Enhancing Event Communication in Disease Surveillance: ECC 2.0

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INTRODUCTION

Regional disease surveillance systems allow users the ability to view large amounts of population health information and examine automated alerts that suggest increased disease activity. These systems require users to view and interpret which of these alerts or data streams are epidemiologically important. This interpretation is valuable information that may benefit other users. In addition to the daily interpretation of data done by users, the ability to communicate local concerns and findings during a public health event to neighboring jurisdictions is of great public health importance. Public health officials also need constant situational awareness and a venue to share their concerns about increases in disease activity before a health emergency is declared. The Event Communications Component (ECC) was created to provide this venue. The ECC was developed for the National Capital Region (NCR) public health surveillance network to facilitate the need for users to communicate. The NCR system is an operational multi-jurisdictional biosurveillance system employed in the District of Columbia and in surrounding Maryland and Virginia counties. NCR users include epidemiologists and public health officials from different levels of government. The ECC has been in operation for a year in the NCR system. ECC 2.0 is being developed to improve on the original version's capabilities and solve its shortcomings.

OBJECTIVE

Identify areas of improvement and establish design goals of ECC 2.0. These design goals include: the incorporation of comment centric design versus event centric, automatic notification of new events/comments, the use of action oriented concern levels and user interface improvements. Focus design goals by utilizing prototyping and user group reviews. Develop ECC 2.0 and integrate it into the NCR system.

METHODS

ECC 1.0 used an event centric design. Events were handled as separate threads of conversation. Comments were only viewable if the users explicitly opened the event the comments were associated with. The users felt that this was limiting. In addition, users were more likely to create new events than search for similar events and then comment on those similar events. This created many separate events that were essentially about the same public health anomaly – thus inhibiting multi-user collaboration. To solve this problem ECC 2.0 will incorporate a comment centric design. Instead of users creating events users will directly create comments on public health anomalies. These comments will be placed in a single list – thus allowing all comments to be viewable at the same time. The concept of an event now becomes a set of comments that share similar meta-information. Another issue was the lack of automatic notification for new events/comments. Email notification will be implemented in ECC 2.0. The notification mechanism will be configurable, allowing users decide what new comments should be emailed and at what frequency. Real time notification will be available in the form of floating message boxes to the user . In addition, users will be able to determine which comments have been read, not read, and replied to. ECC 1.0 had generic concern levels: "Info", "Low", "Guarded", "Elevated", and "High". Users felt these levels were ambiguous and had no standard meaning. Instead of these generic levels ECC 2.0 will use action oriented levels such as "No Concern", "Monitoring", "Investigating", and "Responding". ECC 2.0 will also contain several user interface improvements. One improvement is the use of tabbed panes which will allow the viewing of multiple lists of comments at the same time.

RESULTS

Analysis of the user feedback and surveys on the original ECC will be presented. Areas of improvements and shortfalls will be discussed. Design goals and new features of ECC 2.0 will be discussed. Lessons learned and future directions of ECC will be presented.

CONCLUSIONS

The ability to share concerns and interpretations of data with peers both within and outside their own jurisdiction facilitates user collaboration and regional situational awareness. Lessons learned from ECC 2.0 will help to define best practices in communicating health concerns and events in disease surveillance.