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Public Health Emergency Management Decision Support Using Geographical Information

A geographical information system (GIS) supports the rapid analysis of rich community health data for improving the quality of care, services, and policies. The same system can allow newly established public health emergency management programs to evaluate large amounts of data, using mapping software as a visual data dissemination tool, to formulate decisions that improve the preparedness of communities from naturally occurring and human-caused threats. Since August of 2018, Uganda has worked to prevent the transmission of Ebola from its western neighbor, the Democratic Republic of Congo. The identification of border crossing points, health-screening sites, placement of Ebola treatment units, and laboratory specimen routes came about without benefit of a systematic process for comprehensive evidence-based decisions. This poster examines the use of geographical information system-based decision support system for capturing, storing, checking and manipulating spatially referenced data to make effective planning and management decisions for the implementation of realistic and effective strategies and action plans to improve public health emergency preparedness. Spatially referenced data considered when selecting appropriate sites for implementing emergency management policies, programs, and procedures would include transportation networks, water and sanitation infrastructure, socio-economic characteristics, epidemiological studies, environmental attributes, and the availability of technical expertise. It is the

contention of this analysis that emergency managers can now generate evidence-based decisions concerning the strategic identification and placement of Ebola preparedness and response resources using geographical information systems. The application of these methods will assist not only Ebola preparedness activities, but also the enduring public health emergency management program.