



Data Readiness for Epidemic and Pandemic Preparedness

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Open data for improved decision-making

Information, geographic mapping, and data visualization are changing the way we see the world, the way we interpret data, and how we make decisions.

In 1854, mapping disease incidence changed the way in which the world understood cholera. Doctor John Snow fundamentally altered the way in which we understand disease transmission. By mapping cases, he was able to identify and show the clustering of cases around a water pump, implement preventative action, and stop the outbreak.

Since this time, mapping in epidemics has advanced significantly and is now a common tool used in predicting risk and supporting response operations.

Data readiness approach

Core datasets are an important input for mapping during epidemics. Information about features like road networks, health infrastructure, climate patterns, disease incidence, population density, and health behaviors can be valuable inputs for response teams to analyze in order to better understand the environment in which an outbreak has taken place.

Despite their value, these core datasets are often difficult to find and access during a health emergency or disaster. Response teams often must conduct a “data scramble” to locate information and reach out to different agencies to obtain the data. This takes up valuable

time during a crisis situation. Moreover, these data would be immediately valuable for planning purposes if they were open and available for use.

As one component of the Community-Based Pandemic Preparedness and Prevention Project (CP3), the Red Cross will work with country-level stakeholders to identify high-priority datasets that would be essential in a disaster situation or health emergency, and also useful for immediate purposes. The Red Cross will work to locate, validate, and openly release this information with the permission of its owners. In addition, staff will work to improve data literacy and awareness surrounding this information. These efforts will help to improve what we call “**data readiness**”: **the ability of an organization to utilize data during a response for situational awareness, planning, implementation, monitoring, and reporting.**

Missing Maps initiative

However, what about outbreaks in areas that don’t exist on any maps? How can we visualize and map the risks and disease incidence?

To address these gaps, the CP3 project will rely upon methods and community engagement from the Missing Maps initiative, a collaboration founded by the American Red Cross, the British Red Cross, Médecins Sans Frontières (MSF), and the Humanitarian OpenStreetMap

Team. During the 2014 Ebola crisis, MSF regularly responded to outbreaks in remote areas; when they asked patients where they were from, their responses often couldn’t be located on any maps. This lack of information limited contact tracing and response activities.

Missing Maps was founded as a response to these needs. The project’s purpose is to help map vulnerable communities before a disaster occurs, using satellite imagery and volunteers to create open data that can be used to reduce risk and help speed recovery. To date, 40,000 volunteers around the world have mapped building and road locations for various priority areas, adding this data into a free and open platform called OpenStreetMap. Over 58 million people have been added to the map in this way, along with critical infrastructure like clinics and schools.

To ensure that communities are “on the map”, CP3 will leverage the Missing Maps network to create base data for the communities where the CP3 project is active. The data readiness approach and Missing Maps network will create data that can be used to improve the prevention, detection and response to public health threats.

FOR MORE INFORMATION

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