EFFECTIVE HEALTH SECURITY STARTS AND ENDS ON THE FRONTLINE OF EPIDEMIC PREPAREDNESS AND RESPONSE

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HEALTH SECURITY – LOCAL PERSPECTIVE

Thousands of disease outbreaks occur every year across the globe – some are very small and may only affect a few people, while others turn into local, regional or even global epidemics, as the COVID-19 pandemic is still reminding us every day. These outbreaks may be vector-borne such as dengue or malaria, water-borne such as cholera, or may result from pathogens jumping from animals to humans. Some of these outbreaks can be rapidly contained when appropriate preventive measures and/or treatment are available. Others are much harder to stop. This is particularly true for the increasing number of new zoonotic diseases that emerge across the globe, for which scientists first need to understand transmission patterns and develop cures, vaccines and other strategies to stamp out the outbreak.

But they all have one thing in common: they start, and end, in the community. Early warning of possible outbreaks, and swift action to contain these events, are key to preventing epidemics: disease surveillance, investigation and response need to be embedded within the communities. Where local health authorities are equipped to perform these essential functions and where community members are engaged from the onset, chances are a local disease outbreak is rapidly detected and controlled before it turns into an epidemic.

Public Health Emergency Operations Centers (PHEOCs) are designed to monitor public health events, define policies, standards and operating procedures (SOPs), build capacity for disease surveillance and multi-sectoral response, and coordinate any large-scale emergency response. At the operational level, subnational PHEOCs and Rapid Response Teams (RRTs) are on the frontlines of epidemic preparedness and response: even where strong central PHEOCs and state-of-the-art disease surveillance systems exist, without this first line of defense at the local level, viruses are likely to go undetected until it is too late.

THE LOCAL PERSPECTIVE IN PRACTICE

Early detection and rapid containment of a disease outbreak require active involvement, coordination and communication across communities, health care providers of all types[1], and public health authorities.

PSI is well positioned to make these connections, thanks to our established relationships with government actors, our extensive private sector footprint, and our ability to continuously gather consumer and system insights that are critical to designing effective, tailored approaches to improve health security. This can take many forms, as illustrated by following examples from our health security strengthening work in Laos and Myanmar, funded by the Bill & Melinda Gates Foundation and the Indo-Pacific Center for Health Security:

- In Laos, PSI significantly contributed to the development of a nationwide network of provincial PHEOCs and operational RRTs. We provide

[1] From community health workers to pharmacies, to health facilities in both public and private sectors, and all the way to tertiary care hospitals.

provincial and district health offices with the infrastructure, equipment, information systems, procedures, and technical capacity to manage public health emergencies. Integrated disease surveillance systems that rely on both formal and informal data sources, fully incorporated in the national health management information system, are resulting in better quality, timeliness and granularity of essential surveillance data. Following extensive capacity building of PHEOC staff and RRTs throughout the country, the standard principles of incident management systems are now applied to respond to any public health emergency, including COVID-19 but also increasingly malaria, as part of the country's efforts to reach malaria elimination by 2030.

- In Myanmar, following the events of February 2021 and the effects of the COVID-19 pandemic on the public sector health system, PSI rapidly leveraged its private sector Sun Quality Health network to ensure that community-based disease surveillance remains functional. Building on our experience in malaria surveillance, we deployed social media chatbots, using the tools and communication channels health care providers are most comfortable and familiar with (rather than custom apps - this is based on consumer insights!). Besides using these for case notification, we activated the same tools for two-way communication: health education, provider behavior change, and eLearning delivered at the providers' fingertips, while self-diagnosis chatbots and targeted health information are made available to consumers. This was particularly crucial during the COVID-19 community outbreak, and it remains critical during the ongoing state of emergency, when deploying staff to the field is not an option. Community engagement is being conducted through our social franchise network of pharmacies and private clinics, but also through targeted social media SBCC campaigns for COVID-19 prevention, building in feedback loops and using audience insights to adjust messaging and targeting over time.

These examples highlight the importance of establishing robust remote engagement mechanisms with a wide range of actors at all levels of the health system, starting with the community, and to then use these mechanisms for effective two-way communication. The two-way flow allows (i) to channel key information and change behaviors, and (ii) to gather important insights and collect critical surveillance data that can already be analyzed and promptly acted upon at the local level.

HEALTH SYSTEMS STRENGTHENING AND HEALTH SECURITY – MUTUALLY REINFORCING EACH OTHER

Many elements need to be in place to effectively prevent, detect and respond to disease outbreaks. While a well-resourced central PHEOC with a strong mandate, supportive policies, and clear SOPs is key, it is equally important to develop a wide network of active connections with all parts of the health system that can be tapped into for real-time surveillance data.

For these connections to be durable and agile, they need to be established for more than just collecting data. They need to also be of value to the health system actors concerned. In other words, the prime objective of the connection, i.e., the main reason for establishing the remote engagement mechanism in the first place, should motivate the actor to sustain that connection. In the previous section, we already provided several concrete examples of remote engagement mechanisms, including chatbots and eLearning. These mechanisms are designed to strengthen the health system by, for instance, generating demand for essential health services and products or improving service quality. Most of these mechanisms are health area agnostic, which means that they can also be used to strengthen the system's capacity to respond to specific disease outbreaks (e.g., malaria or COVID-19). All of this to say that HSS work will contribute to enhanced health security.

The reverse is true as well. Effective health security is essential to prevent local disease outbreaks from turning into epidemics or even pandemics. As such, it safeguards the health system from being overburdened. Moreover, as a result of the COVID-19 pandemic and the way it has exposed the fragility of health systems all around the world, interest and investments in health security are rapidly growing. Health security work can advance efforts to develop remote engagement mechanisms with both consumers and healthcare providers, which in turn will accelerate the *wiring* of the mixed health system.