

# Implications of Preparedness and Response Core Competencies for Public Health

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Public health care practitioners and organizations are a part of community readiness for, response to, and recovery from emergencies and disasters of all kinds. Although response to health threats, particularly communicable disease outbreaks, have long been a part of public health practice, 2 advancements in preparedness, including the integration of public health into the broader community emergency response system and the clarification of exactly what knowledge, skills, and attitudes a public health professional brings to the response, have been made since 2001. This article presents the newly affirmed core competencies to be attained and maintained by the majority of the public health workforce and discusses some of the many ways in which these competencies influence practice, research, and education.

**KEY WORDS:** competency-based education, public health management and practice, public health preparedness, workforce training

The Public Health Preparedness and Response Core Competency Model<sup>1</sup> (Preparedness Model) (Figure) is the result of a national project undertaken by the Association of Schools of Public Health (ASPH) at the request of the Centers for Disease Control and Prevention (CDC) in response to the Pandemic and All-Hazards Preparedness Act of December 2006, also known as PAHPA.<sup>2</sup> The specific aim of the project was to develop a model of public health preparedness and emergency response competencies for the public health workforce. The PAHPA legislation, as the primary policy driver for the competency development project, was explicit in the requirement for a competency-based

training program that is responsive to the needs of state, local, and tribal public health organizations and emphasizes public health security capabilities. Thus, the project kept a focus on the National Response Framework<sup>3</sup> and Target Capabilities List,<sup>4</sup> which recommend an all-hazards approach to emergencies that includes terrorist attacks, natural disasters, emerging infectious disease, health emergencies, environmental threats, and/or other major events such as chemical, biological, radiological, nuclear, high-yield explosives (CBRNE), and food and agriculture events. Within all of these, the National Health Security Strategy, required by PAHPA and Homeland Security Presidential Directive 21,<sup>5</sup> makes it very clear that the nation requires a sufficiently large workforce proficient in emergency preparedness, response, and recovery skills.

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The authors are grateful for the partnership with Drs Andrea Young and Robyn Sobelson, who worked closely with the Association of Schools of Public Health on this project through the Office of Public Health Preparedness and Response at the Centers for Disease Control and Prevention during the competency model development process.

This project was supported under a cooperative agreement from the Centers for Disease Control and Prevention through the Association of Schools of Public Health grant U36/CCU300430-28.

Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention, the Department of Health and Human Services, or the US government.

The authors declare no conflicts of interest.

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DOI: 10.1097/PHH.0b013e318254cc72

**FIGURE ● Public Health Preparedness and Response Core Competency Map (Model Version 1.0, December 17, 2010)**

This project is conducted in partnership under a cooperative agreement between the CDC and the ASPH.

The substantial federal investment in public health workforce development for over a decade has included the establishment of training programs covering emergency preparedness and response. However, a careful study of published research on emergency preparedness education<sup>6</sup> has identified a lack of solid evidence on the impact of the training on individuals or public health systems, requiring a substantial research strategy to fill the gap. The CDC Preparedness and Emergency Response Learning Centers, formerly the Centers for Public Health Preparedness, represent a network of accredited, graduate schools of public health uniquely focused on emergency preparedness and response training for the public health workforce, and they are expected to be the major users of the Preparedness Model. ASPH staff made it a particular point to deliver the model directly to the Preparedness and Emergency Response Learning Centers, after having included them in the model development and vetting

process. In addition, the model is being disseminated through the ASPH Web site, through regular dialogue with the various public health emergency preparedness organizations, through presentations at professional meetings, and via the peer-reviewed literature.

It is expected as well that the ASPH and others would recommend that public health agencies apply the model both to improve protection of the nation's health and to strengthen accountability for training dollars provided by federal agencies to public health organizations and educational institutions. Application of the model in public health practice will require attention by policy makers, human resources professionals, and individual workers, as well as trainers and evaluators. The use of the Preparedness Model should be evaluated as part of ongoing research to differentiate effective training methods and frameworks from those that do not produce the desired results.

Core competency-based training (such as that called for by PAHPA) requires a valid, agreed-upon set of competencies. A review of the existing competency literature in circulation at the time of this project was conducted to collect competencies or competency-like statements for consideration as “candidate competencies” in the model development process. This review revealed that nearly 60 public health preparedness and response competency frameworks, models, journal articles, government reports, Web portals, public health practice and academic association training products, as well as slide presentations are available and in use.<sup>7</sup> Of these, some are based on research, some on organizational decisions, and some presented by individual trainers. No universally accepted set of competencies for public health preparedness and response was identified, and many of the competencies did not reflect current federal plans, policies, or capabilities.

The Preparedness Model project was organized as a broad dialogue within the public health community, led by an 18-member group of experts from academia and the practice community.<sup>8</sup> The interactive method by which the competencies were developed is summarized in the Box and detailed by E. Ablah, PhD, et al (unpublished data, 2012). Nearly 400 individuals from a wide range of public health settings participated. The iterative process spanned 21 months and was based on a continuous dialogue among experts and practitioners in the multiple aspects of emergency preparedness, emergency response, and recovery from emergencies. In-person and virtual meetings, coupled with 3 electronic surveys, were used to solicit feedback on draft domains and competencies.<sup>8</sup> The questions continually addressed were whether any one candidate competency was properly stated as a competency and whether it was truly core for all public health workers in the designated target population.

### BOX ● Core Competency Development Method Key Steps

#### Phase I: Initiation (3 mo)

Leadership group drawn from practice and academia  
Comprehensive literature and resource review undertaken

#### Phase II: Delphi-type surveys (13 mo)

Round 1: Selection of domains for inclusion

Between rounds: Expert panel identification of candidate competencies

Round 2: Specification of candidate competencies

Between rounds: Review of data and development of final round

Round 3: Selection of final competencies

#### Phase III: Compilation of model (4 mo)

Analysis of response data and final statement of competencies

Development of graphics and accompanying explanatory materials

#### Phase IV: Publication of model (1 mo)

Defining the target population for the core competencies was the essential first step, given the wide range of skills, responsibilities, and experience of the entire public health workforce of more than 500 000 people, from the beginning worker with no prior public health experience to someone such as the senior epidemiologist with 25 years of work experience following the receipt of a doctoral degree. The decision was to identify competencies that are essential for all mid-level public health workers, defined by education and experience as individuals with either 5 years of work experience and an MPH equivalent or higher degree *in public health* or 10 years of experience with a high school diploma, bachelors, or *non-public health* graduate degree.<sup>8</sup> This definition includes a substantial portion of the known public health workforce, providing the backbone of service delivery in any public health program, or responsible for program support, coordination, development, implementation, management, or evaluation; supervision; community relations; or policy analysis. Examples include the following:

- Administrators, such as payroll supervisors, purchasing managers, and human resources staff.
- Chief clerks of vital records.
- Public health nurses who run well-child clinics, immunization programs, and sexually transmitted disease testing, and may assist with epidemiologic tasks.
- Public health sanitarians who perform routine food, water, pool, and/or restaurant inspections, conduct food worker training, and may assist with epidemiologic tasks.
- Senior laboratory technicians who support laboratory scientists and others in organizing, conducting, and reporting laboratory tests.<sup>1</sup>

Those at an entry level (eg, workers new to public health or those with less than a high school education) and at a more advanced level (eg, very experienced workers or those in high-level leadership positions) will need to be competent as well, but to differing degrees or in other areas than these mid-level workers. Using this mid-level core set as a starting place, organizations and educational institutions can more quickly identify what is needed by these other groups.

In the process of specifying the competencies needed by individuals, it was also important to separate them from the emergency capacity that must be developed by any organization. The following example may help illustrate this point: a worker who is *competent* to develop a computer-based record-keeping system is unable to function if the organization does not have computer *capacity*, and it would be an error to describe the provision of computers as an individual core competency. Providing computers during an emergency

is a logistical task that can be anticipated, should be included in staff assignments, and may require (depending on the organization) some specialized competency in the persons given the assignment, but it is not a core competency.

## ● The Competency Model

As released in December 2010, the Preparedness Model<sup>1</sup> states that the overall goal is to have mid-level public health workers prepared to perform proficiently their assigned prevention, preparedness, response, and recovery role(s) in accordance with established national, state, and local health security and public health policies, laws, and systems. As illustrated in the Figure, the competencies are organized into 4 domains that are critical to build and sustain the capacity to fulfill the worker's responsibilities: model leadership (6 competencies); communicate and manage information (5 competencies); plan for and improve practice (4 competencies); and protect worker health and safety (3 competencies). An important point, however, is that the ability of any one worker to meet the emergency preparedness performance goal for his or her position is closely tied to competencies described in other models and acquired elsewhere. Three other sources are particularly relevant:

1. *Foundational public health competencies*, such as the Council on Linkages Between Academia and Public Health Practice Core Competencies for Public Health Professionals<sup>9</sup> and the ASPH master's degree in Public Health Core Competency Model<sup>10</sup> for those in the target group with specific training in public health.
2. *Generic health security or emergency core competencies*, such as those that may stem from National Incident Management System courses or the new core competencies for disaster medicine and public health recommended for all health professionals.<sup>11</sup>
3. *Position-specific or professional competencies*, such as those developed for public health nursing, environmental health, health education, public health law, applied epidemiology, administrative support, and informatics, depending on the individual's background or assignment.

A key feature of the model is the expectation that those who fit the definition and gain these competencies will maintain proficiency in them as a unified set. Although competencies once learned and never practiced might be relearned quite quickly, responding to an emergency situation does not provide adequate time for extensive refresher training to take place before the response occurs. As stated, these competencies are

generic, but they are always carried out by the worker within a specific position and organization. Therefore, each mid-level public health worker requires regular opportunities to practice the competencies in realistic situations in order to maintain the required proficiency in all of these core competencies. When that is the case, the "just in time" training specific to an event (eg, geographic features of the affected area, update on management of an infectious organism, or abilities of newly arriving volunteers) can contribute to effective performance.

## ● Discussion

This model of core competencies is a foundation for many activities associated with ensuring that public health fulfills its necessary role in community preparedness for emergencies, actions to reduce the likelihood of emergencies or the degree of impact when one occurs, effective response when emergencies occur, and both immediate and long-term recovery actions. Among those who should consider use of the model are policy makers, planners, employers, academic faculty and professional trainers, individual workers, evaluators, accrediting bodies, and researchers. Sketches of actions that might be taken by these potential stakeholder groups are provided later. This is not an exhaustive list of either stakeholders or actions but is intended to stimulate thinking about ways in which the model can serve as a positive influence on practice.

### Policy makers

*Policy makers* at every level should consider the requirements in place for programs under their control, whether for training of individual public health workers, for facilitating coordination between training requirements and support for training programs, or for ensuring that system capacity is addressed at the same time workers are becoming better prepared for the jobs they must perform. This extends to policy makers in the general emergency preparedness area as well as those specific to public health. Congress, by passing PHAPA, has shown that it considers public health competency-based preparedness training a key component of ensuring effective use of resources. It is impossible to answer definitively the perpetual question "Are we prepared yet?" The policy commitment to preparedness at a national level entails an understanding that this must be an ongoing quality improvement process, with the competencies providing assistance to policy makers as they identify benchmarks for appropriate resource allocation.

## Planners

The world of emergency preparedness also includes many *planners*: those developing individual organizations' emergency preparedness plans and annual exercise plans and those planning for interagency or jurisdiction-wide emergency capacity. All of these planners, whether full or part time, should become familiar with this new Preparedness Model and should consider how to ensure that workers fitting this mid-level description are provided adequate training prior to participation in either exercises or actual emergencies. Planners are also critical for identifying where and when the performance of an individual role requires expertise beyond this core and for making plans to ensure that time and resources for additional development will be available as needed.

## Employers

Every public health *employer* should ensure that the currently employed workers in the defined mid-level range develop and maintain the competencies. Even while providing for the education of the existing mid-level workforce, it will be important to develop a combination of new employee orientation, continuous on-the-job learning, and regular exercises and drills with interwoven quality improvement loops, all designed to bring the target audience to proficiency and maintain expertise over time. It will be important to increase the likelihood that employees moving across the somewhat arbitrary 5-year or 10-year experience line of the definition have already become at least novices in these competencies and thus are ready to develop and maintain proficiency without beginning anew. Having a workforce with the core competencies also opens the door to developing the abilities of entry-level employees, those assigned into preformed teams for specialized duties, those moving into senior leadership roles, and those requiring expertise in interagency response. Even if an agency has a commitment to employee development as a part of continuous quality and performance improvement, resources are needed. Employers planning for development need to allocate a reasonable share of those resources to ensure that employees achieve and maintain core emergency preparedness competencies.

In larger organizations, the human resources/personnel/civil service systems also have the opportunity to update position requirements and general personnel information to reflect the expectation of proficiency in these competencies. Career counseling available to employees should include information on ways to achieve and maintain these emergency preparedness competencies in anticipation of future roles that will be assumed by employees during the course of a career

in public health. The human resource offices may be able to ensure continued proficiency by requiring continuing education, refresher courses, or documentation of currency as part of each employee's annual performance appraisal. Some human resource departments are also in a position to facilitate access to continuing education training, either directly or through compensation. The personnel office can also help communicate to employees how the abilities exhibited during an emergency situation are related to the basic job for which they were hired. This means that in a state of emergency, public health nurses remain nurses, sanitarians remain sanitarians, and administrative assistants continue to be administrative assistants, although they may be applying the core competencies and their skills in a different setting or under the direction of an unfamiliar leader. For those employees who discover that they wish to engage more extensively in emergency situations, the human resource office can become a source of information on how to join a Medical Reserve Corps unit, Community Emergency Response Team, the National Disaster Medical System, or an international relief team. Employees participating in such activities do need to keep their employers informed and be aware that they cannot respond to any one emergency through more than 1 resource agency.

## Academic faculty and professional trainers

*Academics* in accredited, graduate schools and programs of public health as well as *trainers* in public health organizations and independent training firms are already presenting a variety of emergency preparedness and response programs, some developed specifically for public health, some based primarily on knowledge transfer rather than competency development, and some extremely specialized. All existing training approaches that target mid-level public health workers should be examined against the expectations of these competencies, with the goal of ensuring that any course on emergency preparedness, response, or recovery to be taken by a mid-level public health worker is consistent with the expectations of these competencies. For each competency, expert educators and trainers must identify the subcompetencies, and specific knowledge, skills, and attitudes to be translated into learning objectives and learning activities. With CDC support, the ASPH and the Preparedness and Emergency Response Learning Centers have already begun the task of operationalizing the model.<sup>12</sup> This work and related implementation efforts, supported by evaluations from training sessions that enhance training and education, are expected to assist faculty in improving the model for sustaining readiness in the US public health workforce.

As a further reminder to trainers, there are at least 3 other groups of public health workers to be considered: the entering workers without the requisite years of experience to fit this model; senior leaders; and those workers who will be representing public health in interagency planning, Incident Command Centers, and community-wide recovery efforts. These groups all need competency-based training specific to the expectations of their roles, and although this core competency model provides general guidance, much additional work is needed to ensure that these groups receive the specific preparation for their roles as well.

### Individual workers

*Individual workers* have a responsibility to their employers and colleagues to maintain their expected knowledge, skills, and attitudes, and this is perhaps more important in emergency situations than at any other time. For example, a worker who does not know how to share important continuity issues for his or her programs with the risk assessment team, does not develop and maintain a personal preparedness plan, cannot differentiate reliable information from rumor, and loses all ability to remain culturally sensitive during times of crisis, will not only be at personal risk of a bad outcome but also puts colleagues and the community at risk. Taking advantage of every training opportunity and participating in drills and exercises are essential. Part of this preparation process is one of self-assessment that can increase understanding of one's own tolerance for stress and adaptability, in anticipation of the need for these characteristics during implementation of an emergency plan.

### Evaluators

*Evaluators* of both educational programs and public health organizations now have this competency set as a framework for critical questions about performance of individuals and organizations. When a disaster drill, a community exercise, or a response to an emergency event does not go well, a key question to ask is whether the involved mid-level public health responders had acquired the core competencies that would have allowed them to perform well. Related questions are whether there were expectations of a specialized response (eg, establishing a new epidemiology protocol or conducting just-in-time training for emergency volunteers) that should have been anticipated with separate training provided. The model can also assist an evaluator to tease out the differences between what was done (or not done) because of the competence of individual workers and what was accomplished (or not accomplished) because system capacity had not been developed or deployed. For example, if the jurisdic-

tion has not developed public health legal preparedness and outlined in accessible places what needs to be done to authorize changes in agency regulations under emergency conditions, then expectations of employee performance "within legal scope" may be unrealistic.

### Accrediting bodies

The *Public Health Accreditation Board* has begun implementing standards for public health organizations. Just as The Joint Commission has included very specific expectations for emergency preparedness and response within the standards for accredited hospitals,<sup>13</sup> the Public Health Accreditation Board (and the similar bodies at the state level) should consider how these core competencies might be used to measure the performance of a health department. The National Association of County and City Health Officials' Project Public Health Ready, also known as PPHR,<sup>14</sup> has successfully assisted many local health departments to receive recognition for emergency preparedness and has grown to include regional and statewide systems. While PPHR criteria does not require agencies to utilize any specific set of competencies, it recommends that the competencies draw from "nationally recognized" work and, thus, the guidelines now include reference to this new model. Given the wide range of organizations that practice public health, there may be other accrediting or recognition bodies useful to nongovernmental public health practice that should also consider how to take advantage of the standard set by this core competency model to strengthen the workforce within participating member organizations.

### Researchers

Finally, *researchers* studying public health education and public health systems are a critical group to begin incorporating this Preparedness Model into programs of research. Although the competencies have been developed through a well-designed research method, the implementation of training programs and the long-term impact on public health practice need to be studied. The relationship of these competencies to other emergency preparedness sets already in existence or under development needs to be explored. Another major issue is the frequency of refresher training, drills, and exercises essential to maintain proficiency. In other health-related areas, such as surgery, it has become clear that there is a level of repeat performance that makes a significantly positive difference in outcome; public health leaders must determine the level of repeat performance of these competencies that increases the likelihood that mid-level public health workers will act as desired when an emergency occurs.

## ● Conclusion

This discussion has provided a preliminary overview of the expected and potential impact of having a well-founded model of core competencies for public health workers, particularly those at the mid-level of practice. The model moves the field a significant step forward from prior competency sets in at least 2 ways: the model benefits from the breadth of input from both academia and practice, and the field of public health practice has advanced on the basis of the prior decade of experience with a stronger overall national emergency preparedness program.

The full impact, however, will only be realized when public health organizations have fully incorporated an expectation of emergency preparedness competency appropriate to the worker's job, years of experience, and expected emergency roles into agency policy, planning, and practice. And it cannot be done by public health alone: adequate planning to minimize the likelihood of emergencies, to strengthen the response when an emergency arises, to move smoothly into a community recovery process, and to support overall community resilience is an essential function of public health that can only be accomplished through meaningful collaboration with emergency response and other agencies at all levels of government.

Having a workforce that maintains proficiency in these core competencies brings public health to the community table prepared to assume its responsibilities as a team member. Yet, that same workforce is expected to maintain competency in many areas, some of them specific to a programmatic area; some to a population group; and some in a specific analytic or intervention skill. Given that many public health organizations seldom are called into full emergency response mode, the expectation of proficiency in even this small number of core competencies may sound like an extreme response to a current popular issue rather than an essential part of practice. The developers of the competencies understood the need for parsimony in a core competency model, and the reactions of public health workers to more specialized candidate competencies were helpful in narrowing down the candidate list to the core set. The worker proficient in these core competencies will be better able to handle other situations as well, such as those involving heightened tension, communication gaps or failures, and suddenly rearranged communication patterns. With a better-prepared workforce, the public health sector will become more competent in fulfilling community and partner organization expectations for the benefit of all. The dialogue should continue, and this newly developed core competency model should be subject to reconsideration and improvement over time.

## REFERENCES

1. Association of Schools of Public Health. Public Health Preparedness and Response Core Competency Model, Version 1.0. Association of Schools of Public Health Web site. <http://www.asph.org/userfiles/PreparednessCompetencyModelWorkforce-Version1.0.pdf>. Accessed July 19, 2011.
2. *Pandemic and All Hazards Preparedness Act*, S.3678. 109th Cong, 2nd Sess, 2006.
3. Department of Homeland Security. *National Response Framework*. Washington, DC: Department of Homeland Security; January 2008. FEMA Publication P-682 (Catalogue No. 08011-1).
4. Department of Homeland Security. Target Capabilities List: a companion to the national preparedness guidelines. Department of Homeland Security Web site. Published September 2007. <http://www.fema.gov/pdf/government/training/tcl.pdf>. Accessed July 5, 2011.
5. Department of Homeland Security. Homeland Security Presidential Directive 21: Public Health and Medical Preparedness. Department of Homeland Security Web site. <http://www.dhs.gov/xabout/laws/gc.1219263961449.shtm>. Accessed July 5, 2011.
6. Potter MA, Miner KR, Barnett DJ, et al. The evidence base for effectiveness of preparedness training: a retrospective review. *Public Health Rep*. 2010;125(suppl 5):15-23.
7. Association of Schools of Public Health. Competency Resources Web site. Competency Resources cited. <http://www.asph.org/document.cfm?page=1126>. Accessed January 6, 2012.
8. Association of Schools of Public Health. Public Health Preparedness & Response Core Competency Model Web site. <http://www.asph.org/document.cfm?page=1081>. Accessed January 6, 2012.
9. Council on Linkages Between Academia and Public Health Practice. Core Competencies for Public Health Professionals. Council on Linkages Web site. [http://www.phf.org/resourcestools/Documents/Core\\_Public\\_Health\\_Competencies\\_III.pdf](http://www.phf.org/resourcestools/Documents/Core_Public_Health_Competencies_III.pdf). Accessed July 19, 2011.
10. Association of Schools of Public Health. Master's degree in Public Health Core Competency Model, Version 2.3. Association of Schools of Public Health Web site. [http://www.asph.org/publication/MPH.Core\\_Competency\\_Model/index.html](http://www.asph.org/publication/MPH.Core_Competency_Model/index.html). Published August 2006. Accessed July 5, 2011.
11. Walsh L, Subbarao I, Gebbie K, et al. Core competencies for disaster medicine and public health. *Disaster Med Public Health Prep*. 2012;6(1):44-52.
12. Association of Schools of Public Health. Preparedness Web site. <http://preparedness.asph.org/>. Accessed January 6, 2012.
13. The Joint Commission. The Joint Commission FAQ page. The Joint Commission Web site. <http://www.jointcommission.org/about/JointCommissionFaqs.aspx>. Accessed July 5, 2011.
14. National Association of County and City Health Officials. Project Public Health Ready. National Association of County and City Health Officials Web site. <http://naccho.org/topics/emergency/PPHR/index.cfm>. Accessed July 5, 2011.