Nursing and health care in Canada and elsewhere are experiencing profound change. A paradigm shift away from an emphasis on disease and illness towards wellness and health is evident in healthcare research, education, and practice. Nursing practice has traditionally focused on the attainment and maintenance of health in individuals, families, and communities. This historical focus provides nurses with an opportunity to assume a leadership role in the changing healthcare forum.

This article describes the application of the Neuman Systems Model (NSM) to nursing practice with reference to the current trends in health care in Canada. A human immunodeficiency virus (HIV) outpatient clinic at a large teaching hospital in Western Canada is the practice setting used to demonstrate the implementation of this model. An overview of the trends forecasted to shape health care in the 21st century is outlined in terms of their relevance to the continued use of nursing models, specifically the NSM.

THE PARADIGM SHIFT IN HEALTH CARE

Lalonde (1974), in his report *A New Perspective on the Health of Canadians*, was one of the first to propose the need to reform health care in Canada. He argued that further advances in the health of Canadians could not be achieved without addressing the impact of lifestyle, human biology, and environment on a person's health. He advocated a move away from the traditional emphasis on illness to a focus on the prevention of disease. Four years later, a seminal document, the Declaration of Alma-Ata (World Health Organization (WHO), 1978), was produced at an international conference on primary health care, outlining strategies with which to achieve health for all by the year 2000. This document advanced the conviction that the attainment of the highest possible level of health for all members of society must become a worldwide societal goal. Primary health care was advocated as the necessary strategy to achieve health for all (WHO, 1978).

Within the model of primary health care, health promotion is advocated as a strategy to assist individuals and communities to enhance their health status. Health promotion focuses on creating an environment that enhances health and wellbeing. It 'represents a mediating strategy between people and their environments...' (WHO, 1984) and includes strategic plans to build healthy public policy, create supportive environments, strengthen community action, develop personal skills and reorientate health services (WHO, 1986). The realization that the concept of health must include an understanding of the relationship between the individual/community and the environment (physical, biological, social, economic, and political) had become evident by this time. It had also become apparent that many vulnerable populations, in both developing and developed countries, had limited access to health through the traditional approaches of health care delivery.

Nurses are in a prime position to participate in the implementation of these new approaches to health care. It is remarkable that as far back as 1978, Schlotfeldt, in...
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outlining her vision for the future of nursing, described a model of community health centres which included nurses as the primary patient contact. Dr Halfdan Mahler, Director General of WHO at the time of the Alma-Ata Declaration, stated that:

'...millions of nurses throughout the world hold the key to an acceptance and expansion of primary health care because they work closely with people...' (Mahler, 1985).

This statement challenges nurses and nursing to become advocates of and participants in a system based on primary health care.

THE NEUMAN SYSTEMS MODEL AS A GUIDE FOR PRACTICE

In order to be an effective partner in the changing healthcare arena, nursing must ensure that its professional practice is guided by theory. The NSM can provide a theoretical framework for nursing practice by providing a comprehensive strategy for assessment, intervention and evaluation of care that is compatible with the philosophy of primary health care. The use and effectiveness of the model in a variety of settings has been documented thus reflecting its generalizability (Smith, 1989; Knight, 1990; Pierce and Hutton, 1992). Individuals, families (Ross and Helmer, 1988; Reed, 1993) or communities (Beddome, 1995) may make up the client system in this model.

An overview of the NSM

The interaction between the client and his/her environment is central to the NSM. Neuman describes her model as being holistic and as one in which:

'...the client is viewed as a composite of interacting variables — physiological, psychological, developmental, sociocultural, and spiritual — that are ideally, either functioning harmoniously or stable in relation to both internal and external environmental stressor influences' (Neuman, 1995).

The client is at the core of the system protected by lines of resistance (factors that assist the client in returning to his/her usual state of wellness) and the normal and flexible lines of defence (Neuman, 1995). The normal line of defence is dynamic and represents the client’s usual state of health (Neuman, 1995).

The nurse interacts with the system by assessing the impact of environmental stressors on the client’s health and assists his/her in maintaining optimum wellness by intervening with primary, secondary and tertiary prevention (Neuman, 1995). In Neuman’s model health promotion is a component of primary prevention. Neuman describes three types of stressors which can influence the system:

1. An intrapersonal stressor which is within the client
2. An interpersonal stressor which is outside, but in close proximity to the boundary of the client
3. An extrapersonal stressor which occurs outside the client’s boundaries.

The goal of intervention is ‘to protect the client system’s normal line of defence or usual wellness state by strengthening the flexible line of defence’ (Neuman, 1995).

The NSM in an HIV outpatient setting

During a recent clinical learning experience the author assessed the utility of the NSM in an HIV outpatient clinic of a large hospital in Western Canada. A literature search was completed to determine the use of nursing models in the clinical area of HIV or acquired immunodeficiency syndrome (AIDS). This inquiry revealed a paucity of information in this area. Pierce and Hutton (1992) used a case study to demonstrate the application of Neuman’s model with an HIV-positive client. Flaskerud (1992) utilized a model of primary, secondary and tertiary prevention to plan the care of HIV-positive clients, but did not use a nursing model. Clearly, further testing and evaluation of nursing models in this clinical setting is necessary.

In the HIV clinic, intervention is implemented by an interdisciplinary team which includes physicians, nurses, social workers, psychologists and public health nurses (health visitors). The weekly client review meetings are reflective of the interdisciplinary nature of the team (Field, 1988) in the HIV clinic and leadership is dependent on the expertise required by each client. Although NSM has the potential to be utilized by a variety of healthcare professionals, in this case the other members of the interdisciplinary team did not use it.

Primary prevention in the HIV outpatient clinic occurs with individuals, families and the community. Intervention at the primary
level is aimed at reducing the likelihood of the client confronting a stressor. Clients are monitored regularly on an individual level to assess the physical, social and emotional impact that the disease process has on them. These elements are comparable to the variables Neuman identifies within each client system. Through this assessment, which includes the careful management of a variety of medications, the client can achieve his/her highest level of wellness.

Primary prevention was implemented with two mothers who were HIV positive during the author’s placement in the HIV clinic. Home visits were made to assess the variables influencing their health and to explore possible solutions to the problems they were having in coping with their illness. One single mother was experiencing difficulty dealing with childcare for her two young children. This mother, because of limited support from her family, needed information regarding temporary childcare to cover the periods when she required hospitalization. She also required emotional support as she began the painful task of identifying a caregiver for her children following her death.

Primary prevention occurred on a broader level through education and outreach work in the community. Educational programmes aimed at the prevention of HIV infection in the community were carried out by nurses and other members of the interdisciplinary health team. Staff in the outpatient clinic were also involved with other community agencies in programme planning for the prevention of HIV infection.

When primary prevention failed to prevent a stressor from invading the client system, secondary prevention was implemented. For example, secondary prevention in the HIV clinic occurred with the initiation of antibiotics to prevent opportunistic infections when a client’s immune status deteriorated. Marked weight loss, accompanied by decreased strength, are common physical symptoms that occur with the progression of HIV disease. These physical changes often necessitated the provision of home care services to clients during the later stages of their illness. Home care is another example of secondary prevention and delays the need for hospitalization.

Tertiary prevention included support and close monitoring of the client’s general health status and immune system to ensure that the client system had stabilized following an illness. In the later stages of illness the health status of clients was monitored in their homes. The process of reconstitution (tertiary prevention) may be very protracted with an HIV client because of the impairment of his/her immune system. Following illness, reconstitution involves the process of the client achieving and maintaining his/her optimum level of wellness. Support and counselling for the client and his/her family was a component of each level of prevention.

**Congruence of the model with current practice**

The principles outlined in the NSM are consistent with the current trends evident in nursing practice and health care in Canada. The focus of this model on prevention is compatible with the increased emphasis on prevention in all areas of healthcare practice. In addition, Neuman’s inclusion of health promotion in primary prevention reflects the contemporary nature of the model. Neuman states that this concept:

‘...has unlimited potential for major role development that could shape the future image of nursing’

(Conrad, 1995).

Recognition of the role of the environment in determining the health status of individuals, families, and communities is a key element and a positive feature of the NSM.

**The future role of the NSM**

The NSM is a comprehensive nursing model which can provide a useful framework for nursing practice in the 21st century. Several authors have demonstrated the utility of this model in the current healthcare system (Pierce and Hutton, 1992; Reed, 1993; Beddome, 1995). In order to ensure the continued relevance of the NSM for client practice it is important to understand the issues surrounding future health care.

The ageing population, poverty and ethical dilemmas arising as a result of rapid technological growth are issues which healthcare providers will have to confront (Catley-Carlson, 1992). Sadik (1992) stresses that the implementation of measures to control population growth are fundamental to the attainment of global health. In addition, the growing trend of delivering health care in the

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The recognition that health is a global concern, in combination with the goal of achieving health for all by the year 2000, necessitates the development of nursing models which are applicable to any culture. Nursing models will increasingly be required to guide the provision of health care in vulnerable populations. The future of nursing may be dependent on:

'...the ability of the discipline to reach out to diverse communities and to meet the health needs of those most vulnerable' (Hall et al, 1994).

The theoretical components of the NSM are sufficiently robust to embrace the emerging trends in health care and thus guide future nursing practice.

CONCLUSION

The realization that traditional approaches to health care were limited in their ability to effect a continued improvement in health status is evident from the Lalonde report (1974) and the Declaration of Alma-Ata (WHO, 1978). As a result of the WHO mandate the goal of health for all by the year 2000 was adopted as a worldwide societal goal by many countries. Primary health care is the fundamental strategy for attaining this goal. The nursing profession, with its historical focus on health and its close relationship to people, is central to the implementation of primary health care.

As strategies are developed to assist in the achievement of health for all, nursing practice will change to reflect this. In the future, nursing practice will focus on the elderly and other vulnerable populations. The increasing complexity of healthcare technology will result in challenging ethical issues for nursing.

Nurses will increasingly practice primary healthcare roles in the community. The NSM has the capability of embracing the emerging concepts in health care and has the potential to provide a strong basis for nursing practice in the next century. 

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