Academic Centers for Public Health Preparedness: A Giant Step for Practice in Schools of Public Health

LEE THIELEN, MPA^a
CHARLES S. MAHAN, MD^b
ANTIGONE R. VICKERY, MPH^c
LAURA A. BIESIADECKI, MSPH^d

(Authors' note: This article was originally written and submitted in April 2004. Since then, substantial changes have been made to the Academic Centers for Public Health Preparedness [ACPHP] program. The 23 ACPHP have united with earmarked specialty centers located in schools of medicine, dentistry, and veterinary medicine to become a network of 40 Centers for Disease Control and Prevention [CDC] Centers for Public Health Preparedness [CPHP]. The Association of Schools of Public Health [ASPH] continues to play a vital role in coordinating network activities. To learn more about the CPHP network's current activities, visit ASPH's website at <http://www.asph.org>.)

Before the 1990s, it was difficult to find tangible evidence of a serious focus on public health practice in most of the U.S. schools of public health. In the years since, national and public health community events have affected changes to refocus the schools of public health to start dealing seriously with the issues of training, service, and research in public health practice. Established in 2000 to improve the safety of our communities, the Academic Centers for Public Health Preparedness (ACPHP) have not only made significant contributions to workforce readiness, but have advanced academic-practice partnerships. The Association of Schools of Public Health (ASPH), the coordinating body of the ACPHP network, undertook a qualitative evaluation of the program. Results demonstrated that the ACPHP were developing valuable expertise in preparedness issues, assessing the training needs of their partners, and testing the effectiveness of the trainings using exercises and drills.

During February and March 2004, 21 ACPHP located at 23 schools of public health, along with their practice partners, participated in a qualitative Peer Review and Practice Evaluation (also called reverse site visits) hosted by ASPH and the Centers for Disease Control and Prevention (CDC) in Atlanta. This article provides background on the historical context of the establishment of the ACPHP, then presents themes learned from the ACPHP evaluation process and offers commentary on how a program focused on increasing public health workers' ability to respond to terrorist threats also significantly advanced academic-practice partnerships, which have been struggling for years.

^aPublic Health Consultant, Fort Collins, CO

^bUniversity of South Florida College of Public Health, Tampa, FL

^cPractice and Workforce Development, Association of Schools of Public Health, Washington, DC

^dAssociation of Schools of Public Health, Washington, DC

Address correspondence to: Laura Biesiadecki, MSPH, Association of Schools of Public Health, 1101 15th St. NW, Ste. 910, Washington, DC 20005; tel. 202-296-1099; fax 202-296-1252; e-mail <lbiesiadecki@asph.org>.

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THE PAST AS PROLOGUE

Before the 1990s, it was difficult to find tangible evidence of a serious focus on public health practice in most of the U.S. schools of public health, as pointed out in the 1988 Institute of Medicine (IOM) report, *The Future of Public Health*.¹ The report criticized schools for becoming somewhat isolated from public health practice and not focusing attention on the training needs of professionals working in health agencies.

While the IOM report generated much debate and discussion, three other events that occurred in the early 1990s helped spur schools of public health to start addressing training, service, and research in public health practice. These events included the Clinton Health Plan, the establishment of the Council on Linkages Between Academia and Public Health Practice (based on the 1990 Public Health Faculty/Agency Forum final report)² and the beginning of the national, regional, and state Public Health Leadership Institutes.

The Clinton Health Plan, of course, died in utero, but it served as a wake-up call to public health leaders in the country that our interests were not being taken seriously enough. The “Big Four” public health organizations (the American Public Health Association, state health departments, county and city health organizations, and schools of public health) were far from collaborative, and each organization was presenting a different idea of the public health agenda to Congress and the White House, leading to much confusion. To his great credit, Dr. Phillip Lee, the Assistant Secretary for Health in the Department of Health and Human Services, recognized the disorder and pulled all of the key representatives together in one room to give them some familiar fatherly advice: “You need to all hang together, or surely you will all hang separately.” The organizations took this to heart, and county and city health departments merged into the National Association of County and City Health Officials (NACCHO), and now they, along with the Association of State and Territorial Health Officials (ASTHO), the American Public Health Association (APHA), and the Association of Schools of Public Health (ASPH), increasingly work together on common initiatives.

The establishment of the Council on Linkages, staffed by the Public Health Foundation, furthered this effort and has provided a regular forum for the practice and academic communities to come together. The Council on Linkages is comprised of leaders from national organizations representing the public health practice and academic communities with the mission to improve public health practice and education by fostering, coordinating, and monitoring links between academia and the public health and health care community. Its precursor was the Public Health Faculty/Agency Forum, which developed recommendations for improving the relevance of public health education to the demands of public health in the practice sector.

The Public Health Leadership Institutes are a network of organizations represented by both academics and practitioners dedicated to building public health leadership programs and skills in order to achieve optimal health outcomes. The Leadership Institutes have brought together academics, government, and private public health stakehold-

ers to not only hone their leadership skills, but to enhance bonding, friendships, better understanding, and a “group courage” that has provided a strong underpinning for making change and progress in U.S. public health. Through funding programs that provide leadership training to state and local public health workers, both CDC and the Health Research and Services Administration (HRSA) have supported these programs.

Also aiding in educational initiatives was the proliferation of distance-learning technology in the mid-1990s. During this period, many schools began using distance-learning technologies such as satellite, video, teleconferencing, and the Internet to reach public health practitioners so that they could keep working at their jobs and not have to travel to campus. At the same time, most schools of public health established some form of identifiable presence for public health practice, ranging from practice centers to departments of practice to associate deans of practice. All of this enhanced the schools of public health capacity to address the training needs of both the current and future public health workforce.

In the past, the CDC has supported academic practice linkages and in recent years invested a significant amount of resources in schools of public health for programs that improve the safety of our communities and our nation, through successful academic-practice relationships. In 2000, CDC funded four Centers for Public Health Preparedness (CPHP) in schools of public health. Initially, these four schools were given modest resources to work with state and local health departments to assess training needs and deliver training related to terrorism and natural disasters. Following the events of September 11, 2001, and the subsequent anthrax exposures, CDC invested significantly more resources. The network of academic centers has grown to 21 (Figure 1) and reflects a unique partnership between accredited schools of public health and state and local health departments. Their charge is to work in close partnership with state and local public health agencies to (1) identify the educational and training needs for bioterrorism, infectious disease, and other public health threats and emergencies; (2) support activities identified in state planning documents; (3) develop appropriate education and training programs in bioterrorism and infectious diseases in concert with national efforts and standards; and (4) develop appropriate capacity in schools of public health for professional education and training. As evidenced by the Peer Review and Practice Evaluation, the ACPHP were actively working to achieve their charge. While their accomplishments to prepare the workforce for public health threats are substantial, the propitious by-product is the natural advancement of academic-practice relationships and general public health workforce issues that have been under discussion for many years at the Callaway Gardens meeting and other related workforce meetings.

WHERE WE ARE NOW

Overall, the ACPHP have taken a giant step toward making public health practice a strong entity in each of the 21 academic centers, not just a struggling sideline. We saw evidence of this in Winter 2004, when the CDC and ASPH supported the Peer Review and Practice Evaluation of ACPHP

Figure 1. Schools of public health with Academic Centers for Public Health Preparedness (ACPHP)

- Columbia University Mailman School of Public Health Center for Public Health
- Emory University, Rollins School of Public Health
- Harvard School of Public Health
- Johns Hopkins Bloomberg School of Public Health
- Saint Louis University School of Public Health
- University at Albany SUNY School of Public Health
- Tulane University School of Public Health and Tropical Medicine and University of Alabama at Birmingham School of Public Health
- University of California at Berkeley School of Public Health
- University of California at Los Angeles School of Public Health
- University of Illinois at Chicago School of Public Health
- University of Iowa: Center for Public Health Practice
- University of Medicine and Dentistry of New Jersey
- University of Michigan School of Public Health
- University of Minnesota School of Public Health
- University of North Carolina – Chapel Hill School of Public Health
- University of Oklahoma College of Public Health
- University of Pittsburgh Graduate School of Public Health & Ohio State University School of Public Health
- University of South Carolina, The Norman J. Arnold School of Public Health
- University of South Florida College of Public Health
- University of Texas School of Public Health
- University of Washington School of Public Health and Community Medicine

programs. During the evaluation (also called reverse site visits), each academic center was given a half day to show the strengths of their partnerships with the practicing public health community, the products and programs they had developed, and the strategies used to support their service area. A review panel consisting of representatives from CDC, the practice community, and the ACPHP assessed the presentations against criteria established by a subcommittee of ACPHP principal investigators. The criteria were categorized under the headings of leadership and strategic planning, customer and market focus, information and analysis, systems development, and business focus. The purpose of the reverse site visits was to:

- Describe the progress of the ACPHP program in contributing to the national workforce preparedness agenda;
- Summarize common themes, shared successes, and frequent challenges referenced in the site visit presentations, reviews, and program materials; and
- Inform the CDC of the current elements of the program, the service areas covered, an overview of the

training methodologies used, the products developed, and recommendations for potential new directions for the program as it moves forward.

Common themes identified during the evaluation process included academic-practice relationships, development of specialty areas, needs assessments, capacity building, competencies, credentialing, and applied research.

Academic-practice relationships

More than 93 practice partners contributed to the presentations by traveling to Atlanta, participating via video or audio conference, or making videotaped testimonials. The enthusiasm and collegiality were evident among the academics and practitioners. The amount of effort they had invested to prepare their presentations and the commitment to travel to Atlanta made it clear that this was a significant, valued, permanent collaboration.

Practice partners were active participants in discussions highlighting both the successes and challenges of working with academic partners. It was apparent that academia is playing an important role in servicing their regional, state, and local partners. However, it was also apparent that there was no one model for how the relationships were developed and maintained or how they thrived. Each was dependent on a number of variables for success, including prior working relationships, regular communications, year the ACPHP was funded, distance between the academic center and the state or local health department, and/or turnover in state or local health department personnel. Problems were highlighted and it was obvious that some ACPHP had better working relationships with their partners than others. However, both academic and practice partners frequently commented that without the resources invested in the ACPHP, the relationships might not have improved. The funding provided the needed impetus to work together.

The progress in strengthening the relationships between the academic and practice communities can be linked to many factors. One is that many principal investigators or directors of this program are former local or state public health officials who are able to provide an increased understanding of the practice community. Evidence that having practice officials in leadership positions has worked was the integral involvement of practice partners in every presentation. A wide range of organizations, including state and local health departments, non-profit public health institutes, emergency services, the military, state public health associations, and federal agencies was represented. New and innovative relationships were formed with medical societies, nursing associations, HeadStart programs, fire departments, prison systems, school districts, community health centers, hospitals, and other partners. One example of this innovative partnership building can be found at one center, which is providing technical assistance to Wal-Mart as the retailer integrates its computerized pharmaceutical product tracking system with a metropolitan area medical response system. This will allow tracking of key pharmaceutical products that will be used in a bioterrorist event.

Specialty areas

As the ACPHP became more established, they developed niche specialty areas. The range of specialties revealed across

the ACPHP network was impressive, and included coastal security, chemical and radiation threats, forensic epidemiology, agro-terrorism, zoonotic disease threats, food safety, and many more (Figure 2). The ACPHP were identifying the expertise in their schools and assessing the needs of their service areas to create dynamic programs that strengthen emergency management, public health response to threats, and national security. The strength of the ACPHP network lies in the ability of all the centers to capitalize on each other's unique expertise and products. This avoids duplication of efforts when possible and maximizes the efficient use of resources.

Needs assessments

The reverse site visits illustrated that the ACPHP were customer focused. ACPHP worked with their state and local

Figure 2. Academic Centers for Public Health Preparedness self-identified specialties

Specialty area	Number of centers
Border health and security	2
Case studies	1
Chemical threats and/or response	2
Conflict resolution/connectivity/problem solving	1
Coastal terrorism	1
Distance learning/instruction	4
Equity in preparedness	1
Evaluation	3
Epidemiology/surveillance	6
Food supply/agricultural preparedness	3
Global/international preparedness	2
Incident command system	2
Infectious disease control/readiness	1
Informatics	2
Leadership and preparedness (including crisis leadership)	6
Learning management systems	3
Legal issues and preparedness	2
Mental health/psychosocial aspects of preparedness	6
Microbiology	1
Native American populations	2
Nuclear threats and/or response	1
Occupational health and safety	2
Public opinion polling	1
Radiation threats and/or response	2
Risk assessment	1
Risk communication	4
Rural preparedness	4
Water supply safety	2
Zoonoses	1

health departments to assess workforce training needs and developed trainings to meet those needs. Needs assessments have been completed through a variety of formats, ranging from informal meetings to focus groups to written and on-line surveys. In addition to assessing training needs, ACPHP also evaluated the best modality for delivery of the training. In the states or localities that preferred direct in-person training, it was provided. In other communities, where it was difficult for public health professionals to take time away from the office to attend trainings, courses were delivered via the Internet, video, or CD-ROM technology. This resulted in increased participation in training events.

Capacity building

The ACPHP program lead to changes in the academic environment and enhancing capacity within schools of public health. New programs were added, such as certificate programs in public health and preparedness and degree programs such as a master in public health (MPH) degree with a specialty in preparedness and emergency management. Internships were giving students first-hand experience in public health work. Faculty members were including emergency and disaster preparedness case studies in their classes. Tools of public health, such as epidemiology, were seen in a new light, with many uses, including forensic work. The ACPHP brought new faces into academic public health, including people with extensive public health management experience. They understand the needs of the local and state public health agencies, and they translated those needs to the academic community.

The bridges between academic public health and the front-line workers and public health managers have been strengthened through this program in surprising and inspiring ways. ACPHP faculty and staff were actively participating in state planning committees and providing technical assistance in writing state preparedness plans. Practice partners served as adjunct faculty for the ACPHP in their state. In one state, a cost-sharing program for tuition reimbursement was established wherein the ACPHP and the state health department each contributed toward graduate school tuition for health department employees.

Competencies

The ACPHP were validating the usefulness of competencies in their trainings. All of the ACPHP were using *Bioterrorism and Emergency Readiness: Competencies for All Public Health Workers* and/or *Core Competencies for Public Health Professionals*^{3,4} in their curricula design. The competencies were regarded as helpful, and evidently served as a good starting point. However, several ACPHP indicated that, like all competencies, they are dynamic and will require modifications as the practice of preparedness advances.

Credentialing

Many ACPHP engaged in piloting local and regional credentialing or certificate programs. One of the ACPHP started an on-line credentialing program for public health administrators and emergency response coordinators. NACCHO's Project Public Health Ready provided the opportunity for half of the ACPHP to be active partners in

“certifying” or recognizing 11 local health departments as ready to respond to public health emergencies. In this effort, ACPHP worked with their local partners to train staff, develop emergency preparedness plans, and practice the plan through drills and exercises.

Applied research

ACPHP advanced the state of the science related to workforce preparedness in order to inform policy and practice. They worked with their state partners to evaluate the effectiveness of their training initiatives from an individual, organizational, and national perspective, helping to define what it means to be prepared. Pre- and post-tests to assess individual worker knowledge were conducted as were the design and implementation of exercises and drills designed to test organizational readiness. However, more needed to be done to explore whether measures of individual or organizational competence are indicators of a workforce that can respond effectively to threats to national safety.

LOOKING TO THE FUTURE

Academic-practice partnerships have come a long way since the IOM's 1988 report. The ACPHP program has elevated the importance and attention to collaborative relationships in times when the focus is on national security and preparedness in an environment of fiscal crisis at the federal and state levels. However, there is more to do to strengthen relationships between schools of public health and state and local health departments.

It is clear that the ACPHP reflect the cultural environment of their schools and states. Each ACPHP has developed its own personality and approach. The strategies, appropriately, are different for suburban and rural America than for the major population centers. The schools with a long history of working with their state health agency and neighboring states have an easier time than those making new connections. It is recognized that in some areas these relationships are still tenuous. Maintenance will require more “care and feeding” for trust and confidence in the quality of the products and services to continue.

The academic-practice partnerships brought about by the ACPHP network are ever-evolving entities. In particular, two areas of change are anticipated in the future: how the ACPHP will leverage existing network expertise and products, and how they will work with practice partners outside their immediate geographic region. ACPHP have been allowed and encouraged to develop innovative approaches to meet the needs of their service areas. This is leading to some duplication of specialty areas and curricula development. Two examples are forensic epidemiology and mental health and preparedness. The ASPH and CDC will begin to work with

the ACPHP to develop a peer review process to evaluate existing resources. Through the peer review process, it is hoped that best practices will emerge and be leveraged by other centers. The ACPHP are stronger partners with the states where they reside, and there is some overlap of coverage. Appropriate geographic distribution of services will take time to develop, and some realignment of specialty areas to avoid duplication will likely occur in the future.

The CDC has a vision for the academic centers. This vision includes the contributions that each ACPHP makes to its local community and to the national ACPHP network. CDC is looking for the ACPHP to be innovative in advancing practice and knowledge. They must also continue to share their work to avoid costly duplication of products and curricula. ASPH, the ACPHP coordinating body, anticipates that with long-term funding, the ACPHP will develop the existing workforce and foster the development of future public health workers as well.

The ACPHP are still evolving and the network is still developing, but significant progress has been made in schools of public health through this program, which will only strengthen and mature with time. The ACPHP network is demonstrating that schools of public health bring extensive technical expertise and assets to the public health community. They are illustrating, in a very profound way, how relevant public health education is to our society and our nation.

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REFERENCES

1. Institute of Medicine. The future of public health. Washington: National Academy Press, 1988.
2. Sorenson AA, Bialek R, editors. The public health faculty/agency forum: linking graduate education and practice final report. Gainesville (FL): University of Florida Press; 1993.
3. Columbia University School of Nursing, Center for Health Policy. Bioterrorism & emergency readiness: competencies for all public health workers. Supported by Centers for Disease Control and Prevention/Association of Teachers of Preventive Medicine Cooperative Agreement # TS0740. November 2002. Also available from: URL: <http://www.nursing.hs.columbia.edu/institute-centers/chphsr/bitcomps.pdf>
4. Council on Linkages Between Academic and Public Health Practice. Core competencies for public health professionals; 2001 [cited 2004 Jan 28]. Available from: URL: <http://www.trainingfinder.org/competencies/list.htm>