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## Local Public Health Department Accreditation Associated with Preparedness Response

### What is the relationship between preparedness and accreditation?

The ability to carry out core public health and emergency preparedness activities varies widely across local communities. The development of accreditation standards for public health agencies has received considerable policy attention because of its potential to promote quality, consistency and interoperability among agencies and thereby reduce inequities in risk protection. The Public Health Accreditation Board (PHAB) launch occurred in September 2011. This national program is grounded in state-based programs including the North Carolina Local Health Department Accreditation Program. To date, 61 of the 85 North Carolina local health departments are accredited. The remaining local health departments must undergo accreditation by 2014.

Specific preparedness benchmarks in the North Carolina accreditation program are:

- 1) The local health department shall be able to respond to a public health emergency on a 24-hour-a-day, 7-day-a-week basis;
- 2) The local health department shall maintain and implement epidemiological case investigation protocols providing for rapid detection and containment of communicable disease outbreaks; environmental health hazards; potential biological, chemical and radiological threats; and
- 3) The local health department shall engage in surveillance activities and assess, investigate and analyze health problems; threats and hazards; maintaining and using epidemiological expertise.

In August and September 2009, NCPERRC facilitated After Action Reviews at 9 local health departments to evaluate their response to the 2009 H1N1 outbreak including 5 accredited and 4 not-accredited. Using data from these reviews, NCPERRC analyzed response activities and timing and compared accredited to not-accredited agencies.

Overall, the findings suggest that accreditation is associated with preparedness development efforts both by documenting the enhanced preparedness capacities held among agencies that choose to pursue accreditation, and by motivating agencies to enhance their preparedness capacities in order to achieve accreditation standards.

The 2009 outbreak of novel H1N1 influenza in North Carolina provided an opportunity to observe local variation in response activities and investigate determinants and drivers. This study examined 2 overarching questions: (1) how did the scope and timing of responses to H1N1 vary in selected local public health agencies in North Carolina; and (2) how did accredited public health agencies compare to their non-accredited counterparts in responding to the outbreak?

### Who collaborated in this research and what activities were conducted?

University of North Carolina Gillings School of Global Public Health (UNC) researchers have a long history of working with the state and local health departments to conduct relevant research initiatives. This specific project grew out of a request from the North Carolina Division of Public Health to use any available opportunities to conduct research on the “unfolding natural experiment” of H1N1 outbreak response by local health departments. Using a matched case-comparison study design, we invited 5 North Carolina accredited local health departments (with at least 2 confirmed cases of H1N1 in the county as of July 31, 2009) to participate in this study. Each accredited agency was matched, using county population size and H1N1 case volume as matching variables, with a North Carolina agency that had not yet been accredited through the state program. Among the 10 invited local health departments, 5 accredited and 4 not-accredited local health departments were able to participate in the research.

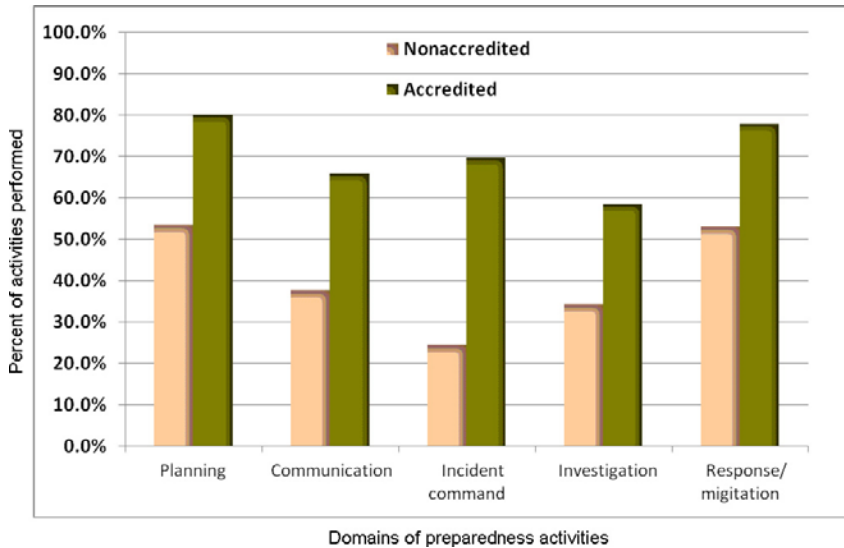
The research team from UNC and the University of Arkansas for Medical Sciences collected data on H1N1 response activities implemented during the initial 2 months of the outbreak through: 1) a closed-form questionnaire administered to local preparedness coordinators; and 2) on-site focus groups held with organizations involved in H1N1 activities in each community. More than 75 individuals representing 55 organizations participated in the on-site focus groups in the 9 local health departments. All data were collected during August and September 2009, prior to the initiation of H1N1 vaccination activities. Factor analysis was used to group more than 200 individual response activity measures into 6 composite domains of activity, with separate measures constructed for (a) the scope and (b) the timing of response activities performed in each domain. Bayesian latent variable analysis methods were used to compare the response activities of accredited and not-accredited agencies.

We used results to construct an after action report (AAR) for each participating agency that highlighted opportunities for improved response. Other key audiences for the project included state health department and accreditation program officials, national accreditation officials with the Public Health Accreditation Board, and a variety of public health and policy stakeholders who are contemplating the merits of accreditation. We prepared a Research Brief summarizing the 9 local health departments’ preparedness activities that were performed well and activities that could use improvements in future responses.

### What impact and outcomes were achieved by this research?

Our results demonstrated that local public health agencies included in this research varied widely in the scope and timing of their H1N1 activities. Accredited agencies performed a significantly larger scope of activities in response to the H1N1 outbreak compared to non-accredited agencies ( $p < 0.05$ ), and these differences were apparent across all domains including planning, incident command, investigation, communication, and response and mitigation activities (See Figure 1 on next page). Additionally, accredited agencies appeared to implement these activities more rapidly (as measured by average response time), particularly for incident command and investigation activities ( $p < 0.05$ ) (See Figure 2 on next page). Although some of the differences in H1N1 response were attributable to agency and community characteristics that predisposed agencies to participate in accreditation, most differences remained large and significant after adjusting for these selection effects (See Figure 3 on page 4).

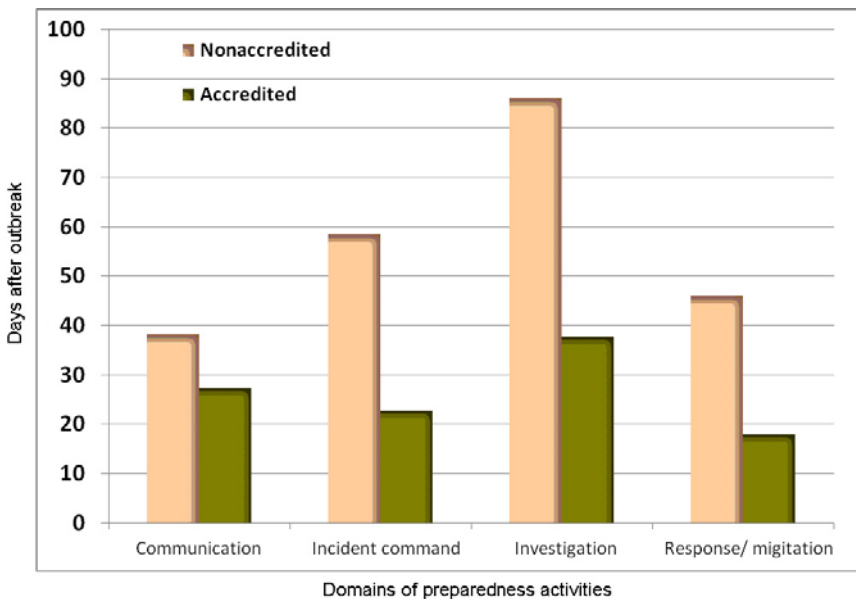
**Figure 1: Scope of H1N1 Activities Performed by Accredited and Non-Accredited Agencies by Preparedness Domains**



This figure presents domains of preparedness activities on the x axis. Each domain represents multiple preparedness activities. The y axis is the percent of activities that were performed in each domain.

For each domain, accredited agencies performed a significantly higher percent of activities than non-accredited agencies while controlling for variation in domains and communities represented by the health departments.

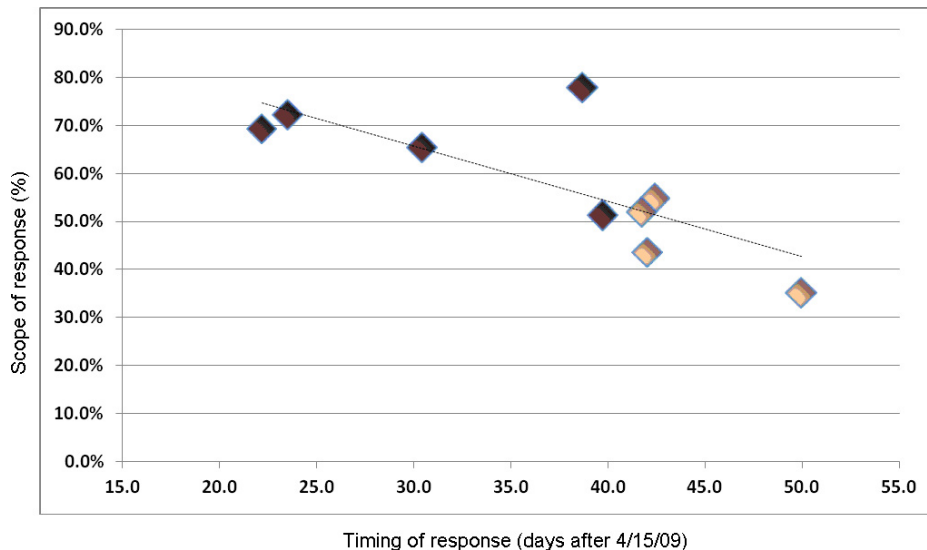
**Figure 2: Average Timing of H1N1 Activities Performed by Accredited and Non-Accredited Agencies by Preparedness Domains**



This figure presents domains of preparedness activities on the x axis. Each domain represents multiple preparedness activities. The y axis is the average timing of when the response activities were performed as days after the outbreak was confirmed on 4/15/09.

For the Incident Command and Investigation domains, accredited agencies were significantly more likely to perform preparedness activities sooner than non-accredited agencies while controlling for variation in domains and communities represented by the health departments.

**Figure 3: Scope and Average Timing of H1N1 Response Activities by Agency Accreditation Status**



This figure presents the average timing of preparedness response activities by each local health department as number of days to response from 4/15/2009 on the x axis and scope of response as the percent of preparedness activities performed on the y axis.

The 5 accredited agencies (darker diamonds) performed more response activities and initiated these activities faster (in an average of fewer days) than did the 4 non-accredited agencies (lighter diamonds).

## What evidence demonstrates that this research had the described impact?

The project rapidly provided participating local health agencies with customized AARs during the fall of 2009, thereby helping agencies to identify and implement improvements while H1N1 response activities were still underway. On a broader policy level, the project has provided state and national public health officials with some of the earliest and most tangible evidence concerning the value of public health agency accreditation. In North Carolina, this evidence was cited by Dr. Edward Baker (NCPERRC PI) to help justify the need for state legislative appropriations to support accreditation activities within the state. At the national level, the PHAB, the Centers for Disease Control and Prevention, and others have used the evidence in public communications and press releases to describe the types of benefits that public health agencies may experience by pursuing accreditation. Additionally, PHAB has convened a special work group to examine improved ways of incorporating preparedness capabilities into accreditation standards based on the work of this project. These research dissemination and translation activities have helped to increase awareness of the potential benefits of accreditation, and may accelerate the adoption of accreditation standards among public health agencies once the national voluntary accreditation program became operational in September 2011.

# Research Brief

# NCPERRC

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## References

This Research Brief *H1N1 After Action Review: Local Health Departments in North Carolina* is on the NCPERRC Web site. [http://cphp.sph.unc.edu/ncpercc/research/H1N1\\_AAR\\_Brief\\_June2010.pdf](http://cphp.sph.unc.edu/ncpercc/research/H1N1_AAR_Brief_June2010.pdf)

CDC Press Release. New Accreditation Opportunity for State, Local, Tribal Health Departments. Released March 24, 2011. [http://www.cdc.gov/media/releases/2011/p0324\\_publichealthdeptaccreditation.html](http://www.cdc.gov/media/releases/2011/p0324_publichealthdeptaccreditation.html)

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