

DESCRIPTIVE ANALYSIS OF THE IMPLEMENTATION OF THE QUAD
COUNCIL PUBLIC HEALTH NURSING COMPETENCIES IN A RURAL STATE

by

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ABSTRACT

The Quad Council of Public Health Nursing Organizations adopted and disseminated the Quad Council Public Health Nursing Competencies in 2003 however little is known regarding the awareness and utilization of this document in rural work environments. This nonexperimental, descriptive study employed a cross-sectional survey to explore the familiarity and implementation of the Quad Council Public Health Nursing Competencies by public health nurses (PHNs) in a rural state. Invitations to participate in and disseminate an electronic survey were sent to Montana's 58 local health jurisdictions. Forty PHNs completed the survey; 47.5% ($n=19$) of the respondents were familiar with the document and 16.6% ($n=6$) were currently using the competencies. Efforts to promote the diffusion of the Quad Council Public Health Nursing Competencies should continue.

CHAPTER 1

INTRODUCTION TO THE STUDY

Introduction

Public Health Nurses (PHNs) represent a major professional segment of the public health workforce. According to the Public Health Work Force Enumeration 2000, this group is the largest identified professional group comprising 11% of the public health workforce nationally (U.S. Department of Health and Human Services [U.S. DHHS], 2000c). A variety of roles, responsibilities, and positions are assumed by PHNs in an array of practice settings. These practice settings range from large or small public health departments to state, federal, or private institutions. The services provided by PHNs are as numerous as their practice settings and include immunizations, disease surveillance, health education, home care, administrative functions, and disaster and emergency preparedness (Loue & Morgenstern, 2001; U.S. DHHS, 2005).

In many states there is no credentialing or minimum level of education required to practice as a PHN. Although the Quad Council of Public Health Nursing Organizations has identified the bachelors degree as the entry level for public health nursing, registered nurses with an associate degree or diploma or even a licensed practical nurse are employed as PHNs. As is the case with many public health professionals the PHN may lack formal education in public health (Loue & Morgenstern, 2001). Concerns about an insufficiently educated and trained public health workforce have created apprehension regarding the ability of this complex system to meet the public health needs

of the nation (Centers for Disease Control and Prevention [CDC], 2001; Institute of Medicine, 1988).

Threats to the nation's health whether they are acute or chronic, man-made or naturally occurring, can be ameliorated by a well trained or competent workforce (Hajat, Steward, & Hayes, 2003; Lichtveld & Cioffi, 2003; Lichtveld, et al., 2001). The incorporation of public health competencies in academia and the practice setting has been cited as a goal to improve the infrastructure of the public health workforce in *Healthy People 2010* (U.S. DHHS, 2000b).

Competency can be defined as a complex set of behaviors constructed around the attributes of knowledge, skills, and attitudes (Hager & Gonczi, 1996; Nelson, Essien, Loudermilk & Cohen, 2002). These attributes are essential to an individual's or system's ability to be proficient and effective (Nelson, Essien, Latoff, & Wiesner, 1997). When education is based on competencies the focus changes from what knowledge was obtained to how that knowledge can be applied (Carraccio, Englander, Wolfstahl, Martin, & Ferentz, 2004; Hird, 1995). Competencies are critical to achieving the core public health functions of assessment, policy development and assurance presented in the *Future of Public Health* (1988) by the Institute of Medicine (IOM) (see Appendix A). Also, competencies are pivotal in providing the Ten Essential Public Health Services as developed by the Public Health Functions Steering Committee in 1994 (Nelson, Essien, Latoff, & Wiesner, 1997) (see Appendix B).

The Core Competencies for Public Health Professionals (Core Competencies) is a list of eight domains with subsets of specific competencies associated with each domain.

The Council on Linkages Between Academia and Public Health Practice (COL) developed and adopted these Core Competencies in April 2001 after ten years of work on the issue. This list of competencies pertains to the broad practice of public health and was envisioned as a unifying tool for the workforce. The Core Competences are linked to the Essential Public Health Services and were created as an endeavor to help assure a well trained public health workforce (Public Health Foundation, COL, Competencies Project, 2005) (see Appendix C).

The public health nursing competencies presented by the Quad Council of Public Health Nursing Organizations (Quad Council) is a living document linked to the COL Core Competencies. These PHN competencies are inclusive of the Core Competencies and the only variations are the addition of the concept of families and individuals in five of the domains plus the identification of two skill levels in all domains. Adopted by the Quad Council in April 2003, these PHN competencies foster accountability among public health nurses and collaboration between nurses and the broader scope of all public health professionals (Kulbok, 2006; Quad Council of Public Health Nursing Organizations, 2004) (see Appendix D).

Background

Public health nursing suffered from a lack of role identification and occupational clarity comparable to the public health profession as a whole, according to King and Erickson, (2006). The Quad Council of Public Health Nursing Organizations was charged with creating a set of PHN competencies to alleviate this dilemma. These PHN

competencies were designed with the intentional purpose to be valuable to academia, as well as, public health agencies and to encompass both the scope of administration and practice of public health nursing.

Competency is not a new concept to the nursing profession. Nursing specialties have developed additional standards, as their areas of expertise have developed. Nurses practicing in these specialty areas have these additional standards as well as their licensure status to uphold. Nursing leaders in the latter part of the 19th century and beginning of the 20th century noted the importance of disease prevention and health promotion outside the hospital setting. During this timeframe the term “public health nursing” evolved and the founding of the National Organization of Public Health Nurses (NOPHN) occurred. Two of the main objectives of the NOPHN were the establishment of professional standards and the sharing of techniques among the nurses. Throughout the existence of the NOPHN various documents have been developed to define and describe the roles of the PHN (Abrams, 2004; Jewish Women’s Archive, n.d.). This philosophy is consistent with the work of the Quad Council and the PHN competencies.

The need for public health professionals is forecasted to grow over the next decade and the use of competencies can provide a guide for orientation and training (Gebbie & Turnock, 2006). In electing to employ the COL Core Competencies the Quad Council recognized the complexity of a multidiscipline profession. They also recognized the importance of a consistent framework for public health workforce education and continual training. The universal use of the COL Core Competencies allows for an

effective strategy for uniting the public health workforce with a set of mutual knowledge, skills, and language.

The Quad Council PHN Competencies are a collateral document to the American Nurses Association (ANA) *Public Health Nursing: Scope and Standards of Practice* (2007). The ANA's *Public Health Nursing: Scope and Standards of Practice* establishes the standards of care and the standards of professional performance for PHNs. Highlighted within this latest edition of the *Public Health Nursing: Scope and Standards of Practice* is the essential nature of the Quad Council PHN Competencies in providing guidance in the practice of public health nursing. Both the Quad Council PHN Competencies and the *Public Health Nursing: Scope and Standards of Practice* focus on concepts essential to health promotion and disease prevention in the public sector. These mutual concepts include assessment, assurance, evaluation, collaboration, and education (American Nurses Association, 2007).

Problem Statement

Few published studies exist regarding the familiarity, acceptance and implementation of the Quad Council PHN Competencies by public health jurisdictions and PHNs. In addition, little is known regarding which local health jurisdictions are utilizing the PHN competencies. The intent of this study is to explore the awareness and the utilization of the Quad Council PHN Competencies by rural PHNs and local health jurisdictions.

Purpose of the Study

The purpose of this study is to explore the familiarity and use of the Quad Council Public Health Nursing Competencies by public health nurses in a rural state. The research questions guiding this study are:

1. What are the demographic characteristics of public health nurses employed by Montana's local public health jurisdictions?
2. How familiar are public health nurses in a rural state with the Quad Council Public Health Nursing Competencies?
3. How are nurses using the Quad Council Public Health Nursing Competencies in the work setting?
4. What are the perceived barriers to using the Quad Council Public Health Nursing Competencies by public health nurses in a rural state?

Theoretical Framework

Rogers's *Diffusion of Innovations* (1995) describes a theoretical framework for the adoption of new ideas. Diffusion in this framework encompasses the spontaneous, unplanned spread, as well as, the intentional, directed spread of an idea. Multiple disciplines, including public health, education, sociology, marketing, geography, economics, and communication have utilized this framework.

Diffusion, according to Rogers (1995), is "the process by which an innovation is communicated through certain channels over time among the members of a social

system” (p. 11). There are four main components in the framework: (a) the innovation, (b) communication channels, (c) time, and (d) social systems.

An innovation may be an idea, practice, or object new to the individual regardless of the actual existence timeframe of the innovation. There are five principal characteristics of innovations, which are dependent on the individual’s perception, that aid in predicting the rate of adoption. The first characteristic is relative advantage or the innovations superiority to the existing ideas. The greater the perceived relative advantage of the new innovation the quicker its rate of adoption. Compatibility is the second characteristic and reflects the concept of the innovations conformity with the values, needs, and social norms of the adopter. The more consistent the innovation is with the attributes of the adopter the more rapid the adoption into the system. The third innovation characteristic is complexity. Uncomplicated ideas, objects, or practices that do not require the acquisition of complex skills or knowledge are adopted more rapidly. Trialability, the fourth characteristic, is the ability to test portions of an innovation and adopt it in increments. This process lessens the uncertainty of an innovation and enhances adoption rates. The final characteristic is observability. Observability refers to the visibility of the innovation or its results; the greater the visibility the quicker the adoption of the innovation (Rogers, 1995).

Communication channels influence the rate of diffusion. Salient to diffusion of an innovation is the creation and exchange of information concerning the new idea, practice, or object. Mass media communication channels may be the most rapid and efficient method of communication but interpersonal communication may be the most

effective method of persuasion leading to implementation of a new innovation. The diffusion of an innovation is a social process often dependent on the experiences and communication of similar individuals (Rogers, 1995).

Time is a dimension examined in this framework and involves the “innovation-decision process” (Rogers, 1995, p. 20). This process is defined as the steps required from the individual before the adoption of a new idea or practice is actualized. This process has been conceptualized into five key steps, starting with knowledge, followed by persuasion, decision, implementation and ending with confirmation. The process usually follows this sequence and culminates in adoption, rejection or discontinuation of an innovation. Also related to the dimension of time is the rate of adoption of the innovation within the social system. Rogers states “when the number of individuals adopting a new idea is plotted on a cumulative frequency basis over time, the resulting distribution is an S-shaped curve” (Rogers, 1995, p. 22,23). This S-shaped curve reflects the usual rate of adoption of innovations but there will be variations in the slope dependent on the innovation.

Diffusion transpires in a social system. Rogers (1995) defines this social system as “interrelated units” involving individuals or groups, seeking to answer a common problem in order to attain a shared goal (p .23). Characteristics of the social system have an effect on the rate of adoption of innovations

In the diffusion of innovations theory framework there are five ideal adopter categories that reflect the rate at which different individuals or units in a social system adopt a new idea, practice, or object. These categories are associated with the

concept of “innovativeness” or the individual’s rate of adoption of the innovation when compared to others in the social system (Rogers, 1995, p. 252). The initial adopter category is labeled innovators. Characteristics of those comprising this group include risk takers, the ability to cope with an elevated degree of uncertainty, and the gatekeepers of ideas. Next are the early adopters; this category consists of opinion leaders and role models. These individuals serve as a source of information for potential adopters in addition to holding the respect of their peers. Third are the early majority; these adopters comprise one-third of the individuals or entities in the social system. Characteristics of this group include deliberateness and frequent interaction with their peers. Late majority is the fourth category of adopters and also comprises one-third of the social system. These adopters are characterized by skepticism and many adopted the innovation due to economic necessity or peer pressure. Laggards are the final adopter category and these individuals may be isolated in the social system. There may be resistance to adoption in this group and they are characterized by the qualities of cautiousness and traditionalism. This latter category does not denote a negative category, but may reflect on an element of social system failure (Rogers, 1995).

The Quad Council PHN Competencies are a recent addition to the public health nursing profession with a lineage from multiple sources of knowledge and expertise. Rogers (1995) diffusion of innovations theory provides a theoretical framework allowing for a systematic view of the adoption of these competencies by rural PHNs and local public health jurisdictions. This theory presents a guide of factors that influence the adoption or lack of adoption from both the innovations and the adopter’s domains. Three

of the four nursing organizations representing the Quad Council disseminated the PHN Competencies in 2003 to their members (Oppewal, Lamanna, & Glenn, 2006). However, little is known regarding the familiarity of the PHN Competencies or their adoption by PHNs outside of these organizations. Rogers's theory will guide this research in identifying factors associated with the adoption.

Significance of the Study

This study will add to the research literature surrounding the use of public health competencies. In addition, it will provide the Montana Public Health Nursing Directors, as well as other interested public health organizations, with information regarding the use of competencies by PHNs in the state of Montana. Knowledge of rural nursing practice, in particular rural PHNs, will also be enhanced. Overall, increased understanding of the current status and appreciation of competencies will increase awareness and contribute to the education and training of the PHN workforce.

Definitions of Terms

1. "Competency" is defined as "the knowledge, skills, and abilities demonstrated by organization or system members that are critical to the effective and efficient function of the organization or system" (Nelson, Essien, Loudermilk, & Cohen, 2002, p. 3).

2. "Public health" has been defined as an "organized community effort to address the public interest in health by applying scientific and technical knowledge to prevent disease and promote health" (IOM, 1988, p. 7).

3. “Public health nurse” is a licensed nurse whose primary focus is to promote health and prevent diseases for entire populations using knowledge from nursing, social, and public health sciences (APHA, Public Health Nursing Section, 2003a).

4. “Rural” is a geographic area that has more than 6 and fewer than 50 persons per square mile (Montana Department of Public Health & Human Services, 2004).

Organization of the Remainder of the Study

The subsequent four chapters will be organized into literature review, methods, results, and conclusions. Chapter 2 will provide a current literature search. The chapter will examine the framework of public health competencies, the usage of the COL Core Competencies by other public health disciplines and organizations. The use of the conceptual framework, Rogers’s diffusion of innovations theory, by public health nursing will be examined and an overview of the public health nursing workforce in Montana will be presented.

Chapter 3 presents the design of the study, the sample, the instrument used in collecting the data and methodology of data analysis. The fourth chapter will describe the findings of the study based on a descriptive analysis of the qualitative and quantitative data. The final chapter will present a discussion of the findings, limitations, and recommendations.

CHAPTER 2

LITERATURE REVIEW

Introduction

Multiple reports and articles from numerous researchers and organizations have addressed the issues of a competent public health workforce, an adequate public health infrastructure and public health competencies. Each of these issues has unique characteristics, yet they are interwoven into the concept of an educated, effectively prepared, and functional public health system. The phenomena of an adequately trained public health workforce in the United States can be traced back to the early 20th century and the establishment of the first school of public health, the Johns Hopkins University School of Hygiene and Public Health, during the 1918 influenza pandemic. The discipline of public health grew out of the necessity for a profession devoted to the health of populations and continues to evolve to meet the needs of an ever changing public health environment (Gebbie, Rosenstock, & Hernandez (Eds) [IOM], 2003).

The following literature review examines components related to public health competencies and the history surrounding the development of the Quad Council's PHN Competences. The Quad Council PHN competencies are a relatively novel document, but their actualization has spanned the past 20 years. Also significant to this study is the use of competencies by other public health professions or organizations as well as an examination of the public health nursing workforce in Montana. Finally, the use of Rogers's diffusion of innovations theory by public nursing will be presented.

Description of the Literature Review

The literature review for this research used an array of methodologies. Initially the Montana State University online library system was accessed (CINAHL, Online Journal Database, PubMed) with key terms “competencies,” “public health,” “public health nursing,” “Quad Council,” “COL Core Competencies,” and “diffusion of innovations.” Articles not available online in their entirety were requested via the interlibrary loan system. Additional references were gleaned from the reference lists from the journal articles and obtained from the Montana State University library. The world wide web search engine Google was utilized due to the lack of academic research surrounding competencies. Search terms “competencies,” “performance,” “public health infrastructure,” “core competencies,” “COL,” “Quad Council,” “Montana public health,” and “public health nursing” were applied.

Competent Public Health Workforce: History and Development

The current impetus of concern regarding the national public health system and a competent work force stems from the IOM’s report, *Future of Public Health* (1988). This report, two years in development, evolved after perceptions of an inadequate public health system were raised by the IOM. Involved in this benchmark report were interviews from multiple public health entities in six states, several key cities, Canada, and staff members of various national public health organizations. (IOM, 1988; Walker, 1989). With the publication of the *Future of Public Health* and the identification of deficiencies

in the public health system, the public health field was charged with rectifying these conditions.

The Future of Public Health focused attention on the need for capacity building in order to accomplish the core functions of public health identified by the IOM. These core functions of assessment, policy development, and assurance have been widely adopted by the public health profession (see Appendix A). Capacity building or the ability to sustain the public health workforce in all its multifaceted roles was a concern to the IOM. Recommendation presented by the IOM committee highlighted the need to “consider how to build agency competence, especially the human resources and skills that will be required for effective action” (IOM, 1988, p.153). Five areas of competency, in order to build capacity, were addressed: technical, political, managerial, programmatic, and fiscal. Recommendations from the committee to improve each area were enumerated (IOM, 1988).

In 1989 the Public Health Faculty/Agency Forum was established through a grant from the U.S. Department of Health Resources and Services Administration in response to the IOM report, *The Future of Public Health*. This forum was convened by the Johns Hopkins University’s Bloomberg School of Public Health and later led to the development of the Council on Linkages Between Academia and Public Health Practice. “Universal competencies” to guide public health practice and academia were identified and published in 1991 in the *Public Health Faculty/Agency Forum: Linking Graduate Education and Practice-Final Report*. These competencies were: communication skills; policy development/program planning skills; cultural skills; basic public health science

skills; financial planning and management skills. In addition to these universal competencies, four discipline specific competencies were presented. (Australian Government Department of Health and Aging, 2002; Banks, Cogdill, Selden, & Cahn, 2005; Gebbie, n.d.; King & Erickson, 2006; Public Health Foundation, 2006; Tilson & Gebbie, 2004).

In 1994 the Public Health Functions Steering Committee, a committee comprised of leading public health organizations and a subgroup of the Public Health Functions Project, adopted the Ten Essential Public Health Services (see Appendix B). During this time frame health care reform was a major political issue and this document was developed as a tool to define public health and inform the general public and government bodies of its function. (IOM, 1996; Novick, 2001; U.S. DHHS, 1999). Prior to this there were numerous lists of public health functions generated by the various public health organizations, this created confusion regarding public health's actual scope and function. The Ten Essential Public Health Services provide one unified definition of public health clarifying the scope and importance of public health; in addition they afforded a framework guiding the activities of public health systems. This document was mapped to the core functions established in 1988 by the IOM. In the Ten Essential Public Health Services, the eighth essential service affirms that part of the practice of public health is to "assure a competent public health and personal health care workforce" (Novick, 2001, p. 45). This entails training, education and a commitment to life long learning on behalf of the public health workforce to ensure public health services.

Also in 1994 the Subcommittee on Public Health Workforce, Training and Education, a section of the Steering Committee of the Public Health Functions Project, was charged with addressing “activities to ensure a competent workforce to perform the essential functions of public health now and in the future” (U.S. DHHS, 1997, p.1). Ensuing from this project was a report in 1997 entitled *The Public Health Workforce: An Agenda for the 21st Century*. In this report the Ten Essential Public Health Services were crosswalked to the universal competencies developed by the Public Health Faculty/Agency Forum, plus a category of “new” competencies was added. Salient to this report was the deliberation surrounding the present and the future education of the public health workforce (U.S. DHHS, 1997).

The Senate Appropriations Committee, in 1999, requested a report assessing the “state of the Nation’s public health infrastructure and...possible actions that could be taken to strengthen key components” (U.S. DHHS, 2001, p. i). This report, *Public Health’s Infrastructure*, uncovered flaws in the current public health infrastructure and offered proposals to strengthen the system. One of the critical gaps identified was “workforce capacity and competency” (U.S. DHHS 1997, p. iii). Reference is made to the universal competencies developed by the Public Health Faculty/Agency Forum and the need to enhance these competences. One of the first sets of recommendations presented in the report pertains to the lack of a proficient public health workforce and the requisite competencies, training, and credentialing of the public health workforce.

Healthy People 2010, a document with input from over 350 entities concerned with the nation’s health, was released in 2000. *Healthy People 2010* built on *Healthy*

People: The Surgeons General's Report on Health Promotion and Disease Prevention published in 1979 and the 1980 report *Promoting Health/Preventing Disease: Objectives for the Nation* and *Healthy People 2000* released in 1990. These previous documents contained national health goals to decrease premature morbidity and mortality. *Healthy People 2010* contains objectives in 28 focus areas developed by federal public health experts to be used as a guiding tool to manage current and emerging public health concerns. It contains two broad goals: (a) "increase quality and years to healthy life" and (b) "eliminate health disparities" (US DHHS, 2000a).

In *Healthy People 2010* focus area 23 pertains to public health infrastructure. In this focus area the concept of a skilled and knowledgeable workforce as an essential element to an effective public health system and the means of achieving the broad goals of *Healthy People 2010* is asserted. In addition, the incorporation of essential public health service issues into existing professional education is presented. In this focus area, objective number 23-8 addresses public health competencies. This objective draws attention to the concept that vital to the public health system are public health employees who possess knowledge, skills and attitudes or competencies pertinent to the profession. The function of competencies in formal job descriptions and performance evaluations as a methodology of assessing the workforce is also offered in this objective (US DHHS, 2000b).

Development of Competencies

The Council on Linkages Between Academia and Public Health Practice (COL) adopted the present list of Core Competencies for Public Health Professionals (Core Competencies) in 2001. This council, consisting of 17 entities representing national public health organizations and academia, collaborated for 10 years, formulating and refining these competencies. The COL has also developed a list of on-going objectives, several of which pertain to the use of the Core Competencies in the areas of public health education in both the academic and practice settings. (Public Health Foundation [PHF], COL, 2006).

The Core Competencies were developed as a living document to evolve with the practice of public health. They were also crosswalked with the Ten Essential Public Health Services as this list defines the essence of public health. As core competencies, this document was “crafted to transcend the boundaries of specific disciplines and help unify the public health profession” (PHF, COL, 2005). The Core Competencies consist of eight domains with corresponding competencies, 68 competencies in all. These corresponding competencies consist of skills, knowledge and attitudes relevant to each domain. The Core Competencies are further classified to job category, front line staff, senior level staff, or supervisory and management staff. Varying levels of skill defined by the terms awareness, knowledgeable, or advanced, have been designated to each job category (Beckett, 2001; PHF, COL, 2005).

A coalition of the Association of Community Health Nurse Educators (ACHNE), the American Nurses Association’s Congress on Nursing Practice and Economics

(ANA), the American Public Health Association-Public Health Nursing Section (APHA), and the Association of State and Territorial Directors of Nursing (ASTDN) collectively known as The Quad Council of Public Health Nursing Organizations (Quad Council), developed and adopted the Public Health Nursing Competencies (PHN Competencies) in 2003. The Quad Council utilized the COL Core Competencies as the framework for the PHN Competencies with the realization that these are core competencies and thereby apply to all public health professionals. With this concept in mind, it was expressed by the Quad Council that the PHN competencies be used in conjunction with additional specialty competencies or documents as appropriate. It is the intent of the Quad Council that these PHN Competencies be utilized in practice and academic settings. There are some noted variances in the two documents. The PHN competencies have listed two major job classifications and the interjection of the category of “individuals and families” into five domains. However, these variants do not impinge on the original content of the Core Competencies (Quad Council of Public Health Nursing Organizations, 2004).

Rural Facet of Competence

In 2003 an adjunct document to *Healthy People 2010*, entitled *Rural Healthy People 2010, vol. 3*, was released by the Southwest Rural Health Research Center of Texas A & M University. This publication contained survey information on the top priorities from rural health leaders. When assessed, public health infrastructure was listed in the top ten areas of concern by those surveyed. (Gamm & Hutchinson, 2004; Gamm, Hutchinson, Dabney, & Dorsey, 2003). A monograph focused on rural public health,

Bridging the Health Divide: The Rural Public Health Research Agenda, was released in 2004. This document identified “the work of public health requires a trained, qualified workforce” (University of Pittsburg, Center for Rural Health Practice, 2004, p.5) as one of three underlying core themes transcending public health research issues. These two documents underscore the importance of an optimally educated and trained rural public health workforce to rural public health stakeholders.

Current Concern of Competent Public Health Workforce

The IOM released *Who Will Keep the Public Healthy? Educating Public Health Professionals for the 21st Century*, in 2003. This report resulted from a charge to the Committee on Educating Public Health Professionals for the 21st Century to provide a framework for improving the education process for the future workforce. In addition the committee was to present recommendations for improving public health education and training. The report espouses that public health professionals would be better prepared to meet the challenges of future public health needs if education in eight identified competency areas were addressed. These content areas are: “informatics, genomics, communication, cultural competence, community-based participatory research, global health, policy and law, and public health ethics” (Gebbie, Rosenstock, & Hernandez, 2003, p.62). Affirmation is given in the report to the COL competencies and their value in public health education. The committee emphasized that an ecological model of public health must be pivotal in public health education.

The IOM released a successive report to the 1988, *The Future of Public Health*, entitled *The Future of the Public's Health in the 21st Century*. Its release in 2003 was due to the broad changes in public health in that fifteen year time span and was undertaken with the intent of creating a framework for assuring the nation's public health. The report notes limited progress in the area of public health infrastructure as advocated in the initial report. The need for a competent workforce at the federal, state, and local level was an issue discussed by the Committee on Assuring the Health of the Public in the 21st Century. Competencies for various disciplines and skill levels are discussed within this report, including the COL competencies,

“the committee recommends that all federal, state, and local governmental public health agencies develop strategies to ensure that public health workers who are involved in the provision of the essential public health services demonstrate mastery of the core public health competencies appropriate to the jobs” (IOM, 2003, p.120).

There was a consensus from this committee on the necessity of competencies in the public health field.

Competencies Associated with the COL Core Competencies

The significance of the work done by the Council on Linkages Between Academia and Public Health Practice on the Core Competencies has been further validated through their adoption by diverse public health disciplines and jurisdictions. Some public health disciplines have adopted these competencies in their entirety and others use only those portions that are relevant.

The Center for Law and the Public's Health developed the Core Legal Competencies for Public Health Professionals in 2001. This document was developed for

public health leaders as well as the front line public health workforce, who are involved with any aspect of public health law. It was designed to be a tool for assessing educational and training needs related to public health law. The majority of the legal competencies are linked to the COL Core Competencies (Center for Law and the Public's Health, 2001).

Also in 2001 the Environmental Health Competency Project was completed by the APHA and the National Center for Environmental Health (NCEH), a division of the CDC. Although this document does not draw directly from the COL Core Competences, it was constructed from the competency framework of the Public Health Faculty/Agency Forum which was a precursor to the COL Core Competencies. The Environmental Health Competency Project defined three primary functions; this triad consists of assessment, management and communication. It also contains 14 core competencies correlating to these functions. The primary functions and core competencies can be mapped to the COL Core Competences. These environmental health competencies were intended to increase job effectiveness through the provision of "goals and guidelines for influencing training and work expectations" (CDC & APHA, 2001, p.14). They were constructed to be used by the practitioner employed at the local health department level.

In 2002, the Northwest Center of Public Health Preparedness at the University of Washington School of Public Health and Community Medicine and the CDC completed their work on the Informatics Competencies for Public Health Professionals. Three classes of competencies were outlined: (a) competencies associated with the use of information, (b) competencies associated with information technology, and (c)

competencies associated with the development, deployment, and maintenance of information systems. In the first class of informatics competencies the eight domains of the COL Core Competencies were used exclusively, however not all the COL competencies were applicable to the informatics field and one additional competency was applied to this class. This tool was proposed as a framework for the development of learning resources for the present public health workforce (Carroll & the Public Health Informatics Competencies Working Group, 2002).

In 2005 a summary report was released by the Canadian Federal/Provincial/Territorial Joint Task Group on Public Health Human Resources. This was a draft document for discussion and a starting point for further validation of public health core competencies. This task force was associated with public health workforce development strategies and resource planning. In the development of the Canadian document the task force acknowledges the expertise and effort that proceeded in the COL Core Competences and they utilized 7 of its domains along with many of the competencies set forth by the COL. The Canadian Public Health Workforce Core Competencies were developed for all public health practitioners with post secondary training in public health (Federal/Provincial/Territorial Joint Task Group on Public Health Human Resources, 2005).

The Applied Epidemiology Competencies for Governmental Public Health Agencies (AECs) draft document was completed by the CDC and Council of State and Territorial Epidemiologists (CSTE) in 2006. The COL Core Competencies were used as a guiding principle in the development of the AECs document and incorporates all eight

domains. However, some of the COL Core Competencies have been modified and other competencies added to reflect the knowledge and skill required by epidemiologists. The objectives of this document are to “define the discipline” and “describe what skills four different levels of practicing epidemiologists working in government public health agencies should have to accomplish required tasks” (CDC & CSTE, 2006, p. 2). This tool is intended for use by practitioners, employers and educators.

Montana Public Health Nursing and Competency

Montana is a rural state with approximately 902,000 people living in an area that encompasses 145,552 square miles (U.S. Census Bureau, 2006). Montana has a decentralized public health system or one in which the local government has significant control and authority surrounding local public health issues. There are 58 local health jurisdictions located in Montana. The state has 51 public health jurisdictions located within 56 counties; the Central Montana Health District is a LHJ encompassing six of these counties. There are seven tribal health jurisdictions located throughout Montana. The majority of the local health jurisdictions, 39 out of the 58, provide public health services in areas with less than 10,000 people. Eight of the local health departments serve counties in which the population is greater than 30,000 people (Montana Department of Health and Human Services [MT DPHHS], 2004; Northwest Center for Public Health Practice [NWCPHP], 2006).

It is estimated by the Montana Department of Public Health and Human Services that local health departments employ 600 people in Montana and this includes 124 full-

time equivalent (FTE) PHNs (MT DPHHS, 2004; NWCPHP, 2006). There are 17 health jurisdictions in Montana where the FTE equated to public health nursing is less than 1 FTE (MT DPHHS, 2004). The number of FTE PHNs does not accurately reflect the actual number of nurses employed by local jurisdictions in Montana due to the counting methodology of FTEs and varying job classifications.

Since the majority of the local health jurisdictions in Montana are located in rural areas these PHNs may face additional challenges when compared to PHNs employed in metropolitan areas. According to Hendricks, (2006) rural nurses may face challenges in obtaining continuing education, an element that is imperative in sustaining a skilled and competent workforce. Factors of distance, financial resources, weather and time were reasons cited as deterrents to continuing education in the rural nursing workforce.

In 2000 the Montana Public Health Improvement Task Force published *A Strategic Plan for Public Health System Improvement in Montana*. This document was built on earlier work done by the task force established by the MT DPHHS in mid 1990. One of the objectives of this project was to improve and support the Montana public health infrastructure. Listed in the goals of this document are “support and enhance a stable, well-trained, and competitively compensated workforce” through methods of a “public health training program . . . that is based on best practices, professional competencies and performance standards” (Montana Public Health Improvement Task Force, 2000, p. 5).

Significance of Competencies to the Public Health Workforce

The current interest in competencies can be traced to the educational discipline and the definition can be simplified to “a headline plus a few sample behaviors” that provide a model for improved job performance (Markus, Cooper-Thomas, & Allpress, 2005, p. 119). The philosophy behind competencies is that the application of competencies by the workforce will change performance thereby influencing outputs at the individual and organizational levels and ultimately influencing outcomes. Competencies are an important model for professional development and assessment (Rothwell & Willens, 2004).

Public Health is an interdisciplinary endeavor, involving teamwork from a variety of professions. Often in professional nursing education there is little opportunity for collaborative, teamwork interaction. The sharing of a common knowledge base, in the form of competencies, provides a cohesive measure connecting all public health disciplines. Public Health Nursing Competencies can aid the PHN in her ability to function as part of the public health team (Ervin, 2002).

Mayer (2003) provided support that public health workforce competencies are associated with improved job performance related to the ten essential public health services in a metropolitan local health department. In his research Mayer (2003) performed reliability analyses with the job performance items “reflecting the four competencies and ten essential services” (Mayer, 2003, p.209). Two to 20 percent of the variance in essential service job performance was attributed to the four COL Core Competencies studied.

Diffusion of Innovations

The diffusion of innovations theory has been widely used and accepted in the public health profession. Public health issues such as AIDS treatment, family planning, and mammography screening have been studied with the application of this theory (Bertrand, 2004; Levy-Storms & Wallace, 2003; Murphy, 2004).

The published public health nursing literature utilizing Rogers's diffusion innovation theory is sparse. Zerwekh, Thibodeauz, and Plesko (2000) applied this theory to the adoption process of a novel public health nursing charting system in the Seattle-King County Department of Public Health. Revision of the charting system was undertaken to reduce the charting burden and more accurately reflect the nursing visits. Concepts related to adoption from Rogers's diffusion of innovation theory were introduced into the change process in order to facilitate the adoption procedure. These researchers noted that the charting system undertaken was a work-in-progress and that the outcomes measures at the time of publication of the article were "not dramatic" (Zerwekh, Thibodeauz, & Plesko, 2000, p.82).

The use of research based guidelines by PHNs in Minnesota was studied employing the diffusion of innovations theory framework. Several factors were evaluated: (a) participants perception of the guidelines, (b) how the guidelines were used, and (c) factors associated with promoting or hindering the use of the guidelines. Results of the study indicated that the majority of the PHNs surveyed had not employed the guidelines in their practice due to multiple barriers (Lia-Hoagberg, Schaffer, & Strohschein, 1999).

Oppewal, Lamanna, and Glenn (2006) discuss the diffusion of innovation theory in relationship to their results regarding the familiarity and utilization of the COL Core Competencies and the Quad Council PHN Competencies by PHNs. Aspects of adopter categories, communication channels and characteristics of the innovation were offered. The outcomes of this research demonstrated that over two-thirds of the PHNs surveyed were aware of the competencies examined.

Rogers's diffusion of innovations theory has proven to be an applicable framework for depicting the adoption patterns of new ideas and practices in the field of public health. Its usefulness in public health's broad profession scope as well as to research in general has been well established.

CHAPTER 3

METHODS

Introduction

Competencies provide a systematic approach for the development of educational objectives, job orientation or evaluation, and continued workforce training. Public health competencies are crucial in maintaining a capable workforce that is able to accomplish the core public health functions of assessment, policy development and assurance, presented by the IOM (1988). The Quad Council adopted the PHN competencies in April of 2003, but little is known regarding their adoption and implementation by public health nurses.

Study Design

This research employed a non-experimental, descriptive design, using a cross-sectional, electronic survey. A convenience sample of PHNs employed by local health jurisdictions in Montana were assessed by means of quantitative and limited qualitative questions. This descriptive study was designed to capture the characteristics of Montana's PHNs who participated in the survey in relationship to their familiarity, usage and perceived barriers to usage of the Quad Council PHN Competencies. Descriptive research is intended to "observe, describe, and document aspects of a situation as it naturally

occurs” (Polit & Hungler, 1999, p. 195-196). This type of research is chosen when little is known regarding the phenomena (Burns & Grove, 2001).

There are economical and flexibility advantages in the use of a web-based, self-reporting survey. The disadvantage with this methodology includes the possibility of ambiguous questions and inaccessibility of computers by all PHNs. The use of a research tool with both quantitative and qualitative questions permitted greater flexibility in portraying the phenomena and the potential for enhanced validity of the findings (Polit & Hungler, 1999).

Convenience Sample

A convenience sample of nurses employed by the 58 local public and tribal health jurisdictions in Montana was the sampling design for this study. Polit and Hungler (1999) describe a convenience sample as “the most conveniently available people ... as subjects” (p. 281). The disadvantage to using this type of sampling includes self-selection bias and lack of generalizability (Burns & Grove, 2001). The nurses surveyed could be employed in any population-focused arena of the local health jurisdiction and have an active LPN or RN license.

There was not an accessible database of PHNs employed in Montana’s local public and tribal public health jurisdictions. The 2004 Montana County Health Profiles does enumerate full-time equivalent employed PHNs by county health departments to be 124 FTE. However there are limitations with this counting method. This number does not accurately portray the actual number of PHNs employed. Neither does it include PHNs

employed at tribal jurisdictions. This number was generated by the individual's primary position at the time of the 2004 MT DPHHS survey according to the supervisor of the Health Planning Section at the MT DPHHS. (J. Oreskovich, personal communication, August 31, 2006).

Tool

The tool used for this survey was adapted from a previous study conducted by Oppewal, Lamanna, and Glenn (2006). Permission was obtained to use the original tool from the lead investigator (see Appendix E) (S. Oppewal, personal communication, May 11, 2006). The original tool consisted of 17 close-ended and open-ended items and assessed members belonging to the four national nursing organizations affiliated with the Quad Councils Public Health Nursing Organization. The original survey was a web-based survey sponsored by Survey Monkey, a public site. Face and content validity of this tool was established through literature review. In addition the Oppewal tool was assessed by two public health nursing experts and by two experts in instrument development. A Cronbach's α of 0.84 was established by the "repeated item method of estimating reliability...on the key study variable of familiarity" (p. 101) with the Quad Council's PHN Competencies. Thirteen of the original questions were constructed to evaluate factors associated with innovation adoption and implementation. Questions assessing the PHN Competencies adoption included "familiarity, access, communication source, past and current use of the competencies and barriers to adoption" (p. 101). Questions

assessing the implementation of the PHN Competencies included “type of use in specific setting, barriers and facilitators of use” (p. 101).

The demographic portion of the tool was expanded in the adapted version from four to seven questions to allow for greater depth in describing the Montana public health nursing population (see Appendix F). One additional question was added to assess the implementation of the PHN Competencies in order to foster a richer understanding of this area. This additional question rated data regarding integration of the PHN Competences into the work environment.

The adapted survey tool was evaluated for content validity by three nurses with PHN expertise. These three PHNs were representative of small, medium and large size public health jurisdictions in Montana. According to Polit and Beck (2006) the methodology used to determine content validity index (CVI) should be well defined and clarified. Two methods of CVI were examined in the adaptation of this survey tool. The first was Item-Content Validity Index (I-CVI), this ranged from 0.66-1.00 for all but one of the survey items. One question was rated as “somewhat relevant” by all the raters, this question related to demographic information of the population and was left on the survey. Secondly, the tool was evaluated using Scale-Content Validity Index/Ave (S-CVI/Ave), and this was computed to be 0.89. The lack of a higher score for S-CVI/Ave may be linked to lack of instructional clarity regarding the constructs and rating task by the researcher to the tool evaluators.

The adapted survey was estimated to take 10 to 15 minutes to complete with the use of a Web-based tool using Snap Survey software. The setting for the completion of

the survey was any location with Internet access; however the participant initially received the questionnaire via the work setting. One survey reminder was emailed to all key contact individuals seven working days after the initial survey was sent.

Data Collection and Analysis

Permission to contact and survey the local public health jurisdictions was sought from the Montana Public Health Nursing Directors, an association of public health nursing leaders. A listserv of key contact individuals for local jurisdiction was obtained from the president of the Montana Public Health Nursing Directors (C. Smith, personal communication, November 15, 2006). Montana State University College of Nursing Office of Research and Scholarship set up the on-line survey with the use of Snap Survey software on a secure website.

Survey announcements and requests were emailed to the key contact persons in local jurisdictions as identified. Each announcement consisted of a cover letter explaining the research and intent (See Appendix G). This initial cover letter requested the recipient, a lead PH official, to forward the announcement with the enclosed URL to every public health nurse employed in population-focused arenas. PHNs included those that maintained an active licensed practical nurse (LPN) or registered nurse (RN) license, in any capacity in that jurisdiction.

A second letter explaining the survey and requesting participants was then provided at the initiation of the survey (See Appendix F). Respondents were informed of the optional, anonymous nature of the study and passive consent to participate was

established by return of the survey. The survey was disseminated to the local public health jurisdictions in January, 2007. The URL remained active for three weeks and after seven working days an email reminder was sent to the key contact persons on the listserv.

All the data was collected by Snap Survey software, converted, and then analyzed with SPSS 13. This quantitative data was analyzed for frequencies, percentages, means and standard deviations with the use of SPSS 13. Qualitative data was printed and analyze by the researcher, then coded for content themes. This analysis was guided by phenomenology principles. The intent of phenomenology research is to describe the experience “as it is lived by the study participants and interpreted by the researcher” (Burns & Grove, 2001, p.31). Within this methodology reality is considered subjective and personal. Phenomenological research views the person as connected with the surroundings.

Human Subjects Considerations

The study plan for this research project was submitted to the Institutional Review Board (IRB) at Montana State University-Bozeman. An exempt status was granted due to the anonymous, survey methodology employed.

CHAPTER 4

RESULTS

Introduction

In January 2007 an introductory email letter, containing a web link to a survey, was sent to key contact individuals in each of Montana's 58 local health jurisdictions. Key contact individuals were solicited to take part in the survey as well as disseminate the survey to all LPNs and RNs practicing population-focused public health in their jurisdiction.

A descriptive analysis was performed with the use of SPSS version 13 to explore characteristics of the Montana PHNs who participated in the survey concerning the familiarity and usage of the Quad Council PHN Competencies. Quantitative data were analyzed with descriptive statistics; frequencies, percentages, means, and standard deviation. The qualitative data analysis was guided by phenomenological research principles. This data was explored for content, including novel and common themes.

The research questions that guided this study were:

1. What are the demographic characteristics of public health nurses employed by Montana's local public health jurisdictions?
2. How familiar are public health nurses in a rural state with the Quad Council Public Health Nursing Competencies?
3. How are nurses using the Quad Council Public Health Nursing Competencies in the work setting?

4. What are the perceived barriers to using the Quad Council Public Health Nursing Competencies by public health nurses in a rural state?

Sample Characteristics

A response rate of 35% ($n=40$) based on the only total count of FTE PHNs ($n=124$) available was achieved (MT DPHHS, 2004). There was not an accessible data base with an actual count of LPNs and RNs employed in population focused public health in Montana. The participants' ages ranged from at least 20 to less than 70 years, with the majority, 62.5% ($n=25$), of the participants falling within the 40-59 years of age categories. Most of the PHNs, 80% ($n=32$), that responded practiced in small jurisdictions, compared to 15% ($n=6$) from large sized jurisdictions and the remaining 5% ($n=2$) from medium sized jurisdictions. The level of education from the participants is given in Table 1. The majority (72.5%, $n=29$) held a bachelor of science degree in nursing or higher. In describing their primary role from the options provided 67.5% ($n=27$) chose the category of generalist/staff PHN, the remaining 32.5% ($n=13$) chose the category of manager/CNS/consultant/program specialist/executive/ public health officer. One participant added the category of "director."

Table 1. Highest Level of Formal Education

	<i>n</i>	%
L.P.N.	1	2.5
A.D.N.	9	22.5
B.S.N.	25	62.5
M.S.N.	3	7.5
M.P.H.	1	2.5
Missing	1	2.5
Total	40	100.0

Table 2 identifies the frequency of membership in formal public health nursing or nursing organizations from the 40 respondents. Only 17.5% ($n=7$) of the participants were members of any of the four nursing organization included within the Quad Council of Public Health Nursing Organizations. The majority, 62.5% ($n=25$) were a member of the Montana Public Health Association. Conversely, almost one fourth or 22.5% ($n=9$), stated they were not a member of any nursing or public health organization.

Table 2. Membership in Nursing or Public Health Organizations

	<i>n</i>	%
American Nurses Association	1	2.5
American Public Health Association	5	12.5
Association of State and Territorial Directors of Nursing	1	2.5
Association of Community Health Nursing Educators	0	0
Montana Public Health Association	25	62.5
Montana Nurses Association	5	10.0
Not a Member of a Nursing or Public Health Organization	9	22.5
Other*		
Montana Public Health Nurse Directors	3	7.5
National Association of County & City Health Officials	1	2.5
Oncology Nursing Society	1	2.5

Note. * “Other” are categories supplied by the participants

The two professional position categories selected by the majority of the participants were, public health nurse (52.5%, $n=21$) and public health nurse administrator (42.5%, $n=17$). Other positions supplied included “maternal child public health nurse ($n=1$),” “health officer ($n=1$),” and “community health nurse ($n=1$).” Public health nurses employed by local jurisdictions work in a variety of programs (see Table 3). As indicated by the frequencies, many of the 40 PHNs that responded are involved in more than one program area.

Table 3. Public Health Nurses' Involvement in Public Health Programs

	<i>n</i>
Maternal Child Health/Home Visit	34
Immunization	38
WIC	24
Emergency Preparedness	31
Disease Surveillance	36
Tobacco Prevention	22
Montana Breast and Cervical Health Program	20
Family Planning	20
Other*	
School Nursing	3
Environmental Health	1
Services for Senior Population	4
Well Child Clinic	1
Assisted Living Facility Inspections	1
Home Health	1

Note. * "Other" are categories supplied by the participants

The range of years that the participants had practiced and/or taught public health varied from less than one year to a maximum of 27 years. The average number of years that the respondents practiced or taught PHN was 12.29 ± 8.36 SD. Eight participants had

been in public health nursing three or less years and six participants had been involved over 24 years.

PHN Competencies Familiarity

The salient research questions dealt with familiarity and usage of the Quad Council PHN Competencies. The degree of familiarity with the competencies in question along with a comparison between the familiarity of the COL Competencies and the Quad Council PHN Competencies is illustrated in Table 4. The majority of the participants, 62.5% ($n=25$), had some degree of familiarity with the COL Competencies compared to 47.5% ($n=19$) who were familiar with the Quad Councils PHN Competencies. But approximately 33% were not familiar with the COL document and over 50% were not familiar with the Quad Council's document.

Table 4. Degree of Familiarity with Standardized Core Competencies

	<u>Quad Council PHN Competencies</u>		<u>Council on Linkages Core Competencies</u>	
	<i>n</i>	%	<i>n</i>	%
I am not familiar with it	21	52.5	15	37.5
I have heard about it but have not seen the document	8	20.0	11	27.5
I have read or skimmed parts of the document	8	20.0	12	30.0
I have read the entire document and am familiar with it	3	7.5	2	5.0
Total	40	100.0	40	100.0

When participants were questioned regarding whether or not they had access to a copy of the Quad Council PHN Competencies, 75% ($n=30$) replied no.

In evaluating the answers to the question regarding how these PHNs learned about the Quad Council PHN Competencies, 27% ($n=7$) responded “colleagues(s) in the work environment” and 19% ($n=5$) responded “APHA/PHN section meeting, newsletter/website, and/or communication.” Under “other” in this question the qualitative responses included:

1. “Public health nursing orientation and college”
2. “I think I heard a speaker on it at a meeting”
3. “This survey and the preparation for it”
4. “They are part of our annual performance appraisals”
5. “Not sure”
6. “National Association of County and City Health Officials”
7. “EP [emergency preparedness] program meeting”

In analyzing these qualitative responses the majority ($n=5$) of these responses pertained to the “colleagues in the work environment” category. This inclusion of the qualitative responses into this category brings the percentage for this cohort to 46% ($n=12$).

Implementation of Quad Council PHN Competencies

Nineteen out of the 40 participants indicated familiarity with the Quad Council PHN Competencies and 47.4% ($n=9$) of this “familiar” group replied “yes” when asked if they had ever used these competencies in the work setting or academic setting. In

describing their usage or contemplation of usage of the Quad Council PHN competencies there was a mixed response from this “familiar” group. This response was almost equally divided between the concepts of either thinking about or making plans to use the competencies and using the competencies to a limited or moderate degree. Six respondents indicated “yes” when queried if they were currently using the Quad Council PHN Competencies. When asked to rate the integration of the Quad Council PHN Competencies into the work environment on a scale of one to ten, with one indicating minimal integration and ten indicating maximum integration, eight participants responded. The average number selected on the scale was 4.12 ± 2.16 *SD*.

Of those who reported using the Quad Council PHN Competencies currently in the work environment, the rank order from the list of “check all that apply” responses from the survey, as well as “other” responses, is provided in Table 5. As indicated by the frequencies some participants are utilizing these competencies for more than one application in the work environment.

Table 5. Implementation of the Quad Council PHN Competencies

	<i>n</i>	%
For Orientation Purposes	4	44.4
As a Tool to Identify Continuing Education Needs	4	44.4
Annual Evaluation Tool	3	33.3
Competency Based Testing	2	5.0
Other*		
Reference	1	2.5
Tool for All Staff	1	2.5

Note. * “Other” are categories supplied by the participants

Two respondents indicated that they had used the Quad Council PHN Competencies and decided to stop using them at a later date.

Barriers to Implementation of Competencies

In assessing the qualitative data surrounding the question of barriers to utilization of the Quad Council PHN Competencies, the overwhelming theme presented by the “unfamiliar” participants ($n=20$), that replied, was lack of knowledge regarding the existence of the document. This theme was presented by 80% ($n=16$) of this group and is highlighted by comments such as “I have never heard of it” and “Unfamiliar with them, haven’t seen them.” Other comments that were made on the subject of barriers included issues related to resources and the element of time “it is to time consuming to go through

all the competencies and try to incorporate them” and “there is enough work to be done here without looking for new hoops to jump through.”

Nevertheless, of those “unfamiliar” participants ($n=22$) the majority (91%, $n=20$) of this group replied they would consider using the Quad Council PHN Competencies if they were in a more useable form and if they were promoted as a best practice model by a designated professional organization.

Additional comments that were delivered at the end of the survey included “I do feel competencies are important but this is a one-public-health-nurse-office and at this time there is not time to implement them” and “do you see more information becoming available for supervisors as we try to implement?”

CHAPTER 5

DISCUSSION

Summary

In January 2007, 40 PHNs responded to an electronic survey sent from a Montana State University graduate student. Key contact individuals in Montana's 58 local health jurisdictions were solicited to participate and disseminate the survey to all PHNs practicing in population-focused public health in their respective jurisdiction. This exploratory research survey examined familiarity and usage of the Quad Council PHN Competencies which were adopted by the Quad Council of Public Health Nursing Organizations in 2003. A substantial portion, 47.5% ($n=19$) of the respondents were familiar with the competency document in question and of this group approximately one third were using the competencies in the work setting.

The Quad Council PHN Competencies is a relatively new innovation; however the competencies are directly linked to the COL Core Competencies adopted in 2001. The current concern regarding an optimally functioning public health workforce, reflected through knowledge and skills or competencies, can be traced back to 1988 in the IOM's report, *Future of Public Health*. Since the publication of this benchmark report there have been numerous organizations and multiple reports concerned with a adequately prepared public health workforce.

Rogers's (1995) diffusion of innovations theory provides a theoretical framework to examine the adoption of new ideas. Adoption of an innovation is contingent on

channels of communication. Characteristics of the new idea or practice as well as characteristics of the individual, related to the rate of adoption, are presented in this theory. According to Rogers (1995) an idea will be more quickly adopted if it is perceived as superior to existing ideas, is compatible with the needs of the adopter, is uncomplicated, and can be adopted in increments. The Quad Council PHN Competencies reflects these characteristics for 15% ($n=6$) of the survey participants, those who are currently using the competencies. In addition this adoptive group can be considered “innovators” and “early adopters,” or belonging to two of the categories of adopters identified by Rogers (1995). These “innovators” are characterized by qualities of risk takers and the ability to cope with uncertainty. “Adopters” are those in the group that are opinion leaders and role models.

Research Question 1: Demographic Characteristics - Montana's PHNs

Many of Montana's PHNs have an associate degree in nursing or are a licensed practical nurse, 25% ($n=10$), even though the Quad Council of Public Health Nursing Organizations has identified the bachelors degree as the entry level for public health nursing. An additional barrier that one must consider in regards to this rural state is that the Montana Board of Nursing does not require any credentialing for public health nurses or continuing educational to maintain an active license for registered nurses.

The majority of the nurses that responded to the survey (80%, $n=32$) were from jurisdictions that serve less than 10,000 people. Even though the majority of Montana's local health jurisdictions reside in these sparse geographical areas the majority of

Montana's public health nurses work in the large jurisdictions. There may be a few reasons surrounding this inconsistency, first the key contact individuals from the LHJ may not have disseminated the survey letter and link to those in their jurisdictions for undetermined reasons. This would have limited the number of nurses in the medium and large jurisdictions that were exposed to the survey. Secondly it is possible that some PHNs do not have access to computers or internet in the work setting.

Many of the PHNs were not members of any public health and/or nursing organization that disseminated the Quad Council PHN Competencies to their constituents. Oppewal, Lamanna, and Glenn (2006) linked knowledge of the Quad Council PHN Competencies to belonging to a PHN organization or being a member of an academic institution. If the key communication channel for disseminating the Quad Council PHN Competencies were organizations related to the Quad Council, then the probability that Montana's PHNs would be familiar with the document are poor. In addition, none of the survey participants indicated that they were a public health nurse educator or affiliated with academia, likewise limiting the channels of communication regarding this document.

As demonstrated by the number of public health programs selected by PHNs (see Table 3) Montana's PHNs perform a variety of functions. A majority, 77.5% ($n=31$), of the respondents indicated that they are involved in emergency preparedness program. This group may be familiar with the COL Core Competencies located through a link on the MT DPHHS's Montana Public Health Training and Communication Centers web

page. Yet, this group may be unaware of the direct correlation between the COL Core Competencies and the Quad Council's documents.

Research Question 2: How Familiar are PHNs in a Rural State with the Quad Council PHN Competencies?

Of the 40 participants responding to the survey, 47.5% ($n=19$) were familiar with the Quad Councils PHN Competencies. In this "familiar" group colleagues in the work environment was the most frequently cited category from which PHNs learned of the competencies. This finding differs from Oppewal, Lamanna, and Glenn's (2006) research which indicated that most of their participants learned about the document from PHN organizations. However, in the aforementioned study the survey was only disseminated to PHNs belonging to nursing organizations included in the Quad Council of Public Health Nursing Organizations. The colleague connection in this study meshes with Roger's (1995) effects of communication channels on rate of diffusion in relationship to the population that responded. Diffusion of the Quad Councils PHN Competencies is a social process depended on the communication channels one is exposed to and the experiences of others. Interpersonal communication may be the most effective method of persuasion leading to adoption of an innovation according to Rogers (1995).

The lack of association with a nursing or public health organization may have hindered the diffusion of the Quad Council PHN Competencies in this rural state. Of those who participated in the survey, 22.5% ($n= 9$) were not a member of any nursing organization or public health organization.

Research Question 3: How are PHNs Using the
Quad Council PHN Competencies in the Work Setting?

Of the PHNs in the rural state surveyed, 47.5% ($n=19$) were familiar with the Quad Councils PHN Competencies. Approximately one-third of this “familiar” group had adopted and implemented the competencies in the work setting. This can be considered a relatively strong utilization when one takes into consideration that only 17.5% ($n=7$) of the total survey participants belong to any organization represented by the Quad Council of Public Health Nursing Organizations who was the main source of formal dissemination of this competency document.

The two most frequently cited areas of implementation and usage from this group were for “orientation purposes” and as a “tool for identifying continuing education needs in the practice setting.” Both these categories were credited with 44.4% ($n=4$) of the number of responses. All the respondents that were currently using the competencies provided comments regarding where the competencies were being used: two responses indicated areas related to disease surveillance on an “everyday basis,” one for developing a “strategic plan for our health department,” one for staff “performance evaluations,” and one as a “reference only.”

These examples correlate with the intentions of the Quad Council of Public Health Nursing Organizations usage of the competencies in the practice setting. These intended functions include “facilitate education, orientation, training and lifelong learning using an interdisciplinary model” (Quad Council of Public Health Nursing Organizations, 2004, p. 443).

A small portion ($n=2$) of those who had adopted the Quad Councils PHN Competencies decided at a later date not to use them. In assessing this phenomenon in relationship to Rogers's (1995) diffusion of innovations theory, discontinuation is an alternative to adoption. The interpretation surrounding this situation may have been that the innovation did not conform to the needs of the adopter, it was too complex of an innovation, it had little or no relative advantage when compared to the existing situation, or the innovation did not lend itself to incremental adoption.

Research Question 4: What are the Perceived Barriers to Using the Quad Council PHN Competencies in the Work Setting?

Over half of the survey participants were not familiar with the Quad Council PHN Competencies ($n=21$). Of this "unfamiliar" group, 20 responded to the open-ended inquiry concerning barriers to using the competencies. Access to the Quad Council's document was hampered by lack of knowledge of their existence. The overarching theme from this group was this lack of knowledge. This theme was asserted by 80% ($n=16$) of the participants that provide qualitative comments. Examples written by this group included: (a) "unaware that this existed," (b) "this survey is the first I've heard of them," and (c) "don't know what they are." This "unfamiliar" group, according to Rogers (1995), did not belong to any of the social systems disseminating the Quad Councils PHN Competencies and/or have access to information channels that may have communicated information about them. Reflected in this barrier is Rogers's (1995) characteristic of observability of the innovation. For this group the innovation was not visible or observable. This characteristic influences the rate of adoption. Out of 40 participants only

nine stated they had a copy of the Quad Council PHN Competencies even though they are located on several internet sites.

In addition to the above mentioned main theme surrounding barriers there were comments related to lack of resources. These comments reflect this theme,

“Providing services to our community is our main commitment and this keeps our limited staff very busy. It is too time consuming to go through all the competencies and try to incorporate them.”

“...this is a one-public-health-nurse office and at this time there is not time to implement them.”

Public health nurses, perhaps especially in frontier and rural health jurisdictions, may not have the time or resources to implement these competences. According to Hendricks (2006) time was a factor related to lack of continuing education among rural nurses.

Additional perceived negative attributes of the innovation from the perspective of the participants must also be taken into consideration. This included the concern of compatibility or the ability of the document to conform to the values and needs of the participant (Rogers, 1995). This is reflected in the statement “Priorities. There is enough work to be done here without looking for new hoops to jump through.” This perceived negative attribute will affect rate of adoption.

Critical to the lack of awareness barrier is the acknowledgement from the “unfamiliar” participants that they would consider using them if a designated organization was instrumental in promoting their use as a best practice model. Montana has a decentralized public health system and there is no fundamental entity upholding the interests of all PHNs. An overwhelming 91% of the “unfamiliar” participants would

consider using these competencies if they were presented in a useable format and promoted by the Montana Public Health Association or the MT DPHHS.

Limitations

As with any study there are limitations to be considered when examining the results. The specific number of RNs and LPNs employed in Montana's 58 LHJ is unknown. Therefore, the representativeness of the study sample in relationship to the actual population can not be determined. Also, the relatively small sample size must be taken into consideration.

Contributing to the limited representativeness and sample size was the methodology employed in gaining access to the PHNs. The contact list obtained from the Montana Public Health Nurse Directors contained some outdated and inaccurate email addresses, plus not every LHJ was represented by this organization. To compensate for those missing LHJ, key contact individual's email addresses were obtained from the MT DPHHS, Public Health and Safety Division's web page on local public health agencies and from individuals with knowledge of key tribal contact information. However, even with these combined resources contributing key contact information, not all contact information was correct or current. After all email address options were exhausted only two LHJ had an undeliverable key contact e-mail address. But a hindering factor related to participation in this survey may have been that some of the key contact individuals were not directly related to public health nursing and therefore may not have been

invested in a project concerning public health nursing. These individuals may have been less likely to disseminate the survey.

Another limitation was the dissemination mechanism of the survey. Any of the key contact individuals, at the LHJ, could have opted not to forward the survey to the PHNs in their respective jurisdiction. This would have limited the number of PHNs having the opportunity to participate in the survey.

As with all computer based surveys, if any of the PHNs did not have access to a computer he/she would not have had the capabilities to participate in the survey. Also, the survey format was not contingent on answering all the applicable questions and some surveys did have missing data. However, all surveys were recorded and analyzed.

This survey was adapted from a previously utilized study and the wording and intent of the majority of the questions was not modified. Some of this intentional, original phrasing may have not been pertinent to the population in this study, especially phrasing dealing with “academic setting.” The adapted tool did not undergo rigorous reliability and validity testing.

Finally, this survey was intentionally brief in order to increase response rates and not burden the participants. This brevity limited the depth of information on the perceived attributes of the Quad Council PHN Competencies and the diffusion process.

Recommendations

This research highlights the lack of awareness of public health nurses in a rural state regarding the existence of the Quad Council PHN Competencies. Over 50% of the

PHNs survey had no knowledge of this document. With this deficiency in mind the following recommendations are submitted:

1. Public health nurses may not belong to any nationally recognized nursing or public health organizations, but they may be a member of a state organization, such as the Montana Public Health Association (MPHA). The MPHA could provide information at its annual fall conference on the Quad Council PHN Competencies and the new Public Health Nursing: Scope and Standards of Practice published (2007) by the American Nurses Association. In addition MPHA could post a link to the COL Core Competencies and the Quad Council PHN Competencies on their new web site.

2. The MT DPHHS's, Family and Community Health Bureau sponsors an annual spring conference. This group could present a break out session on competencies related to various public health disciplines and include PHN competencies within this session.

3. MT DPHHS maintains a continuing educational interactive web site, Montana Public Health Training and Communication Center. This site does contain information on competencies related to public health. However the Quad Council PHN Competencies are not listed. With the nursing profession playing a major role in public health it is recommended that this competency document be added to this site.

4. MT DPHHS does not have an accessible, formal mechanism for identifying and communicating with all nurses employed in public health. In this era of increased funding in emergency preparedness and concerns surrounding this arena, it would seem prudent to have this workforce identified.

Future research related to the Quad Council PHN Competencies and this study could include the following:

1. This study only explored the familiarity and usage of the Quad Council PHN Competencies in a rural state. Future research is needed to assess if rural states differ from more populous states in the aspects investigated.
2. Montana has a decentralized public health system. Does knowledge of and use of the Quad Council PHN Competencies differ in states that have a centralized public health system?
3. Future research should explore the rationale behind the discontinued use of the Quad Council PHN Competencies by some LHJ.
4. Many of the participants in this exploratory research were employed in small LHJ. Does the size of the jurisdiction have any impact on knowledge and implementation of the Quad Council PHN Competencies?
5. Many PHN in this study did not belong to any formal nursing or public health organization. This relationship may contribute to lack of information about the Quad Council's document as well as other public health issues. Further research is needed in understanding why public health nurses do not belong to any formal informational group and if Montana PHNs differ greatly from PHNs working in other states in this aspect.

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APPENDICES

APPENDIX A

CORE FUNCTIONS OF PUBLIC HEALTH

I. Assessment:

The committee recommends every public health agency regularly and systematically collect, assemble, analyze, and make available information on the health needs of the community, including statistics on health status, community health needs, and epidemiological and other studies of health problems.

II. Policy Development:

The committee recommends that every public health agency exercise its responsibility to serve the public interest in the development of comprehensive public health policies by promoting the use of the scientific knowledge base in decision making about public health and by developing public health policy. Agencies must take a strategic approach, developed on the basis of positive appreciation for the democratic political process.

III. Assurance:

The committee recommends that public health agencies assure their constituents that services necessary to achieve agreed upon goals are provided, either by encouraging actions by other entities (private or public sector), by requiring such action through regulation, or by providing services directly.

The committee further recommends that each public health agency involve lay policymakers and the general public in determining a set of high-priority personal and community-wide health services that governments will guarantee to every member of the community. This guarantee should include subsidization or direct provision of high-priority personal health services for those unable to afford them.

APPENDIX B

TEN ESSENTIAL PUBLIC HEALTH SERVICES

The Essential Public Health Services

The Essential Public Health Services describe the public health activities that should be undertaken in all communities. The Core Public Health Functions Steering Committee developed the framework for the Essential Services in 1994. The Essential Services provide a working definition of public health and a guiding framework for the responsibilities of local public health systems.

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

APPENDIX C

COUNCIL ON LINKAGES CORE COMPETENCIES
FOR PUBLIC HEALTH PROFESSIONALS

Analytic/Assessment Skills

- Defines a problem
- Determines appropriate uses and limitations of both quantitative and qualitative data
- Selects and defines variables relevant to defined public health problems
- Identifies relevant and appropriate data and information sources
- Evaluates the integrity and comparability of data and identifies gaps in data sources
- Applies ethical principles to the collection, maintenance, use, and dissemination of data and information
- Partners with communities to attach meaning to collected quantitative and qualitative data
- Makes relevant inferences from quantitative and qualitative data
- Obtains and interprets information regarding risks and benefits to the community
- Applies data collection processes, information technology applications, and computer systems storage/retrieval strategies
- Recognizes how the data illuminates ethical, political, scientific, economic, and overall public health issues

Policy Development/Program Planning Skills

- Collects, summarizes, and interprets information relevant to an issue
- States policy options and writes clear and concise policy statements
- Identifies, interprets, and implements public health laws, regulations, and policies related to specific programs
- Articulates the health, fiscal, administrative, legal, social, and political implications of each policy option
- States the feasibility and expected outcomes of each policy option
- Utilizes current techniques in decision analysis and health planning
- Decides on the appropriate course of action
- Develops a plan to implement policy, including goals, outcome and process objectives, and implementation steps
- Translates policy into organizational plans, structures, and programs
- Prepares and implements emergency response plans
- Develops mechanisms to monitor and evaluate programs for their effectiveness and quality

Communication Skills

- Communicates effectively both in writing and orally, or in other ways
- Solicits input from individuals and organizations

- Advocates for public health programs and resources
- Leads and participates in groups to address specific issues
- Uses the media, advanced technologies, and community networks to communicate information
- Effectively presents accurate demographic, statistical, programmatic, and scientific information for professional and lay audiences
- **Attitudes**
- Listens to others in an unbiased manner, respects points of view of others, and promotes the expression of diverse opinions and perspectives

Cultural Competency Skills

- Utilizes appropriate methods for interacting sensitively, effectively, and professionally with persons from diverse cultural, socioeconomic, educational, racial, ethnic and professional backgrounds, and persons of all ages and lifestyle preferences
- Identifies the role of cultural, social, and behavioral factors in determining the delivery of public health services
- Develops and adapts approaches to problems that take into account cultural differences
- **Attitudes**
- Understands the dynamic forces contributing to cultural diversity
- Understands the importance of a diverse public health workforce

Community Dimensions of Practice Skills

- Establishes and maintains linkages with key stakeholders
- Utilizes leadership, team building, negotiation, and conflict resolution skills to build community partnerships
- Collaborates with community partners to promote the health of the population
- Identifies how public and private organizations operate within a community
- Accomplishes effective community engagements
- Identifies community assets and available resources
- Develops, implements, and evaluates a community public health assessment
- Describes the role of government in the delivery of community health services

Basic Public Health Sciences Skills

- Identifies the individual's and organization's responsibilities within the context of the Essential Public Health Services and core functions

- Defines, assesses, and understands the health status of populations, determinants of health and illness, factors contributing to health promotion and disease prevention, and factors influencing the use of health services
- Understands the historical development, structure, and interaction of public health and health care systems
- Identifies and applies basic research methods used in public health
- Applies the basic public health sciences including behavioral and social sciences, biostatistics, epidemiology, environmental public health, and prevention of chronic and infectious diseases and injuries
- Identifies and retrieves current relevant scientific evidence
- Identifies the limitations of research and the importance of observations and interrelationships
- **Attitudes**
- Develops a lifelong commitment to rigorous critical thinking

Financial Planning and Management Skills

- Develops and presents a budget
- Manages programs within budget constraints
- Applies budget processes
- Develops strategies for determining budget priorities
- Monitors program performance
- Prepares proposals for funding from external sources
- Applies basic human relations skills to the management of organizations, motivation of personnel, and resolution of conflicts
- Manages information systems for collection, retrieval, and use of data for decision-making
- Negotiates and develops contracts and other documents for the provision of population-based services
- Conducts cost-effectiveness, cost-benefit, and cost-utility analyses

Leadership and Systems Thinking Skills

- Creates a culture of ethical standards within organizations and communities
- Helps create key values and shared vision and uses these principles to guide action
- Identifies internal and external issues that may impact delivery of essential public health services (i.e., strategic planning)
- Facilitates collaboration with internal and external groups to ensure participation of key stakeholders
- Promotes team and organizational learning

- Contributes to development, implementation, and monitoring of organizational performance standards
- Uses the legal and political system to effect change
- Applies theory of organizational structures to professional practice

APPENDIX D

QUAD COUNCIL PUBLIC HEALTH NURSING COMPETENCIES

Domain #1: Analytic Assessment Skills	Generalist/Staff PHN		Manager/CNS/Consultant/ Program Specialist/Executive	
	Individuals & Families	Populations/ Systems	Individuals & Families	Populations/ Systems
1. Defines a problem	<i>Proficiency</i>	Knowledge	Proficiency	Proficiency
2. Determines appropriate uses and limitations of both quantitative and qualitative data	Knowledge	Awareness	Proficiency	Proficiency
3. Selects and defines variables relevant to defined public health problems	Knowledge	Knowledge	Proficiency	Proficiency
4. Identifies relevant and appropriate data and information sources	Proficiency	Knowledge	Proficiency	Proficiency
5. Evaluates the integrity and comparability of data and identifies gaps in data sources	Knowledge	Awareness	Proficiency	Proficiency
6. Applies ethical principles to the collection, maintenance, use, and dissemination of data and information	Proficiency	Knowledge	Proficiency	Proficiency
7. Partners with communities to attach meaning to collected quantitative and qualitative data	N/A (see Note 1)	Knowledge	N/A (see Note 1)	Proficiency
8. Makes relevant inferences from quantitative and qualitative data	Knowledge	Awareness	Proficiency	Proficiency
9. Obtains and interprets information regarding risks and benefits to the community	Knowledge	Knowledge	Proficiency	Proficiency
10. Applies data collection processes, information technology applications, and computer systems storage/retrieval strategies	Knowledge	Awareness	Proficiency	Proficiency
11. Recognizes how the data illuminates ethical, political, scientific, economic, and overall public health issues	Knowledge	Awareness	Proficiency	Proficiency

Domain #2: Policy Development/Program Planning Skills		Generalist/Staff PHN		Manager/CNS/Consultant/Program Specialist/Executive	
		Individuals & Families	Populations/ Systems	Individuals & Families	Populations/ Systems
1.	Collects, summarizes, and interprets information relevant to an issue	Knowledge	Awareness	Proficiency	Proficiency
2.	States policy options and writes clear and concise policy statements	Awareness	Awareness	Proficiency	Proficiency
3.	Identifies, interprets, and implements public health laws, regulations, and policies related to specific programs	Knowledge	Knowledge	Proficiency	Proficiency
4.	Articulates the health, fiscal, administrative, legal, social, and political implications of each policy option	Awareness	Awareness	Proficiency	Proficiency
5.	States the feasibility and expected outcomes of each policy option	Awareness	Awareness	Proficiency	Proficiency
6.	Utilizes current techniques in decision analysis and health planning	Knowledge	Awareness	Proficiency	Proficiency
7.	Decides on the appropriate course of action	Knowledge	Awareness	Proficiency	Proficiency
8.	Develops a plan to implement policy, including goals, outcome and process objectives, and implementation steps	Knowledge	Awareness	Proficiency	Proficiency
9.	Translates policy into organizational plans, structures, and programs	N/A (see Note 1)	Awareness	N/A (see Note 1)	Proficiency
10.	Prepares and implements emergency response plans	Knowledge	Knowledge	Proficiency	Proficiency
11.	Develops mechanisms to monitor and evaluate programs for their effectiveness and quality	Knowledge	Knowledge	Proficiency	Proficiency

Domain #3: Communication Skills		Generalist/Staff PHN		Manager/CNS/Consultant/ Program Specialist/Executive	
		Individuals & Families	Populations/ Systems	Individuals & Families	Populations/ Systems
1.	Communicates effectively both in writing and orally, or in other ways	Proficiency	Knowledge	Proficiency	Proficiency
2.	Solicits input from individuals and organizations	Proficiency	Knowledge	Proficiency	Proficiency
3.	Advocates for public health programs and resources	Proficiency	Knowledge	Proficiency	Proficiency
4.	Leads and participates in groups to address specific issues	Proficiency	Knowledge	Proficiency	Proficiency
5.	Uses the media, advanced technologies, and community networks to communicate information	Knowledge	Awareness	Knowledge*	Knowledge*
				* reflects ability to determine need for and to utilize experts in these areas	
6.	Effectively presents accurate demographic, statistical, programmatic, and scientific information for professional and lay audiences	Knowledge	Knowledge	Proficiency	Proficiency
7.	Attitudes: Listens to others in an unbiased manner, respects points of view of others, and promotes the expression of diverse opinions and perspectives	Proficiency	Proficiency	Proficiency	Proficiency

Domain #4: Cultural Competency Skills	Generalist/Staff PHN		Manager/CNS/Consultant/ Program Specialist/Executive	
	Individuals & Families	Populations/ Systems	Individuals & Families	Populations/ Systems
1. Utilizes appropriate methods for interacting sensitively, effectively, and professionally with persons from diverse cultural, socioeconomic, educational, racial, ethnic and professional backgrounds, and persons of all ages and lifestyle preferences	Proficiency	Proficiency	Proficiency	Proficiency
2. Identifies the role of cultural, social, and behavioral factors in determining the delivery of public health services	Knowledge	Knowledge	Proficiency	Proficiency
3. Develops and adapts approaches to problems that take into account cultural differences	Proficiency	Knowledge	Proficiency	Proficiency
4. Attitudes: Understands the dynamic forces contributing to cultural diversity	N/A (see Note 1)	Knowledge	N/A (see Note 1)	Proficiency
5. Attitudes: Understands the importance of a diverse public health workforce	N/A (see Note 1)	Knowledge	N/A (see Note 1)	Proficiency

Domain #5: Community Dimensions of Practice Skills	Generalist/Staff PHN		Manager/CNS/Consultant/Program Specialist/Executive	
	Individuals & Families	Populations/ Systems	Individuals & Families	Populations/ Systems
1. Establishes and maintains linkages with key stakeholders		Knowledge		Proficiency
2. Utilizes leadership, team building, negotiation, and conflict resolution skills to build community partnerships		Knowledge		Proficiency
3. Collaborates with community partners to promote the health of the population		Knowledge		Proficiency
4. Identifies how public and private organizations operate within a community		Knowledge		Proficiency
5. Accomplishes effective community engagements		Knowledge		Proficiency
6. Identifies community assets and available resources		Knowledge		Proficiency
7. Develops, implements, and evaluates a community public health assessment		Knowledge		Proficiency
8. Describes the role of government in the delivery of community health services		Knowledge		Proficiency

Domain #6: Basic Public Health Sciences Skills		Generalist/Staff PHN		Manager/CNS/Consultant/ Program Specialist/Executive	
		Individuals & Families	Populations/ Systems	Individuals & Families	Populations/ Systems
1.	Identifies the individual's and organization's responsibilities within the context of the Essential Public Health Services and core functions	Knowledge	Knowledge	Proficiency	Proficiency
2.	Defines, assesses, and understands the health status of populations, determinants of health and illness, factors contributing to health promotion and disease prevention, and factors influencing the use of health services	Knowledge	Knowledge	Proficiency	Proficiency
3.	Understands the historical development, structure, and interaction of public health and health	Knowledge	Knowledge	Proficiency	Proficiency
4.	Identifies and applies basic research methods used in public health	Awareness	Awareness	Knowledge	Knowledge
5.	Applies the basic public health sciences including behavioral and social sciences, biostatistics, epidemiology, environmental public health, and prevention of chronic and infectious diseases and injuries	Awareness	Awareness	Knowledge	Knowledge
6.	Identifies and retrieves current relevant scientific evidence	Knowledge	Knowledge	Proficiency	Proficiency
7.	Identifies the limitations of research and the importance of observations and interrelationships	Awareness	Awareness	Knowledge	Knowledge
8.	Attitudes: Develops a lifelong commitment to rigorous critical thinking	Proficiency	Proficiency	Proficiency	Proficiency

Domain #7: Financial Planning and Management Skills	Generalist/Staff PHN		Manager/CNS/Consultant/Program Specialist/Executive	
	Individuals & Families	Populations/ Systems	Individuals & Families	Populations/ Systems
1. Develops and presents a budget		Awareness		Proficiency
2. Manages programs within budget constraints		Knowledge		Proficiency
3. Applies budget processes		Awareness		Proficiency
4. Develops strategies for determining budget priorities		Awareness		Proficiency
5. Monitors program performance		Knowledge		Proficiency
6. Prepares proposals for funding from external sources		Awareness		Proficiency
7. Applies basic human relations skills to the management of organizations, motivation of personnel, and resolution of conflicts		Knowledge		Proficiency
8. Manages information systems for collection, retrieval, and use of data for decision-making		Awareness		Proficiency
9. Negotiates and develops contracts and other documents for the provision of population-based services		Awareness		Proficiency
10. Conducts cost-effectiveness, cost-benefit, and cost utility analyses		Awareness		Proficiency

Domain #8: Leadership and Systems Thinking Skills	Generalist/Staff PHN		Manager/CNS/Consultant/Program Specialist/Executive	
	Individuals & Families	Populations/ Systems	Individuals & Families	Populations/ Systems
1. Creates a culture of ethical standards within organizations and communities		Knowledge		Proficiency
2. Helps create key values and shared vision and uses these principles to guide action		Knowledge		Proficiency
3. Identifies internal and external issues that may impact delivery of essential public health services (i.e. strategic planning)		Knowledge		Proficiency
4. Facilitates collaboration with internal and external groups to ensure participation of key stakeholders		Knowledge		Proficiency
5. Promotes team and organizational learning		Knowledge		Proficiency
6. Contributes to development, implementation, and monitoring of organizational performance standards		Knowledge		Proficiency
7. Uses the legal and political system to effect change		Knowledge		Proficiency
8. Applies theory of organizational structures to professional practice		Awareness		Proficiency

Definitions:

- **Awareness:** Basic level of mastery of the competency. Individuals may be able to identify the concept or skill but have limited ability to perform the skill.
- **Knowledge:** Intermediate level of mastery of the competency. Individuals are able to apply and describe the skill.
- **Proficiency:** Advanced level of mastery of the competency. Individuals are able to synthesize, critique or teach the skill.

Note 1: (applicable to Domains 1, 2 and 4) These competencies, because of their population or system-focused language, do not apply at the individual/family level, but are applicable to the broader context of population-focused public health services and systems.

APPENDIX E

PUBLIC HEALTH NURSING SURVEY, 2004
BY
S. OPPEWAL, B.F. LAMANNA, & L.L. GLENN

Aug 18, 2004 Version

Instructions:

The purpose of this survey is to help understand how agencies are using the Quad Council PHN Competencies that were approved April, 2003. The APHA PHN Section, ACHNE, and the ASTDN are collaborating on this survey. The survey is being sent to the membership lists. Findings will be presented in aggregate format only at the APHA Annual Meeting November 9, 2004.

The survey should take about 10 minutes to complete. All responses are anonymous and your participation is voluntary. We refer to the Quad Council PHN Competencies as the PHN Competencies throughout this survey. Complete the survey only once (in the event you received this request from multiple PHN organizational memberships). Thank you for your participation. We hope the results will help improve current public health nursing practice and education.

1. I describe myself primarily as a:
 - a. Generalist/Staff Public Health Nurse
 - b. Manager/CNS/Consultant/Program Specialist/Executive
 - c. Faculty member
 - d. Other (please specify)

2. How many years in **TOTAL** have you practiced and/or taught public health nursing?
 ____ number of years

3. What best describes your educational background? Check initial and terminal degrees.
 - a. ADN
 - b. BSN
 - c. BA
 - d. MSN
 - e. MA in other field
 - f. Post-Master's degree certificate
 - g. PhD in nursing
 - h. Doctorate in other field

4. What public health nursing organization(s) do you belong to? Check all that apply.
 - a. ANA
 - b. APHA
 - c. ASTDN
 - d. ACHNE

5. How familiar are you with the Council on Linkages' "Core Competencies for Public Health Professionals"? (Choose one best answer).
 - a. I am not familiar with it.
 - b. I have heard about it but have not seen the document.
 - c. I have read or skimmed parts of the document.
 - d. I have read the entire document and am familiar with it.

6. Do you have a copy or do you have access to a copy of the PHN Competencies?
 - a. Yes
 - b. No

7. How familiar are you with the PHN Competencies that were endorsed by the Quad Council in April 2003? (Choose one best answer)
 - a. I am not familiar with it.
 - b. I have heard about it but have not seen the document.
 - c. I have read or skimmed parts of the document.
 - d. I have read the entire document and am familiar with it.

If you are NOT familiar with the PHN Competencies and answered (a) to question #7, please skip to question # 13.

8. How did you learn about the PHN Competencies? Check all that apply.
 - a. Colleague(s) at work
 - b. APHA PHN Section meeting, newsletter/website, and/or communication
 - c. ANA meeting, newsletter/website, and/or communication
 - d. ACHNE meeting, newsletter/website, and/or communication
 - e. ASTDN meeting, newsletter/website, and/or communication
 - f. Other (please specify)

9. Have you ever used the PHN Competencies in your work or academic setting?
 - a. Yes
 - b. No

10. Are you currently using the PHN Competencies in your work or academic setting?
 - a. Yes
 - b. No

11. If you are currently using the PHN Competencies in your work setting, or making plans to use them, what one statement best describes how you are using them?
- We are thinking about using them
 - We are making plans to use them
 - We are using them in a limited manner
 - We are using them to a moderate degree
12. If you are using the PHN Competencies, where are you using them? (Check all that apply)
- In an undergraduate class
 - In an undergraduate clinical
 - In a graduate class
 - In a graduate clinical
 - For orientation purposes in a practice setting
 - As a professional development tool to identify CE needs
 - As part of the annual evaluation of our nurses
 - As competency-based testing for educational or practice purposes
 - Other (please specify)
13. Have you or your agency used the competencies or considered using them, and then decided at a later time to **not** use them at your work setting?
- Yes
 - No

If you are using the PHN Competencies in your work setting, please skip to question #17.

14. If you are **not** using the PHN Competencies, what has prevented you from using them? (Comment in the box)
15. Would you consider using them if they were available in a more useable form - in other words if they were adapted for use as an evaluation tool, promotion tool or a set of clinical competencies for students?
- Yes
 - No

16. If you are not using the PHN Competencies, would you consider using them if your PHN professional organization was more active in promoting their use as a best practice model?
 - a. Yes
 - b. No

17. This is the end of the formal survey, but we welcome additional comments about the PHN Competencies in the box below.

Thank you!

APPENDIX F

PUBLIC HEALTH NURSING SURVEY, 2007

January 2007

Instructions:

The purpose of this survey is to help understand how familiar agencies and public health nurses in Montana are with the Quad Council PHN Competencies that were approved April, 2003. It will also explore the usage of these competencies by agencies and public health nurses. Findings will be presented in a Montana State University graduate nursing student thesis.

The president of the Montana Public Health Nursing Directors was contacted regarding this thesis project. Permission was granted from this association to utilize their email list serve as a method of disseminating this survey.

A public health nurse is defined by the American Public Health Association, Public Health Nursing Section as: “a licensed nurse whose primary focus is to promote health and prevent diseases for entire populations using knowledge from nursing, social and public health sciences.” (APHA, Public Health Nursing Section, Definition 2003). All LPNs and RNs employed by local health jurisdictions in population-focused public health are encouraged to participate in this study.

The survey should take about 10-15 minutes to complete. All responses are anonymous and your participation is voluntary. We refer to the Quad Council PHN Competencies as the PHN Competencies throughout this survey. Complete the survey only once. Thank you for your participation. We hope the results will help improve current public health nursing practice and education. Proceeding with the survey indicates informed consent.

1. Age of survey participant:

- a. younger than 20 years of age
- b. 20-29 years
- c. 30-39 years
- d. 40-49 years
- e. 50-59 years
- f. 60-69 years
- g. 70 years and older

2. The Public Health Jurisdiction where I’m employed serves a geographical area with a population of:

- a. 10,000 people or less (small jurisdiction)
- b. 10,001 to 29,999 people (medium jurisdiction)
- c. 30,000 or more people (large jurisdiction)

3. What is your professional position in the public health field? (Please select the one for your primary job position)

- a. Public Health Nurse
- b. Public Health Nurse Educator
- c. Public Health Nurse Infectious Disease Specialist
- d. Public Health Nurse Health Promotion Specialist
- e. Public Health Nurse Administrator
- f. Other, please specify _____

4. Check all the public health programs that you are involved in? (Please check all that apply)

- a. Maternal Child Health/Home Visit
- b. Immunization
- c. WIC
- d. Emergency Preparedness
- e. Disease Surveillance
- f. Tobacco Prevention
- g. Montana Breast and Cervical Health Program
- h. Family Planning
- i. Other _____

5. I describe myself primarily as a:

- e. Generalist/Staff Public Health Nurse
- f. Manager/CNS/Consultant/Program Specialist/Executive/Public Health Officer
- g. Academic Faculty member
- h. Other, please specify _____

6. How many years in **TOTAL** have you practiced and/or taught public health nursing?

_____ number of years

7. What best describes your highest educational background?

- e. LPN
- f. ADN
- g. BSN
- h. BA
- i. MSN
- j. MA in other field
- k. Post-Master's degree certificate
- l. PhD in nursing

- m. Doctorate in other field
 - n. MPH
8. What public health nursing organization(s) and/or nursing organization(s) do you belong to? Check all that apply.
- a. American Nurses Association
 - b. American Public Health Association
 - c. Association of State and Territorial Directors of Nursing
 - d. Association of Community Health Nursing Educators
 - e. Montana Public Health Association
 - f. Montana Nurses Association
 - g. Not a member of a nursing or public health organizations
 - h. Other, please specify _____
9. How familiar are you with the Council on Linkages' "Core Competencies for Public Health Professionals"? (Choose one best answer).
- a. I am **NOT** familiar with this document.
 - b. I have heard about it but have not seen the document.
 - c. I have read or skimmed parts of the document.
 - d. I have read the entire document and am familiar with it
10. Do you have a copy or access to a copy of the PHN competencies that were endorsed by the Quad Council in April 2003?
- a. Yes
 - b. No
11. How familiar are you with the PHN Competencies that were endorsed by the Quad Council in April 2003? (Choose one best answer)
- e. I am **NOT** familiar with the document.
 - f. I have heard about it but have not seen the document.
 - g. I have read or skimmed parts of the document.
 - h. I have read the entire document and am familiar with it.

If you are not familiar with the PHN Competencies and answered (a) to question 11, please skip to question # 20.

12. How did you learn about the PHN Competencies? Check all that apply.
- a. Colleague(s) at work
 - b. American Public Health Association/ Public Health Nursing Section meeting, newsletter/website, and/or communication
 - c. American Nurses Association meeting, newsletter/website, and/or communication
 - d. Association of Community Health Nursing Educators meeting, newsletter/website, and/or communication

- e. Association of State and Territorial Directors of Nursing meeting, newsletter/website, and/or communication
- f. Journal article
- g. Other, please specify _____

13. Have you ever used the PHN Competencies in your work or academic setting?
a. Yes
b. No

14. Are you currently using the PHN Competencies in your work or academic setting?
a. Yes
b. No

15. If you are currently using the PHN Competencies in your work setting, or making plans to use them, what one statement best describes how you are using them?

- e. We are thinking about using them
- f. We are making plans to use them
- g. We are using them in a limited manner
- h. We are using them to a moderate degree

16. If you are using the PHN Competencies, where are you using them? (Check all that apply)
a. For orientation purposes in a practice setting
b. As a professional development tool to identify CE needs
c. As part of the annual evaluation of our nurses
d. As competency-based testing for educational or practice purposes
e. Other, please specify _____

17. If you are using the PHN Competencies how would you rate the integration of the PHN Competencies into your work environment on a scale of 1 to 10. (1 equaling minimal integration and 10 maximum integration.)

1 2 3 4 5 6 7 8 9 10

18. If you are currently using any of the PHN Competencies please provide an example of their use in your practice.

19. Have you or your agency used the competencies or considered using them, and then decided at a later time to **NOT** use them at your work setting?
- a. Yes
 - b. No

If you are using the PHN Competencies in your work setting, please skip to question #23.

20. If you are **NOT** using the PHN Competencies, what has prevented you from using them? (Comment in the box)
21. Would you consider using them if they were available in a more useable form - in other words if they were adapted for use as an evaluation tool, promotion tool or a set of clinical competencies for students?
- c. Yes
 - d. No
22. If you are not using the PHN Competencies, would you consider using them if one of the following organizations was more active in promoting their use as a best practice model? Montana Department of Public Health and Human Services, Montana Public Health Association, Montana Nurses Association, or any PHN professional organization
- a. Yes
 - b. No
23. This is the end of the formal survey, but we welcome additional comments about the PHN Competencies in the box below.

Thank you!

APPENDIX G

FIRST AND SECOND EMAIL ANNOUNCEMENTS
TO KEY PUBLIC HEALTH CONTACTS

Public Health Nursing Survey
From a Montana State University Graduate Student

Dear Public Health Officials, Nursing Leaders and Public Health Nurses:

I'm hoping you will have time to assist a Montana State University Graduate Nursing Student with a **short survey**. Your help is deeply valued. If you are a Public Health Official or Nursing Leader please, forward this message containing the link to the survey to all Public Health Nurses in your jurisdiction. The survey is intended for all RNs and LPNs employed in public health and if you are a Public Health Nursing Leader please, take the survey before forwarding this message.

The purpose of this survey is to help understand how familiar agencies and public health nurses in Montana are with the Quad Councils Public Health Nursing Competencies that were approved in 2003. It will also explore the usage of these competencies. The responses are completely anonymous and participation is voluntary. The findings will be presented in a graduate nursing thesis.

The survey contains 23 questions and should take no more than 10-15 minutes to complete. Should you have any questions, feel free to contact Christy Buttler Nelson, RN at 406-278-7748 or clbuttlr@yahoo.com. The results of the survey will be available upon request.

The survey will be available on line only until January 29, 2007. Thank you in advance for your help and for your support of public health nursing. **Click on the link below to access the survey.**

<http://www.montana.edu/nursingsurveys/PHN/phn.htm>

Public Health Nursing Survey
From a Montana State University Graduate Student

Dear Public Health Officials, Nursing Leaders and Public Health Nurses:

If you have already participated in this survey regarding Public Health Nursing Competencies thank you very much for your help. If you have not please consider taking part in this public health nursing research.

I'm hoping you will assist a Montana State University Graduate Nursing Student with a **short survey**. Your help is deeply valued. If you are a Public Health Official or Nursing Leader please, forward this message containing the link to the survey to all Public Health Nurses in your jurisdiction. The survey is intended for all RNs and LPNs employed in public health and if you are a Public Health Nursing Leader please, take the survey before forwarding this message.

The purpose of this survey is to help understand how familiar agencies and public health nurses in Montana are with the Quad Councils Public Health Nursing Competencies that were approved in 2003. It will also explore the usage of these competencies. The responses are completely anonymous and participation is voluntary. The findings will be presented in a graduate nursing thesis.

The survey contains 23 questions and should take no more than 10-15 minutes to complete. Should you have any questions, feel free to contact Christy Buttler Nelson, RN at 406-278-7748 or clbuttler@yahoo.com. The results of the survey will be available upon request.

The survey will be available on line only until January 31, 2007. Thank you in advance for your help and for your support of public health nursing. **[Click on the link below to access the survey.](#)**

<http://www.montana.edu/nursingsurveys/PHN/phn.htm>