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The Concept of Population Health Within The Nursing Profession

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THE CONCEPT OF POPULATION HEALTH WITHIN THE NURSING PROFESSION

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POPULATION HEALTH HAS been a framework for providing health care since the time of Hippocrates. As health issues have become diversified, various disciplines have contributed to the overall conceptualization of population health. This has led to overlapping of terminology and confusion especially when terms such as *population health*, *public health*, *community health*, and *population-focused care* are used interchangeably.

Conceptual History

Historically speaking, the concept of population health has shifted according to the dominant field of interest and its usage of information. In the not so distant past, the health of a population was equivalent to short-term survival and centered on issues related to food scarcity, predators, and pestilence (Singer & Ryff, 2001). Governmental interest in the health of its population was centered on male adolescents and adults whose health was important in relation to the defense or the prosperity of the nation. The Industrial Revolution brought to light changes needed in agriculture, sanitation, and community processes that depicted population health through the eyes of epidemiologists and demographers. Epidemiologists studied disease variation in populations through descriptions of the number of cases and examination of environmental or temporal factors and personal characteristics to assist clinicians in explaining etiology. This laid the foundation that factors influencing health behaviors, which in turn affect the health of both individuals and entire populations, exist. Physicians and nurses began to look at issues related to hygiene and nutrition to prevent the spread of disease, as well as to improve the outcomes for those afflicted. It was recognized that if behaviors and beliefs related to health practices could be changed among the masses, the whole of society would benefit.

In the past century, medicine made unprecedented advances in the diagnosis and treatment of disease. Medically, societal health was transfigured from group behavioral factors into individual responses at the molecular, cellular, and genetic levels. Poor health was attributed to a host's response to an invading organism, genetic defects, or the malignant aggression of an invading cell. Improvement in health status depended on a timely and accurate diagnosis, followed by effective response to treatment modalities at the cellular level. Concepts relevant to population health were replaced with the medical model, except in a few health disciplines such as public health or community health. Through it all, longevity was extended, but optimal human health remained elusive. Disturbing reports indicated that human behaviors and environmental factors previously identified in the population health model had a stronger relationship with morbidity and mortality than anything that medicine or the government could impact. This has been apparent as early as 1979 when the Surgeon General's report stated, "a lifetime of seemingly harmless acts such as eating fatty foods, smoking a few cigarettes each day, going to work in traffic without a seatbelt, or driving home after a few drinks accounted for most of society's disease, injury,

disability, and premature death" (U.S. Department of Health, Education, and Welfare, 1979). At such time, health promotion became a national goal. In spite of this, advances in high technology and the need for hospital-based resources to support technology became priorities among health care professionals. Educational programs designed to train physicians and nurses with advanced assessment and diagnostic skills and the use of advanced technology in the care of patients proliferated across the United States. The concept of population health was buried as hospitals scurried to be the first in the area with a computerized tomography scanner.

In spite of all the advanced technology and resources, the United States continued to rank 15th from among 25 industrial countries in relation to health statistics, supporting the need for a change in practice approaches (World Health Organization [WHO], 2000). The government requested evidence to justify, defend, and eventually contain the costs of new technologies and resources as long-term data failed to support improvement in the overall health status of American citizens. Refusing to give up the medical model as the dominant health care framework, health care professionals blamed the failure of patients to adequately use advanced technology for the unacceptable health statistics. Health behavior models emerged to explain why people did not use available resources (Harrison, Mullen, & Green, 1992). A generation of highly controlled randomized trials and fine-grained behavioral research, which tested such things as specific ways to improve patient compliance with smoking cessation or clinic appointments, ensued (Bibeau, Mullen, McLeroy, Green, & Foshee, 1988; Green & Kreuter, 2005; Schwartz, 1987). This resulted in the belief by health care professionals that educational strategies and incentives were the key to assisting the public in becoming more self-sufficient in health and in becoming better consumers of health care services. A meta-analysis of these projects, however, could not find a method superior to others across different population groups. This suggested that patient education interventions tended to be ineffective unless the method matched the behavioral needs of the patient (Green, Mullen, & Stainbrook, 1986; Mullen, Green, & Persinger, 1985). This also led to the recognition that, although human biology is relatively uniform across the species, thus lending itself to the medical model, human behavior, culture, and social change processes are not. It was once again apparent that good health depends on much more than adequate diagnosis, treatment, and patient knowledge of health care issues.

Partially in response to this phenomenon, multifactorial models of illness (later referred to as biopsychosocial models) that viewed health as a result of interacting systems at the cellular, genetic, interpersonal, and environmental levels were formulated. The old principles in population health identified decades before began to take hold in disciplines other than medicine to explain health disparities. Sociologists and environmentalists began to view population health as interrelated facets of the biologic, psychological, environmental, and social determinants of health and disease (Singer & Ryff, 2001).

The understanding that lifestyle played a dominant factor in health-related issues caused a resurgence of the population health model that had long been suppressed by the popular medical model. Lifestyle, in part, was underemphasized because the value-laden culturally and ethically defined nature of many of the lifestyle issues, such as diet and sexual practices, made it impossible to effectively influence through individual patient care contacts or to dictate uniformly from a distant central government. Evidence from decades of research on behavioral change (Green & Frankish, 1996; Tonin, 1980; Zapka & Dorfman, 1982) indicates that people will not be committed to initiating and upholding changes that support health until the emphasis shifts to behavioral and social factors designed to decrease behaviors associated with health risks or coping with chronic conditions and life-threatening diseases. Based on this, it is more likely that the population health model is a more effective framework for health improvement and that assessment of single interventions needs to give way to more broad-gauged approaches to program development with interventions that target at multiple levels and that are pertinent to large segments of the population.

As population health reemerged as a plausible model for improving health, it did so enmeshed within the multiple disciplines responsible for its development. It appeared, at times, not to be an identifiable entity but to overlap with the concepts of public or community health, which also encompassed the role of environment and societal factors in health-related issues. Terms such as *population health*, *public health*, *community health*, and *population-focused care* were used interchangeably but often with distinct differences depending on reference point and professional orientation. This poses several questions: What is population health? Is it the same as population-focused care? Is it different from public health or community health? What is the role of nursing in population health? Is the nurse expert in population health different from a clinical nurse specialist(s) (CNS), nurse practitioner(s) (NP), or clinical nurse leader(s) (CNL)?

What is Population Health?

To understand the concept of population health, one first needs to understand the basic concept of health. The most common definition cited is the one developed by WHO (2000): "Health is the state of complete physical, mental, and social well being and not merely the absence of disease or infirmity." This definition has been popular because it depicts health as a fixed entity from which deviations are easily identifiable and measurable. This utopian ideal has been criticized, however, as having little direct application to individuals or populations in practice (Williams & Wood, 1986). It can be argued that health, such as the concept of pain, is whatever the holder claims it to be.

Traditionally, the medical field has described health in some aspects in relation to the absence of disease or illness.

This is in contrast to the lay person who describes it as being rooted in the experience of illness, either personally or through others (Grant, 2005). Lay individuals' perceptions of health have been shown to change in the course of life but to typically include common elements such as the ability to function, energy and vitality, psychosocial well-being, and the understanding that a higher level of health can be present despite a major illness. Allowing for the idea that individuals may view themselves as healthy despite illness or disability has shifted the paradigm somewhat and creates a dichotomy between those requiring health care and those providing health care.

An example of this would be an individual who suffers myocardial infarction. Both patient and physician agree that the individual is not in good health at the time of the acute attack. But differences emerge as the individual survives and enters a cardiac rehabilitation program, which requires certain changes in diet and exercise regimens. The individual, fearing further compromise in his or her health, complies with the program and shows improvement in cardiac status. The physician views the patient as having improved health. The patient, however, still views himself or herself as ill because it is the illness that requires a change in lifestyle. As the patient is convinced that his or her health has improved, the patient then becomes less compliant with the cardiac rehabilitation program and slowly returns to the previous lifestyle. The physician views the patient as less healthy, but the patient sees himself or herself as more healthy because the patient is now living a lifestyle that is not associated with being ill. The health care provider views the rehabilitation program as a way to maintain health, but the patient views the same program as a reminder of the illness. It is only when the patient can step outside the boundaries of the program that the patient can feel truly healthy.

Examples such as this prompted investigators such as Lindsey (1996) to explore the experience of being healthy in people living with chronic illness or disability. He reported that the essential attributes of feeling healthy were honoring the self, seeking and connecting with others, creating opportunities, celebrating life, transcending the self, and acquiring a state of grace. The negative influence of chronic disease on health resulted in loss of self-identity and strained relationships with others. It is not surprising, therefore, that someone's lifestyle is tied to his or her identity and relationship with others. The ability to choose what to eat, how to plan the day, and what activities to participate in gives an individual a sense of power and fulfillment. It also forms a foundation for maintaining relationships with others who enjoy similar interests. When illness forces individuals to make choices they would not normally make, to participate in activities they would not normally do, or to refrain from activities they previously enjoyed, it may create such a strain that the individual returns to less healthy activities to feel healthy (see Table 1).

In light of these findings, the concept of health needs to include not only the elements of well-being but also the process of fostering awareness, influencing attitudes, and identifying alternatives so that individuals can make informed choices and changes in their behavior to achieve an optimum level of physical and mental health and to improve their physical and social environment. Without the recognition of these elements, strategies for improving health will have limited effect.

Provided that this is accepted for the concept of health, the question remains: How does this apply to population health? A population is simply a large mass of people constituting some kind of definable unit to which measurements pertain (Caldwell, 1996). Once this unit has been defined, it could be argued that population health would pertain to the prevention of disease, improvement in well-being, or promotion of healthy behaviors within the unit. In keeping with the concept of health and in acknowledging that individuals form the composite population, it is within reason that factors influencing individual identity and lifestyle within the specified unit would constitute the basis for health within a population. This would then transcend globally to the overall health status and the performance of the health care system. Population health, therefore, encompasses two broad perspectives: the understanding of macrolevel trends in health status and the evaluation of the performance of the health care system (Singer & Ryff, 2001). Within these perspectives are four broad domains that include time trends and spatial variation in health, accounting for such trends with particular emphasis on social and behavioral factors, understanding linkages between macroeconomy and health, and evaluating the health care system (Singer & Ryff, 2001). A population health focus targets behavior and lifestyle, including the following:

- Development of health care activities based on an assessment of relationships derived from the population's (a) genetic predisposition; (b) behaviors (actions taken or not taken as individuals or groups) and lifestyle; and (c) social and environmental factors (history and culture, levels and distribution of employment and education, housing, availability of health insurance, safety of neighborhoods, etc.)
- Development of health care activities based on an assessment of the ecosystem and its subsystems, most notably the health care system
- Development of health care activities based on an assessment of the population's (1) knowledge, attitudes, beliefs, values, and perceptions that facilitate or hinder motivation for change; (2) rewards or feedback following the adoption of a health behavior; and (3) skills, resources, or barriers that help or hinder desired behavioral or environmental changes (Green & Kreuter, 2005).

Is Population Health the Same as or Similar to Public Health or Community Health?

For decades, as other health-related disciplines embraced the medical model as the framework for health

Table 1. Case Study

Sarah was a typical 17 year old junior in high school until she was diagnosed with juvenile onset diabetes. She was fortunate that her disease was easily controlled with insulin, diet, and exercise. Sarah's mother exerted great effort to prepare her meals according to the guidelines given by the dietician. Sarah was repeatedly praised by her pediatrician because her HgbA$_{1C}$ was perfect and she was in great health. The problem was that Sarah did not feel like she was in great health. Although it was true that her mother painstakingly prepared her meals, mealtime to Sarah was a nightmare. Sarah had four brothers and sisters who did not share her disease and, hence, not her diet. When she sat down to eat, she wanted what everyone else was eating, and it took great effort not to be resentful of them. Sometimes her siblings would tease her ("Look what I have. Too bad you cannot have any."); sometimes they would have pity ("I'm sorry you cannot have any. Do you want us to eat this somewhere else?"); but most of the time, they just ignored her and ate whatever they wanted. Sarah's mother tried to be sensitive by including items Sarah could eat into the overall menu, but most of the time, those items were ignored by everyone else at the table but Sarah. Sarah's mother tried serving the diabetic diet to the whole family in an effort to avoid preparing two separate meals, but the other family members complained loudly and resented Sarah ("Why do I have to eat that just because Sarah is sick?"). Preparing separate meals was the only peaceful solution. This practice, however, put a strain on Sarah's mother, which Sarah was acutely aware of. Sarah became less and less willing to eat with her other family members. The divide widened during holidays and social events. There was always an argument with her siblings when it came to choosing a restaurant or holiday menu. Her siblings always wanted to eat at familiar places Sarah once loved or to have traditional holiday treats. Although there were always appropriate menu items available, Sarah felt as though she was being punished for having to select them. She felt miserable, isolated, and alone. She began to dread vacations, holidays, or family social events. School activities provided additional stress for Sarah. She stopped buying lunch at school as she had done before and instead ate the carefully prepared lunch her mother made for her. Her friends felt embarrassed to eat in front of her and constantly apologized when they purchased food items that had previously been her favorites. In time, she also felt the impact on her social life. She was not included in social activities as much as she once was. This was, in part, because her friends did not have as much in common with her and, in part, because she did not want to be involved. For example, it had been common for her to get together with her girlfriends on the weekend and go to the mall. It was almost a ritual for them to stop and get pizza and ice cream. Now she was left with three choices—she could get a salad and a diet drink while her other friends ate the food she desperately wanted; they could go to the mall and not stop for pizza, which imposed upon her friends and made her feel guilty; or she could not go at all. In the end, she stopped going. Sarah's friends tried to be understanding and would invite her over, but always with such comments as "What can we have that you can eat?" or "I had my mother buy sugar free soda so there would be something here for you when you came over." Sarah felt different, isolated, and powerless. Her life and relationship with others were greatly affected. At one point, Sarah agreed to go with her girlfriends to the movies. She went in first and headed right for the concession stand. She bought what she had always bought before she was diagnosed with diabetes: large popcorn with extra butter and a large regular soda. Her friends did the same. After the movie, one of her friends threw her arms around her and stated, "It is so good to see that you are better now!" Sarah went home and tested her blood sugar and saw that it was 310. She had not felt this healthy in months.

This would be the beginning of a downward spiral for Sarah into noncompliance with her diabetes therapy. She would become trapped into a seemingly hopeless battle between a physical need and the competing need to be the person she wants to be.

delivery services, public health and community health practitioners continued to embrace the population health philosophy. In time, public health and community health became synonymous with population health, and the terms were used interchangeably.

As previously described, population health is governed by the physical, social, cultural, and economic environment in which we live and work. It is the greater understanding of macrolevel trends in health status (lifestyle, attitudes, values, and behaviors), how macroeconomy (public policy, media, and economy) and health are linked, and the performance of health care systems (DeSouza, Williams, & Myerson, 2003).

Public health, on the other hand, is defined as health promotion and ill-health prevention as special responsibility of the government. Public health addresses the relationship between the state and the health and welfare of its citizens (Grostin, 2004). It evaluates the role of the environment and adaptation for the survival of the species (Singer & Ryff, 2001). Lillian Wald, in 1890, first used the term in caring for the poor and the

sick in New York slums to convince policy makers about the social, economic, and environmental causes of ill health. Public health in the United States was founded on the recognition of poverty and the need for public services to be responsive to diverse socioeconomic and cultural groups. Eventually, this led to the formation of governmental departments that organized federal, state, and community efforts to protect, promote, and improve the health of its citizens. Most states have a Department of Health, which assures public health and security. The goals of public health include the prevention of chronic, environmental, genetic, and infectious diseases; prevention or minimization of outbreaks of disease; protection of the health and safety of the public; and the building of a science base for future prevention.

Community health originally centered on individual or family health concerns requiring services outside traditional institutional settings within a specific geographic area. Community health is often differentiated from public health in that the goal is to provide care for the sick or the disabled in the community (Niles & McEwen,

2001). In recent years, however, community health has broadened its definition to include clients interacting in social units and sharing common interests. It has moved away from providing direct care to individuals and families to utilizing a population-focused approach to concentrate on specific groups of people regardless of geographical location (Baldwin, Conger, Abegglen, & Hill, 1998). In doing so, the focus of community health has become less distinctive as its own specialty and more of a subset of population health. This expansion is not shared by all in the practice discipline, however. The American Nurses Association continues to define community health nursing as nursing care directed to individuals, families, or groups that contributes to the health of the total population. Population issues would be addressed through individual family assessments. Those subscribing to the broadened definition would focus on the characteristics of the community as a whole. Community health, however, still remains essentially within the community setting, although the setting can be very diverse and can include homes, workplaces, clinics, and schools. Population health has no boundaries, except those that define the aggregate to which care is provided. Population health nurses are expected to cross institutional lines and to develop health strategies that apply to patients within a given population in all environments and at any point in the health continuum. *Population-Based Public Health Interventions: Practice-Based and Evidence-Supported: Part I* (Keller, Strohschein, Lia-Hoagberg, & Schaffer, 2004a) and *Population-Based Public Health Interventions: Practice-Based and Evidence-Supported: Part II* (Keller, Strohschein, Lia-Hoagberg, & Schaffer, 2004b) are excellent examples of how public health and community health nurses use the population health framework in their practice.

Population health, public health, and community health all incorporate components of health promotion, disease prevention, environmental influences, and culture to aggregates/groups of people. They all contain elements of program development, involvement in health care policy, and program and systems evaluation. The differences tend to lie on whether the approach is made through the care of the individual/family or the overall population, and the type of approach utilized to determine strategies for health management (see Table 2). Population health is the most global concept and often incorporates components of both public health and community health.

Clearly the goal of population health is to maximize the health of a population. The key elements that set population health apart from both public health and community health are its overall lack of boundaries and evaluation approach, which uses predisposing, enabling, and reinforcing factors within a given population to develop therapeutic strategies designed to decrease behaviors associated with health risk and to prevent habituation and the relapse and recidivism of behavior, and to determine the response of the health care system to these identified behaviors.

Is Population Health Care the Same as Population-Focused Care?

In the early 1990s, the terms *population-focused care* and *population-based practice* began to appear in the professional literature. The terms denote a practitioner's provision of health care services to aggregates of patients in contrast to individual patients. In this respect, population health care encompasses population-focused care, but population-focused care is not necessarily population health care. For example, CNS or NP in pediatric nursing typically include infants and children as their specialty population for which they deliver expert care services. This does not mean that they deliver care based on the population health framework. Take, for example, the common childhood problem of otitis media. The child's parent could easily bring the child to an outpatient clinic for the treatment of the condition and for consultation with pediatric CNS or NP because their advanced practice skills apply to members of this population. If the nurse examines the infant, diagnoses otitis media, prescribes treatment (usually under protocol), provides discharge instructions, and arranges for follow-up, the nurse is operating in the advanced practice nursing model, although the nurse does this for aggregates of pediatric patients with otitis media. If the nurse uses his or her experience with all other patients in this population and takes into consideration the cost and the efficacy of one antibiotic over another, success rates of therapies, availability of services for the family (such as insurance coverage), and so on, then the nurse can be said to be providing population-focused care. For the nurse to work in the population health model, the antibiotic treatment for the disease would be a secondary care provision. The primary goal would be to investigate why the children contact the disease, why children continue to contact the disease in spite of treatment options, and what contributes to the large number of children who contact that disease, often repeatedly, year after year. Perhaps, in this example, the nurse would identify the mode of infant feeding as being associated with the high incidence of otitis media. The nurse would investigate why women prefer formula feeding in spite of the health risk to their infants. The nurse would have to investigate the culture, beliefs, values, and so on, not only of the parents of the infants but also of the whole community in which they live. The nurse would also have to investigate all avenues that support or reward the parent for choosing formula feeding, including the role of other health care professionals, health care systems, public policies (perhaps the mother receives state money to buy formula but receives nothing for breastfeeding), how infant feeding is portrayed in the media, the effect of formula companies on culture, how the workplace supports breastfeeding mothers, and so on. The population health nurse would then approach the problem of otitis media by implementing health care strategies that change infant feeding practices. In the population health model, the

Table 2. Comparison of Population Health, Public Health, and Community Health

Parameter	Population Health	Public Health	Community Health
Overall goal	To maximize the health of the population	To organize federal, state, and community efforts to protect, promote, and improve the health of its citizens	To provide health care for individuals/families or social groups at a community level To promote healthy communities
Health management view	Health promotion and ill health prevention at levels proximal to the individual; emphasis on behavioral and social factors designed to decrease behaviors associated with health risk, and coping with chronic conditions and life threatening diseases	Health promotion and ill health prevention to protect the health and safety of the public; emphasis on natural disasters, outbreaks of disease, and biologic, chemical, or nuclear incidents	Health promotion and ill health prevention of the individual/family or social groups sharing common interests within a community; emphasis on the health of the community
Necessary elements	1. Assess factors that predispose, enable, or reinforce behaviors contributing to health risks 2. Design interventions that support individuals', groups', or communities' control over the determinants of their health 3. Utilize or develop public policy to support healthy lifestyles 4. Evaluate the health care system	1. Assure public health and security 2. Prevent chronic, environmental, genetic, and infectious diseases 3. Stop further cases of disease and outbreaks 4. Protect the health and safety of the public 5. Build a science base for future prevention	1. Provide nursing care directly to individuals, families, or groups in such a way that contributes to the health of the total population 2. Work toward health promotion, health maintenance, health education, and management, coordination, and continuity of care using a holistic approach for the management of the health care of individuals, families, and groups in a community (American Nurses Association, 1980) 3. Perform outreach functions, including case findings and consultation

health issues related to otitis media can only be solved by changing the infant feeding practices of the population, not by prescribing amoxicillin. As nurses providing population-focused care continue to treat infants with otitis media with the best available therapy, population health nurse experts will work to implement hospital policies that support breast-feeding, initiate public and governmental programs that support healthy infant feedings practices, develop programs aimed at addressing the cultural components involved in infant feeding practices, and so on. For an additional example of how population health, public health, and community health address the same problem, see Table 3.

What is the Role of Nursing in Population Health?

Nursing plays a key factor in both the improvement in the health of populations and the responsiveness of the health system to legitimate expectations of the population. Health promotion and disease prevention based on healthy lifestyles and behaviors are the premise under which Florence Nightingale founded the profession almost 200 years ago. Nursing can utilize population health as a framework to focus on:

1. Immediate outcomes, including reduction of risk factors, enhancement of well-being, effec-

Table 3. How Population, Public, and Community Health Could Address the Same Problem (e.g., Death Related to Motor Vehicle Accidents [MVAs])[a]

Population Health	Public Health	Community Health
Assessment		
Aim		
To provide population specific information	To provide population specific information	To provide population specific information
Epidemiologic		
Number of victims/accidents	Number of victims/accidents	Number of victims/accidents
Location of accidents	Location of accidents	Location of accidents
Time of accidents	Time of accidents	Time of accidents
Pattern of accidents	Pattern of accidents	Pattern of accidents
Use of seat belt	Use of seat belt	Use of seat belt
Use of alcohol	Use of alcohol	Use of alcohol
Demographic information on accident victims	Demographic information on accident victims	Demographic information on accident victims
Environmental		
Weather patterns	Weather patterns	Weather patterns
Emergency response systems	Emergency response systems	Emergency response systems
Road conditions	Road conditions	Road conditions
Vehicle condition	Vehicle condition	Vehicle condition
Policy		
Traffic laws	Traffic laws	Traffic laws
Law enforcement	Law enforcement	Law enforcement
Based on data results		
1. Profile behavioral and environmental factors known to be risk factors for MVAs.	1. Determine the pattern and nature of MVAs, and identify areas of highest risk (i.e., day of week, time of day, age of driver, and location of MVAs).	1. Compare community data with national or regional data.
2. Profile the population most likely to be involved in MVAs.		
3. Determine what factors predispose, enable, or reinforce the behaviors in the at risk population, which in turn contribute to MVAs.	2. Determine the magnitude of the problem (i.e., death from MVA in relation to other causes of death in the same population or geographic area).	2. Determine the magnitude of the problem for a specific community.
Predisposing factors: evaluate the population's knowledge, attitudes, beliefs, and values in relation to MVAs (i.e., beliefs that an infant is safer in the mother's arms rather than in a safety seat)	3. Determine causality (use of alcohol, driving ability, use of seat belts and airbags, road conditions, weather, traffic patterns, etc.).	3. Profile the community and determine causality (i.e., traffic or weather patterns, community resources that may be used to respond to roadway emergency, enforcement of driving laws, age or health of community members in relation to driving ability, specific cultural beliefs or customs that promote unsafe driving practices, etc.).
Genetic factors: age and gender	4. Determine the need for resources (laws on speed limit, laws on helmet use, enforcement of laws, vehicle safety designs, emergency services, and road construction and repairs).	
Enabling factors: skills, resources, or barriers to behavioral or environmental changes (i.e., driving laws, road lighting, distance to emergency facilities, and road conditions)	5. Determine the need for public education.	4. Determine the need for community resources.
Reinforcing factors: rewards/feedback that individuals receive for maintaining or changing behavior (i.e., it is socially more acceptable not to wear a seat belt; peer pressure to exceed speed limit)		5. Determine the need for community education.
Based on determination		
1. Determine the needs and priorities of the affected population (what is important to them).	1. Develop programs, local or state policies, or services to reduce the incidence of MVAs.	1. Develop a caseload of individuals involved in MVAs, and provide and coordinate their health care services within the community.
	2. Direct resources toward those	

Table 3 (continued)

Population Health	Public Health	Community Health
2. Sort and categorize the predisposing, enabling, and reinforcing factors that directly impact behavioral or environmental factors contributing to MVAs. 3. Determine which factors have the highest priority. 4. Determine the cost effectiveness and feasibility of interventions targeting priority factors. 5. Focus interventions on those factors that meet the needs and priority of the affected population, are feasible, and are cost effective. 6. Evaluate the effectiveness of interventions.	policies. 3. Assure access to and availability of programs, policies, resources, and services that reduce the incidence of MVAs. 4. Develop public educational programs, as needed. 5. Evaluate the success of interventions.	2. Work with the community to identify and implement programs aimed at reducing MVAs, and evaluate the effectiveness of such programs. 3. Develop, implement, and evaluate community educational programs aimed at reducing behaviors related to MVA causation, 4. Evaluate the success of interventions. 5. Promote MVA related legislation and serve on task forces that address issues related to that community.

[a]Due to the long history of interchange between the disciplines, strict boundaries do not exist and there is a high probability of overlap.

tive coping, and organizational and environmental changes

2. Intermediate outcomes, including maintenance of healthy lifestyle, improved fitness and self-confidence, improved self-esteem and self-efficiency, and reduced medical utilization

3. Final outcomes, including reduced illness and extended longevity.

To meet these goals, nursing needs to shift from resource-based to population-based planning and evaluation. In addition, for nurses to make an impact, they must become specialists in (1) lifestyle or health-related behaviors, which are not isolated acts under the autonomous control of the individual but rather socially conditioned, culturally imbedded, economically constrained patterns of living; and (2) strategies aimed at lifestyle promotion and the evaluation of such programs (Green & Kreuter, 2005). This can only be achieved by population health nursing.

Because the vast majority of the nursing workforce practices within the hospital or institutional setting, they provide health care offering localized strategies that target individual patients in terms of lifestyle and behavior modifications (Whitehead, 2005). The workload issues of the typical bedside institutional nurse are often a barrier to the more global population health framework. The implementation of the CNL, a unit-based nurse expert who can integrate the principles of the population framework into the current nursing care environment, has been suggested by the American Association of Colleges of Nursing (AACN). According to the curriculum suggested by AACN, a CNL possesses all the skills and expertise of the population health nurse expert but is expected to practice at the microsystem level as opposed to the macrosystem level of the population health nurse expert (AACN, 2004).

To accomplish the goals of population health, nursing must start with the identification of a specific human population. Populations are commonly defined by age, income, geography, community, employer, insurance coverage, and health status or disease/illness affliction. This list, however, is infinite provided that the nurse assesses the population needs beyond those of the individual who appears for illness or injury treatment or beyond those who turn out for educational events. This assessment should reveal the causes of the health need and should identify the determinants of health. For example, risk conditions or factors that influence health (alcohol, tobacco, and nutrition) or factors that operate directly on human biology in time (housing, income, work environment, safety, and public policies) should be identified. The data identified should then be applied by nurses to the development of programs designed to influence changes in the factors that predispose, enable, or reinforce the causes of less-than-optimal health practices in that population.

Several evaluation models have been utilized in the past to achieve this purpose. One model that has been suggested is the Precede Proceed model developed by Green and Kreuter (2005). It is an interventionist model used to maintain, enhance, or interrupt a behavior pattern or condition of living that is linked to improved health or to increased risks for illness, injury, disability, or death. Green and Kreuter define the behavior of interest as usually that of the people whose health is in question, either now or in the future. The Precede Proceed model is an outgrowth of the professional disciplines of epidemiology, health education, and health administration. It has a strong base in statistics, social and behavioral sciences, biomedical science, economics, and management sciences.

The Clinical Prevention and Population Health Curriculum Framework developed by the Healthy People

Curriculum Task Force also addresses the incorporation of the principles of population health into professional practice from a curriculum and educational focus (Allan, Stanley, Crabtree, Werner, & Swenson, 2005). This model, designed by representatives of all major health care providers, is the outcome of a task force convened to address the Healthy People 2010 objectives. It emphasizes the need for evidence-based practice, clinical preventative services, health system evaluation, health policy, and community aspects of practice.

Models such as these assist the nurse in identifying predisposing factors, such as the population's knowledge, attitudes, beliefs, values, and perceptions that facilitate or hinder motivation for change. It also identifies those skills, resources, or barriers that can help or hinder desired behavioral and environmental changes. In addition, it identifies the rewards and feedback the learner receives from others following the adoption of the behavior. The nurse then has the information necessary to understand what will encourage or discourage the continuation of health-related behaviors. The nurse can then use this knowledge to design interventions that produce lifestyle changes, which in turn influence the environment through political advocacy, consumer demand, or cumulative actions.

How is this Different From the Work of CNS or NP?

As health care has advanced, the nursing profession has kept pace through the education and training of expert nurses to meet the needs of these advanced or newly developed practices. The National Association of Clinical Nurse Specialists (NACNS) (2004) acknowledges that the essence of CNS practice is clinical nursing expertise in diagnosis and treatment to prevent, remediate, or alleviate illness and to promote health with a defined specialty population. The expertise of clinical practice is manifested in the care of clients, whether individuals, families, or groups. CNS practice also influences systems such as health care agencies or political systems to mobilize change to facilitate expertly designed nursing interventions (NACNS, 2004). CNS provide expert nursing care to patients with complex conditions and advance the practice of nursing by designing innovative evidence-based interventions; by influencing the practice of other nurses; and by influencing the health care system environment to support autonomous nursing practice (NACNS, 2004).

NP are primary care providers with specialized advanced education and clinical competency to provide health and medical care for diverse populations in a variety of primary, acute, and long-term care settings (American Academy of Nurse Practitioners, 2002). They use scientific processes and national standards of care for the management of patient care, the assessment of an individual's health status, diagnosis, and the development of a treatment plan.

CNS and NP can also practice within the disciplines of public health and community health. The difference, however, between the CNS and NP and the population health nurse expert is the management approach to health care and the framework in which practice is dictated. In the case study involving Sarah, an adolescent suffering from juvenile-onset diabetes, nursing care could be provided by CNS, NP, or population health nurse experts. If Sarah were seen by a pediatric NP, one would expect that the pediatric NP would obtain a relevant health and medical history and would perform a physical examination. One would expect that the pediatric NP would identify Sarah's health and medical risk factors resulting from her noncompliance with her diabetes therapy. The NP, together with Sarah and her mother, would establish a mutually acceptable cost awareness plan of care that would maximize Sarah's health potential. This plan may include ordering diagnostic tests, adjusting insulin requirements, providing or reinforcing Sarah's or her mother's educational needs, or referring Sarah to appropriate consultants, such as a dietician, to help Sarah with her food choices.

Sarah might also be seen by a CNS whose population of interest is individuals with juvenile-onset diabetes. The CNS would review Sarah's history and physical examination and pertinent laboratory findings and would discuss the results with Sarah and her mother. She would develop a plan with Sarah's and her mother's inputs to reduce Sarah's risk behaviors. She would collaborate with other health care professionals and would use available resources, as necessary, to assist Sarah to meet the desired outcomes. She would facilitate the integration of services for Sarah to reduce fragmentation of care. The CNS may also elect to develop or test alternative or innovative strategies to assist Sarah in achieving desired health outcomes because compliance, rather than lack of understanding or need for education, is more of an issue with Sarah. The CNS may use an existing tool or may design a measurement tool to evaluate the effectiveness of the intervention, once implemented, to be able to use the data with other members of the target population.

If Sarah were seen by a population health nurse expert, the nurse would focus not on Sarah's history or physical findings but on day-to-day activities that surround Sarah but are not necessarily related to her disease. The nurse would concentrate on how socialization occurred within Sarah's family and circle of friends, and what it meant to be part of that socialization. The nurse would then investigate the environment that Sarah interacted with to determine the effect it had on her health behaviors. She would evaluate how social activities were determined and what importance they carried within that culture. The nurse would evaluate the effect of the media, the social milieu of the school and the home, and any other medium that would influence factors that would predispose her to, enable her to continue, or reinforce her less-than-desirable health behaviors. The nurse would then develop a plan designed to influence changes in these factors. The plan could be broad enough to involve school officials in

health curriculum changes and policy changes at a local or governmental level that might influence school lunch items or vending machines; and the plan could be specific enough to help Sarah see her diet as a way to become more physically attractive (rather than physically healthy), which would be more accepted, desired, and supported by both her siblings and her adolescent friends.

Conclusions

Population health is an emerging field that bridges multiple disciplines across basic, social, and health sciences (Weinstein, Hermalin, & Soto, 2001). As definitions of health move away from the absence of disease model and recognize that the world of everyday life has at least as much to do with achieving health outcomes as disease, disability, or illness, health care strategies that concentrate on socially conditioned, culturally imbedded, economically constrained patterns of living need to be developed. Nurses are in a unique position to develop and to evaluate such strategies because of their presence in all aspects of the health continuum, but to do so, they will have to change their orientation to population-based planning. This is different from the population-focused care typically employed by CNS and NP who develop care strategies for individuals or groups within a defined specialty population for which they have expertise. Care of the individual is still highly valued, but as the individual's active participation in decision making is being influenced by factors not under his or her direct control, there will be an emerging need for those nurses to go beyond population-focused care and to become experts in population health care.

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