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Communicable Disease Prevention and Control

Program Structure in Eastern Nova Scotia

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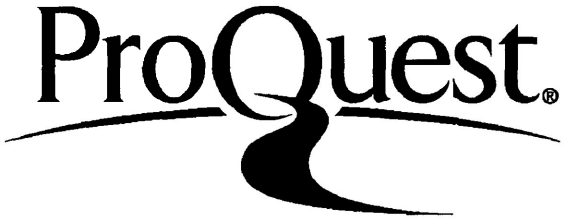

Introduction

Public health nursing services and programs are intended to improve the health of the population. These services must be evaluated to achieve this goal. Healthcare system changes in 2004 lead to two separate reviews of the Communicable Disease Prevention and Control (CDPC) program in eastern Nova Scotia. The recommendations from both reviews resulted in the development of a temporary CDPC program structure. The purpose of this paper is to provide an outline of the key findings and recommendations from both reviews and the resulting CDPC structure in eastern Nova Scotia. The literature review will outline a brief history of public health nursing, the current role of public health nurses, the generalist and focused public health nursing service models, and implications for future public health nursing roles. This paper will lay the foundation for future and more in-depth evaluations of the current CDPC program in eastern Nova Scotia.

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Statement of the Problem

Protecting and promoting the health of populations is what public health nurses strive to achieve. The nurses do this by considering the many factors that can affect the health of our communities and the people that live within them (Meagher, 2002). The effects of public health nursing actions and programs must be evaluated to achieve this goal. The purpose of this paper is to provide an outline of the key findings and recommendations of an internal and external review of Public Health Service's CDPC program, in Cape Breton District Health Authority (CBDHA) and Guysborough Antigonish Strait Health Authority (GASHA), in eastern Nova Scotia in 2004. This paper will provide the foundational data that will inform ongoing evaluation of the current CDPC program. We are in an era of accountability and the demand for program evaluation is constantly brought to the forefront of the public health system.

Objectives of Paper

1) To outline some of the cited advantages and disadvantages of a generalist and focused public health nursing service model.
2) To outline the structure, key findings, and recommendations from an internal and external review of the CDPC program in CBDHA and GASHA in 2004.
3) To outline the current CDPC structure in CBDHA and GASHA and determine whether the program is meeting the recommendations from both reviews.
4) To outline some future implications for public health nursing.

Background

Last (2001) defines public health as, "one of the great efforts organized by society to protect, promote, and restore the people's health" (p. 145). Public health is a combination of sciences, skills, and beliefs that are carried out to maintain and improve the health of all the people by collective or social actions (Last, 2001).

In eastern Nova Scotia public health consists of a multi-disciplinary team of public health practitioners. Public health nurses make up the majority of the team and remain the constant in delivering programs and services to individuals, families, and communities. The Community Health Nursing Association of Canada (2003) defines public health nursing as a specialty practice of community health nursing that synthesizes knowledge from the public health sciences, nursing sciences, and social sciences to promote and protect the health of populations.

Nursing has been provided in the community since the 1600's, mostly by women motivated by Christian charity (Allemang, 2000). Sanitary and humanitarian reforms of the 19th century England, and the transfer of health knowledge into education activities helped develop and support the role of the early community health nurse (Allemang, 2000). Public health nursing in Canada was influenced by the work of Nightingale and Lillian Wald (Falk Rafael, 1999b). By the end of the century, community nurses became part of organizations and agencies outside of the hospitals that were involved with health promotion and disease prevention activities (Allemang, 2000). Today the roles and responsibilities of public health nurses vary throughout the world.

In the late 1990's, restructuring of the healthcare system in Canada and Nova Scotia led to changes in public health program structures. These changes resulted in focused and generalist nursing approaches being used to provide nursing services and programs to the people of eastern

Nova Scotia. The approach that was used to deliver the CDPC program caused dissatisfaction among many of the public health nurses, and in 2004 resulted in two separate program reviews. Recommendations from both reviews resulted in the development of a temporary CDPC structure in 2005. The time has come to evaluate the CDPC program and initiate appropriate changes to ensure the needs of the population are being met.

Definition of Terms

Communicable Disease

An illness due to a specific infectious agent or its toxic products, through the transmission of that agent or its products, from an infected person, animal, or reservoir to a susceptible host directly or indirectly through an immediate plant or animal host, vector, or the inanimate environment (Last, 2001).

Communicable Disease Prevention and Control Program

The Communicable Disease Prevention and Control Program is the coordination of partners and organizations in the investigation and management of important aspects of communicable disease prevention and control. Activities include specialized knowledge in communicable diseases, epidemiology, surveillance and control, and community support. The key functions of the program are implementing provincial standards and approaches for non-vaccine preventable communicable diseases, vaccine preventable communicable diseases, and outbreak investigation and management (Nova Scotia Department of Health, 1997).

Health Promotion

Health promotion is a strategy for improving the health of the population by providing individuals, groups, and communities with the tools to make informed decisions about their well-being. Health promotion moves beyond the traditional treatment of illness and injury. Health promotion efforts are centered primarily on the social, physical, economical, and political factors that affect health and include such activities as the promotion of physical fitness, healthy living, and good nutrition (Shah, 2003).

Population Health

Population health is the health of the population measured by health status indicators. Population health is influenced by physical, biological, behavioral, social, cultural, economic, and other factors. Population health refers to the prevailing health level of the population, or a specified subset of the population, or the level to which the population aspires. Public health is the range of practices, procedures, methods, institutions, and disciplines required to achieve population health (Last, 2001).

Public Health

One of the efforts organized by society to protect, promote, and restore the people's health. It is the combination of sciences, skills, and beliefs that is directed to the maintenance and improvement of the health of all people through collective or social actions (Last, 2001).

Public Health Competencies

Core competencies are the skills and knowledge essential to practice public health. They are independent of program and topic area and reflect a public health approach to health issues. Core competencies transcend the boundaries of specific disciplines and are program-independent (Federal/Provincial/Territorial Public Health Human Resources Joint Task Group, 2004).

Public Health Functions

Public health functions are a set of activities that protect, promote or improve health, and prevent illness, injury, or disability. The activities may be directed at an entire population, priority populations, or individuals in some circumstances. Functions include: assessment, surveillance, advocacy, health promotion, disease/injury prevention, and health protection (Nova Scotia Department of Health, 2002).

Public Health Nursing

Public health nursing is a specialty practice of community health nursing that synthesizes knowledge from the public health sciences, nursing sciences, and social sciences. Public health nursing is informed by the principles of primary health care to promote and protect the health of the population (Community Health Nurses' Association of Canada, 2003).

Literature Review

Introduction

Since the early 1990's, changes in philosophy, structure, operations, and governance have occurred in Nova Scotia's healthcare system (Meagher, 2002). Federal policies, funding decisions, and restructuring in Nova Scotia have lead to changes in public health programs, including the CDPC program in eastern Nova Scotia. Methods of delivering the CDPC program have changed several times, in an attempt, to continue to deliver quality service and to ensure public health nurses were meeting the needs of the communities. The purpose of this literature review is to outline the history of public health nursing, the current role of the public health nurse, approaches to deliver public health programs, and implications for public health nursing.

Public Health Nursing History

Community health nursing was practiced as early as the 1600's, and the true role of the public health nurse evolved from the work of Florence Nightingale in 19th century England (Falk Rafael, 1999b). Public health actions at that time focused on social and economic issues that affected health (Falk Rafael, 1999b). It is not surprising that Nightingale's first training for district nurses focused on caring for new mothers and babies, infectious diseases, health teaching, health promotion, social and health reforms, and political activism (Falk Rafael, 1999b).

Edgecombe (2001) agrees the support Nightingale provided to the district nurses is the first evidence of qualified public health nurses. Lillian Wald, a visiting district nurse from New York, continued the work of community nursing in the United States and is credited with first using the term "public health nurse"(Buhler-Wilkerson, 1993). Wald chose the term because she wanted to place emphasize on the community aspect of the nurse's work (Buhler-Wilkerson,

1993). Wald is best known for her work with the Henry Street settlement and has inspired many to pursue the role of a public health nurse (Buhler-Wilkerson, 1993). Both Nightingale and Wald believed the role of the public health nurse included health promotion strategies and partnering with key community groups that would work towards social betterment (Buhler-Wilkerson, 1993). The work of these pioneer public health nurses formed the cornerstone of landmark documents such as the World Health Organization document *Primary Health Care: Report of the International Conference on Primary Health Care and the Ottawa Charter for Health Promotion* (Edgecombe, 2001).

Nightingale and Wald influenced public health nursing in Canada (Falk Rafael, 1999b). Early community health nursing was provided by women in religious orders and then by nurses who were trained according to the Nightingale model (Allemang, 2000). By the end of the century in Canada, nurses became part of agencies and organizations outside the hospital that were interested in health promotion and disease prevention (Allemang, 2000).

The Victorian Order of Nurses (VON) was established in 1897 and provided treatment, health promotion, and disease prevention activities to the communities (Allemang, 2000). The amalgamation of nursing services dealing with health and social issues led to divisions of public health nursing within Provincial and municipal health departments (Allemang, 2000). Public health nursing became generalized when services were directed towards families and communities, as opposed to individuals (Allemang, 2000).

Public health nurses were providing services to rural parts of Manitoba as early as 1916 and in Alberta and British Columbia in 1919 (Allemang, 2000). In 1921, a one-year demonstration project by the Red Cross lead to the launch of public health nursing services in New Brunswick and Nova Scotia (Allemang, 2000). In 1920, a six-month postgraduate course in

public health nursing was established at Dalhousie University (Mount Saint Vincent University Archives, 2005). The intent of the program was to ensure there would be enough trained public health nurses to work at the health centers that were established as part of the post Halifax Explosion Public Health Program (Mount Saint Vincent University Archives, 2005).

The Provincial branch of the Canadian Red Cross Society funded the nursing program, which was put together by Dalhousie's Medical faculty, nursing professionals, and public health officials (Mount Saint Vincent University Archives, 2005). The 18-week program included topics such as: (a) hygiene; (b) pre- and post-natal nursing; (c) pathology and bacteriology; (d) physiology and housing, as it related to health; (e) vital statistics; and (f) the history of public health nursing (Mount Saint Vincent University Archives, 2005).

The program attracted 15 nurses in 1921 and only six by 1923, resulting in the termination of the program (Mount Saint Vincent University Archives, 2005). In 1945, the university again offered a one-year diploma program for graduate nurses in public health, which was maintained up until the 1977-78 academic year (Mount Saint Vincent University Archives, 2005). Today a baccalaureate degree in nursing is essential for a nurse to practice as a beginning practitioner in public health nursing (Canadian Public Health Association, 2001).

Public Health Nurse's Current Role

According to the Community Health Nursing Association of Canada (2003), public health nursing is defined as a specialty practice of community health nursing that synthesizes knowledge from the public health sciences, nursing sciences, and social sciences, and is informed by the principles of primary health care to promote and protect the health of populations. The Canadian Public Health Association also defines public health nursing as an art

and a science, combining public health sciences and nursing theories to promote and preserve the health of populations (Canadian Public Health Association, 2001).

The literature reviewed for this paper was consistent in defining public health nursing. The definition outlined by the Community Health Nursing Association of Canada does not clearly separate public health nursing from other community health nursing roles, such as VON, and puts public health nursing under the umbrella of community health nursing. In a document prepared by public health nurses from Manitoba (Public Health Nurses of Manitoba and the City of Winnipeg, 1998), they clearly articulated their role was different from other nurses practicing in the community. The nurses noted that public health nursing services are delivered within a community-based framework and a designated public health nurse should provide these services. The nurses explained the focus of the public health nurse's work is on health promotion and illness prevention, and not on illness treatment and care, which is provided by home care, palliative care, the VON, and other home nursing programs (Public Health Nurses of Manitoba and the City of Winnipeg, 1998).

In Canada, the terms community health nurse and public health nurse are used in a variety of ways (Canadian Public Health Association, 2001). In some parts of Canada, the term community health nurse is used synonymously with public health nurse and in other areas they are used separately to differentiate the range of nurses working in the community (Canadian Public Health Association, 2001). Although the definition of a public health nurse was fairly consistent in the literature reviewed, it appears the role of the public health nurse is inconsistent in many countries including Canada.

According to Edgecombe (2001), public health nursing in Ireland includes midwifery, public health, and home nursing. This is similar to the United Kingdom where public health

nursing includes home visiting. In Finland public health nurses are specialists in primary health care, public health care, medical care, and health education. In Australia the term "public health nurse" was used in the early decades of the 20th century, and the term "community health nurse" was later introduced when the community health movement started in the 1970's (Keleher, 1999). Keleher uses the term public health nurse to describe all nurses who work from the public health paradigm of health (Keleher, 1999).

Community Health Nursing Standards

Promoting health, building individual and community capacity and relationships, facilitating access and equity, demonstrating professional responsibility, and accountability are standards that define the scope and depth of public health nursing (Community Health Nursing Association of Canada, 2003). These standards are intended to support the development of community and public health nursing and promote community nursing as a specialty. It is expected that registered nurses enter public health as a novice practitioner and require additional experience, knowledge, and skills to support the growth of their practice (Community Health Nursing Association of Canada, 2003). After two years of experience these standards become basic practice for public health nurses (Community Health Nursing Association of Canada, 2003). Standards are broad statements that reflect professional values and accountabilities, to the public, and are used to evaluate the quality of nursing practice (Kaiser & Rudolph, 2003). A study by Kaiser & Rudolph (2003) served two purposes: (a) to examine the construct validity and reliability of the Clinical Performance Evaluation Tool, designed to evaluate the clinical practice of generalist public health nurses, and (b) to evaluate the appropriateness of using the American Nursing Association standards as objectives to evaluate baccalaureate generalist students during public health clinical experiences. The literature reviewed for Kaiser's study

indicated that a link between standards and performance competencies was needed to advance the assessment of quality in nursing practice and education (Kaiser & Rudolph, 2003).

The Community Health Nursing Association of Canada (2003) standards of practice have identified activities that will ensure community health nurses become competent and maintain their competency throughout their practice. The Community Health Nursing Association of Canada has worked with the Public Health Agency of Canada to develop the core competencies for public health practitioners (Community Health Nursing Association of Canada, 2003).

Public Health Competencies

Incidents such as Severe Acute Respiratory Syndrome (SARS), West Nile Virus, and an impending influenza pandemic have highlighted both the strengths and weaknesses of Canada's public health system (Joint Task Group on Public Health Human Resources, 2005). These events have provided an opportunity for a number of federal and provincial committees and agencies to work together to strengthen the public health system in Canada (Joint Task Group on Public Health Human Resources, 2005). Key to revamping the public health system is having a skilled and motivated workforce (Naylor, 2003). In 2003, a joint task group, Public Health Human Resources was established and mandated to focus on long term planning, education, and training for the public health workforce (Joint Task Group on Public Health Human Resources, 2005). The task group recommended a national public health workforce strategy and developed a pan-Canadian framework that would help develop a skilled and competent public health workforce to support health care renewal (Joint Task Group on Public Health Human Resources, 2005).

Provincial health departments across Canada, including Nova Scotia, have started to review their public health structures. In 2005, the Nova Scotia Department of Health and the Nova Scotia Health Promotion commissioned an external review to assess public health capacity,

strengths, limitations, and opportunities in Nova Scotia. The review's report, *The Renewal of Public health in Nova Scotia: Building a Public health system to meet the needs of Nova Scotians,* was released in 2006 and outlined 21 recommendations. Several of these recommendations focused on strengthening the public health workforce.

As discussed in the previous section, community and public health standards of practice are linked to competency in nursing and specifically in community and public health. Core public health competencies are competencies that are common to all public health practitioners and are cross cutting skills, knowledge, and abilities that are necessary for the broad practice of public health (Federal/Provincial/Territorial Public Health Human Resources Joint Task Group, 2004). These competencies were based on the core functions of the public health system, which apply to practitioners with post secondary training in public health, and are fundamental to delivering core public health services (Federal/Provincial/Territorial Public Health Human Resources Joint Task Group, 2004). Professional public health disciplines will contribute specific core competencies, in combination with the general core competencies, resulting in an effective public health system (Federal/Provincial/Territorial Public Health Human Resources Joint Task Group, 2004).

Individual practitioners will have different levels of ability for particular competencies based on their level of training and their role in the organization (Federal/Provincial/Territorial Public Health Human Resources Joint Task Group, 2004).

This approach was similar to that used by The Quad Council of Public Health Nursing Organizations (2004) who started with the link between academia and public health practice. The Quad council used the competencies as a framework for education and orientation for public health nurses (Quad Council of Public Health Nursing Organizations, 2004). The competencies

were further divided to differentiate the generalist and specialist roles of public health nurses. The generalist level would reflect those nurses with a baccalaureate degree, and the specialist would reflect those nurses with a master's degree in community/public health nursing or public health (Quad Council of Public Health Nursing Organizations, 2004). The Quad Council document was based on several assumptions including public health nurses would have the same competencies as all baccalaureate nurses and would then demonstrate competencies specific to public health. The competencies should reflect the standards of practice, not what is currently happening in the practice today (Quad Council of Public Health Nursing Organizations, 2004).

Primary Health Care

A consistent theme from the literature reviewed was the relationship between the public health nurse and primary health care and population health. The theory component for public health nursing is being based more and more on a model of primary health care, which emphasizes health promotion, prevention of illness, and community development and participation (Canadian Public Health Association, 2001). Meagher's (2002) qualitative study explored the complex and unique primary health care practice of public health nurses in Nova Scotia. Forty-four public health nurses and seven managers from across the province participated in the study. The study highlighted key values that guided the practice of public health nurses as well as the challenges that they face. Two of the five key values voiced by the participants were primary health care and social justice and population health promotion (Meagher, 2002). Participants believed that they understood both concepts and were currently practicing them within their scope of practice as a public health nurse (Meagher, 2002). Participants felt their role would be validated when the government shifted to primary health care and there was more emphasize put on health promotion (Meagher, 2002). Other public health nurses in this study

commented that the shift to primary health care had increased expectations that nurses would deliver more population focused and collaborative initiatives, while continuing to provide programs and services directed to individuals and families, leading to role confusion (Meagher, 2002).

In an undated document written by Saskatchewan public health nursing managers titled *Primary Health Care and Public Health Nursing: What are the Links,* managers agreed and elaborated to say that the principles of primary health care and public health nursing are the same. This group examined the links between public health nursing and primary health care nurses. They felt that the public health nurses and the primary care nurses both brought unique skills and knowledge to the team, and although they complimented one another there were some key differences, one being that the public health nurses coordinate and facilitate access to services beyond the health sector (Managers of Public Health Nursing Services of Saskatchewan, n.d.).

Health Promotion

Health promotion was described in most of the literature as a significant piece of the work done by public health nurses. Fliesser, Schofield, and Yandreski (2003) described how public health nurses included the five principles of health promotion strategies in their practice and that health promotion occurred within the context of the trusting relationship public health nurses developed with their clients. When describing their work, public health nurses in the Nova Scotia study emphasized the determinants of health and the different health promotion strategies they used to meet the needs of their clients (Meagher, 2002). They gave several examples of how they developed personal skills; re-orientated health services, created supportive environments, built healthy public policy, and strengthened community action (Meagher, 2002). Public health

nurses in Manitoba believed health promotion was the cornerstone of public health, and the concepts of health promotion are central to the public health nurse's role (Public Health Nurses of Manitoba and the City of Winnipeg, 1998). They viewed the population as a whole rather than focusing on at risk groups only, and having said this, the group also felt it may be more effective if priority was given to those most at risk (Public Health Nurses of Manitoba and the City of Winnipeg, 1998). Participants in Meagher's (2002) study admitted to being committed to providing equitable services to all members of their community, but did state they often work with isolated or high risk groups as this is where they can make the biggest difference. Both groups of public health nurses from the above studies believed in the theory of population health, but services were often targeted towards individuals and families.

Population Health

Population health was a common theme in the literature reviewed and according to public health nurses they are practicing population health. Public health nurses in the Nova Scotia study believed population health was fundamental to their practice (Meagher, 2002). Grumbach, Miller, Mertz, and Finocchio (2004) investigated the practice activities, priorities, and education of public health nurses in California. Participants included staff nurses and managers. Results showed that public health nurses were more likely to implement interventions at the individual and family level than at the community or system level (Grumbach et al., 2004). The public health managers in this study also rated the interventions directed at the individual and family as more important than those directed at the community or system level (Grumbach et al., 2004). The gap between the goals and theories of public health nursing, and the reality of their practice, was evident in this study and funding was deemed to be a key factor (Grumbach et al., 2004). Funding is often tied to concrete and measurable outcomes, and interventions directed at

individuals and families are easier to track than those directed at the larger community (Grumbach et al., 2004). This was also stated as a reason in Meagher's study, where participants felt they were torn between mandated programs and other community activities and initiatives.

The education of public health nurses was also a key factor that impacted on how nurses delivered their nursing programs. Most public health nurses are educated in general nursing programs and public health content is either minimal or nonexistent (Grumbach et al., 2004). Counter to this study was a study in Wisconsin that examined the characteristics of public health nursing practice changes and their recommendations to improve the practice of public health nursing (Zabner & Gredig, 2005). The participants in the study felt that in the last 5 years their practice focused more on populations and less on individuals and provision of direct services (Zabner & Gredig, 2005). Participants also stated the change in their practice was supported by statewide continuing education conferences. Smith & Bazini-Barakat (2003) examined a practice model developed by the Los Angeles County Department of Health Services public health nurses. This practice model was grounded in national public health nursing standards, and the framework allowed the nurses to apply the standards to individuals, families, and the community (Smith & Bazini-Barakat, 2003). One of the many benefits of this model was that it would help the public health nurses align their nursing practice with the principles of public health, which would help public health nurses return to assessing the determinants of health when working with individuals, families, and communities (Smith & Bazini-Barakat, 2003). The model would also create a common framework for public health nursing practice in a department that employed generalist district nurses and public health nurses focused on specific target groups (Smith & Bazini-Barakat, 2003).

Smithbattle, Diekemper, and Leander (2004) agree that textbook knowledge and the theory component of public health is critical for a beginning public health nurse, but it is the experiences they encounter in the field that give them the big picture of public health. Grasping the big picture occurs when public health nurses initially work with individuals and families, and then the service or the program being delivered becomes more complex when applying this knowledge to the community (Smithbattle, et al., 2004). In this article experienced public health nurses did comment on the importance of new public health nurses becoming skilled in home visiting and other services directed towards individuals and families, before sharpening their focus on the community and population activities (Smithbattle et al., 2004). Several participants described family clinical issues that prepared and helped them move upstream to participate in population health initiatives (Smithbattle et al., 2004).

Models of Delivery

The literature reviewed in the previous section indicated that public health nurses around the world work in a variety of roles, settings, and locations within a broad spectrum of public health systems. The intent of this section is not to determine if one method of delivery is better or more effective than the other, but merely to outline some of the cited key advantages and disadvantages of both the generalist and focused public health nursing models.

Falk Rafael's (1999a) study examined two distinct public health nursing practice models that became apparent between 1980-1996 when cutbacks and changes occurred in public health in Southern Ontario. District nursing was apparent during the beginning of the study period and focused nursing was apparent during the latter part of the period (Falk Rafael, 1999a). The district nurse was characterized by the nurse's connection to the community, and the entire community was the client. Participants felt the shift from generalist nursing to focused nursing

narrowed the nurse's expertise from a generalist in a geographic area to a focused nurse in a specific program area (Falk Rafael, 1999a).

McKenna, Keeney, and Bradley (2003) examined the perceptions of community health nurses, senior strategists, and the public in relation to specialist and generalist nursing roles in Ireland. According to this study, the focused or specialized nurses were viewed as the experts in their field because they were able to keep up to date on relevant knowledge, skills, and trends, whereas the generalist nurse would require a broader base of knowledge and would find it difficult to keep up to date on information related to all areas of practice (McKenna et al., 2003). Participants believed this would cause the public health nurse to become deskilled in specialized areas, resulting in poor practice and poor service (McKenna et al., 2003).

Participants in Falk Rafael's (1999a) study felt as a generalist nurse they could observe the difference they made to individuals and families, and changing to a focused role allowed them to focus only on the part of the community affected by the specific program. In Southern Ontario, participants who switched to focused nursing felt they were further distanced from the community by providing fewer direct services (Falk Rafael, 1999a). Other participants felt this was a positive change as they had more time to concentrate on content specific areas (Falk Rafael, 1999a). This interruption of services to the community was also mentioned in McKenna's study. Participants believed that there was no continuity of care with specialized or focused nursing as you had several nurses delivering different services to one individual, family, or community (McKenna et al., 2003). Participants believed too many specialists or focused nurses would cause role confusion among other health professionals and the public.

Interestingly, the public participants interviewed for McKenna's study felt as long as the nurse knew his/her role and the quality of care was good, they had no strong views on the debate

(McKenna et al., 2003). This way of thinking by public participants could have been due to the fact that they were not aware of the different models of nursing, or they didn't care who took care of them as long as the nurse was competent.

A study by May, Phillips, Ferketich, and Verran (2003) outlined critical challenges a research team encountered when they implemented a generalist model of public health nursing in partnership with rural health departments in Texas. The research team used a comprehensive multi level nursing practice model for their framework, which would support the generalist role (May et al., 2003). The model emphasized public health nursing practice and community based action research in improving population health. The study identified key challenges such as funding and differences in philosophy of health care as a business, which led the research team to consider one stop shopping for the generalist nurse (May et al., 2003). The outcome of the study showed constraints of funding and differing philosophies often prevented public health nurses from truly working as a generalist public health nurse (May et al., 2003). This is consistent with literature reviewed in a prior section that indicated funding impacts program delivery as it is tied to measurable interventions and outcomes.

In 1994 regionalization of the Nova Scotia Department of health resulted in four separate health units (Gillis, 1996). Public health nursing staff in eastern Nova Scotia formed a working group to address the issue of restructuring public health nursing services and public health nurses returning to a generalist role (Gillis, 1996). Working group participants believed their work would lay the foundation for restructuring and future planning, and at the core of the restructuring was the need to incorporate a population health approach to the services they provided in their communities (Gillis, 1996). The group met five to six times in 1995 and 1996 and held focus groups with other public health nurses to help them vocalize their issues and

concerns with returning to a generalist role. Lack of knowledge, skill, competency, and comfort level with program specific material were some of their concerns (Gillis, 1996). Some participants felt having a resource nurse available with expertise in the program area would help them deliver the program (Gillis, 1996). Falk Rafael's (1999a) study revealed similar findings, and public health in Southern Ontario maintained specialized programs such as communicable disease control. During restructuring in eastern Nova Scotia, public health also maintained two to three public health nurses to remain focused in CDPC, while the other nurses took on the generalist role, which included communicable disease follow up and after hours call.

Implications for Future Practice

Public Health Human Resource task group's 2004 report, *The Development of a Draft Set of Public health Workforce Core Competencies* indicated that a communicable disease prevention and control team will be required to participate in certain activities, and members should be proficient in information management, epidemiology, communication, partnership, and collaboration, along with a number of technical skills (Federal/Provincial/Territorial Public Health Resources Joint Task Group, 2004). The task group also noted the CDPC team should consist of different team members who have particular combinations of certain competencies, with the entire team possessing all of the necessary competencies (Federal/Provincial/Territorial Public Health Resources Joint Task Group, 2004). The group suggested the core public health competencies discussed earlier be used as a tool to develop public health education, curriculum, and ongoing professional staff development.

Communicable disease prevention and control will continue to be a major focus of public health nursing. The volume and speed of travel, complacency regarding immunizations, and resistant strains of diseases has increased the spread of infectious diseases (Naylor, 2003). The

National Advisory Committee on Severe Acute Respiratory Syndrome (SARS) and Public Health was established in 2003 and was mandated to provide an assessment of public health efforts and lessons learned for future infectious disease control (Naylor, 2003). The report noted that public health tends to operate behind the scenes until there is an outbreak, or when the system fails to protect the health of the population, as it happened in Walkerton, Ontario in 2000 (Naylor, 2003). The committee recommended the creation of a National public health advisory board, a Chief Public Health Officer of Canada, and a national public health strategy (Naylor, 2003). The committee had concerns about the framework for infectious disease surveillance and outbreak management, and strongly recommended strengthening the communicable disease surveillance system and the non-communicable disease surveillance system (Naylor, 2003). The committee also recommended that a new Federal, Provincial, and Territorial network for communicable disease control be created, planning among multi-jurisdictions occur for surge capacity, and that practitioners obtain risk communication skills for emergency preparedness and response (Naylor, 20030). These recommendations will strongly impact the current and future role of the public health nurse.

Berkowitz (2002) explored how public health nurses will need additional skills and competencies to be prepared for future acts of bioterrorism. Although the focus of public health is at the population level, it was apparent after September 11, 2001, that individuals and families required services and public health nurses were in positions to provide and assist with these services (Berkowitz, 2002). According to Berkowitz, public health nurses have a role in interventions related to bioterrorism and they have a role in protecting the public from acts of bioterrorism. Mondy, Cardenas, and Avila (2003) outlined how public health nurses can be trained to deal effectively with acts of bioterrorism.

Mondy et al. (2003) described advanced public health nurses as having specialization in community/public health nursing, graduate study in relevant public health fields and clinical work, and completion of a research project, thesis, or major paper in public health nursing. According to Smith & Bazini-Barakat (2003), the Los Angles County public health nursing practice model was used by advanced public health nurses to develop a plan for preparedness and response to acts of bioterrorism. A key role for public health nurses is to collaborate with other agencies and facilitate and mobilize community resources to organize coalitions that will deal with issues of bioterrorism (Smith & Bazini-Barakat, 2003). Akins, Williams, Silenas, and Edwards (2005) examined the role of the public health nurse in a large public health region in Texas. This qualitative study determined a number of issues that affect a public health nurse's ability to prepare for acts of bioterrrorism. Lack of standardized public health education and shortage of qualified public health nurses were noted as key barriers in ensuring preparedness (Akins et al., 2005).

Analysis of Internal Review of CDPC program

Introduction

There are no formulas and no one right way to organize, analyze, and interpret qualitative data. The two CDPC program reviews undertaken within a six -month period overlapped and were considered separate initiatives. However, public health staff and managers believed the internal review would inform the external review of the CDPC program. Analysis of both reviews will include some of the experiences of public health practitioners working in the program. The description of what both reviews entailed will be outlined in a narrative form to provide a holistic picture of what happened in the CDPC program. Through content analysis it

will also be attempted to identify coherent and important themes and categories from both reviews.

Background

In October 2003 the manager for the CDPC program met with all public health nurses to discuss issues and concerns the nurses had with the CDPC program. The nurses expressed anxiety and displeasure with the structure and delivery of the CDPC program. In March 2004, the CDPC manager and public health nursing staff initiated an internal review of the CDPC program.

Setting/Subjects

A two-part survey was emailed to all 39 public health nurses, the five managers in public health, the Director of public health, and the local Medical Officer of Health. The intent of the survey was to identify issues that would inform the next steps of the review. In June 2004 all public health nurses were brought together with the CDPC manager and the local Medical Officer of Health to clarify survey responses and to ensure there was a common understanding of the issues and the areas for improvement. This meeting helped validate some of the survey responses and outlined the next steps in the internal review.

Data Collection

Data collection tools consisted of a two-part survey. Part 1 had five open-ended questions with an A and B part. Question A asked participants what they thought was the current role of public health staff involved in a communicable disease investigation. Question B asked what were the strengths of the roles and what were areas for improvement.

Part 2 of the survey included ten open-ended questions that asked the participants to comment on the nine steps involved in the investigation of a communicable disease. Specifically,

they were asked what was working, what was not working, and how it could be improved. Participants were given one week to complete and return the survey. A clerical person received the completed surveys to help maintain anonymity, although participants were given the option of putting their names on the survey. Several days after surveys were returned a conference call was held to clarify the structure of the survey questions and the intent of the surveys. The CDPC manager had four public health nurses help with sorting, organizing and analyzing the results.

Findings

In the first part of the survey, 44 out of 69 participants believed the role of the district public health nurse was the follow up and investigation of communicable diseases. The identified strengths of the district public health nurse in a communicable disease investigation were the knowledge of the district and the nurse's ability to keep current on CDPC issues. The area for improvement was the need to increase the competency level of the district public health nurses.

Participants believed the role of the public health nurse on call for CDPC was similar to the role of the district public health nurse. The difference noted between these two roles was the public health nurse on call after hours is responsible for a large geographic area and must delegate some of the work to the other public health nurses. There was a high number of "no responses" to the strengths of the public health nurse on call. This may indicate participants felt there were no strengths to this role or refused to answer this question. Participants believed the main area for improvement was to have more education for the public health nurses.

The role of the manager on call was to provide support, guidance, and help with decision-making and policy clarification. A high number of participants did not respond to what needed to be improved, and an almost equal number said having a nurse as a manager on call was an area

for improvement. The role of the CDPC manager was seen as providing support, clarifying policies, a resource person, and overall management of the CDPC program.

The majority of participants felt the role of the Medical Officer of Health was to advise and make recommendations when following communicable diseases. A significant number of participants gave no response on the strengths of the Medical Officer of Health's role in CDPC. An area for improvement was for the Medical Officer of Health to be the lead for urgent communicable disease investigations.

In the second part of the survey participants commented that the following steps of a communicable disease investigation were working:

1. Receiving the lab reports, and in a timely manner from the clerical person.
2. Good process for entering information into CDPC case manager database.
3. District public health nurse being assigned cases.
4. Provincial communicable disease control manual.
5. Manager on call, and the CDPC manager providing support, clarifying policies, and providing resources.
6. Accessibility of the MOH, and
7. District public health nurses education and awareness of the community

The main areas of the investigation that participants felt were not working were the knowledge of interpreting lab reports, the short time frame for nurses on call to respond, duplication of database and paper forms, a non nurse manager on call for support, and a communication barrier with the Medical Officer of Health. Participants felt these areas could be improved by increasing education on interpretation of lab reports, getting rid of paper forms, having only a nurse manager on call for support, and the Medical Officer of Health building

relationship skills. A large number of participants gave no response on what was not working, which may have been a refusal to answer the question.

Limitations

Some of the limitations of this survey included the short turn around time for participants to complete the survey; anonymity was not guaranteed, making assumptions as to why participants refused to answer specific questions, and the large number of no responses to specific questions

Recommendations/Themes

The final report of the survey did not include specific recommendations, however, common themes and categories were noted based on participants responses. Several themes identified included the key role the district public health nurses played in the CDPC program, the need for more education and training for staff involved in the CDPC program, and improved relationships between staff working in the program.

Analysis of External Review of CDPC program

Background

The Chief Executive Officer's of GASHA and CBDHA initiated an external review of the CDPC program in eastern Nova Scotia in June 2004. The intent of the review was to assess the strengths, limitations, and areas for improvement. The goal of the review was to ensure the CDPC program was responsive, coordinated, and appropriately implemented to meet service area accountabilities as outlined in the Health Protection Act, Health Authorities Act, Health Standards Document (1997), and the Nova Scotia communicable disease manual. A review team was assembled and consisted of the Provincial Chief Medical Officer of Health, the Vice President of Community health for GASHA, and an independent administrative expert who

would carry out the review. The team reviewed relevant reference documents and reports, including the findings of the internal review, to establish a set of benchmark criteria that would guide the review.

Setting/Subjects and Data Collection

The consultant met with 31 out of 40 full time public health nurses. The nursing staff agreed to a team consultation approach. The five managers, the Director of public Health, the local Medical Officer of Health, the Provincial communicable disease coordinator, the Provincial communicable disease nurse consultant, and two other Medical Officers of Health were interviewed separately, for a total of 43 people participating in the consultation process.

Findings

Participation.

The consultant found that the managers and public heath nurses very cooperative, willing to participate in the consultation, and were dedicated to providing the best CDPC service and program as possible to their communities.

Increasing demands.

The needs and expectation of the community have increased and with new and re-emerging diseases increasing, public health has been challenged to ensure the health of the population is protected and maintained.

Leadership and challenges

The Director of public health was viewed as an experienced public health practitioner, who provided excellent direction and leadership, evidenced by accreditation audits in public health. The Medical Officer of Health had been in the role for two years and seemed committed to fulfilling his role, although he did express concern with the structure and delivery of the

CDPC program. The Medical Officer of Health has many roles and responsibilities with all public health programs, but the communicable disease prevention and control role is that of a leader in the overall decision making, planning and coordination, and follow up of communicable diseases. It was determined this role was not being fulfilled at the time of consultations and the review.

Participants expressed that a strained interpersonal relationship between the Director of public health and the Medical Officer of Health negatively impacted communication, role responsibility, and at times prevented the organization from meeting their goals and objectives.

Management.

The five managers and the director made up a 24/7 administrative on call schedule. Their role was to provide support, clarification, and resources to public health nurses on call. The public health nurses were concerned with having non–nurse managers on call providing support and clarification when they did not have any clinical public health experience.

The managers expressed concern with the current structure and delivery of the CDPC program, and felt the need to have experience and expertise among a core group of nurses who would provide guidance and support for less experienced nurses. The managers felt that one CDPC manager could not be available at all times. It was also identified that less experienced public health nurses relied on the on call manager for support and direction when dealing with communicable diseases after hours.

Public health nurse's perspective

Thirty-one of 40 public health nurses met with the consultant. Participants agreed that communicable disease prevention and control was the basis of public health nursing. Public health nurses felt they had a general knowledge of communicable diseases and dealt with

communicable diseases in some aspect of their community work. The public health nurses had no desire to eliminate this function from their role, and their main concern was with the on call system for CDPC. All 40 public health nurses made up the after hours call schedule, meaning they were on call approximately every six months or maybe twice a year. The nurses felt this did not provide them with the experience and expertise to deal with urgent communicable disease issues. When on call after hours, the public health nurse would contact the manager on call for guidance and support and expressed concern when the manager was not a nurse. After consulting with the manager on call, the public health nurse would then contact the Medical Officer of Health on call for further direction. Public health nurses indicated the Medical Officer of Health often expected them to have all supporting documentation/information available, and because of their inexperience, they may not have been prepared, leading to stressful confrontations. The public health nurses looked upon the after hours call with dread and anxiety. The consultant also noted that the current system appeared cumbersome, involved many people, and with many transfers of information increased the opportunity for error.

Orientation.

Public health managers and public health nurses expressed concern with the lack of orientation for new nurses, possibly putting the public at risk. In the past, the province and districts have collaborated to deliver bi-annual CDPC in-services for public health nurses involved with communicable disease programs. It was evident that there was expertise in CDPC across the province, and the consultant felt there should be more collaboration and planning between the province and the districts to ensure comprehensive orientation was provided for nursing, management, and the Medical Officers of Health

Recommendations

The recommendations were developed based on the themes compiled from the consultation process. Points for consideration from the Provincial standards regarding CDPC were:

1. Each region will maintain public health staff competencies in communicable disease prevention and control.
2. Each region will provide communicable disease prevention and control expertise for information, consultation, and referral consistent with approved department of health standards and guidelines.
3. Each region will maintain a Public Health Services capacity to respond to outbreaks and conduct outbreak control, investigation, and prevention.
4. Each region will maintain a regional health CDPC coordinator with expertise in communicable disease control, surveillance, and prevention.

The above standards were considered and the following recommendations were made in an attempt to develop a CDPC program in eastern Nova Scotia that would be reliable, efficiently coordinated, and staffed by competent and confident public health practitioners.

Accountability and leadership

The roles, responsibilities, and accountabilities of senior managers must be clarified within the CDPC program to facilitate achievement of program goals. The relationship between the Director of public health and the local Medical Officer of Health should be one of support and collaboration to meet the needs of their community. The consultant felt this recommendation could be achieved through dialogue and clarification of each other's roles and responsibilities.

Delivery structure / on call system

Two to four positions from the current complement of district public health nurses should be redeployed to form a core CDPC team under the direction of the CDPC manager. The positions should be strategically located to cover both districts and two positions should be located in Sydney. The core team would be responsible for planning, developing, implementing, coordinating, and evaluating the CDPC program. The team would be responsible for staff development on CDPC issues, which would enable the other public health nurses to be involved with day-to-day CDPC issues and activities. The team should be responsible for the after-hours call schedule, replacing the present system involving all 40 public health nurses. The CDPC manager position should be enhanced to allow for dedication to the program. The manager would be responsible for planning, developing, coordinating, and evaluating the CDPC program. The manager would work closely with the Medical Officer of Health when delivering the CDPC program and every effort should be made to be active in Provincial communicable disease meetings. The management after hours call schedule could remain in place for administrative support.

Orientation and education

Orientation and education efforts must continue to enhance the orientation and continuing education for public health staff in the CDPC program. Consideration should be given to working with provincial consultants and experienced staff from other districts to develop a standard CDPC orientation program for public health nurses and Medical Officers of Health. The Provincial CDPC committee, the Provincial communicable disease coordinator, and the Chief Medical Officer of Health should consider establishing a formal orientation, mentoring, and ongoing education program for public health practitioners in CDPC programs. This action could

result in more efficient use of resources, a minimum standard of orientation for nurses specializing in CDPC, and another level of orientation for nurses in generalized roles.

Current status of Provincial CDPC programs

Communicable disease prevention and control is a key responsibility area for public health services. The CDPC program is a comprehensive program that includes prevention, education, surveillance, control, and reporting of infectious diseases. In Nova Scotia, public health practitioners and physicians share responsibility for various aspects of the CDPC program. Public health nurses in Nova Scotia, in consultation with the Medical Officer of Health, provide the services below:

1. Prevention of Communicable disease - including education, immunization, treatment, isolation, and enforcement of the 2005 Nova Scotia Health Protection Act.
2. Prompt investigation and follow up of communicable diseases with enforcement of regulations - Nova Scotia Modifiable Diseases list is the list of diseases that must be investigated by a Public health nurse.
3. Reporting - Completion of the notifiable disease report forms on all diseases listed as notifiable.
4. Surveillance - Involved with surveillance activities that allow public health to know which communicable diseases are present, and assist with predicting which diseases or infections may be expected at a given time of the year.
5. Liaison - Liaises with hospitals, health centers, physicians, community health staff, First Nations, laboratories, continuing care units, and other partners on communicable disease prevention and control.
6. Education – provides education on prevention and control of communicable diseases.

The key functions of the Nova Scotia Provincial CDPC core service program are to implement the provincial standards and approaches for non-vaccine preventable communicable diseases, vaccine preventable diseases, and outbreak investigation and management (Nova Scotia Department of Health, 1997). The 2005 Nova Scotia Health Protection Act, the Nova Scotia Health Standards Document (1997), and the Health Authorities Act regulate communicable diseases (MacIssac, 2004). Prevention and control of communicable diseases is an essential public health intervention that is critical in maintaining the health and wellness of the population. The Chief Medical Officer of Health and the Chief Executive Officers 's of the district health authorities maintain operational accountability for communicable disease prevention and control services within the Province (MacIssac, 2004). Medical Officers of Health are deployed throughout the Province. There are nine district health authorities in Nova Scotia. All DHA's (1-9), with the exception of DHA 9, deliver public health programs and services through a shared service approach. Currently three of the shared service areas in Nova Scotia (DHA 1, 2, 3, and DHA 4, 5, 6, and DHA 9) use a focused or specialized communicable disease prevention and control approach, where some of the public health nurses only work in the CDPC program.

CDPC in Eastern Nova Scotia

There are 40 public health nurses in CBDHA and GASHA. Prior to the early nineties public health nurses in CBDHA and GASHA used a focused approach to deliver their nursing programs, including the CDPC program. In 1995, public health nurses in CBDHA and GASHA returned to a generalist approach to deliver public health programs and each nurse was assigned a specific area or "district". A key concern the nurses had with the generalist approach was the short period of time they were on the after-hours call schedule, which did not allow them to

become competent and gain the skills and expertise required for communicable disease prevention, control, and follow up (Pickles, 2004)

As noted in the previous section, public health in CBDHA and GASHA has undergone two separate reviews of the CDPC program. The first review was carried out in June 2004 and was completed by the CDPC program manager. The second review was carried out in September 2004 and was completed by an external consultant. The intent of both reviews was to review the CDPC program in CBDHA and GASHA to ensure the program was responsive, coordinated, and appropriately implemented to meet accountabilities as outlined in the Health Protection act, the Health Authorities act, the 1997 Health standards Document, and the 2003 Provincial Communicable disease manual (MacIssac, 2004). The reviews were carried out with the intent of assessing strengths, limitations, and opportunities for improvement.

Based on themes and recommendations from both reviews a core team of communicable disease prevention and control nurses was developed. The team consists of three public health nurses who are part of a multi-disciplinary public health team and report to the CDPC manager. Two of the nurses are located in the Sydney main office and the third is in the Antigonish public health office. The CDPC nurses participate in the assessment, planning, implementing, and evaluation of policies and programs. As part of a core team, the nurses play a key role in orientation of new staff, ongoing staff development, receiving and follow up of notifiable diseases, surveillance, and prevention activities related to immunization, pandemic planning, and blood borne pathogen diseases. The core team focuses on the more serious and labor-intensive communicable diseases, while the district public health nurses continue to follow up enterics, sexually transmitted infections, and other diseases with assistance from the core team. The core

CDPC team assists with outbreak recognition and management in public facilities such as daycare centers, continuing care centres, and hospitals.

Currently the three CDPC nurses and five district public health nurses make up the afterhours call schedule. The plan is to have the district nurses who are on the after hours call schedule replace nurses on the core CDPC team using a staggered approach. The intent is to build knowledge, skill, and capacity among all public health nurses, which will enable public health in eastern Nova Scotia to provide a coordinated and competent response to communicable disease follow up. This core CDPC team was intended to be temporary with changes made based on an indepth evaluation. The Medical Officer of Health involved in the 2004 review is no longer employed and has since relocated to British Columbia. Postings for a new Medical Officer of Health have been unsucessful to date, and a Medical Officer of Health from Halifax covers for the CDPC program. Also to date, there have been no attempts to provide a consistent and formal provincial communicable disease prevention and control education and orientation program for public health nurses in Nova Scotia.

Discussion

Communicable diseases kill more than 14 million people every year (Heyman, 2004). Illness and disability caused by these diseases have a tremendous social and economic impact. Communicable diseases deliver surprises in the form of new diseases, re-emerging diseases, or old diseases behaving in new ways such as Tuberculosis and malaria (Heymann, 2004). With this in mind, the goal of the CDPC program in CBDHA and GASHA is to provide continuous, quality client focused services within a responsive and coordinated system.

According to the literature that was reviewed for this paper, it is evident that although public health nursing is consistently defined as a specialty under the scope of community health

nursing, there is still confusion among public health nurses, other health professionals, and the public around the role of the public health nurse. The Community Health Nursing Association of Canada (2003) includes public health nursing under the umbrella of community health, while public health nurses in the Manitoba document strongly disagreed and very clearly articulated their role was different from other nurses that work in the community (Public Health Nurses of Manitoba and the City of Winnipeg, 1998).

When agencies such as the Community Health Nursing Association of Canada and the Canadian Public Health Association use the terms public health nurses and community health nurse synonymously, it is not surprising there is confusion regarding the role of the public health nurse. This confusion increases when public health nurses are further categorized as being a focused or generalist public health nurse. Participants in Falk Rafael's (1999a) study viewed the community as their client and felt focused nursing expertise was narrowed as they only worked with a specific group, rather than the entire community. Participants in McKenna et al. (2003) study believed the focused nurses were the experts as they were able to keep up to date on the knowledge and skills of their programs, as opposed to generalists who could not keep updated, as they could not know everything about all groups in their community.

When reviewing the advantages and disadvantages to both models of nursing, it became evident that the current structure in eastern Nova Scotia, with a balance of both, is meeting the current needs of our communities, partners, and staff. The expertise of the core CDPC team and the general knowledge of CDPC that the district public health nurses have, allowed eastern Nova Scotia to respond efficiently and effectively to communicable diseases. Since the current structure was implemented two years ago, public health nurses and other health professionals have commented positively on the structure. The core team is recognized for providing quality

and efficient CDPC services, and our compliment of public health nurses are recognized for their ability to provide surge capacity during emergency events.

Eastern Nova Scotia is no different when it comes to barriers in providing population health services. Lack of funding and public health content in nursing programs, ultimately impact the delivery of public health programs and services. Public health nurses, who in theory, believe their client is the total population, often focus on the individual and family services as these have measurable and concrete outcomes. With a review of the public health system in Nova Scotia well under way, recommendations such as more resources and the need for more public health practitioners to be masters prepared will only strengthen the system.

At a time when communicable disease prevention and control programs are being challenged to meet the increased demands of emerging and re emerging diseases, it is imperative to examine the effectiveness and efficiency of the current program and ensure that the program is meeting the needs of the public, partners, and staff. A formal review of public health is underway in Nova Scotia. It was felt several issues came forward during the internal and external reviews of CDPC in eastern Nova Scotia that may be relevant for the provincial review.

Recent world events, such as acts of terrorism, will shape the role of the public health nurse and the public health system. Change is not easy at the best of times and it becomes even more difficult for public health nurses to adapt to change when the broader healthcare system is undergoing changes. Downsizing and restructuring of programs impact the roles and responsibilities of public health nurses and they are being asked to do more with fewer resources. To this day, public health nurses play a vital role in building the capacity within individuals, families, communities, and organizations to create a responsive public health system for health promotion and disease prevention.

Conclusion

Public health nurses in eastern Nova Scotia provide services to individuals, families, and communities and bring a wealth of history and experience to the role of health promotion and protection. Public health nurses serve populations and communities and are connected on a long-term basis to these communities. The depth and variety of knowledge, skills, and abilities that public health nurses possess, along with their knowledge of community, position them to be critical to the health of the people. This broad knowledge of the community has prepared all public health nurses as generalists. Lack of funding and human resources to deliver programs through a generalist model caused a shift to focused or specialized nursing. The CDPC program in eastern Nova Scotia continues to be delivered using both models, providing a coordinated and effective service meeting the needs of our communities, partners, and staff.

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