

# Awareness at the Edges: How Informal Networks Complement Syndromic and other Surveillance Methods

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## OBJECTIVE

In addition to reliance on surveillance and other epidemiologic data, public health officials depend on informal and formal contacts with healthcare colleagues to maintain epidemiologic situational awareness. The objective of this investigation was to describe the networks of contacts between public health and healthcare sectors during situations when health departments responded to potential or actual public health threats.

## BACKGROUND

As part of a series of qualitative case-study investigations that examined the uses and utility of syndromic and other surveillance data [1], we documented the network of both formal and informal connections that public health officials have with colleagues in the healthcare sector, particularly at hospitals. Understanding how informal networks were used during emergencies may assist in integrating formalized emergency management protocols into public health practice. In this paper we analyzed the informal networks of contacts that public health officials have with colleagues outside public health, and the roles they played in enabling the flow of information as revealed in a set of public health incidents.

## METHODS

The events and case studies chosen represent a spectrum of health department investments in syndromic surveillance and a range of epidemic and disaster-related threats to public health [1]. Seven case studies were selected: a salmonella outbreak in a small city, a wildfire in a rural area, wildfires in an urban area, a tornado in a small town, a hazardous material exposure in an urban area, and a state response to the 2006-2007 influenza season. The research team included epidemiologists, a business analyst, and a medical anthropologist, who interviewed state and local public health officials and emergency healthcare providers involved in each public health incident. Interviews were transcribed, coded and analyzed using the ‘constant comparison’ approach, in order to base our theorizing in the participants’ described experiences [2]. Key landmark events were identified and an analysis was conducted to charac-

terize both the formal and informal communications systems [3]. From this we assessed the role, structure, and extent that informal communications played in each event.

## RESULTS

The set of cases revealed a broad range of organizational adaptations to local information environments that connected public health officials and healthcare providers. Across all case studies, such adaptations exhibited variations over two comparative dimensions: degree of formality and frequency of engagement. The informal contacts also extended the “reach” of the formal PHS surveillance deep into the community structure, affording various types of information redundancy, calibration in the PHS, and “fit” to the local environment. Finally, trust permeated many of the informal networks.

## CONCLUSIONS

Our preliminary analyses provide insight into the form and value of the informal networks that connect public health officials and healthcare providers. These networks are integral to the process of public health surveillance both enabling and supplementing formal data collection. Despite the increasing use of formal incident command protocols by health departments to manage the flow of information during crises, these informal networks remain important. Indeed, much of surveillance is local *and* personal.

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## REFERENCES

- [1] Buehler JW, Whitney EA, Smith D, Prietula MJ, Stanton S, Isakov AP. Situational uses of syndromic surveillance. *Biosecurity & Bioterrorism: Biodefense, Strategy, Practice, and Science*. 2009. 7(2): 165-177.
- [2] Glaser BG, Strauss A. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine; 1967.
- [3] Luke, DA, Harris JK. Network analysis in public health: History, method, and applications. *Annu. Rev Public Health*. 2007. 28: 69-93.

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