

Preferences and Perceptions of Biosurveillance System Users - Results from a Recent Survey

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OBJECTIVE

This paper describes results from a survey of public health department users of biosurveillance. The survey solicited input regarding sophistication of analytic methods, perceived value of potential data sources, and utilization resulting in timelier public health interventions.

BACKGROUND

“The ultimate measure of whether a surveillance system has achieved the optimal balance of attributes lies in its usefulness.”[1] No one is better qualified to comment on usefulness than the users. As system developers, we are well advised to consider the opinions of users when building, evaluating, and considering revisions to surveillance systems.

Health Monitoring Systems, Inc. (HMS) is a for-profit company that provides biosurveillance capabilities to public health agencies and hospitals using a software-as-a-service model.

METHODS

A survey was distributed via a web-based service (SurveyMonkey.com, Portland, OR) to 240 registered public health users of biosurveillance systems provided by Health Monitoring Systems. Questions measured desires relating to system function (early detection and situational awareness), preference of analytic sophistication with regards to accuracy of results, perceptions regarding value of potential data sources, and value of analysis for earlier implementation of intervention efforts. The survey also recorded professional demographics (i.e. number of epidemiology courses completed, job function, and number of years they have worked in public health).

RESULTS

Sixty-five (27.1%) completed surveys were returned. Respondents self-identified as epidemiologists (50.8%), nurses (19.7%), supervisor/managers (19.7%), health commissioners (4.9%), and statisticians (4.9%). The number of years worked in public health ranged from less than a year to 34 years (mean=10.4 years, median=8 years). The number of graduate-level epidemiology courses ranged from 0-20 courses (mean=5.7, median=5).

User's indicated that early detection of outbreaks was slightly more important to them than situational awareness. On a 1 to 5 scale, with 1 being “No Im-

portance” and 5 being “Most Important”, early detection averaged a 4.56 rating while situational awareness averaged 4.38. 34.5% of users reported that notifications of an anomalies had resulted in earlier implementation of public health intervention efforts. Earlier intervention from notifications occurred on average 35.8% of the time (median = 25%). 65.6% of users answered that they would be willing to sacrifice a reasonable reduction in accuracy of results to have more intuitive analysis methods. Only 29.7% answered that accuracy was more important than understanding the methods used. Food recalls (90.2%), over-the-counter medication sales (91.9%), prescribed medication orders (91.9%), clinical laboratory orders (91.9%), and clinical laboratory results (98.4%) were the top five potential data sources, other than emergency department visits, that users felt were useful to essential for biosurveillance. Regression analysis did not demonstrate that age, job function, or years in public health were associated with any responses.

CONCLUSIONS

Users of biosurveillance systems desire both the capability for early detection of outbreaks and function of situational awareness from their biosurveillance system. Earlier intervention remains a goal of users. There is need among users for the system to use intuitive analytical processes. Public health users desire additional data sources. Researchers and developers should most likely investigate and integrate these into a biosurveillance system design that allows for multiple data sources.

REFERENCES

[1] Buehler JW. Surveillance. In: Rothman KJ, Greenland S, editors. *Modern Epidemiology*. 2nd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 1998. p. 435-57

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