Research Brief

NCPERRC
North Carolina Preparedness and
Emergency Response Research Center

Analyzing North Carolina's Health Alert Network

As part of their participation in the North Carolina Preparedness and Emergency Response Research Center (NCPERRC), industrial and systems engineering researchers at North Carolina State University (NCSU) collaborated with state and local public health partners to complete a multi-year study of North Carolina's Health Alert Network (NCHAN). The project included an analysis of NCHAN alerts and interviews with NCHAN users to understand how the system currently functions and to identify areas for improvement. This report is a summary of the project, findings and next steps.

Background

The North Carolina Health Alert Network (NCHAN) is part of the national health alert network funded by the Centers for Disease Control and Prevention. The Health Alert Network serves as a notification system that alerts key staff members about events that may pose a risk to community health. In North Carolina, once an alert is issued, NCHAN's registered users from the state, regional, and local levels are contacted via email, pager, phone, and/or fax.

Two types of notification are sent out on NCHAN: those that require user acknowledgement (for events that require an immediate response) and those that do not (for events that are less urgent). Receiving NCHAN alerts involve two steps: a general alert is sent to users indicating the alert priority level: high, medium, or low, then the user must log in to the system for the details of the alert, including the nature of the event and the affected areas.

To better understand what type of information is typically shared through NCHAN, researchers reviewed alerts sent between 2002 and 2010.

Analysis of Alerts

More than 400 NCHAN alerts were sent during the timeframe studied in the project. Alerts related to training, testing, and demonstration of the system were most frequently noted (36%), followed by whooping cough (Pertussis, 15%), "other diseases of concern" (10.5%), and West Nile Virus (9.7%). Only 3% of alerts were noted as high priority events.

Interview Findings

The project interviewed key North Carolina Division of Public Health (NC DPH) stakeholders and staff members from eight local public health departments who were invited to participate based on their frequency of NCHAN use and county size. The goals of the interviews were to characterize how NCHAN functions and how it can be improved.

These participants noted that NCHAN was a rapid alert system that provided a quick way to alert a large number of people and had the potential to serve as an early warning system. However, concerns were raised about whether NCHAN was providing the right information to the right people at the right time.

> "Based on interviews with users, one of the most compelling strengths of the NCHAN is that information reported on NCHAN is factual, in contrast from information they may receive about public health issues from other information sources such as the media."
>
> Dr. Julie Ivy, lead researcher from NCSU

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Those interviewed also reported several limitations to the NCHAN system. These weaknesses were related to (1) the technical aspects of sending and receiving alerts and (2) the lack of clarity regarding when to send an alert and how to use and respond to system alerts. According to users, NCHAN is difficult to use, has specific technical limitations such as character restrictions in the alert, and it is difficult to add attachments and to select a subset of counties to receive the message.

Project findings indicate that training on the NCHAN system is not currently available, and there is limited guidance to users regarding when to send a NCHAN alert, what information the alert should contain, and how to respond to alerts. Although a technical manual is available, policies are lacking on NCHAN protocols and use.

During interviews, users also reported a desire to have NCHAN integrated with other North Carolina Public Health Information Network (NCPHIN) systems, such as North Carolina Electronic Disease Surveillance System (NC EDSS) and North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT.)

Suggestions

Combining what they learned from the system analysis and interviews with users, researchers from NC State University suggested changes related to the network structure of NCHAN, alert use and content and system policy and design issues. A few key suggestions include:

- Establish a NCHAN policy advisory group to make recommendations on use standards.
- Create two levels of operation to support regional and state level NCHAN alerting.
- Establish alert levels that correspond to level of response required.
- Integrate NCHAN with other NCPHIN systems.

These and other suggestions were shared with key stakeholders and partners in conversations about next steps in helping translate these research findings into public health practice.

Next Steps

At the June 2010 NCPERRC advisory meeting, the Synergy and Translation Committee and the "Engineering the Health Alert Network Project" breakout group, comprised of committee members, researchers and NC DPH staff, discussed research findings and clarified three primary next steps:

- Prepare recommendations for policy and system changes to NCHAN;
- Convene a policy group to clarify NCHAN purpose and utilization recommendations; and
- Develop and provide training on how to use NCHAN.

As an initial step to improving NCHAN system use, NCPERRC is continuing to partner with the NC DPH to convene a policy advisory group. The primary purpose of this group will be to clarify NCHAN use standards, which could inform the future development of a NCHAN user guide and related training. This group is scheduled to begin to meet in the Fall 2011. Another research brief will be prepared when the policy advisory group has formulated recommendations.

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