Operationalizing One Health through Simulations for Improved Emergency Preparedness and Management – Pilot Case Studies in Ethiopia, Tanzania, and Cameroon

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BACKGROUND

Simulation exercises play an important role in preparedness. While many countries have emergency plans in place, they have not been tested and operationalized. Chemonics has used a variety of different simulation exercises in Ethiopia, Tanzania, and Cameroon to strengthen the One Health approach, and these exercises can be replicated and scaled in other countries. In Ethiopia, there was a need to test the effectiveness of the country's Highly Pathogenic Avian Influenza Preparedness and Response Plan (HPAI PRP). In Tanzania, the country had a need to increase the preparedness of its border regions with the DRC against a potential EVD outbreak.

Cameroon aimed to improve ability to respond rapidly and effectively to epidemic and pandemic threats by pilot testing the Emergency Supply Chain (ESC) framework; this framework uses best practices in supply chain preparedness and a One Health approach to build countries' supply chain management capacity in the context of global health security and emergency preparedness.

METHODS

Tabletop exercise (TTX): In **Ethiopia**, the TTX, which is a discussion-based simulation, analyzed all 4 pillars of the HPAI PRP to develop realistic scenarios that tested proposed response to a HPAI outbreak globally, regionally, and then domestically.

Full-scale field simulation and drills: In **Tanzania**, we identified priority health facilities, points of entry (POE), Ebola Treatment Centers (ETC), and Treatment Holding Units (THU) in 7 districts within 2 regions and conducted two TTXs and 15 field drills which covered 4 POEs, 8 ETCs, and 3 THUs.

Drills and Skills Building Simulation: In **Cameroon**, the simulation involved a two-day exercise to simulate two disease scenarios, Ebola and Anthrax, to (1) Practice decision-making during an emergency (2) Apply best practices on communication and coordination (3) Understand types of disease outbreaks (4) Test the efficacy of the ESC Playbook.

RESULTS

In **Ethiopia**, 25 participants received training. The simulations illustrated that key pieces of legislation were missing and needed to be developed. An active working group was developed to revise the PRP.

In **Tanzania**, 494 participants received training. Weaknesses identified were in donning/doffing, decontamination, sample management, inventory management, and IPC protocols. Strengths noted were high political will and existing THUs and ETCs.

One Health simulation exercise conducted at the Kenya-Tanzania border in June, 2019
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In **Cameroon**, the simulations for the first time brought together several in-country stakeholders to discuss their roles in the emergency supply chain and the MOH's adoption of ESC playbook.

CONCLUSIONS

Each pilot simulation (Ethiopia , Tanzania, and Cameroon) tested the government's capacity to manage a disease outbreak, emphasized the fact that once a country has identified relevant stakeholders in its response mechanism, they should determine what roles they typically play so as to design appropriate coordination structures. Other countries in the region and world can use lessons learnt from these simulations to inform national level policies and guidelines in support of a One Health approach to preparedness and response.

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