

## **Center for Public Health Preparedness**

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# **FIRST STEPS: A PILOT PREPAREDNESS PROGRAM FOR PUBLIC HEALTH NURSES**

By Stephen S. Morse,  
Jacqueline A. Merrill

### ***Public Health Preparedness***

Public health will face major challenges in the coming decades. The 1999 West Nile outbreak in New York City and other recent incidents demonstrate how important public health is as a frontline defense against emerging infections, bioterrorism, and other unexpected emergencies. A well-prepared public health workforce is more critical than ever. The challenges are particularly great in urban areas, which traditionally serve as ports of entry, may be appealing targets to terrorists, and have large and diverse populations with complex health risk factors.

To better prepare the public health workforce to carry out routine functions effectively and fulfill the additional roles required in emergencies, a national network of “Centers for Public Health Preparedness” has been established by the Centers for Disease Control and Prevention (CDC). The network currently includes seven academic Centers funded through a cooperative agreement with the Association of Schools of Public Health (ASPH). Goals include the development of competency-based public health practice courses primarily designed to utilize distance-learning technology (such as World Wide Web-based instruction) that can be implemented locally and replicated nationally. The Center for Public Health Preparedness at the Mailman School of Public Health, Columbia University, is working toward these goals in partnership with the New York City Department of Health (NYC DOH).

### ***Pilot Program Development***

An initial assessment of emergency preparedness needs within the NYC DOH was conducted employing focus groups, consultation with senior management, and a census of employees by occupational category.

Results of this assessment indicated that a short orientation program, keyed to basic emergency response competencies, and introducing the health department's emergency roles and responsibilities, would be useful for the entire NYC DOH workforce.

A pilot competency-based preparedness program was decided upon as a first step. Public health nurses were selected as an initial target group because of their level of general education and clinical background, their significant numbers in the NYC DOH workforce, their frontline contact with the public, and their critical role in emergency response. A convenience sample of approximately 50 public health nurses in the School Health Program was identified and recruited for a 3-hour pilot program in June 2001. The session incorporated an evaluation designed to measure both knowledge and attitudes/intentions. In addition to the traditional educational pre/post tests, the nurses were asked to consent to participate in a one-month follow-up post test by mail (approved by Columbia University and NYC DOH Institutional Review).

### **Participant Roles and Responsibilities**

Public health nurses, as the largest single professional group in public health, are critical to emergency preparedness. Public health nurses constitute nearly 20% of the New York City's total public health workforce of 5000. The NYC DOH nurses selected for the pilot session were from the agency's School Health Program and serve the city's elementary and middle schools. Most work 35 hours a week during the school year. 92% of the pilot participants have 5 or more years of experience as RN's. 35% have 20 or more years of experience. However, those with at least 5 years of experience *specifically* as a public health nurse constituted less than half (43%) of the pilot group.

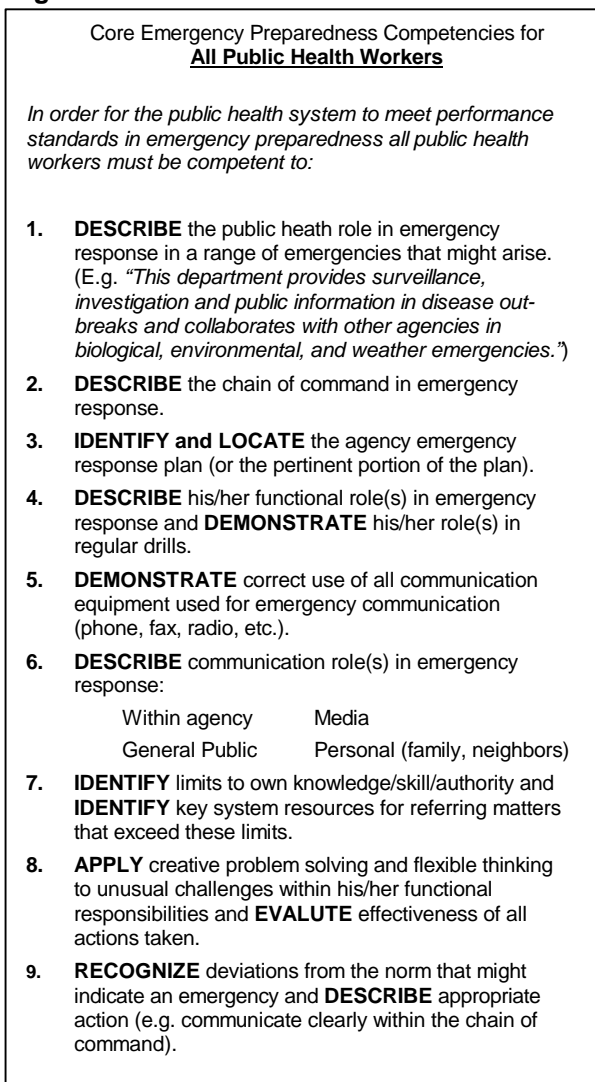
In an emergency, the primary functional role of these nurses is to staff emergency shelters in collaboration with the American Red Cross (ARC). In New York City, public emergency shelters are opened in the event of weather emergencies such as extreme heat/cold, flooding, hurricanes, or other situations (e.g. power outages) that require emergency housing. The shelters are often located in public schools, as well as other municipal buildings. Public health nurses may have other roles in emergencies. For example, nurses staffed telephone hotlines during the 1999 West Nile

outbreak. Public health nurses also provide public education in health related emergencies.

### **Pilot Program Content Development**

The curriculum team developed the pilot program using core emergency preparedness competencies developed by the Center for Health Policy at the Columbia University School of Nursing.\* These competencies were recently developed with CDC sponsorship, using combined techniques of expert opinion, via a Delphi survey, and focus groups with public health workers in a variety of settings nationwide (see Fig. 1). The core competencies were analyzed and separated into sub-competencies, which were used to create learning objectives and a program outline

**Figure 1**



The pilot presentation defined emergencies and disasters, illustrated by wide range of emergencies that might be expected in NYC, including recent examples such as the World Trade Center bombing and the 1999 West Nile outbreak. Also examined were the role of the health department in emergency response (Fig. 1, Competency 1), agencies involved in disaster response at local, state, and federal levels, organization of NYC DOH disaster command and control, and emergency roles and responsibilities of the various segments of the DOH workforce (Fig. 1, Competencies 2-3). Functional roles of DOH public health nurses, including sheltering and an overview of shelter operations, were then discussed (Fig. 1, Competency 4). With summer approaching, heat emergencies were used as a specific example, with attention to the clinical aspects and treatment of heat exposure. Specialized communication equipment used in the shelter – Nextel Motorola i1000 phones operated in the “walkie-talkie” mode – was demonstrated (Fig. 1, Competency 5) and agency communication policies were reviewed (Fig. 1, Competency 6).

Competency 7 (see Fig. 1) was addressed by reiterating the scope and standards of practice for public health nursing in general and within the NYC DOH shelter program, specific to heat emergency. Resources such as ARC disaster services protocols, the School Health Program shelter manual and the contents of shelter supply bags were displayed and made available during and after the program. Key resource personal in NYC DOH and ARC chains of command were identified. Competencies 8 and 9 (see Fig. 1) were examined through soliciting from the group examples of unusual and/or unexpected situations that might alert a public health nurse to the presence of a possible emergency or require flexible problem solving skills. These examples were then explored using questions and discussion.

A concern of NYC DOH leadership was the likelihood of employees being personally prepared to respond to shelter duty during an emergency. To address this concern the development team incorporated a group discussion on family emergency planning (Fig. 1, Competency 6) to conclude the pilot session. Evaluation questionnaires subsequently identified responsibilities to children or family as the single most important factor that might keep an employee from responding.

## Results

Table 1 shows preliminary results of the pre- and post-test questionnaires for questions involving

nurses’ behavioral attitudes and intentions, and how they understand their role in emergency preparedness and response. The vast majority of nurses (48 in pre-test and 51 in post-test) agreed that they feel a responsibility to help in a health-related emergency. Before receiving the training, however, few (3) could accurately identify their primary emergency response role (sheltering).

Results from follow-up questionnaires mailed to participants 30 days after the program are currently being analyzed.

**Table 1**

QUESTION	RESPONSE	
As a public health nurse, do you feel responsible for helping (if needed) during a health related emergency?	<b>PRE (n=50)</b> Y: 47 N: 1 Maybe: 1 No Response: 1	<b>POST (n=50)</b> Y: 49 N: Maybe: No Response: 1
If Yes, what is your role (s)?	<b>PRE</b> General health care: 36 Shelter: 1 Inform the public: 2 No Response: 11	<b>POST</b> General health care: 32 shelter: 4 Inform the public: 4 Triage: 4 No Response: 6
In general would you be available (at any time-24 hours/7 days a week if called upon to responds to a health emergency)?	<b>PRE</b> Y: 20 N: 15 Maybe: 9 No Response: 6	<b>POST</b> Y: 22 N: 15 Maybe: 9 No Response: 7
If contacted, do you intend to respond?	<b>PRE</b> Y: 36 N: 8 Maybe: 2 No Response: 4	<b>POST</b> Y: 44 N: 3 Maybe: 1 No Response: 2
What would keep you from responding?	<b>PRE</b> Children/Family: 23 Own health reasons: 9 Transportation: 10 Out of town weekends: 5 Compensation: 1 Live out of town: 1  Other: 1	<b>POST</b> Children/Family: 22 Own health reasons: 6 Transportation: 12 Out of town weekends: 5 Compensation: 1 Live out of town: 1 Pets: 1 Out of town at time of emergency: 2
What resources would you need in order for you to be available 24 hours/7 days a week if necessary?	<b>PRE</b> Transportation: 9 Adult/child care: 16 Communication Equipment: 8 Compensation: 1 Own safety: 1 Instructions: 15	<b>POST</b> Transportation: 10 Adult/Child care: 15 Communication Equipment: 9 Compensation: 5 Own safety: 1 Instructions: 10

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According to the satisfaction survey the preparedness program was well received. Comments from participants were overwhelmingly positive. The pilot program was useful in identifying gaps in information and areas requiring special attention. For example, NYC DOH School Health Program managers subsequently drafted a guide to assist employees identify and resolve personal needs in advance of an emergency call-up.

Evaluation results and feedback from the pilot participants and DOH observers were incorporated into a preparedness program offered in August to approximately 800 public health nurses in the School Health Program, in conjunction with disaster health services and shelter training by the American Red Cross. This revised program\* includes more precise information on the NYC DOH's disaster command and control plan, increased detail on the public health nursing role with shelter populations, as well as expanded evaluation measures of behavioral attitude and intention.

While it is clear that the pilot program was positively received, formal evaluation will determine the impact of the expanded program offered in August. However, there are collateral benefits worth noting. Public health nurses in the School Health Program spend nearly all their time in school

buildings operated by the NYC Board of Education, not the NYC DOH, and therefore they infrequently interact with other DOH employees beyond their direct supervisors. As a result, they often feel isolated from the larger organization. By showing how each employee fits into the agency's overall emergency response plan, and reinforcing the notion that the individual employee is not an isolated player but part of a team effort, basic preparedness instruction can help to overcome this sense of isolation and reinforce positive individual and organizational performance. The pilot participants expressed gratitude for the inclusive tone and objectives of the program, as well as for the informative materials directly related to their professional performance and clinical skills in heat emergencies.

The evaluation of the entire School Health Program preparedness training experience will be used to guide the development of additional curricula. The remaining ~4000 NYC DOH employees must attain basic emergency preparedness competencies. In addition, there are competencies specific to professional staff and to leaders/administrators that must be mastered (see \*\* below). Plans for this further work are currently being developed by the Columbia University Center for Public Health Preparedness.

\* The preparedness presentation can be viewed via the "Resources" link on the Columbia University Center for Public Health Preparedness home page at: <http://cpmcnet.columbia.edu/dept/sph/CPHP/index.html>

\*\* A complete version of emergency preparedness competencies for four levels of public health workers (pdf format), and a description of the emergency preparedness competency development project may be downloaded at this URL: <http://cpmcnet.columbia.edu/dept/nursing/institute-centers/chphsr/projects.html>

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