

Lifelong Learning for a Well Prepared Public Health Workforce

*The case of an academic health
department model and the impact of
local public health departments as
learning organizations*

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Abstract

The terms *workforce development*, *learning organization*, and *academic health department* are all components of a ***lifelong learning*** approach for public health and refer to a similar overarching concept: creating an environment or an ethos that prioritizes learning, fosters a well prepared workforce, and seeks to achieve groups of people who work smarter, better, collaboratively, and efficiently. Lifelong learning refers to learning as a ***necessary*** and ***lifelong process*** due to a new intensity in knowledge, a growing technology base, and an ever-changing range of challenges faced by public health in the new millennium. Lifelong learning will be defined more extensively within this paper, and for purposes explored throughout, will be linked to public health preparedness.

With the essential services of public health expanding to include preparedness and response, with the majority of public health workers across America becoming eligible for retirement in the next decade, with major shifts in our demographic make-up as a nation, with the population living longer and dealing with more chronic disease than ever before, and with a global purview becoming increasingly prominent, governmental public health systems must prepare for change at a pace more rapid and more encompassing than we have ever experienced.

Learning quickly, learning differently as technology advances, and learning new things in the context of old systems can be challenging. We must attempt a cultural shift in how learning happens in local public health departments, and competency-based learning should be integrated into workplace experience.

Every reference included for this paper focuses on bringing awareness to the fact that a competent, sustainable workforce is necessary to an effective public health system in America. Calling attention to an issue is one thing, but proposing opportunities for action is more challenging. Public health leaders pay attention to research, innovation, best practices, and real-world local health department examples of success. We must continue to fund and pursue these endeavors to determine if lifelong learning will really work in public health.

Promoting lifelong learning among public health workers affects not only the workforce, but also allows for an entire organization to be well prepared and highly functioning. This paper will review who is doing the work of public health, how the focus of learning and training is not a 'one-size-fits-all' solution, and how we can address the health needs of the public in the context of preparedness better if we work smarter. One example of an academic health department model in North Carolina illustrates how health departments can become effective learning organizations and contribute to a culture of lifelong learning.

The Public Health Workforce in the United States

Who they are and what they do

Whether there is a focus on the individual, the organization, or the system as a whole, efforts on improving public health must include a shift in focus from offering training and learning as a reward, a requirement, or a reaction to emerging issues, to making training and learning integral to public health organizations. Public health in America began and continues to grow in a reactive manner in response to adverse events from disease and disaster. With no crystal ball, we will continue to react to emerging health threats that affect the population, but our reactions must be quick, accurate, collective, and effective. Public health workers are often local heroes and magicians when it comes to making something (interventions, programs, and clinics) from nothing (scarce, fragmented, and short-term funding). However, there are still many obstacles to the approximately 500,000 governmental public health workers in our country (Gebbie, 2002, p.59) who are working toward achieving common goals, understanding their roles and responsibilities on a daily basis versus an emergency situation, and having access to ample learning opportunities in their jobs.

The Institute of Medicine's (IOM) 2003 report, The Future of the Public's Health in the 21st Century, relayed not only the state and needs of the public health infrastructure, but also emphasized that "the public workforce must have appropriate education and training to perform its

role" (IOM, 2003, p. 5). In order to address this need, we must first understand who is doing the work of public health and to what training and education they are already exposed. Dr. Kristine Gebbie echoes this approach, stating that "effective training and education for an evolving public health workforce requires a better understanding of the workers and their distribution, education, and roles" (2003, p. 80).

So who is doing the work of public health in local, regional, and state government settings and what are they already trained to do? One recent public health workforce study defined a public health professional as "a person educated in public health or a related discipline who is employed to improve health through a population focus" (HRSA, 2005, p.20). *The Bureau of Health Professions Classification Scheme* lists more than 50 different public health occupations, ranging from health administrator to service maintenance and skilled craft worker (see Health Sciences Committee, 2004, Appendix C and US Department of Health and Human Services report, 1995, Appendix C for detailed lists and categories of these classifications). The classifications with the largest populations in state and local public health settings can be collapsed into approximately 10 primary occupations, including public health nurses, clerical and administrative workers, environmental health professionals, mental health professionals, allied health professionals, health educators, nutritionists, managers/policy analysts, physicians, epidemiologists, and

laboratory scientists (Macon-Harrison, 2004, p.17, Health Sciences Committee 2004, CDC/ASTDR, and USDHHS, 1995).

In North Carolina, an assessment of public health workers, their specific occupational roles, and their educational backgrounds was conducted as part of a larger effort to determine training priorities for public health preparedness. A 2004 report of the public health workforce entitled, North Carolina Public Health: Everywhere. Everyday. Everybody., reflects a statewide snapshot of public health workers across this state (p. 13-23).

A baseline period of assessing the public health workforce in core public health skills and emergency preparedness and response completed October 1, 2004 (see Macon-Harrison, 2004, for more detailed information about data collection, methodology, and findings). Data from the workforce development training needs assessment presented in this report provided demographic details as well as training priorities for public health workers statewide. Percentages of the North Carolina workforce who identified themselves in a specific public health occupational area are presented in Figure A below. Figure B illustrates the highest educational degrees of those assessed, and Figure C denotes the educational background of those assessed.

Figure A: Occupational Classification Reported by North Carolina's Public Health Employees (n=7087)

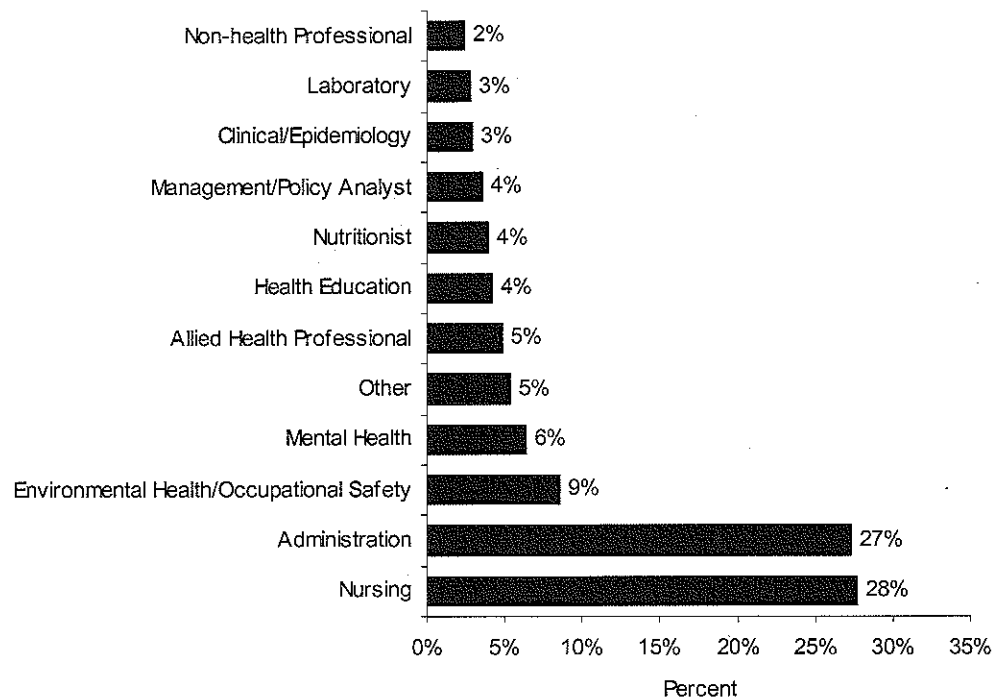
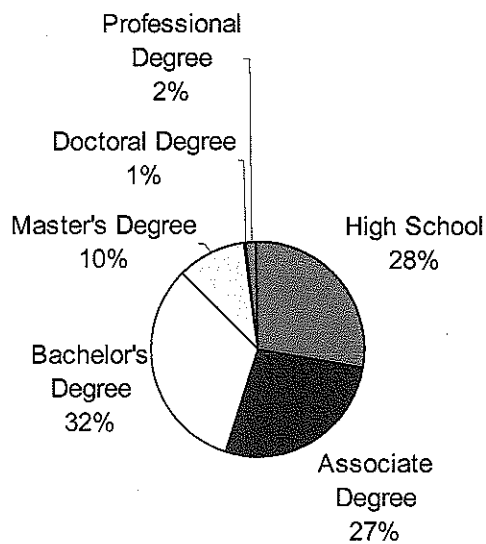
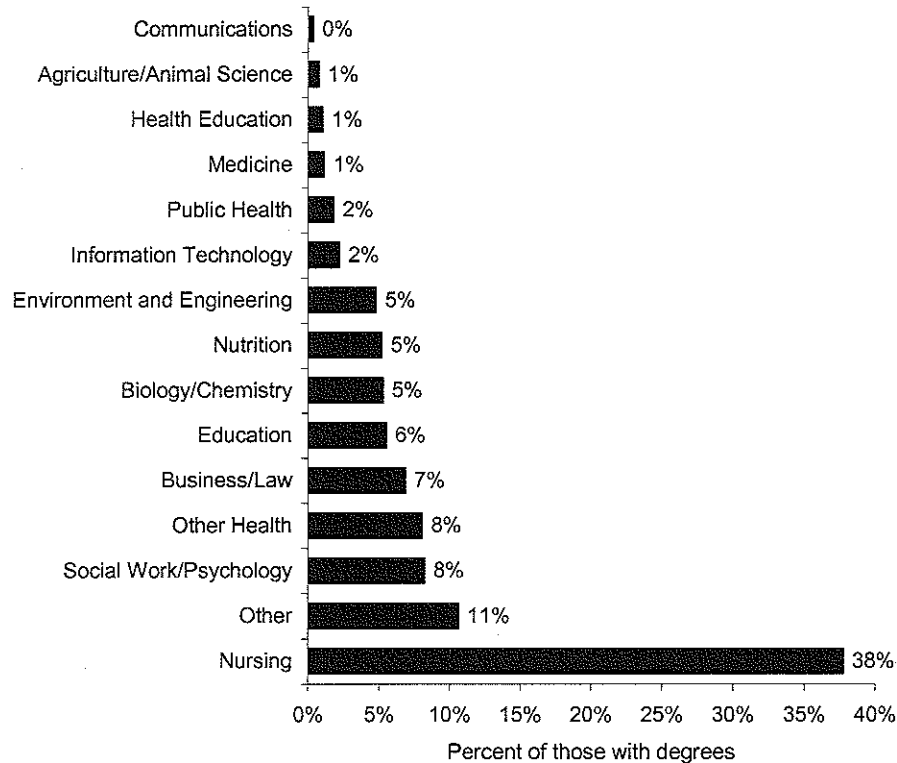


Figure B: Highest Educational Degrees of North Carolina's Public Health Employees (n=5067)



**Figure C: Educational Fields in which North Carolina's
Public Health Employees Hold Degrees (n=3200)**



It is no surprise that public health nursing is the largest segment of the public health workforce in North Carolina, and that more workers hold a degree in nursing than any other field. This is reflective of national workforce data, in which nursing makes up the single largest group of professionals in state and local health departments (IOM, 2003, p136).

The next largest category of public health workers includes administrative and clerical professionals; often, this occupational group is not required to have continuing education, nor are they offered many opportunities for training and education in the essential services including preparedness and response.

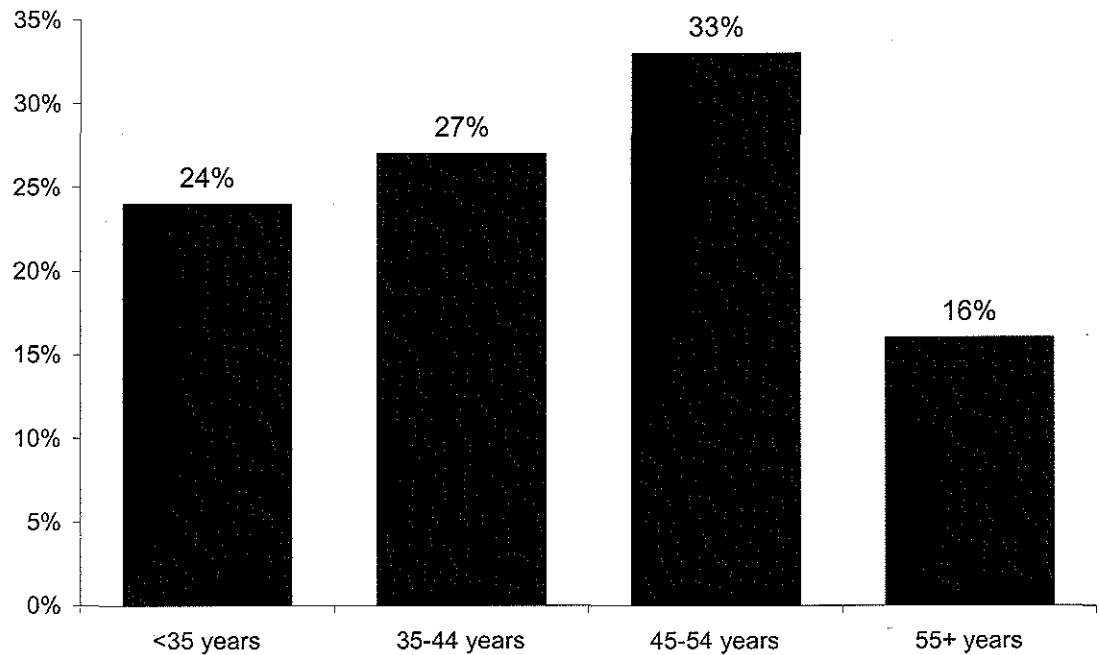
opportunities for training and education in the essential services including preparedness and response.

There is a definite need to assess the public health workforce to determine gaps in knowledge (Turnock, 2004). Ongoing training, education, and competency demonstration of the public health workforce contribute to an improved public health infrastructure (IOM, 2003).

The issue of workforce training and competency is central to the success of any public health system. Governmental public health agencies have a responsibility to identify the public health workforce needs within their jurisdictions and to implement policies and programs to fill those needs. In addition, an assessment of current competency levels and needs is essential to develop and deliver the appropriate competency-based training, as well as to evaluate the impact of that training in practice settings (IOM, 2003, p. 119).

Aside from the need for workforce training and competency, another concern is sustainability. Building an effective pipeline of new public health leaders becomes increasingly important as many of our most experienced members of the workforce retire. The Council on Linkages Between Academia and Public Health Practice notes that there is a growing crisis with regard to retirement trends in our public health workforce over the next decade (2001). Consistent with national trends (CDC/ASTDR, 1999), nearly 50% of the public health workforce in North Carolina is 45 years of age or older (see figure D below).

Figure D: Age of Public Health Employees in North Carolina (n=6055)



A State Public Health Employee Worker Shortage Report by the Association of State and Territorial Health Officials (ASTHO) echoes the retirement and worker shortage crisis by citing data from a workforce survey of 37 states confirmed other national data trends, noting that state governments could lose more than 30% of their workforce to retirement, private-sector employers, and alternative careers by 2006, and that health agencies would be the hardest hit. Epidemiologists and public health nurses would be the occupational groups most affected by workforce shortages and would be in need of the most formal academic training (ASTHO, 2004).

In an effort to align its resources to address the need for preparedness among the current public health workforce, the Centers for

Disease Control and Prevention (CDC) produced a “strategic plan for public health workforce development toward a lifelong learning system for public health practitioners” (CDC/ATSDR, 1999). This document and others that followed (IOM, 2003), outline a strategy with six primary steps for effective workforce development:

1. Monitor workforce composition and project future needs
2. Identify competencies and develop content/curriculum
3. Design an integrated learning system (adopt technology)
4. Provide incentives to assure competency
5. Conduct evaluation and research
6. Assure financial support

(CDC/ATSDR, 1999, 23-28)

Continuing to assess the public health workforce, prioritizing training needs, bolstering local health department support mechanisms for learning, and offering continual competency-based training opportunities over time are important steps toward creating a lifelong learning infrastructure, and will be crucial components to ensuring a competent, effective, prepared, and sustainable public health workforce (Lichtveld, 2001).

The Eleventh Essential Service in Public Health

“Prepare for and respond to disasters”

Tacit in the notion that the workforce is a primary piece of the public health infrastructure is also a basic understanding that everyone doing the work of public health focuses on similar efforts in their day-to-day

responsibilities to promote health and prevent disease. Essential services in public health were established to help make this link across occupational classifications in public health and to give a 'top ten' list of what public health does every day. For years, this list of services has been commonly referred to as the "ten essential services in public health."

The Public Health Education and the University of California (2004) recently added an eleventh essential service to the list: prepare for and respond to disasters (Table A).

Table A. Essential public health services

- **Monitor health status** to identify community health problems
- **Diagnose and investigate health problems** and health hazards in the community
- **Inform, educate, and empower** people about health issues
- **Mobilize community partnerships** to identify and solve health problems
- **Develop policies and plans** that support individual and community health efforts
- **Enforce laws and regulations** that protect health and ensure safety
- **Link people to needed personal health services** and assure the provision of health care when otherwise unavailable
- **Assure a competent public health and personal health care workforce**
- **Evaluate effectiveness, accessibility, and quality** of personal and population-based health services.
- **Research** for new insights and innovative solutions to health problems
- **Prepare and respond to disasters**

SOURCE: Essential Public Health Services Work Group of the Core Public Health Functions Steering Committee, DHHS, 1994 (Health Services Committee, 2004)."

As the new eleventh essential service implies, preparedness is and should be part of the work public health strives to achieve every day and room should be made for learning our roles in preparedness among other regular duties. After all, "what is public health preparedness? It is an ongoing system of planning, capacity building, and training. In other

words, people are the key” (Morse, 2003, p.427). Including public health preparedness as the eleventh essential service makes good sense, but since funding for preparedness is still separate from the funding for other essential public health services, preparedness efforts and core public health missions seem to be running on parallel tracks.

Some of the more well-known roles that public health has traditionally played in disasters and response are those services relating to disease control, epidemiological investigations, surveillance, laboratory identification, public information and public health education (Morse, 2003). It is easy to continue these basic public health functions and at the same time prepare for and respond to disaster situations as they arise. However, the converse is more tricky: it is difficult to continue providing all the essential services during a time of disaster. “Public health has both a day-to-day sustaining role and a pivotal emergency role in every community... the nation faces a basic public policy [and funding] challenge: to balance this investment with the other high priorities in today’s faltering economy and in the face of the imminent dangers in a terrorized world” (Gebbie, 2002, p65).

Building skills among the workforce starts with a basic understanding of the essential services, and of competency areas that focus on the skills, abilities, and knowledge within public health as a whole and within specific public health occupational groups. “The same infrastructure that supports routine public health activities is also essential

for emergency preparedness. The first lines of defense for deliberate attacks – a skilled workforce, robust information systems, and strong organizational capacity – are those that stand against infectious diseases, injuries, chronic diseases, natural disasters, and high-risk behaviors” (Baker, 2005, p. 304). How do we address the training and education needs off all eleven essential services at once? One answer hinges on the incorporation of competencies and competency-based training.

Training, Educating, and Preparing the Public Health Workforce: Competencies as a Benchmark

Who gets what and why

“An almost universal priority for workforce development is ensuring that all public health practitioners have mastery over a basic set of competencies involving generalizable knowledge, skills, and abilities that allow them to effectively and efficiently function as part of their public health organizations or systems.”

CDC-ASTDR, DHHS, CDC

Core public health skills based on the essential services (Council on Linkages, 2001), and the emergency preparedness and response competencies for **all public health workers** (Columbia, 2002), are two overarching guides that everyone in public health should, at the very least, be aware of. Intended levels of mastery, and therefore learning objectives for workers within each competency, differ depending upon individual backgrounds and job duties. Competencies were ultimately designed to

provide a common basis and help guide curriculum and content development of public health education and training programs for preparation of all practitioners. Competencies may also be used by those in practice settings as a framework for hiring and evaluating staff.

The Council on Linkages Between Academia and Public Health Practice has worked for a number of years to address the needs of the public health workforce and has developed strategies to:

- ***strengthen skills and competencies of the existing workforce***
- ***expand the type and amount of training available to address new challenges in public health and***
- ***effectively prepare and recruit students and professionals from other disciplines to enter and remain in the practice of public health***

(Council on Linkages: accessed online April 11, 2006:
<http://www.trainingfinder.org/competencies/index.htm>).

In addition, the Council on Linkages Between Academia and Public Health Practice leads discussion on credentialing public health professionals, expanding academic health department models, and promoting the academic/practice linkages.

A significant number of nationally recognized agencies and publications have recently heightened the importance of providing training for the public health workforce in public health competency areas. These sets of competencies guide what public health should be responsible for and present a framework for developing and enhancing knowledge, skills

and abilities through training. Most notably, a 2004 publication, a *Competency-to-Curriculum Toolkit*, reiterates the notion that competencies should be functional, should describe what public health workers do, and are the basis for training programs that take individuals through a continuum of learning opportunities (Columbia, 2004). The *Competency-to-Curriculum Toolkit* outlines definitions, assumptions, and provides ideas for the development of useful curriculum for public health training programs. The word *competency* itself can be loaded with implication, but for purposes of public health learning strategies, competencies are “actions which are observable in the execution of one’s work...” they are the “...applied skills and knowledge that enable people to perform work” (Columbia, 2004, p.8). The toolkit goes on to explain that competencies should be observable – they should be stated as an action verb for example. Competencies should also contain performance and task-specific content as well as provide a context for the work environment. The toolkit provides a number of different definitions of competency from other sources. One in particular from the American Compensation Association reads, “A combination of observable and measurable skill, knowledge, performance behavior and personal attributes that contribute to enhanced employee performance and organizational success.” (Columbia, 2004, p.8).

Why are competencies important as we think about workforce development and lifelong learning? One of the strongest barriers to

having a competent and prepared workforce in the past was this problem of having so many public health workers defined by different job classifications and specific occupational groups with no clear overarching rubric about essential services and consistent expectations.

Competencies help bring a tool for communication across public health programs and organizations and facilitate how training and education can be offered in a more valuable, effective manner. Competencies can be specific, and they can also “transcend the boundaries of the specific disciplines with public health and help to unify the practice” (Columbia, 2004, p.11).

Training based on competencies – whether focused on core public health skills, emergency preparedness, or another specific focus area, is more effective since it aligns the effort of learning with an outcome in a working condition or a workplace environment. In designing a competency based training or curriculum, the toolkit presents the following questions to help guide a more effective learning process:

1. What is the desired outcome of the performance?
2. What competencies are needed by public health workers to bring about these activities?
3. What are the indicators (qualitative and quantitative or behavioral and measurable) that define each competency?
4. What are the specific knowledge, skills, and abilities (KSA's) which must be learned to achieve competency?
5. How can these KSA's fit into a comprehensive curriculum or set of courses?
6. What is the current educational level and learning style of the targeted public health worker group?
7. What are the most effective educational strategies and teaching methods (e.g., case study, demonstration, supervised field work) for workers to learn each identified KSA?

8. What instructional resources are already available or modifiable for use that address the competencies, or identified need?
 9. How will learning or improved performance be measured?
- (Columbia, 2004, p.22).

Gebbie and colleagues continue to make strides in creating tools like the Columbia School of Public Health Competency-to-Curriculum toolkit. Public health has needed such tools for quite some time. "If useful tools for measuring the size, composition and distribution of the public health are few, tools for assessing the individual competency and performance are even fewer" (Turnock, 2003, p 475). What are feasible ideas for enhancing public health worker performance through integrated competency frameworks and curricula specific to preparedness? One way to do this is through creating learning management systems "to serve the ongoing education, training, and career-development needs of public health workers" (Turnock, 2003, p 475). Centers for Public Health Preparedness have adopted this notion and are working with state and local public health workers to determine the best approach to an online integrated learning management system that delivers competency-based training in public health preparedness topic areas.

In North Carolina, a learning management system, called the public health workforce development system, was created to assist public health workers with assessing their training needs, connecting to competency-matched trainings, and to track their progress over time. One of the initial uses of this online learning management system was to conduct a pilot

program within an academic health department model and to test the impact of lifelong learning in the context of practice.

An Academic Health Department Model

Building a learning organization:

Workforce development in the context of practice

The general concept of an academic health department arose out of an effort to improve the linkages between public health practice and an academic base (Novick, 2004). "The academic health department represents a formal affiliation between a health professions school and a local health department, similar to the more familiar affiliation between academic institutions and 'teaching hospitals.' Such an affiliation allows both partners to benefit from the educational connection that the affiliation represents" (Keck, 1998, p.1).

In 2004, the North Carolina Institute for Public Health garnered funding for a one-year research project from the CDC and the Association of Schools of Public Health (ASPH). The effort was titled: "Academic health departments: Enhancing local health departments' capacity as learning organizations through cooperation with academic institutions." The grant activities encompassed different approaches to an academic health department model, with one incorporating a lifelong learning approach in a local health department. This model included identifying elements of successful partnerships between health agencies and academic institutions to address workforce development and included

specific activities to set about a framework for the creation of a learning organization.

The North Carolina Institute for Public Health and the North Carolina Center for Public Health Preparedness helped identify examples of training needs and attempted to provide innovative methods to meet adult full time public health workers' learning preferences. Since a learning management system was made available to all public health workers, data from the system's online assessment was used to prioritize training needs and build training plans for individuals.

The lifelong learning approach went beyond just individual-related activities for learning – it also focused on the organization and strived to create supports, incentives, and opportunities for collaboration. Activities for Chatham County Health Department's academic health department model included:

- Conducting an individual health worker assessment online
- Prioritizing individual training needs in preparedness and core public health competency areas
- Working together with local public health leadership to establish organizational training needs in preparedness and core public health competency areas
- Providing an organizational training plan made up of
 - Profile of Area and Agency
 - Current Workforce Development Status
 - Staff Training Needs Assessment Results
 - Recommendations for Workforce Development
 - Workforce Development Plan of Action for Implementation
- Creating a 'facilitated learning team' made up of health department employees representing all divisions to identify barriers to training and learning, to create incentives for training and learning, and to

initiate a cultural change in the way learning takes place in the health department

- Enhancing a learning library space at the health department
- Encouraging collaborative learning through informal and formal presentations after individuals attend conferences and face-to-face trainings
- Providing technology access such as a video-conferencing system, a new computer, and head sets for those who share workspace but want to pursue online training courses
- Working with the local county-based human resources department to establish a pay-for-performance model for employees who seek training and education within their supervisors' established guidelines
- Evaluating the inputs, activities, process and outputs of the lifelong learning model (see Appendix A)

The Chatham County Health Department (CCHD) model of lifelong learning encouraged individual use of an online learning management system provided opportunities and scholarships for education. All seventy-nine individuals in CCHD submitted online assessment data in the learning management system. Based on individual responses, training needs identified for emergency preparedness and response competencies and core public health competencies were matched to continuing education opportunities. Priority needs for the overall health department also were identified in aggregate for both sets of competencies.

Priority emergency preparedness and response training needs for public health workers included: describing the responsibilities of a health department during an emergency situation, describing a health

department's emergency response plan, carrying out individual roles and responsibilities in an emergency response, and finding resources that will help carry out individual responsibilities during an emergency.

Priority core competency training needs included: staying informed of public health laws and regulations, being aware of important health problems, identifying cultural, social, and behavioral factors that affect health, providing health promotion and disease prevention information, interacting effectively with people from diverse backgrounds, and collecting, summarizing, and interpreting information relevant to a health issue.

Training days were established for staff at the health department to cover material in each of these competency areas, and a workforce development coordinator worked within the health department and together with the North Carolina Institute for Public Health to ensure each health department employee had access to relevant training opportunities.

Outcomes of the academic health department model for lifelong learning included personal career development for individual staff members, skill development in an actively functioning health department, increased understanding of the preparedness and response competencies for all public health workers, and improvement of the relationship between the agency and the school of public health. A job role was established for a workforce development lead in the health department and a policy change for a pay-for-performance model became available for the first

time during this program's pilot phase. Also, the effort led to the formation of a larger lifelong learning effort that has been expanded to 15 health departments through the North Carolina Center for Public Health Preparedness.

A valuable unexpected addition of data collection occurred during the Academic Health Department project: An internal health department-wide survey by health department employees who were working on a local Chatham County leadership project collected data from staff about training and education preferences. The survey covered questions on barriers to training as well as motivators and preferred mode of delivery. Findings from this internal survey showed that those who had certification or licensure requirements were more likely to participate in ongoing training and education. Having a space dedicated to training within the health department also helps employees take advantage of online and self-paced training opportunities. Other incentives include promotions, money, and educational advancement. The results of the survey also showed that more than 50% of the Chatham County workforce was interested in mentoring and shared learning experiences, and overall, training was perceived as a high priority at every level in the health department. Barriers to training included time, finding staff coverage of regular job duties, and having access to ongoing funding that assures training opportunities will continue.

One unforeseen outcome of the initial pilot for Chatham County Health Department, was that many of the inroads made during the pilot phase were lost after two years due to turnover in health department staff. Regardless of amounts of time, resources, technical assistance, support, and relationship building that are devoted to the project, when key contacts move on from the health department and new staff come in, progress can be hindered. Dynamics of a partnership can change quickly if more than 2 or 3 key stakeholders leave from either of the partnering practice or academic organizations. In this case, once the health director moved on in her career path, her administrative lead, the workforce development coordinator, and three others on the facilitated learning team followed suit. It is not uncommon for health departments to experience turnover, and once a dynamic leader leaves, impetus is provided for others to relocate. Many of the individuals who made this lifelong learning pilot a success in Chatham County continue to work in public health in North Carolina in other local or state health department roles however, so although turnover is something we must take into account, the affects of such programs may still have lasting impact on individuals and the public health system at large.

At the heart of the academic health department model, there is a close collaboration occurring between academics and practice. Ideally, practice simply subsumes the academic pieces and keeps moving at an improved pace and performance. It is important to note however, that

each of these partnering entities has a culture that should be recognized and respected in the process. “Successful collaborations between academia and practice involve a complex set of relationships that require strategies at individual, organization, and system levels” (Stevens, 2004, p.316). If we get the relationships right, and we successfully incorporate competencies, training, learning, performing, and evaluating to go along with the collaborating, a lifelong learning approach for the public health workforce may be successful and sustainable.

Lifelong Learning in Public Health

Where do we go from here?

Combining the system, the workforce, and the issues

How do we combine what we know about the public health workforce (who they are and what they are working on), what the essential services (including preparedness) guide us to perform, and how do we effectively train and educate the workforce as they carry out the many and varied duties of a local or state health department? Furthermore, how do we track the progress the workforce makes and the lessons they learn and retain along the way? Whether the workforce is learning and improving surveillance skills for better detecting the next outbreak of *E. coli* at a church picnic or whether they are learning and improving surveillance skills for better detecting the next pandemic influenza strain, does it matter as long as they are learning? Does it matter **why** they are performing as long as they are performing better? Does it matter **why** they are using

handheld electronic assessment instruments as long as they can use the latest technology to collect and analyze data and monitor the health of the population?

The concept of lifelong learning may indeed help with the approach of acquiring new and better skills and being more prepared. But what do we know about lifelong learning and how can we use it to become a better prepared public health workforce?

The literature presents distinctions between a formal educational approach including going to school, graduating, and heading into the workforce, versus a more informal and organic type of workplace learning that takes into account a high value on the satisfaction workers gain as they develop stronger competency to perform skills. Educational literature has taken on many discussions of the merit and potential clashing of lifelong learning with conventional learning approaches (Hager, 2004). Most individuals will identify with the difference they felt understanding how well they were able to conduct their jobs on the first day versus after six months to a year in the same position. There is obvious learning that takes place, experience that builds, and confidence that grows as we learn by doing. In contrast, the kind of learning we receive in school is not always directly or immediately applicable. Both types of educational approaches are valuable, but which approach will work best for adult full time workers who need to continue to absorb new approaches, new knowledge, new ideas, and new skills as they integrate them within a

workplace environment? A lifelong learning approach for public health assumes a combination of training and educational opportunities to ensure self-directed learning, just-in-time learning, collaborative learning, informal learning, learning-on-demand, and organizational learning (Fischer, 2000). In his article entitled, "Lifelong Learning – More than Training," Gerhard Fischer writes of learning as "an integral and irremovable part of adult work activities" that can be a collaborative effort among colleagues and that is not an option, but a necessary approach within the future of our societies (Fischer, 2000, p. 265). A good example of this kind of learning is an after-action report and debriefing after an exercise or an outbreak investigation has completed. A team of people working on the outbreak may get together afterwards to ask: What did we learn? What would we do differently next time? How can we improve the process and build efficiencies for the next similar challenge?

A formal integrated delivery system for lifelong learning does not currently exist in public health and there are not adequate incentives provided that might influence public health worker participation in lifelong learning (CDC/ASTDR, 1999, p10). Training and continuing education is rarely on the top priority list of things for local health departments to offer given a limited budget. Furthermore, funding for training programs rarely allows for ample evaluation of the approach. What is the good news? More and more public health leaders are realizing the importance of a competent and sustainable workforce, and training opportunities do exist

through Schools of Public Health, Offices of Continuing Education, Institutes for Public Health, Centers for Public Health Preparedness, and Public Health Training Centers. Each of these entities is working together to create valuable training experiences for front line public health staff, and to assess, train, track, and provide feedback in multiple learning environments (including online and face-to-face). And what is the *really* good news? All this is happening with an emphasis on providing smarter, better and faster essential public health services to communities. These efforts focus on the preparedness competencies for all public health workers, and it is in large part due to public health preparedness funding that many training, education, and learning opportunities are finally being prioritized. We should see great returns on this investment for years to come if we can continue to improve the nature and measurement of workplace learning.

Lifelong learning "is a mutual responsibility shared by educational institutions, workers, and employers" (Knapper, 2000, p.129). Finding success in lifelong learning is largely dependent upon individual employees (lifelong learners), but the organizational climate, culture and supports are also determinants of its success (Knapper, 2000). For this reason, an academic health department model and a change in the organizational culture in governmental public health that provides specific support for lifelong learning, could have a lasting impact on how the public health workforce acquires skills and delivers improved service.

The IOM report entitled, Educating the Public Health in the 21st Century made a sound observation that “If we want high quality public health professionals, contributing through practice, teaching, and research to improved health in our communities, then we must be willing to provide quality support to the education of those professionals (IOM, 2003, p. 167).” And as the familiar adage goes, “you get what you pay for.” Consistent funding for workforce training initiatives must be wrapped into ***all*** programs and priorities across public health.

As Margaret Potter looked ahead to the twenty-first century and considered public health workforce development she wrote, “A fully supportive managerial and cultural environment for ongoing learning within state and local agencies, for the most part, is still an aspiration rather than a common reality. But it is a new century and calls for public health workforce development are sounding a distinctly new and vigorous note. Let the progress continue (Potter, 2001, pg vii)!” She was right in 2001, I hope the sentiment still applies in 2006... let the progress continue indeed.

Lifelong learning approaches can only be effective if they are well coordinated, if they have lasting impact among the public health workforce, if they have sustained funding, and if we have concrete measures to ensure implementation, evaluation, and effective delivery over time. Policy makers and providers of education alike must take into account new government measures to ensure the success of lifelong

learning as more than just a good idea (Field, 2000). “Workforce is the most essential element in our collective efforts in assuring the public health (Woltring, 2003, p.438).” As public health workers try to meet the demand for public health services as wide-ranging as answering questions about flu-stricken birds while remembering that diet and exercise are just as important to the health of our populations, I have confidence that our public health workforce will continue to strengthen, will work smarter and collaborate more, will lead change and affect population health positively, and will continue to make our communities better, healthier, and safer.

References

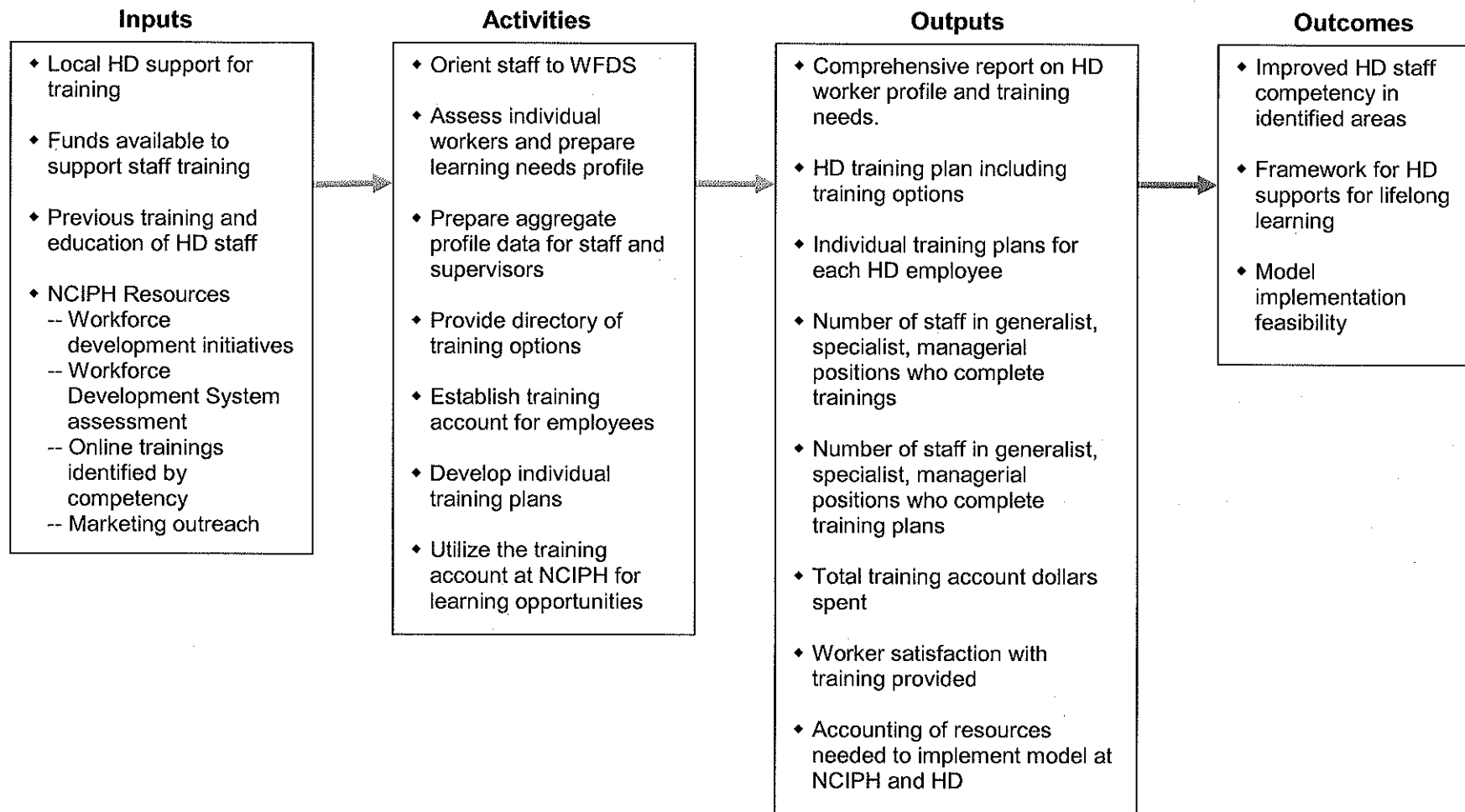
1. Gebbie, K., Merrill, J., Tilson, H. (2002). "The Public Health Workforce" Health Affairs. 21(6)57-67.
2. Institute of Medicine (IOM, 2003). The Future of the Public's Health in the 21st Century. The National Academies Press. Washington, DC.
3. Gebbie, K., Merrill, J., Hwang I., Gebbie E., Gupta, Meera. (2003) "The public health workforce in the year 2000." Journal of Public Health Management and Practice. 9(1):79-86.
4. Health Resources and Services Administration. 2005. US Department of Health and Human Services, Bureau of Health Professions. Available at: <ftp://ftp.hrsa.gov/bhpr/nationalcenter/publichealth2005.pdf>. Accessed April 9, 2006.
5. Health Sciences Committee (2004). Appendix C. "Public Health Education and the University of California." Accessed online April 9, 2006:<http://www.ucop.edu/healthaffairs/REFORMATTED%20PUBLIC%20HEALTH.pdf>
6. US Department of Health and Human Services (USDHHS). (1995). Appendix C. "Revision of the Federal Standard Occupational Classification (SOC) System: New Occupational Categories Recommended for the Field of Public Health." Public Health in America Statement, in The Public Health Workforce: An Agenda for the 21st Century.
7. Macon-Harrison, L. Rybka TP, Rothney E, Hajat A, Davis MV, Alexander LK, Horney JA, Stevens R, Pfaender S, Pfaender A, Wallace J. (2004). North Carolina Public Health: EveryWhere. EveryDay. EveryBody. A Report on the Public Health Workforce in North Carolina. A North Carolina Center for Public Health Preparedness and North Carolina Institute for Public Health Publication. University of North Carolina Press.
8. Macon-Harrison L, Davis MV, MacDonald, PM, Alexander LK, Rothney E, Alexander JG, Rybka TP, Stevens R. (2005). "Development and Implementation of a Public Health Workforce Training Needs Assessment Survey in North Carolina." Public Health Reports. v120 Suppl 1:28-34.
9. Turnock BJ. Public Health: What it Is and How it Works. (2004). Third Edition. Gaithersburgh, MD: Aspen Publishers.

10. CDC/ASTDR Strategic Plan for Public Health Workforce Development: Toward a lifelong learning system for public health practitioners (1999). Task force report on public health workforce development.
11. Council on Linkages Between Academia and Public Health Practice. (2001) Public Health Functions Steering Committee. Also available online: <http://www.trainingfinder.org/competencies/index.htm>.
12. Association of State and Territorial Health Officials (ASTHO). (2004). "State Public Health Employee Worker Shortage Report: A Civil Service Recruitment and Retention Crisis." The Council of State Governments, the National Association of State Personnel Executives, with ASTHO. Also available online: www.ASTHO.org.
13. Lichtveld, MY., Cioffi, JP., Baker, EL., Bailey, BC., Gebbie, K., Henderson JV., Jones, DL., Kurz, RS., Margolis, S., Miner, K., Thielen, L., Tilson, H. (2001) "Partnership for front-line success: a call for a national action agenda on workforce development." Journal of Public Health Management and Practice. 7(4):1-7.
14. Public Health and Education and The University of California: Final Report of the Health Sciences Committee. (2004). Accessed online April 11, 2006: <http://www.ucop.edu/healthaffairs/REFORMATTED%20PUBLIC%20HEALTH.pdf>
15. Department of Health and Human Services (DHHS): See Health Services Committee above in reference #5.
16. Morse, SS., "Building Academic-Practice Partnerships: The Center for Public Health Preparedness at the Columbia University Mailman School of Public Health, Before and After 9/11. (2003). Journal of Public Health Management and Practice. 9(5):427-432.
17. Baker, EL., Potter, MA., Jones, DL., Mercer, SL., Cioffi, JP., Green, LW., Halverson, PK., Lichtveld, MY., Fleming, DW. (2005). The public health infrastructure and our nation's health. Annual Review of Public Health. 26:303-18.
18. Columbia School of Nursing Center for Health Policy. (2002). Bioterrorism & Emergency Readiness: Competencies for all public health workers. Also available online: www.nursing.hs.columbia.edu.
19. Columbia School of Nursing Center for Health Policy and Association of Teachers of Preventive Medicine. (2004). Competency-to-Curriculum Toolkit: Developing Curricula for Public Health Workers. Public Health Workforce Development Collaboration.

20. Turnock, BJ. (2003). "Roadmap for Public Health Workforce Preparedness." Journal of Public Health Management and Practice. 9(6):471-480.
21. Novick, LF., "The Teaching Health Department." (2004). Journal of Public Health Management and Practice. 10(4) 275-276.
22. Keck, CW. (1998) "The Academic Health Department: A Proposal to Examine the Question of What Should Be Done to Facilitate the Development of Academic Health Departments." Council on Linkages Between Academia and Public Health Practice. Accessed online April 11, 2006: <http://www.phf.org/Link/ahd.htm>.
23. Stevens, RH., and Roper, WL. (2004). "The North Carolina Experiment: Academia-Practice Partnerships." Journal of Public Health Management and Practice. 10(4), 316-320.
24. Hager, P. (2004). "Lifelong learning in the workplace? Challenges and issues." Journal of Workplace Learning. Emerald Group Publishing. 16(1/2):22-32.
25. Fischer, G. "Lifelong learning – more than training." (2000). Journal of Interactive Learning Research. 265-272.
26. Knapper, C. "Lifelong learning in the workplace" (2000). 129-138.
27. Institute of Medicine (IOM, 2003) Who will Keep the public Healthy? Educating Health Professionals in the 21st Century. The National Academies Press. Washington, DC.
28. Potter, MA. (2001). "A Twenty-first century call for public health workforce development." Journal of Public Health Management and Practice. 7(4):vi-vii Editorial.
29. Field, J. "Governing the Ungovernable." (2000). Educational Management & Administration. 28(3) 249-261.
30. Woltring, C., Novick, LF., (2003). "Public Health Workforce: Infrastructure's Keysone." Journal of Public Health Management and Practice. 9(6). 438-439.

Appendix A: Lifelong Learning Logic Model

*Developed in collaboration by Mary Davis, DrPH, Erin Rothney, MPH, and Lisa Macon Harrison
with additional technical assistance from Sarah Pfau, MPH, consultant*



Evaluation Plan for the North Carolina Local Health Department Lifelong Learning Model

*Developed in collaboration by Mary Davis, DrPH, Erin Rothney, MPH, and Lisa Macon Harrison
with additional technical assistance from Sarah Pfau, MPH, consultant*

Table 1: Life Long Learning Model

Objective (Process or Outcome)	Met / Not Met	Significant details / how exceeded, where applicable	Unexpected Outcomes
Orient staff to learning management system	Met	UNC partners convened <i>two</i> meetings to accomplish the objective: one with the Health Director and management, and one with health department staff	Accepted to orally present the concepts and methods for enhancing local health departments' capacity as learning organizations at the Nov. 2004 APHA mtg
Assess each worker and prepare a learning needs profile	Met	1. All 79 Chatham Co. health department staff participated in the online assessment 2. Partners developed a "Training Plan Template" for local health agencies	
Prepare aggregate profile data for staff and supervisors	Met	1. UNC partners promptly prepared a draft report in Quarter 1 for the LHD partners 2. A "Priority Training Needs" report in Q4 identified a) Emergency Preparedness and Response; and b) Public Health Core Competencies training priorities	

Provide directory of available training options	Met	1. Training directory includes 350 opportunities, many of which are free 2. Partners compiled "training packages" specific to the general public workforce, public health nurses, and administrative employees, based on trainings available	Partners developed a matrix to facilitate use of the training options. Matrix includes: training title, description, provider, format, cost, and URL / contact.
Establish training account for Chatham County Health Department employees	Met	\$7,500 account established.	Partners leveraged <i>local resources</i> (government, human resources offices) for a <i>sustainable</i> life long learning environment
Develop individual training plans (with input from staff members, supervisors, and health department management)	Met	1. All employees received individual training plans immediately upon completion of the training needs assessment through the learning management system. 2. Partners worked a lot on incentive plans for: a) fostering a learning environment; and b) completed training efforts [including payment at time of job performance evaluation for completing training identified in training plan] 2. Partners mapped out <i>departmental</i> and <i>occupational</i> training plans and packages	Partners ended up forming Facilitated Learning Teams for Year 2, which involve peer leadership for training coordination / oversight

Utilize the training account at NCIPH for learning opportunities	Met	To be used at Health Director's discretion for cost-based trainings or training and learning environment resources (computers), or even monetary incentives for training completion.	
Monitor processes	Met	Quantifiable, process-oriented activities were documented consistently throughout the project 1. Quarter 2: monitored learning environment 2. Quarters 3, 4, monitored training plan implementation	Year 2 Facilitated Learning Teams will complete baseline and quarterly surveys, and meet regularly to discuss experiences, barriers, and accomplishments
Evaluate outcomes	Met	1. Reported progress quarterly for project objectives 2. Completed an evaluation survey for the Project Evaluator, and participated in a roundtable discussion of "lessons learned"	Year 2 Facilitated Learning Teams data will be used to plan the future workforce development structure, accountability, and strategy

Lifelong Learning Model, Model Specific Evaluation Questions

1. What percent of health department staff completed the training needs assessment?

One hundred percent of the 79 health department staff completed the training needs assessment.

2. What percent of health department staff utilized training plans?

All health department staff received an individualized training plan immediately upon completing the training needs assessment. Individual training plans were incorporated into the employee's pay for performance review plan, which is one measure of staff utilization of the training plan. However, data on use will not be available until October, 2005.

3. Did health department staff take advantage of assessment and training offered by SPH?

Health department partner staff completed a baseline training assessment offered by the SPH. The health department is reviewing locally available training and SPH trainings to identify the most appropriate training to meet a particular training need.

4. Did assessment results inform the agency training plan?

Assessment results, which provided priority competency training needs for the agency and occupational category, increased manager awareness of competency-based training needs. The health department partner created a lifelong learning infrastructure including Workforce Development Coordinators who are also focusing on training in priority areas. The health department is focusing training on priority needs to close identified gaps and examining how funds are used rather than just sending people to training. Additionally, the model encourages sharing of information which increases impact of training knowledge to a larger number of people, putting knowledge into practice.

5. Do staff follow recommended training plans?

The AHD project focus in the last year has increased use of training plans. The availability of Workforce Development Coordinators and link to pay for performance may increase use of training plans.

6. Are staff trained in identified competencies?

The health department addressed priority training needs in core public health, preparedness, and cultural competency across the agency.

7. Does this model result in more competent staff at appropriate levels?

With less than a year of targeted competency training at the health department, it is too early to measure if staff are more competent. But the health department partners state that the formal process is increasing competency across disciplines and levels of accountability. Ongoing focus on competency-based training and assessment will ensure this outcome.

Can the model be feasibly implemented? What resources are needed to implement and sustain the model?

This model can be implemented with demonstrated dedication by health department staff and health director commitment to lifelong learning. Health department leadership should be committed to creating a learning organization and assign staff to making this happen. The health department should have a designated contact person to work with the academic partner. The academic partner also needs to have a designated staff contact to work with the health department on lifelong learning. The academic partner contact should be familiar with all continuing education academic resources available at the institution and should be knowledgeable in the field of workforce development. Additionally, the academic partners should be available to meet on a regular basis with health department staff to provide consultation or technical assistance as needed.

In terms of resources, for the academic partner, a minimum of a 25% FTE professional staff person and 10% FTE administrative staff person would be needed to work with 1 health department. This could be increased to 2 75% FTE to work with 15 health departments at one time on lifelong learning efforts. Additional resources for the academic partner would include materials, computer support for assessment and online learning, and funds to travel to health departments. Resources needed for the health department partner, minimum staffing needs would include 10% FTE to manage the activity. To maximize effectiveness of this model, the health department resources needed would include a 50% FTE workforce development coordinator and funds for equipment, training costs, and travel funds to trainings.