEARNED IN GLOBAL HEALTH SECURITY IMPLEMENTATION

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If you want to travel fast, go alone; if you want to travel far, go together.

—African Proverb

THE US CENTERS FOR DISEASE CONTROL AND PREVENTION'S (CDC) Strategic Framework articulates 3 agency priorities: secure global health and America's preparedness, eliminate disease, and end epidemics.¹ After 5 years of implementing the Global Health Security Agenda (GHSA),^{2–5} we have learned many lessons. While more work remains in global health security, documenting lessons learned is imperative to provide the evidence base for the next steps in global health security implementation. The theme of this Supplement to *Health Security* is: "what works—lessons learned in global health security implementation." The information shared in this compilation is intended to add value to the efforts of everyone interested and engaged in health security.

The GHSA, launched in February 2014, is "a partnership against global health threats."³ The GHSA members include 67 countries, the private sector (eg, Private Sector Roundtable, or PSRT), nongovernmental organizations and academic institutions (eg, GHSA Consortium, or GHSAC), and the World Bank.³ These GHSA member governments and organizations encompass the multisectoral nature of the partnerships needed to effectively address threats to health security.

As CDC works to achieve our priorities, including to secure global health, we have a firm foundation in specific capabilities that enable achievements—namely, local and global partnerships and engagement with stakeholders.¹ In these partnerships, examples of which are in this Supplement, we work together to effectively utilize science and public health expertise.

This Supplement is intended to encourage the regular exchange among partners of timely, accurate, and complete quantitative and qualitative data and information on lessons learned. Evidence exists that the combination of assessment, feedback, and routine exchange of information has been a powerful force for local public health and global health progress.^{4–8} With this Supplement, we aim to continue the momentum to improve capacities and capabilities for health security around the world.

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As GHSA partners work toward achieving the vision of a world that is safe and secure from global health threats, these articles may have value for partners and stakeholders in countries with similar local challenges and opportunities. Additionally, they present findings and ideas that are worthy of discussion more broadly. This Supplement continues the emphasis of earlier supplements facilitated by CDC, adding to the global health security evidence base.^{9–11}

Three main themes resonate from the articles in this Supplement: (1) effective partnerships are critical for attaining and sustaining progress; (2) global public health and local public health are inextricably linked; and (3) progress in global health security requires having metrics that are monitored, reported regularly, and continuously evaluated. These themes also are articulated in some of the core principles of the GHSA, as outlined in the GHSA 2024 Framework.¹²

An example of a fundamental public health partnership for any country is the rapid response team (RRT), used by many countries to respond to emergencies. Greiner et al observed rapid response teams during emergency responses, outbreak investigations, and pre-deployment management training. The authors identified several challenges that need to be addressed in rapid response team management, including the need for the development of a team roster, standard operating procedures, and specific training to address appropriate response competencies.¹³

Meng et al report on the development of a web-based surveillance data management system for acute febrile illness in Guangdong and Yunnan provinces, China, that demonstrates partnerships on multiple levels. Engaging multiple stakeholders (eg, clinicians, laboratorians, and public health professionals) and at multiple levels (eg, local, provincial, national, US, China) in the system design helped to ensure quality data and information sharing while building capacity and trusted relationships.¹⁴

Clara and colleagues highlight the potential for partnership between the community and ministry of health through their community-based surveillance implementation project in the detection and reporting of priority diseases in Côte d'Ivoire. Based on their findings, they are exploring scale-up of such surveillance partnerships, while considering the best approach to training and achieving balance between system sensitivity and specificity.¹⁵

Standley et al note the importance of partnerships in building health security capacity in Guinea after the 2014-2016 Ebola epidemic. The authors highlight the key components of information sharing, flexible funding mechanisms, and adaptability to local needs.¹⁶

Local health disparities and challenges can be easily hidden within more centralized or national data.^{17,18} Therefore, it is important to remember that public health is local,^{17,18} and there will always be a need for routine exchange of local information to the regional, national, and global levels. This Supplement includes several articles that highlight the local-global public health link and capacity strengthening.

The article on National Public Health Institute (NPHI) legal framework development by Rosenfeld et al demonstrates the role legal mapping can play in understanding potential gaps

in a country's public health infrastructure. To the degree that such potential gaps are related to the specific legal authority or approaches used by that country to establish and maintain its NPHI (a major influence for infrastructure and institutional development), they might be addressed through revisions to specific legal authorities. Thus, lessons learned about the variability in legal approaches used to establish NPHIs can help stakeholders generate legal strategies to improve development, maintenance, and sustainability of health security capacities.¹⁹

Capacity development requires investments from multiple partners and lessons learned on costs relating to sustainability, planning of resources, better prioritization of global health security investments, and increased support from host nation budgets. The article by Lee et al summarizes costing tools for national action plans,²⁰ and an article by Sloan et al summarizes costs for electronic Integrated Disease Surveillance and Response (eIDSR) implementation in 1 district in Sierra Leone.²¹ Lee et al propose that operational plans should be developed annually, so that detailed costing of prioritized activities can directly inform budgets and accountability lines.²⁰ Sloan et al demonstrate that upfront investment costs of eIDSR equipment are a large portion of total costs, but once the system is implemented, annual operational costs are minimal. In addition, the authors state that partner support may be essential for developing electronic real-time surveillance systems.²¹

Similarly, Martin and colleagues discuss the success with health facility-based eIDSR and mobile-device health (mHealth) in Sierra Leone. mHealth applications can dramatically increase the scale and coverage of routine surveillance and reporting and are feasible even in resource-constrained settings.²²

The article by Hemingway-Foday et al is on lessons learned during the 2017 Ebola outbreak in the Democratic Republic of the Congo. These lessons are cross-cutting across several technical areas and include the development of procedures and tools for improved outbreak data collection, management, and use; the establishment of telecommunication protocols for low-resource settings; the need to strengthen Ebola surveillance guidelines; and the need for capacity building for health workers, specifically for case detection and reporting.²³

The last theme captured in this Supplement is on metrics. Measuring gaps and progress in global health security implementation requires having metrics that are monitored, reported regularly, continuously evaluated, and analyzed. Monitoring and evaluation include engaging partners and stakeholders and ensuring lessons learned are disseminated for programmatic and decision-making purposes,²⁴ including for global health security implementation. Many global health security metrics and monitoring and evaluation frameworks exist, including the well-known World Health Organization (WHO) Joint External Evaluation (JEE), which is a voluntary, objective, and independent multisectoral assessment of a country's health security preparedness and response capacity across 19 International Health Regulation (2005) technical areas.^{25,26} To have progress in global health security, we must have strong partnerships, stakeholder buy-in, and investments.²⁷ In addition, metrics need to be developed in local and national settings with all stakeholders and partners involved, because such metrics may not meet the criteria that "one size fits all." Global health security metrics need to be tailored to the local conditions in individual countries to best fit their needs and

ensure that such metrics can be feasibly measured (ie, data can be collected) to better track progress. Global health metrics are necessary for every country, including the United States, as outlined in *Healthy People 2020 and 2030*.

Several articles in this Supplement discuss metrics. Kassambara and colleagues conducted a pilot study in Mali to examine the optimization of laboratory sample transport. The authors shed insight on the role of partnerships and metric use. Advantages in timeliness and specimen quality and additional costs were noted.²⁸ Similarly, Dama et al report on the design and piloting of a specimen transport system in Burkina Faso. They note the importance of engaging stakeholders from the design to implementation and encourage development of a monitoring and evaluation framework with feedback integration.²⁹ Kaka and colleagues discuss cross-border preparedness and response in Benin, Nigeria, and Togo and focus on common interests in partnering to control cross-border outbreaks. They describe countries' collaborations to respond more successfully to Lassa fever outbreaks, as documented through metrics (eg, identification time of a case) and sharing information with partners.³⁰

This supplement concludes with Williams et al describing the global metric for developing field epidemiologist capacity of 1 per 200,000 population from the WHO JEE. The authors discuss the need to tailor this metric to local needs and raise important questions about the definition of a field epidemiologist and the specific competencies needed to respond to evolving national priorities.³¹ This article provides a next step in global health security implementation by continuing the discussion of how metrics need to be constantly monitored, evaluated, and revised to measure progress in global health security.

In summary, because the primary aim of global health security is built on a foundation of sustainability, partnerships are critical.^{2–5,9–12,27} Global health security aims to not only build partnerships, but also to facilitate the development of partnerships across stakeholders, from the national to the local level.^{2–5,9–12,27} This supplement provides lessons learned on the value of effective partnerships and reveals opportunities for new partnership development.

In a long journey, the next step can be as important as the final destination. As we enter the next phase of global health security efforts, we need to ask: What are our next steps? Before we accelerate our speed, we need to affirm that we are moving in the right direction. Do we have the right metrics and goals for the right context? Are we working within the right partnerships and facilitating the appropriate new ones? How will we know if we are making progress, both in the short- and long-term? As the current CDC Director, Dr. Robert Redfield, said in the recent Jeffrey Koplan Lecture at CDC on November 6, 2019, “The need for health security will always be with us.” This supplement provides tangible examples to learn from and specific ideas for discussion as we move forward toward a healthier and safer world.

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