Public Health Workforce

Kentucky Public Health Leadership Institute Scholars:

Emily Anderson, RN
Nurse Consultant; Kentucky Department for Public Health

Tammie Bertram, RN, BSN
Community Health Nurse Administrator; Franklin County Health Department

Cynthia Brown, BS, CHES, LPN
Senior Health Educator; Bullitt County Health Department

Carolee Epperson, ASN, RN
Senior Community Health Nurse; Laurel County Health Department

Jill Ford, RN, BSN
Community Health Nurse; Monroe County Health Department

Georgia Heise, BS, MS
Public Health Director II; Three Rivers District Health Department

Mentors:

F. Douglas Scutchfield, MD
Peter P. Bosomworth Professor of Health Services and Research Policy;
University of Kentucky

Margaret Stevens, RN
Nurse Consultant; Kentucky Department for Public Health

EXECUTIVE SUMMARY:

Upcoming changes to the Kentucky local public health merit system will make 2008 an attractive time to retire. Retirement benefits will change from being based on 3 years of highest salary to 5 years of highest salary. In addition, the National Association of Local Boards of Health stated that public health has high vacancy rates, high turnover rates, and an aging workforce. In fact, the National Association of Local Boards of Health reported that on average, 25% (range 6% to 45%) of the public health workforce is eligible for retirement.[1] Where will all these replacement employees come from?

Number 8 of the Ten Essential Public Health Services is to ensure a competent workforce. A competent workforce exists only when an adequate number of employees are learning and applying new information while taking responsibility for their roles and progress. Our infrastructure must be comprised of individuals trained not only in their individual fields but in public health as well. In fact, it can be postulated that the health status of our citizens and subsequent expense are the results of our poorly performing public health system. We simply can no longer afford our current system, in fact, we've been unable to afford it for some time now. Strategic succession planning, sound financial practices and population-based social change, developed and implemented by qualified professionals, are the only ways we can successfully address the threats to our society that exist today.[2, 3, 4,5] Again, where will these employees come from?

The answer is, we will recruit them and grow them within our own public health system. This is imperative if we are to meet the mission of public health. This KPHLI project proposes legislation for the development of funds for student loan repayment, tuition reimbursement, and continuing education for the development of a strong public health workforce.

INTRODUCTION/BACKGROUND:

Peer reviewed journals such as the *Journal of American Medical Association,* the *American Journal of Public Health* and the *Journal of Public Health Management and Practice* reflect a broad body of literature that supports the concept that our overall public health infrastructure is inadequate and its human resources in dire need of development. Few members of the public health workforce actually possess formal training in public health and public health credentialing remains inconsistent at best.[6, 7] The Joint Council of State and Local Health Officials has called for federal involvement to strengthen the public health workforce nationwide saying that the federal government must take the leadership role.[8] Numerous other works have also addressed the need for intervention at the federal level.[9,10] The 1988 Institute of Medicine Report, *The Future of Public Health,* assessed our public health system and found it to be in "disarray."[11] Later Institute of Medicine Reports, *The Future of the Public's Health in the 21st Century* and *Who Will Keep the Public Healthy: Educating Public Health Professionals,* also call for human resource development as a way to ensure that the health of our nation is protected.[12, 13]

Furthermore, at present we are unable to identify exactly what constitutes a public health professional, although many have taken up the challenge of researching and writing on the subject.[14] Our public health system is operating in a segregated manner, which all too often compromises the overall impact that agencies have on the communities they serve.[15] Our public health leaders are ultimately responsible for the performance of our workforce. Unfortunately, study after study has demonstrated that public health leaders do not receive the needed training not only in public health, but neither leadership nor management as well. It is thought that less than 1% of public health administrators have a college degree in management, instead their backgrounds vary anywhere from nursing to liberal arts.[16] What chance do we have if our system retains only practitioners trained to provide personal medical services and puts individuals without adequate training into leadership roles?

Let us consider the status of our public health system overall. The literature tells us that public health's very own workforce threatens to bring about its collapse. The incessant determination of public health practitioners and society at large to emphasize individual medical care over population-based preventive strategies reflects an understanding of neither public health nor finance.[17] The spending practices of our government reinforce this concept. For example, in 1993, $3000 per person was spent on individual health care while a mere $44 per person was spent on population-based preventive programs.[18] This seems ridiculously ironic considering approximately 75% of all premature deaths in our nation are preventable. Individual behavior change could prevent 63% of that total, and social and environmental changes could reduce it by another 23%. Only about 15% of premature deaths are preventable by better access to individual medical services alone.[18]

To become more efficient and effective, public health research is tentatively moving toward management concepts borrowed from private sector business. One such concept is *total quality management*. The basic premise behind total quality management is one very familiar to health care providers, "prevention is cheaper than cure."[19, 20] When applied to industry, "prevention is cheaper than cure" means that its more cost effective to have a process that works right the first time instead of trying to fix defective products manufactured as the result of a inadequate process. When considered in terms of health, "prevention is cheaper than cure" can apply to the overall health status of our population as well as to the way we deliver services. Traditionally, health care has equated "cheap" to poor quality – that if we are considering the cost of providing a service we are somehow "cheating" the recipient. Total quality management may not be ingrained in current public health culture, but leaders in the field are coming to the realization that change is inevitable.

The old style management of public health meant a few people in top management had a lot of information but the rest of the workforce did not. The majority went about their particular tasks without much thought or input on how they fit into the big picture of public health. Our workforce must now be provided with information about how all actions in public health impact each other and the subsequent financial impact. This is where we can be much more effective than our previous approach of waiting until something goes wrong before reactively looking for a solution. Because total quality

management is a preventive approach to management, as our workforce becomes trained, they will learn to anticipate and address problems before they arise. Unfortunately, the response from public health so far has been, "we don't have the time or money to plan."[19] As a result, periodic spending freezes and layoffs have been the answer to cutting costs. These reactive tactics only serve to exacerbate the original problem or create new ones. To combat this old culture, it is very important to place well-trained employees throughout our public health infrastructure.

In the past, employees tended to be selected based on their ability to perform certain tasks. The total quality management approach demands flexibility and the ability to adapt quickly and learn new skills. The total quality management workforce takes a problem solving approach and possesses competencies reflective of the desired culture of the public health system. There are several considerations that should be taken when selecting a workforce which include seeking candidates possessing the competencies that reflect the desired organizational culture, an interview process that reflects the desired organizational culture, and an ongoing evaluation of the entire process.[20] The current selection process for the public health workforce is much more of a "we'll have to take what we can get" proposition.

The majority of the health care providers in today's workforce were trained under the old "fee for service" model and struggle with today's "prospective payment system" model. A short time ago, the more services an agency provided, the more payment it received. Not surprisingly, such a system encouraged over consumption of services and even the provision of unnecessary services and fraud. It is quite understandable that employees entering the public health workforce under this reimbursement model would have trouble with changing to a new system that allows payment based on what the payor source considers appropriate. Additionally, we must consider why a reimbursement system for individual medical services has had such an impact on a system whose mission it is to ensure the health conditions in which the population can be healthy. How did our system of public health allow itself to become so dependent on reimbursements for provision of personal medical services? Could it be that the cash cow "fee for service" model of the past led us away from our true purpose?

The prevailing culture in the United States embraces the provision of individual medical service as most important when considering how to improve health status. Unfortunately, the delivery of individual medical service is only a small part of improving health status. In addition, public health practitioners perpetuate the problem. In their book, *Marketing Public Health: Strategies to Promote Social Change,* authors Siegal and Doner warn "if public and legislative debate continues to dwell on reforming the method of reimbursing physicians and hospitals rather than on the method for ensuring the societal conditions in which people can be healthy, then the field of public health will be lost amid the complexities and conflicts of public debate."[18] Even though public health should be involved in strategies that include prevention along with the delivery of individual medical services, it must not become so involved that sight is lost of the real mission of public health. Social change for the good of the population, not simply improving

medical services for individuals is the goal. Social change that will bring about substantial, sustained improvement in the population's health status.[3]

Other concepts such as *talent management* are being sought to develop the public health workforce as well. Public health must research talent management models from successful businesses and how to adapt them.[21] Our workforce must be provided with information about how all actions in public health impact each other and the subsequent financial impact.[22] Public health must seek human resources possessing the competencies that reflect the desired organizational culture, conduct an interview process that reflects the desired organizational culture, and implement an ongoing evaluation of the entire process.[20, 23] Succession planning for ensuring the survival of adequate human resources is imperative.

Experts in the field report a lack of adequate baseline knowledge of our existing system. Many issues have arisen from the length of time that has lapsed since we last mapped our human resources let alone assess them such as the fact that a significant percentage of public health workforce is eligible for retirement.[24, 25, 26, 27, 28] Additionally, we must explore to what extent our human resources perform the functions for which public health was created. Much current literature assesses the capabilities of our public health system and its human resources.[29, 30, 31, 32] As a result, models for workforce development are being developed.[33, 34, 31] Further review of the literature reveals models for the development of public health managers in particular. Strategies for strengthening the leadership of public health are also being developed.[35,16] For all the very same reasons outlined in this review of literature, institutions of higher learning call for more programs of study for public health professionals.[36, 37] Former Kentucky Health and Human Services Cabinet Secretary James Holsinger, MD, was instrumental in the development of a proposal for what is now the College of Public Health at the University of Kentucky. In the proposal document from the College of Medicine for the Doctor of Public Health Degree Program, an "urgent need" was declared for leaders in public health.[38]

If we are to succeed in making substantial change to the health status of our state, our focus will have to be lifted from personal medical services. Is it possible that the health status of our citizens is the result of our poorly performing public health system? Its time public health shows accountability for our mission of improving the population's health status. Much research has established that evaluation of our workforce must be tied to health status. "For long term change, sustained and integrated workforce and leadership development will need to be directed at performance that is related to reductions of health risks and improvements in health status as a result of increased capacity to provide needed health services."[39] Our workforce has been ill prepared to accomplish this task in the past.

While Kentucky's merit system contends that it exists to recruit, retain and protect the rights of a competent workforce, its structure shows that it values clinicians over those with more broad educations. For example, the existing system equates a clinical associate's degree or in some cases, no degree and experience, to a bachelor's degree in non-clinical fields. No surprise, there are far more associate level clinicians in the public

health workforce than there are professionals in any other discipline. Clinicians are definitely the majority and all other disciplines are in the minority. It seems as if the majority is discriminating against the minority in the public health workforce because the pay grades of the majority are higher than those in the minority for the same levels of responsibility in their respective fields. Integration, not isolation of the practice of public health, should be our goal. We must move beyond our present, somewhat exclusive, single-disciplinary system to a trans-disciplinary approach that is inclusive of public health, clinical health and non-health fields.[40] Another that values education and rewards performance must replace our current system. However, it will be successful only if public health practitioners can demonstrate that they have the knowledge and skills to carry it off. Hopefully, public health leaders will recognize this. Regrettably, many public health leaders at the local level believe that population health status is beyond their control because of its correlation with socioeconomic status. If our leaders doubt their ability to affect population health status, how will we ever be able to convince legislators to invest tax dollars?

Local public health departments can take a stand for workforce development and subsequently, improved health status in Kentucky by eliminating the existing inequities in compensation at their agencies. According to 902 KAR 8:060 (3) (14), the department may approve other salary adjustments with the advise of the Local Health Department Employment Personnel Council and local health departments. A salary adjustment may address special working conditions, after hours adjustment where working hours cannot be adjusted, or other specific circumstances."[41] Local health departments have made use of this practice in other disciplines, predominantly in clinical areas. However, if we are to succeed in making substantial change to the health status of our state, our focus will have to be lifted from personal medical services. For too long we have randomly provided training to the public health workforce without evaluation.[40]

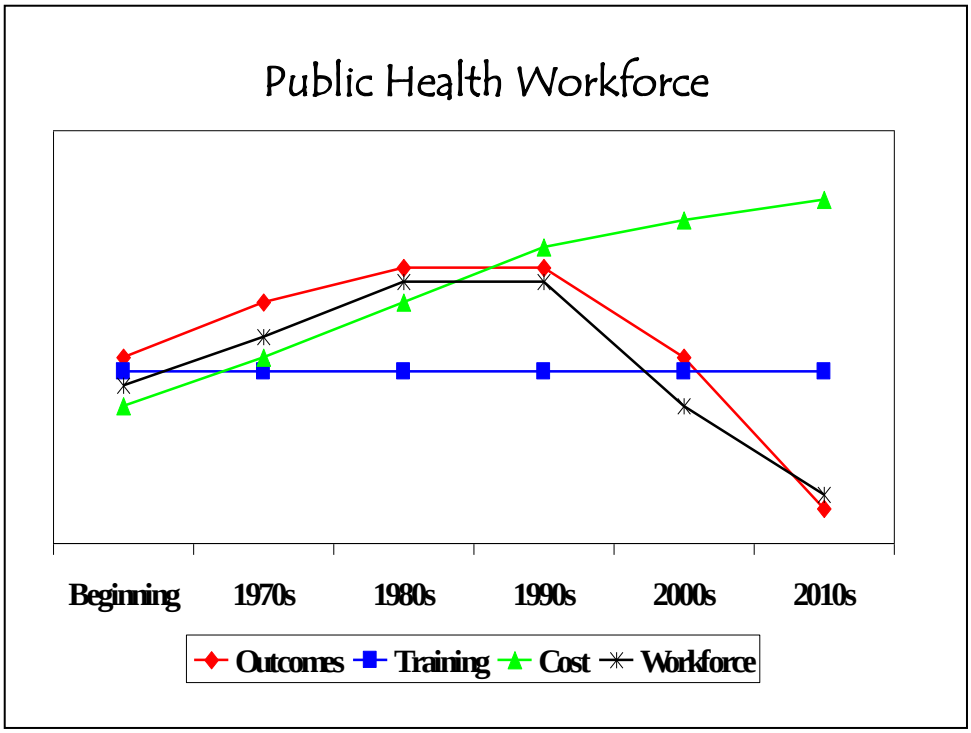
Public health's emphasis of individual medical services over population-based strategies is reflected in the structure of its classification and compensation plans, which may explain our poor health status and depleted budget in Kentucky. Upon review of Kentucky's current compensation plan for local public health departments, it is apparent that several disparities exist.[41] According to Volume I, Section II, of the Administrative Reference for Local Public Health Departments, "The Department for Public Health administers a personnel program for local health departments in Kentucky. The purpose of the personnel program is to promote the recruitment of qualified individuals for the public health workforce, retain employees with a program of benefits and compensation, and protect the right of employees during their service."[41] While public health has been able to recruit employees, retaining them is much more difficult. This practice has resulted in the workforce we have today which is comprised primarily of clinicians whose area of expertise is delivering personal health care services. In essence, public health serves as a training ground that enables new graduates to gain experience and then move on to higher paying positions elsewhere. This occurrence is much more costly to taxpayers than retaining trained employees by offering them a just compensation. Costly, because a workforce limited in scope cannot perform the duties that are public health's mission.[42]

Public health is standing on the brink of a revolution. This revolution will move us toward strategies for social change and away from individual medical service.[2] Its time public health shows accountability for our mission of improving the population's health status. With our focus on individual medical services, we've failed to demonstrate much success in the area of health behavior. Convincing the population to make healthier lifestyle choices would certainly improve population health status, but only if we efficiently and effectively reach large numbers.[43] We're redefining public health to encompass quality of life and all its determinants. We must focus on visionary leadership and a competent workforce with appropriate management and succession planning of that workforce, to accomplish our original mission of ensuring the public's health.[44, 43] This transformation of public health will require dedicated leaders unafraid of the challenge to fully develop the public health workforce into the society of professionals it should be and see that it is maintained in the future.[40]

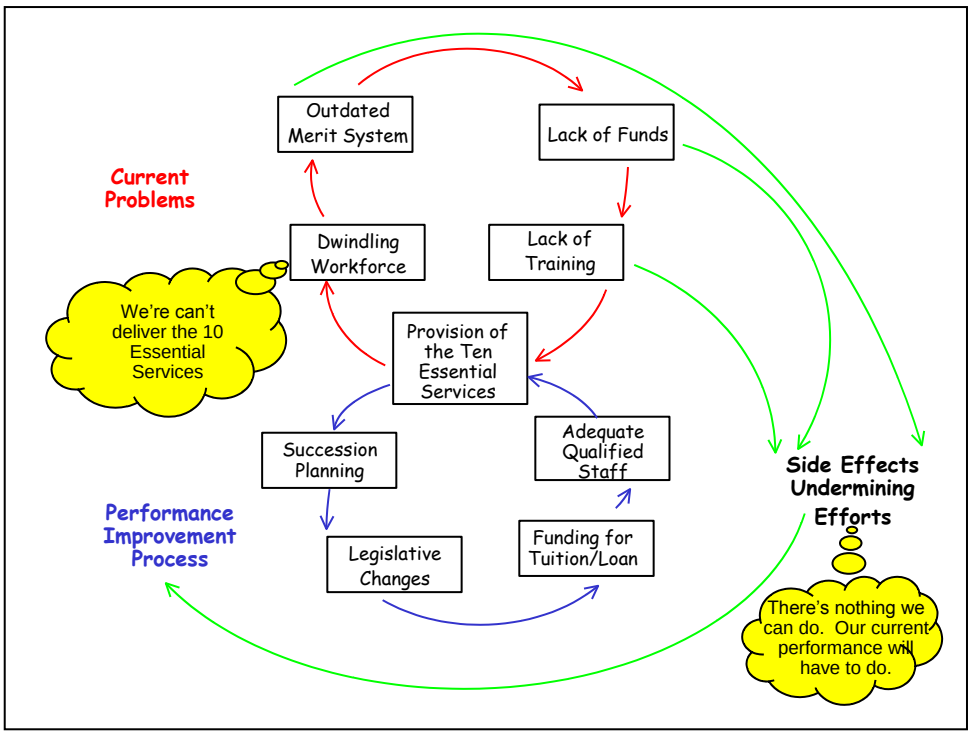
Problem Statement:

An underdeveloped workforce, insufficient funding and the inability to compete with the private sector threatens the ability of Kentucky's Public Health System to adequately carry out the 10 Essential Services of Public Health.

Behavior Over Time Graph:



Causal Loop Diagram:



10 Essential Public Health Services/National Goals Supported:

Workforce development addresses Public Health Essential Service 8, ensuring a competent workforce. However, since a competent workforce is necessary to perform every other essential service, development of the workforce actually addresses all 10.

PROJECT OBJECTIVES/DESCRIPTION/DELIVERABLES:

The object of our project was to ensure delivery of the Ten Essential Public Health Services by identifying methods to recruit and/or develop qualified professionals to the public health workforce to replace 2008 retirees. Our project deliverables include; a promotional/educational DVD, KPHA Workforce Position Paper, KPHA Resolution, Workforce Survey Instrument, Educational Materials on the Lawmaking Process, and Proposed Legislation for Tuition Reimbursement, Student Loan Repayment and Continuing Education.

METHODOLOGY:

The GI Jaynes came together with a shared passion for public health, the public served and the people who deliver the services to the public. With the help of our KPHLI instructors, we defined our problem statement, developed a Behavior Over Time Graph and created a Causal Loop Diagram. From there, we researched the current literature on our topic. Initially, we looked to other entities with successful recruitment and maintenance programs, including the military, for ideas. It soon became apparent that "luring" people to certain fields had to do with money, benefits and/or love of the work. In public health's case, we decided love of the work was internal and money was not an option, however, benefits could be approached. The benefits we chose were tuition reimbursement and student loan repayment. Not only would these benefit employees and recruits but also those served by public health. By providing access to higher education we would be developing a more highly skilled workforce to deliver services in the most efficient manner possible. However, we decided to survey the public health workforce and collect their opinions. We developed an Internet survey and applied to the IRB for approval where it is still pending. Nevertheless, we examined existing legislation regarding tuition reimbursement and student loan repayment and decided to write our own. We researched the lawmaking process, met with legislators and sought their advice and sponsorship. Members of the GI Jaynes sought collaborations with other entities with similar interests. Forces were joined with KPHA and a group of University of Kentucky nursing students to write a position paper and resolution which are on KPHA's website. The GI Jaynes are represented on a new steering committee for a University of Kentucky workforce development study funded by the CDC. Work on this project has highlighted some collateral issues. One issue, identified by Kentucky Title X/Family Planning Program, is the need to retain its current clinical providers by broadening their current scope of practice. The attractive retirement opportunity in 2008 because of the change in the retirement system, will lead to a decreased workforce of mid-level clinicians providing services in Kentucky's local health departments. To address this predicted shortfall, the Kentucky Title X program plans to offer Expanded Role Nursing Training for Family Planning nurses in public health to include more advanced clinical services. The result of our research is a proposed piece of legislation and our continued efforts to see it passed as part of a comprehensive succession plan to ensure provision of the 10 Essential Public Health Services.

RESULTS:

Our research into existing Department for Public Health Human Resources data showed that in 2008, 276 of local public health departments' 2980 employees will be eligible for retirement, excluding Lexington/Fayette, Louisville/Jefferson and Northern Kentucky Independent Health Departments. The 3 independents operate under their own individual merit systems and between them have 58 employees eligible for retirement. The Kentucky State Department for Public Health has 397 full-time employees, 57 of whom currently have 20 or more years of service, thus eligible for retirement in 2008. These employees will have to be replaced in order to maintain services. Who will we be able to

attract? The health status of Kentuckians speaks for itself as an indicator of how our present system is functioning.

CONCLUSIONS:

The GI Jaynes conclude that public health needs to develop and implement a comprehensive succession plan, not only to address the issues in 2008, but also to ensure the mission of public health is achieved.

LEADERSHIP DEVELOPMENT OPPORTUNITIES:

Emily Anderson, RN

This past year has been challenging not only personally, but also professionally. I began being relatively new to public health. KPHLI has helped me become more aware of my personal growth towards leadership. The skills and vocabulary such as "Causal Loop Diagrams" have become second nature! I've enjoyed getting to know the individuals in my KPHLI team. We all immediately identified with the challenges facing public health and were able to effectively express our concerns in our Change Master Project Topic relating to Workforce Development. After overcoming our greatest obstacle, diverse geographical locations, our strong commitment to this topic enabled the GI Jaynes to rally together and complete our project. As past KPHLI graduates have commented, it (the project) really starts coming together at the end. I feel I've grown professionally during this past year. The greatest lesson I've learned has been to listen to my "inner voice". Leadership starts from within. I look forward to the years facing me in public health. I know I'm not alone, and my "GI Jaynes" are always with me in spirit!

Tammie Bertram, RN, BSN

It has been an honor to participate in the KPHLI program. The experience has been both rewarding and eye opening. The 360 exercise was very helpful in assessing my leadership skills and helping to set goals for the future. The emotional intelligence piece was the one I enjoyed most, the exercise and lecture were both excellent. One of the unexpected outcomes of the program is learning from other public health professionals and the friendships that are initiated. I truly value my experience with KPHLI and feel that I have grown both professionally and personally.

Cynthia Brown, BS, CHES, LPN

I had heard that there would not be a lot of work, just going to the summits and some group work. Boy, was I misled. The hardest part was understanding Systems Thinking and the Mental Models. I was glad for Andy Weiner's patience in explaining it over and over. I enjoyed the Tipping Point. Now instead of the movers and shakers of the community, I am identifying the Mavens, Connectors and Salesmen. I can now use the Law of the Few and the Power of Context in my community work. There are aspect of KPHLI that are priceless, that is the people you meet and work with, the connections you make and the things you learn from them. It is all about the relationships—In my opinion. Overall, the staff was great; the summits were very informative and created a learning environment. It was a year of pushing the limits of my brain, but in the end, I feel better prepared to face the future of my Public Health career. Thank you, KPHLI

Carolee Epperson, ASN, RN

I have enjoyed participating in the Kentucky Public Health Leadership Institute. I feel this program has helped to improve my leadership skills. I have enjoyed meeting and working with people from different areas of public health. I also enjoyed being able to network with other professionals that I may use in the future. The Individual Development Plan allowed me to recognize my weaknesses, as well as, the strengths I possess personally and professionally. The Kentucky Public Health Leadership Institute has also enabled me to possess better communication skills and better participatory skills that will benefit me in my job as a Public Health Nurse. This has been a rewarding experience for me.

Jill Ford, RN, BSN

When I first began my KPHLI experience, I have to admit I was a little skeptical about the whole thing. My director and one of my co-workers are both KPHLI graduates, so initially, I felt a little pressured to attend. It was not long into the experience that I began to realize just how much I was learning about myself and thus, how much I was strengthening my professional and personal life. This experience has enabled me to increase my leadership and interpersonal skills. Personal gain, however, will not be the only benefit from this experience; I feel that this experience will enable me to be a stronger asset in the public health arena. Finally, the collaboration through KPHLI has enabled me to begin many friendships that I hope will continue to endure.

Georgia Heise, BS, MS

There's nothing like a shared deadline to bring people together. The members of the GI Jayne Change Master Team seem like a group of old army buddies now. Over the past year we've struggled with molding a topic we're all passionate about into a *systems thinking, emotionally intelligent* proposal. Along the way we've laughed, stressed and shared the obstacles everyday life threw at us. We checked out helicopters, strategic plans, databases, challenge courses and there was even talk of a "Storm on the Capitol." We met with lawmakers and deciphered (somewhat) the process of how a bill becomes a law. Believe it or not, these were all tactical maneuvers toward an overall mission of creating developmental opportunities for our public health workforce. In the end, we all learned a lot about each other and ourselves. In addition to the GI Jaynes, I met and worked with many other great people, especially the gang from Outawhack County, who will no doubt lead public health where it needs to go. KPHLI has been quite an experience and I can't wait to be a mentor next year!

REFERENCES

1. Critical findings when assessing the environmental health workforce capacity. (2005, Third Quarter). *National Association of Local Boards of Health*, 12.
2. Amodeo, A. R. (2003). Commentary: Developing and retaining a public health workforce for the 21st century: Readiness for a paradigm shift to community-based public health. Journal of Public Health Management & Practice, 9 (6), 500-503.
3. Bobo, K., Kendall, J., & Max, S. (2001). Organizing for Social Change. Santa Ana, CA: Seven Locks Press.
4. Rowitz, L. (2006). Public Health for the 21st Century, The Prepared Leader. Sudbury, MA: Jones and Bartlett.
5. Wolfe, R. L. (1996). Systematic Succession Planning, Building Leadership from Within. Boston, MA: Thompson.
6. Akhter, M. N. (2001). Professionalizing the public health workforce: The case for certification. Journal of Public Health Management and Practice, 7 (4), 46-49.
7. Cioffi, J. P., Lichtveld, M. Y., Thielen, L., & Miner, K. (2003). Credentialing the public health workforce: An idea whose time has come. Journal of Public Health Management & Practice, 9 (6), 451-459.
8. Brown, C. K., & Roddy, C., (2001). Joint Council of State and Local Health Officials: Workforce development – principles for action. Journal of Public Health Management and Practice, 7 (4), 55-59.
9. Berkowitz, B., and Nicola, R. M. (2003). Public health infrastructure system change: Outcomes from the Turning Point Initiative. Journal of Public Health Management and Practice, 9 (3), 224-227.
10. Fox, C. E. (2004). Urban health: The need for federal involvement. Journal of Public Health Management & Practice, 10 (1), 86-87.
11. Institute of Medicine. (1988). The Future of Public Health. Washington, DC: National Academy Press.
12. Institute of Medicine. (2002a). The Future of Public's Health in the 21st Century. Washington, DC: National Academy Press.
13. Institute of Medicine. (2002b). Who Will Keep the Public Healthy: Educating Public Health Professionals. Washington, DC: National Academy Press.
14. Lichtveld, M., Cioffi, J., Henderson, J., Sage, M. & Steele, L. (2003). People protected – Public health prepared through a competent workforce. Journal of Public Health Management & Practice, 9 (5), 340-343.
15. Holtzhauer, F. J., Nelson, J. C., Meyers, W. C., Margolis, S., & Klein, K. (2001). Improving performance at the local level: Implementing a public health learning workforce intervention. Journal of Public Health Management and Practice, 7 (4), 96-104.
16. Setliff, R., Porter, J. E., Malison, M., Frederick, S., & Balderson, T. R. (2003). Strengthening the public health workforce: Three CDC programs that prepare managers and leaders for the challenges of the 21st century. Journal of Public Health Management and Practice, 9 (2), 91-102.
17. Gostin, L. O. (2002). Public Health Law and Ethics. New York: University of California.

18. Siegel, M. & Doner, L. (1998). Marketing Public health: Strategies to Promote Social Change. Gaithersburg, MA: Aspen Publishers.
19. Finkler, S. A. & Ward, D. M. (1999). Essentials of Cost Accounting for Health Care Organizations. Gaithersburg, MA: Aspen Publishers.
20. Rees, C. J. and Doran, E. (2001). Employee selection in a total quality management context: Taking a hard look at a soft issue. Total Quality Management, 12 (7 & 8), 855-860.
21. Berger, L. A., and Berger, D. R. (2004). The Talent Management Handbook, Creating Organizational Excellence by Identifying, Developing, & Promoting Your Best People. New York, NY: McGraw-Hill.
22. Hellerstein, J. K. and Neumark, D. (1995). Are earnings profiles steeper than productivity profiles? Journal of Human Resources, 30 (1), 89-113.
23. Dixit, A. (2002). Incentives and organizations in the public sector: An interpretative review. Journal of Human Resources, 37 (4), 696-728.
24. Gebbie, K., Merrill, J., Hwang, I., Gebbie, E. N., and Gupta, M. (2003). The public health workforce in the year 2000. Journal of Public Health Management and Practice, 9 (1), 79-86.
25. Kreitner, S., Leet, T. L., Baker, E. A., Maylahn, C., and Brownson, R. C. (2003). Assessing the competencies and training needs for public health professionals managing chronic disease prevention programs. Journal of Public Health Management & Practice, 9 (4), 284-290.
26. Danielson, J. Zahniser, S. C., and Jarvis, D. (2003). Identifying training needs in the public health workforce: The public health prevention service as a case study. Journal of Public Health Management & Practice, 9 (2), 157-164.
27. Chauvin, S. W., Anderson, A. C., and Bowdish, B. E. (2001). Assessing the professional development needs of public health professionals. Journal of Public Health Management & Practice, 7 (4), 23-37.
28. United States General Accounting Office. (1991). Public Health Assessment Incomplete and of Questionable Value. Washington, D.C.
29. Suen, J. and Magruder, C. (2004). National profile: Overview of capabilities and core functions of local public health jurisdictions in 47 states, the District of Columbia, and 3 U.S. territories, 2000-2002. Journal of Public Health Management and Practice, 10 (1), 2-12.
30. Mayer, J. P. (2003). Are the public health workforce competencies predictive of essential service performance? A test at a large metropolitan local health department. Journal of Public Health Management & Practice, 9 (3), 208-213.
31. Turnock, B. J. (2000). Can public health performance standards improve the quality of public health practice? Journal of Public Health Management and Practice, 6 (5), 19-25.
32. Beaulieu, J. E., Scutchfield, D. F., and Kelly, A. V. (2003). Recommendations from testing of the national public health performance standards instruments. Journal of Public Health Management & Practice, 9 (3), 188-198.
33. Potter, M. A., Barron, G., and Cioffi, J. P. (2003). A model for public health workforce development using the national public health performance standards program. Journal of Public Health Management and Practice, 9 (3), 199-207.

34. Reid, W. M., Beitsch, L. M., Brooks, R. G., Mason, K. P., Mescia, N. D., and Webb, S. C. (2001). National public health performance standards: Workforce development and agency effectiveness in Florida. Journal of Public Health Management and Practice, 7 (4), 67-73.
35. Porter, J., Johnson, J., Upshaw, V. M., Orton, S., Deal, K. M. and Umble, K. (2002). The management academy for public health: A new paradigm for public health management development. Journal of Public Health Management and Practice, 8 (2), 66-78.
36. Price, J. H., Akpanudo, S., Drake, J. A., and Telljohann, S. K. (2004). Continuing education needs of public health educators: Their perspectives. Journal of Public Health Management and Practice, 10 (2), 156-163.
37. Dodds, J. M., Calleson, D.C., Eng, E., Margolis, L., and Moore, K. (2003). Structure and culture of school of public health to support academic public health practice. Journal of Public Health Management & Practice, 9 (6), 504-512.
38. University of Kentucky. (1999). New Degree Proposal from the Doctor of Public Health Degree Program. Kentucky School of Public Health, College of Medicine, University of Kentucky.
39. Wright, K., Rowitz, L. & Mercle, A. (2001). A conceptual model for leadership development. Journal of Public Health Management and Practice, 7 (4), 60-66.
40. Lichtveld, M. Y. & Cioffi, J. P. (2003). Public health workforce development: progress, challenges, and opportunities. Journal of Public Health Management & Practice, 9 (5), 340-343.
41. Kentucky Cabinet for Health Services. (2003). Administrative Reference for Kentucky Local health Departments. Department for Public Health, Kentucky Cabinet for Health Services.
42. Kennedy, V. C. & Moore, F. I. (2001). A systems approach to public health workforce development. Journal of Public Health Management & Practice, 7 (4), 17-22.
43. Rohrer, J. (2004). Performance contracting for public health: The potential and the implications. Journal of Public Health Management and Practice, 10 (1), 23-25.
44. Holtzhauer, F. J., Nelson, J. C., Meyers, W. C., Margolis, S., & Klein, K. (2001). Improving performance at the local level: Implementing a public health learning workforce intervention. Journal of Public Health Management and Practice, 7 (4), 96-104.