

Event Communication in a Regional Disease Surveillance System

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OBJECTIVE

The objective is to create a capability within an existing regional disease surveillance system that allows event information to be shared easily, thoroughly, and in a timely manner, while gathering the knowledge needed to improve the entire system in the future. The functionality of this communication component must balance the utility of immediate situational awareness with the long term benefits of capturing critical information, such as system usage patterns and user response behavior, which can be used to develop future system enhancements.

BACKGROUND

Versatile, user-friendly visualization tools are required to organize the wealth of information available to users of large, regional surveillance systems into a coherent view of population health status. Communications components must allow multiple users of the same system to share information about the health of their populations in an organized fashion and facilitate communications among jurisdictions.

The Johns Hopkins University Applied Physics Laboratory (JHU/APL) has developed a communications tool to be used within the regional disease surveillance system in the National Capital Region (NCR). This abstract describes this new communications component that is designed to encourage and facilitate communication between multiple jurisdictions using a common surveillance system.

METHODS

To meet these objectives, an event / communication feature was designed and developed by a team of epidemiologists and software developers that allows individuals conducting daily data reviews to express concerns about specific events, situations, and statistical detection algorithm outputs. This prototype tool is embedded within the regional surveillance system and provides a forum in which users can write free text comments, rate events based on level of concern, and attach hyperlinks to other screens in an effort to relay pertinent information to others. These capabilities aid in resolving specific health alerts at both the local and regional levels.

In addition to meeting the immediate needs of users for better awareness of the community's current

health situation, this component also enables the information gathered to be used for the future enhancements of the overall disease surveillance system. For example, algorithm developers can view the communications logs to better understand and compare which detection alarms were met with concern versus those that were dismissed. This knowledge can aid in the future refinement of alerting algorithms.

RESULTS

Initial user feedback of the prototype has suggested modifications for future iterations of the event / communications component. Ongoing collaboration between JHU/APL and the health authorities in the NCR allows system designers to better define features that enhance the day-to-day user communications and improve situational awareness during unusual health events. Data collected on system usage patterns during simulated exercises and documentation of investigation practices observed during daily use, allow algorithm developers access to invaluable information that was previously unavailable. This communications component along with the overall surveillance system will continue to evolve and adapt to the users' needs for better event tracking and communication capabilities.

CONCLUSIONS

With the ability to monitor larger amounts and variety of data than ever before, health monitors need the ability to communicate information about the health of their populations with other investigators both within and among regions. Realizing this and the benefits of collecting user information electronically in a form that can help the future enhancements to disease surveillance systems, the development team at the JHU/APL gathered user input and devised the initial version of an event / communications component and placed it in a regional biosurveillance node. The value of this system is already clear. Continued refinement will ensure a component that is both advanced and efficient and highly beneficial to both users and developers.

REFERENCES

Further Information:

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