Global Disease Surveillance Platform™

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The Global Disease Surveillance Platform prototype intends to facilitate linking disparate sources of public health related information across national and global organizations to optimize response to public health threats. The platform addresses early event detection, analysis and interpretation, and public health response. The architecture of the platform operationalizes existing infrastructure (local, national, and global) and focuses on how all the components are integrated together into the product solution. The platform incorporates traditional and untraditional sources of information.

In times of crises, decision makers rely on analysts to sift through information from various sources to glean the most accurate and relevant data to construct the best recommendations and make available to decision makers. The platform provides the analyst to visualize information that will enhance spatial, temporal, alerting, and periodic pattern analysis and predictive modeling. The platform strives to facilitate these analysts by becoming a single point of entry to multiple data sources, with applied analytics in a given scenario, such as the pandemic influenza. The platform is intended to offer an accurate and timely source of information for public health event threats, early identification and detection, and enabling coordinated response; dynamic mitigation policy.

At the start of the project, a decision was made to capitalize on existing open source technology, common interchange formats, web services technology, Government off-the-shelf (GOTS) and Commercial off-the-shelf (COTS) system architecture. An evaluation of several data feeds was conducted to meet the functional needs of the overall platform. The system integration of core services provides the following functions: process structured/unstructured data; temporal/geographic business intelligence; early event identification and detection; data repository, and querying. The lifecycle of information flow is positioned around the three functions that serve as strategic pillars to the Department of Health and Human Services' National Strategy for Pandemic Influenza: 1) preparedness and communication; 2) surveillance and detection; 3) response and containment.

The scope of the research & development project this year focused on the entire lifecycle of the pandemic influenza and demonstrated the utility of the platform during the stages of the pandemic. Additionally, we documented technical and policy-related challenges in developing a global disease surveillance platform.

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