A framework for the introduction and evaluation of advanced practice nursing roles

Denise Bryant-Lukosius PhD RN CON(C)
Assistant Professor, School of Nursing, McMaster University; Clinical Nurse Specialist, Jwarinski Cancer Centre, Hamilton, Ontario; and Canadian Health Services Research Foundation Postdoctoral Fellow, Canada

Alba DiCenso PhD RN
Professor, School of Nursing and Department of Clinical Epidemiology & Biostatistics, McMaster University, Hamilton, Ontario; and Chair in Advanced Practice Nursing, Canadian Health Services Research Foundation/Canadian Institute of Health Research, Canada

Submitted for publication 5 January 2004
Accepted for publication 14 March 2004

Correspondence:
Denise Bryant-Lukosius,
Room 3H48 – Faculty of Health Sciences,
McMaster University,
1200 Main Street West,
Hamilton,
Ontario,
Canada L8N 3Z5.
E-mail: bryantl@mcmaster.ca

BRYANT-LUKOSIUS D. & DICENSO A. (2004) *Journal of Advanced Nursing* **48**(5), 530–540

A framework for the introduction and evaluation of advanced practice nursing roles

Aim. This paper describes a participatory, evidence-based, patient-focused process for advanced practice nursing (APN) role development, implementation, and evaluation (PEPPA framework).

Background. Despite the growing demand for advanced practice nurses, there are limited data to guide the successful implementation and optimal utilization of these roles. The participatory, evidence-based, patient-focused process, for guiding the development, implementation, and evaluation of advanced practice nursing (PEPPA) framework is an adaptation of two existing frameworks and is designed to overcome role implementation barriers through knowledge and understanding of APN roles and environments. The principles of participatory action research directed the construction of the new framework.

Conclusions. The process for implementing and evaluating APN roles is as complex and dynamic as the roles themselves. The PEPPA framework is shaped by the underlying principles and values consistent with APN, namely, a focus on addressing patient health needs through the delivery of coordinated care and collaborative relationships among health care providers and systems. Engaging environmental stakeholders as participants in the process provides opportunity to identify the need and shared goals for a clearly defined APN role. The process promotes increased understanding of APN roles and optimal use of the broad range of APN knowledge, skills, and expertise in all role domains and scope of practice. The steps for planning and implementation are designed to create environments to support APN role development and long-term integration within health care systems. The goal-directed and outcome-based process also provides the basis for prospective ongoing evaluation and improvement of both the role and delivery of health care services.

Keywords: advanced practice nursing, participatory action research, evidence-based practice, patient-focused care, role barriers, role implementation, role evaluation

Introduction

Health care restructuring has led to increased demand for advanced practice nursing (APN) roles (Dillon & George 1997, Pinelli 1997, Offredy 2000, Chang & Wong 2001). These roles focus on meeting patient health needs by maximizing the use of nursing knowledge and skills and improving the delivery of nursing and health care services. APN roles require graduate education, involve autonomous and expanded practice, and include multiple domains related to clinical practice, education, research, professional development, and leadership (ANA 1995, CNA 2000, ICN 2003).

An earlier paper identified six inter-related issues influencing the development, implementation, and evaluation of APN roles (Bryant-Lukosius *et al.* 2004). Recommendations for improving the introduction of APN roles include the need for a collaborative, systematic and evidence-based process designed to:

- provide sufficient data to support the need and identify goals for a clearly-defined role;
- support the development of a nursing orientation to practice characterized by patient-centred, health-focused and holistic care;
- promote full use of APN knowledge, skills and expertise in all role domains;
- create environments that support APN role development within the health care team, practice setting and broader health care system; and
- provide ongoing and rigorous evaluation of APN roles related to predetermined outcome-based goals.

This paper describes a framework to guide the successful development, implementation, and evaluation of APN roles. This framework builds on the work of Dunn and Nicklin (1995), who identified steps for introducing new APN roles, and Spitzer (1978), who outlined a strategy for introducing new health professionals.

Based on the *ad hoc* nature of APN roles in Canadian hospitals, Dunn and Nicklin (1995) recommended that their introduction follow these steps: identify patient needs, collaborate with physicians, determine types of positions, define scope of practice, set standards and develop protocols, provide educational programmes, evaluate impact, and determine the need for future positions.

While not empirically developed or evaluated, the Spitzer (1978) framework uses an evidence-based approach in which new health care provider roles are likened to the introduction and evaluation of new therapies. The framework has been successfully used to introduce several APN roles in Canada (Spitzer *et al.* 1974, Mitchell-DiCenso *et al.* 1995, Mitchell-DiCenso *et al.* 1996), and includes the following steps: establish the need for the new role; define the role; evaluate the safety, effectiveness and economic efficiency of the role; determine the impact of the role on quality of care, patient acceptance and satisfaction; evaluate health care provider satisfaction; determine the extent of role transfer if other care provider functions are assumed by the role; and monitor long-term performance. Spitzer's (1978) framework was revised to include one additional step to develop and evaluate educational programmes specific to the new role (Mitchell-DiCenso *et al.* 1996).

There are unique challenges to the successful implementation of APN roles (Beal *et al.* 1997, Woods 1998, Irvine *et al.* 2000, Centre for Nursing Studies and the Institute for the Advancement of Public Policy 2001, Guest *et al.* 2001, Seymour *et al.* 2002). Spitzer's (1978) framework applies to any new health care provider role and therefore does not address implementation issues specific to APN. Dunn and Nicklin (1995) identified steps relevant to introducing APN roles but also did not address implementation issues. Combining these two frameworks addresses several recommendations for introducing APN roles by: providing a systematic and evidence-based approach for role development based on patient needs, incorporating nursing standards and scope of practice for role delineation, supporting role development through education consistent with role definitions, and rigorously evaluating the role.

PEPPA framework

The merged framework, the participatory, evidence-based, patient-centred process, for APN role development, implementation, and evaluation (PEPPA), addresses implementation issues specific to APN roles (Figure 1). The principles of participatory action research (PAR) informed the construction of the framework. As a process of systematic inquiry, PAR provides a democratic process for involving individuals in organizations, education systems, and communities in promoting health and social change (Foote Whyte 1991, Smith *et al.* 1993, Deshler & Ewert 1995). In the PEPPA framework, the principles of PAR are applied to promote more equitable distribution of power and enhance the contributions of nurses, patients, and other stakeholders in APN role development. Relevant principles of PAR include: active participation in cycles of reflection–action; valuing what people know and believe by building on their present reality; collective investigation, analysis, learning, and conscious production of new knowledge; collective action in using new knowledge to address problems; and evaluating the impact of these actions (Deshler & Ewert 1995, Bowling 1997, Smith 1997).

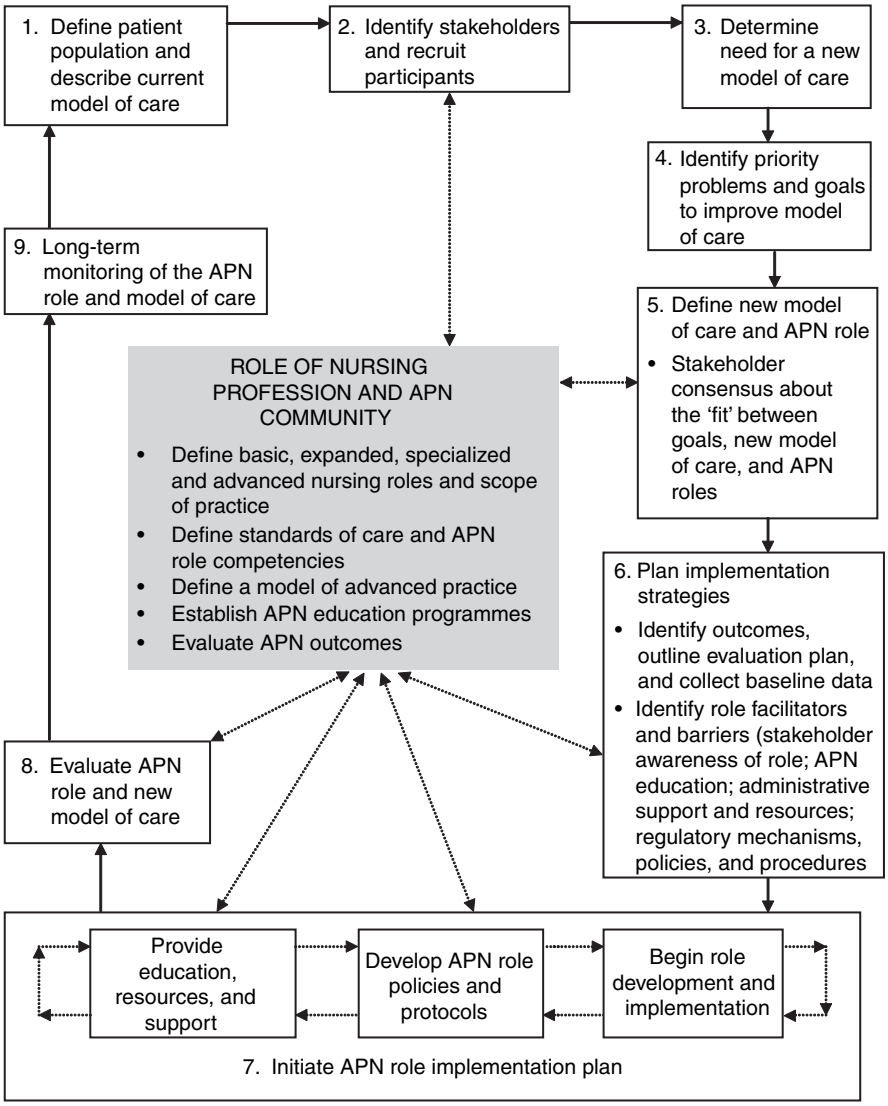

Figure 1 The PEPPA framework: a participatory, evidence-based, patient-focused process for advanced practice nursing (APN) role development, implementation, and evaluation (adapted from Spitzer 1978, Dunn & Nicklin 1995, Mitchell-DiCenso *et al.* 1996).

Spitzer (1978) emphasizes the collection of data to establish the need for new health care provider roles. Factors to consider include population-to-practitioner ratio, demand and use of health services, unmet patient needs, and patient acceptance and satisfaction with care. In the PEPPA framework, needs assessment moves beyond supply and demand issues to identify environmental factors that affect patient care and the introduction of APN roles.

Most APNs work collaboratively within multi-disciplinary teams and in established relationships with physicians and other care providers (Brown 1998, Woods 1999, Hamric 2000). These and other stakeholders have important impacts on patient care. The model of patient care is defined by stakeholder roles and relationships and is influenced by their values, beliefs and experiences with APN. These relationships create work conditions that can facilitate or obstruct APN role development (Hamric 2000). To promote work conditions that support APN roles, the process for role introduction should assess how well the model of care or relationships among patients, health care providers and health services is meeting patient health needs.

Step 1: Define patient population and describe current model of care

The starting point is to define the current model of care by mapping out how patients and families enter the health care system and interact with health care providers and services over a specific period or continuum of care (Smith 1997). While the patient is the centre of the model, the focus of relationships and interactions can be defined from a team, organizational, and/or geographical perspective. For example, in considering an APN role for patients with prostate cancer, the population could be limited to those with

advanced disease. The care continuum could begin at the time of referral to an oncology team or regional palliative care programme and continue until the patient's death.

Step 2: Identify stakeholders and recruit participants

This step involves identifying key stakeholders. The principle assumption of the framework is that all stakeholders, regardless of their roles, have the capacity to reflect, learn, inform and work to improve the model of care (Deshler & Ewert 1995, Smith 1997). Stakeholders include patients and families, advocacy groups, volunteer agencies, health care organizations, the health care team, professional associations, support staff, administrators, educators, and government agencies involved in health policy and funding. Stakeholders represent vested interests, values, perceived power and expectations. Stakeholder participation at the onset is critical for ensuring commitment to and providing support for planned change. Manley (1997) found that nursing staff involvement in defining the purpose and objectives of the advanced practice/nurse consultant role was a prerequisite for establishing a culture of shared values and beliefs necessary to operationalize the role. When new APN roles are established in isolation from key stakeholders, issues related to role clarity, role boundaries, role acceptance, and potential barriers and facilitators to role implementation are not addressed (Read 1999, Centre for Nursing Studies and the Institute for the Advancement of Public Policy 2001, Guest *et al.* 2001, Seymour *et al.* 2002, Marsden *et al.* 2003). Participants refer to stakeholders involved in implementing the framework. The term *participant* rather than *stakeholder* is used to reflect the active role individuals play in defining tasks and working as planners, learners, data collectors and decision-makers.

Factors to consider for participant recruitment include: ability to invest the time and energy and to communicate stakeholder issues (Gray *et al.* 1995, Smith 1997). Participants should represent a range of stakeholders who would affect or be affected by changes to the model of care and introduction of an APN role. Finding the right balance in composition and numbers of participants can be a challenge. If the range is too narrow or over-represented by one stakeholder group, the scope of ideas for change may be limited. Too many participants can impede consensus decisions.

From an APN standpoint, there must be a balance between medical and other stakeholder viewpoints. Medicine often dominates APN role development; yet, optimal outcomes may be achieved when APN roles have a strong nursing orientation (Beal *et al.* 1997, Cameron & Masterson 2000, Irvine *et al.* 2000, Bryant-Lukosius *et al.* 2004, Marsden *et al.* 2003). Models of care involving APN roles must reflect values consistent with nursing. In many health care settings this requires movement from traditional medical models focused on illness towards patient-focused, holistic, and integrated models of care designed to promote health and quality of life. Paradigm shifts of this magnitude occur when participants with varied viewpoints have opportunity to express opinions, are perceived as valuable contributors, and are involved in consensus decisions (Smith 1997).

The process for defining a patient-focused model of care must include patients and families. Patients are active participants in their own health care and are experts in their needs (Gray 1992). Families give home care and patient support. Patients and families can provide a balance between medical and administrative viewpoints, increase awareness about the human dimension of health care, and identify inefficiencies and lack of coordination among health services (Gerteis *et al.* 1993, Gray *et al.* 1995).

Some stakeholders may have no experience with APN roles. Involving APNs and the nursing profession may help educate participants about the roles and how they may fit within a new model of care. Nursing associations can also address implementation issues related to role standards, competencies, licensing, education, mentorship and outcomes (Dunn & Nicklin 1995, Read 1999).

A final consideration is determining who will facilitate the process. Like the external researcher in PAR, the facilitator is not an objective observer but an active participant (Deshler & Ewert 1995). An important role of the facilitator is promoting equitable and valued involvement of all participants. The challenge is to guide participant discussion such that the range of experiences, issues, needs, and conflicts can be elicited and move the group forward to determine shared goals and actions (Gray 1992, Smith *et al.* 1993, Soltis-Jarrett 1997). The facilitator requires expert group process and transformational leadership skills, and must also have participant support and be perceived as a credible individual with commitment to the process rather than a specific agenda (Bowling 1997).

Step 3: Determine need for a new model of care

The reflective process begins as participants analyse the strengths and limitations of the model of care (Smith *et al.* 1993, Dunn & Nicklin 1995) and investigate these issues:

- What are patient and family health needs?
- What are the context and consequences of these needs?
- What factors contribute to these needs?
- What are stakeholder perceptions of these needs?

- What additional information about these needs is required? and
- What sources and methods can be used to acquire this information? (Smith *et al.* 1993).

APN roles involve assessing and managing human needs resulting from actual or potential health problems (ANA 1995, Endicott 1997). Patient health problems (e.g. prostate cancer) must be distinguished from patient health needs (e.g. information about prostate cancer treatment). Needs are subjective expressions of goals or of something missing that is important for well-being (Maslow 1970, Alderfer 1972, Endicott 1997), whereas health problems may or may not be associated with health needs.

Health care literature and institutional or national databases may provide measures of patient health needs related to morbidity and mortality, physical and psychosocial function, disability, healthy years of lost life, and health-related quality of life (Tugwell *et al.* 1985, Harrison *et al.* 1996). In the absence of existing data, surveys, focus groups or in-depth interviews could be employed. Patients and families often have numerous health needs, but not all needs have the same frequency or significance. Therefore, the analysis should also prioritize needs.

A similar process is used to determine how well the model of care is meeting patient health needs. The analysis considers the availability, accessibility, acceptability, awareness, appropriate use, and affordability of health services and human resources for meeting health care demands related to patient volume and acuity, provider/consumer satisfaction, and changes in the quantity, distribution, or roles of health care providers (Spitzer 1978, Mitchell-DiCenso *et al.* 1996). In this manner, the context and consequences of patient/family, health care provider, and health care system factors contributing to unmet patient health needs are identified.

Step 4: Identify priority problems and goals

The next step asks, 'What does this new information mean?' and 'What additional information is required?' (Smith *et al.* 1993). The group develops a more complete understanding of patient needs and the strengths and limitations of the model of care. Shifts in traditional power structures occur when participants become connected by mutual understanding and shared interests (Smith 1997). This enables the group to move forward and establish consensus on the problems in meeting patient health care needs, the most important problems, and what can be accomplished by resolving these problems.

Categorizing patient needs and health care delivery problems into groups or themes helps to identify and analyse problems. When several problems in meeting patient health care needs are identified, establishing priorities can focus efforts to achieve maximum improvement in the model of care. Formal methods such as the Delphi technique, consensus panels, or nominal group process can be used to achieve consensus (Bowling 1997). Regardless of the approach, consensus decisions should be informed by broad stakeholder input and should reflect patients' priority needs. Strong agreement on priorities is important for stakeholder commitment to problem resolution. Goal identification allows participants to determine what they hope to accomplish through efforts to resolve priority problems and provides the basis for identifying outcomes to evaluate the new model of care and the APN role.

Step 5: Define the new model of care and APN role

Participants move to the action stage (Smith *et al.* 1993) by determining modifications to the model of care and need for an APN role:

- What new care practices and care delivery strategies can be employed to achieve identified goals? Are there evidence-based data to support these changes?
- Are changes to current roles and responsibilities required to implement new care practices and care delivery strategies?
- Is there a need for additional expertise provided by a new health care provider role?
- If so, would an APN role enhance ability to achieve goals for meeting patient health care needs? How do we know this?
- How well does an APN role 'fit' within this new model of care?
- What are the advantages and disadvantages of an APN role compared with alternative health care provider roles?

Generating a depth and breadth of strategies to improve care is strengthened because patient needs have been examined from multiple viewpoints. A new model of care evolves from discussion about what is the most appropriate care, who are the most appropriate health care providers, and how they will be involved in new care practices and goal-related strategies.

For example, in a hypothetical assessment of patients with prostate cancer undergoing prostatectomy, a priority problem is increased hospital re-admissions for urinary sepsis. Negative consequences include prolonged recovery, increased costs, and cancellation of other surgery because of lack of beds. Contextual factors include lack of pre- and post-operative patient education about self-care of urinary catheters, increased age of patients at risk for complications, and reduced home care services. Implementing only one strategy, such as preoperative education, will limit the impact on

reducing urinary sepsis because other contributing factors have not been addressed. Instead, participants could determine the additional expertise an APN role would provide to prevent urinary sepsis through patient education, targeting high risk patients, establishing criteria and assessing patient readiness for discharge, and improving home support and follow-up care.

To minimize role confusion, it is important to clarify participant perceptions about the purpose and multi-domains of APN roles related to clinical practice, education, research, professional development, and leadership. The 'fit' between goals, strategies, definitions of APN roles, competencies, and scope of practice is also evaluated. Specialization, expansion, and advancement are basic criteria for 'advanced' nursing practice (ANA 1995). Of particular importance is the effective use of all APN role domains, the need for skills and role autonomy beyond traditional scopes of nursing practice, and role overlap with other health care providers. Another consideration is the compatibility of values underlying the changes to the model of care and values associated with APN. The primary focus of the role should be on promoting continuous, coordinated care designed to improve patient health. Decisions to introduce a new APN role involve careful evaluation of the strengths and limitations of alternate nursing and health care provider roles (Mitchell-DiCenso *et al.* 1996).

Following the decision to introduce a new APN role, participants work on defining the precise nature of each APN role domain (Dunn & Nicklin 1995). This task may require involvement of those who have experience with similar APN roles. The development of the neonatal nurse practitioner role in Ontario, Canada involved surveys of medical directors, nursing directors, nurse managers, staff nurses, and physicians from neonatal intensive care units across the province and from American and Canadian centres that had implemented the role (Hunsberger *et al.* 1992). These data enabled participants to achieve consensus about explicit activities and time allocated to each role domain. Identifying stakeholder preferences in defining the APN role enhances the likelihood of role acceptance and optimal role utilization.

The next task involves defining the relationship between the APN role and those of other care providers. Studies examining the introduction of APN and other types of nursing roles suggest that greater attention must be paid to teamwork and accountability (Guest *et al.* 2001, Read *et al.* 2001, Seymour *et al.* 2002). For example, how would the physiotherapist and home care nurse work with the APN to improve the self-care skills of patients after prostatectomy? The model of care is refined as the roles and responsibilities of the APN and health care team members are clarified. Through this process issues related to accountability, autonomy, collaboration, communication, reporting mechanisms, and reimbursement are addressed (Levenson & Vaughan 1999). Professional nursing standards provide guidelines for establishing role qualifications, including level of experience, education and credentials.

Step 6: Plan implementation strategies

The action stage continues with developing a plan to ensure system readiness for the APN role. Key questions to address are:

- What goal-related outcomes are expected from the introduction of an APN role and changes to the model of care? When will these outcomes be achieved?
- What are the facilitators and barriers to APN role development and implementation?
- What strategies are required to maximize role facilitators and minimize role barriers?
- What resources and supports are required for role development and implementation?

Planning begins with outlining the evaluation plan, including specification of goal-related outcomes for each APN role domain and other changes to the model of care, timeline for achievement, and identification of baseline data to be collected prior to role implementation. This plan should consider the availability of measurement tools, resources to conduct the evaluation and strategies to obtain patient feedback (Levenson & Vaughan 1999).

Planning involves identifying strategies to facilitate APN role development, and anticipating and preventing role barriers. Depending on the model of care and APN role, strategies may be required to address implementation issues within and across organizations and health care settings. Stakeholder awareness of the role; APN education; administrative support and resources; and regulatory mechanisms, policies, and procedures are frequently identified as APN role facilitators and warrant particular attention during the planning stage (Cameron & Masterson 2000, Guest *et al.* 2001, Bryant-Lukosius *et al.* 2004, Marsden *et al.* 2003).

Stakeholder awareness of the role

In previous frameworks, education focused on developing the APN (Dunn & Nicklin 1995, Mitchell-DiCenso *et al.* 1996). In the PEPPA framework, education also involves providing education about the APN role. Lack of role clarity among stakeholders is a barrier to role implementation (Dunn & Nicklin 1995, Knaus *et al.* 1997, Woods 1998, Irvine *et al.* 2000, Seymour *et al.* 2002). Stakeholders such as nurses, physicians, students, support staff and managers should receive information about the APN role and have an opportunity to clarify role expectations (Levenson & Vaughan 1999).

APN education

There is growing consensus that graduate education is essential for APN roles (ANA 1995, CNA 2000, ICN 2003). New roles require consideration of the availability and types of existing graduate programmes, and extent to which curricula include required specialty knowledge and skills. Regional or national models of care requiring substantial numbers of APNs may necessitate development of specialty-focused education programmes (Mitchell-DiCenso *et al.* 1996, Andrusyszyn *et al.* 1999).

When only a few APN roles are required, developing specialty graduate programmes may not be feasible and it may be more efficient to send potential postholders to programmes in other countries. Many APNs acquire specialty expertise through apprenticeships, in-house education programmes, or on the job training. Drawbacks to these kinds of education include: variable quality and consistency, lack of standards, incomparability to other APN roles for evaluation, lack of academic credit, limited impact on career advancement, and non-transferability of skills to other settings. Physicians are often the primary educators in apprenticeship programmes and may not address nursing issues. Linking with nursing education programmes to provide periodic postgraduate certificate courses may be one strategy to enhance APN education. At the minimum, role-specific education programmes should utilize APN expertise (Dunn & Nicklin 1995, Marsden *et al.* 2003) and be evaluated (Mitchell-DiCenso *et al.* 1996).

Administrative supports and resources

Administrative support is crucial for role implementation and development (McFadden & Miller 1994, Kinney *et al.* 1997, Knaus *et al.* 1997). An important function of administrators is to promote systems entry. Advanced practice nurses who are new to the role and/or organization report difficulty in navigating and negotiating their roles within complex health care systems (Knaus *et al.* 1997, Irvine *et al.* 2000). Strategies to support systems entry include: heightening the role profile within practice settings; facilitating introductions to key colleagues; delegating leadership responsibilities to the APN; initiating APN participation in practice, education, and/or research committees; and demonstrating commitment to policies and practices that support advanced nursing practice.

Substantial learning occurs during the first year of role implementation (Brown & Olshansky 1997, Kleinpell-Norwell 1999, Sidani *et al.* 2000). Administrators can promote APN role development through: regular contact, support and evaluation of progress; mentorship; and APN networks and working groups. Collaborating with university schools of nursing provides APNs with opportunities to: evaluate and improve their own practice through education of graduate students, participate in research, and use nurse teachers (McFadden & Miller 1994).

Administrative commitment to the APN role involves providing practical resources and supports necessary to perform it (Ostwald *et al.* 1984, McFadden & Miller 1994, Sanchez *et al.* 1996, Levenson & Vaughan 1999, Martin & Hutchinson 1999, Guest *et al.* 2001). Practical resources include adequate office and clinical examination space, audiovisual equipment, and communication and computer technology. Practical support includes assistance with clinical procedures, clerical work, and data management, and educational opportunities.

Optimal reporting structures for APN roles are unclear and may depend on clinical and non-clinical activities. Currently, APNs may report to physicians, nursing or non-nursing directors, or medical and nursing directors (McFadden & Miller 1994, Sidani *et al.* 2000). Nursing administrative support is important for developing a nursing orientation to practice and job satisfaction, while physician support is essential for role implementation (McFadden & Miller 1994, Beal *et al.* 1997, Woods 1998, Cameron & Masterson 2000, Irvine *et al.* 2000). Nurse administrators and physicians may have competing expectations of the APN role; therefore, dual reporting to a nursing and medical director may be important for maximizing support and resolving role conflicts. Non-hierarchical management structures which permit senior nursing leaders to be involved in APN role development, and where the APN is viewed as an important contributor to the management team and to achieving organizational goals, have also been identified as important role facilitators (Manley 1997, Cameron & Masterson 2000).

Regulatory mechanisms, polices and procedures

Planning involves identifying the structures to support role autonomy related to APN authority, collaborative and independent practice and clinical decision-making. Role autonomy enables full role implementation and permits APNs to be creative, flexible and immediately responsive to patient needs (Woods 1998, Irvine *et al.* 2000, Cameron & Masterson 2000).

At legislative and health care systems levels, planning may involve the nursing profession gaining regulatory approval and establishing the credentialing process for expanded role activities (Dowling *et al.* 1996, Levenson & Vaughan 1999, Centre for Nursing Studies and the Institute for the Advancement of Public Policy 2001). At organizational levels, processes are required for documentation of patient care, prescriptive and diagnostic authority, and referral to and from other health care providers and services. These issues can be addressed by

developing policies and protocols that outline APN role autonomy, authority, and accountability (Kinney *et al.* 1997, Knaus *et al.* 1997, Irvine *et al.* 2000, Sidani *et al.* 2000, Read *et al.* 2001). When legislation does not keep pace with the expansion of APN roles, protocols can bridge the gap in supporting APN role autonomy (Vlasic *et al.* 1998, Irvine *et al.* 2000, Sidani *et al.* 2000).

Step 7: Initiate APN role implementation plan

Ideally, the strategies in Step 6 should be implemented in a logical sequence, in which: stakeholders are oriented to the role, potential role-holders acquire the necessary education, and administrative support and resources are in place; regulatory mechanisms and policies and procedures are established; and the person is hired and role development and implementation begins. Rarely is it possible to have all strategies in place at the time of role introduction, and continuous change within APN work environments will require new strategies to support role development. As the framework illustrates, role implementation is a continuous process with movement among these steps, and is dependent upon the stage of role development and monitoring of the role.

A critical issue is the recognition that full implementation of an APN role takes time. Hamric and Taylor (1989) identified seven phases of clinical nurse specialist (CNS) role development, each with unique tasks and resource and support needs. For novice CNSs, full role implementation took 3–5 years (Hamric & Taylor 1989). Movement through developmental phases is dependent on performance evaluations and communication between APNs and administrator(s) to ensure that the supports and resources necessary for each phase are provided.

Step 8: Evaluate APN role and new model of care

In PAR, reflection involves examining the impact of actions (Smith *et al.* 1993) and in this step involves a comprehensive structure-process-outcome evaluation of the new model of care and APN role. Several structure-process-outcome frameworks have been developed to evaluate APN roles (Grimes & Garcia 1997, Byers & Brunell 1998, Irvine *et al.* 1998). Inclusion of the model of care in this evaluation will help identify how roles, relationships and resources impact on APN outcomes. Structure refers to resources, the physical and organizational environment, and characteristics of the APN. Process refers to the types of services, how services are provided, and how the APN role functions related to practice, education, research, and organizational and professional leadership. Outcomes are the results of care and are affected by both structure and process factors. Studies of new APN and health care provider roles have demonstrated the importance of structure and process evaluations to identify role barriers and facilitators (Guest *et al.* 2001, Read *et al.* 2001). Role barriers can then be addressed prior to comprehensive outcome evaluations.

Initial evaluations of the APN role and model of care should focus on outcomes related to safety and efficacy, acceptance and satisfaction, costs and role transfer (Mitchell-DiCenso *et al.* 1996). Selecting outcomes sensitive to APN interventions is a challenge and failure to do so may result in missing improvements attributable to the APN role. Selecting goal-directed outcomes relevant to each role domain and specific to the APN role aids in determining nurse-sensitive outcomes (Burns 2001, Minnick 2001).

The amount of exposure to nursing interventions is another important consideration (Brooten & Naylor 1995). Insignificant change in APN-related outcomes may not mean that the role is ineffective, but that the frequency or intensity of APN-patient interactions is insufficient. Revisions to the APN role might consider increasing the amount of patient contact. The model of care could also be modified to eliminate barriers that restrict patient access to the APN.

The APN has a responsibility for monitoring the impact of the role and his/her own performance. This should include prospective data collection relevant to the goals for each APN role domain. APNs have found that documenting activities relevant to goal-directed outcomes demonstrated the diversity of their work, was crucial to maintaining their position, and provided evidence to support the addition of new roles (McFadden & Miller 1994). Strategies include daily records of activities and time spent on role domains, such as the number of referrals and types of patients seen, staff programmes provided, number and types of consultations, development of care maps, scholarly presentations and publications, contributions to committees and organizational initiatives, and participation in research (Dayhoff & Lyon 2001). Activities are then linked to specific outcomes such as prevention of complications, staffing patterns and practices, length of stay, costs, and re-admission rates. Feedback on performance and process related elements of the role, such as personal, peer, staff and patient satisfaction, should also be documented.

Step 9: Long-term monitoring of the APN role and model of care

Mechanisms for annual monitoring and long-term surveillance of the model of care and the APN role are also required (Mitchell-DiCenso *et al.* 1996). Continuous change within APN environments can affect the safety, satisfaction and

What is already known about this topic

- There is growing demand internationally for advanced practice nursing roles.
- Many barriers to the successful introduction of new advanced practice nursing roles could be avoided by improved planning and systematic efforts to address implementation issues unique to advanced practice nursing.

What this paper adds

- The PEPPA framework, or a participatory, evidence-based, patient-focused process, for guiding the development, implementation, and evaluation of advanced practice nursing (APN) roles.
- Engaging stakeholders in the role development process gives opportunities to establish the need and identify shared goals for a clearly-defined advanced practice nursing role.
- The goal-directed and outcome-based process provides the foundation for prospective evaluation and thus continued improvement of advanced practice nursing roles and delivery of health care services.

sustainability of the role. Advances in treatment and technology can impact on patient health needs and health care policies or funding can influence care delivery. Long-term monitoring of established roles is importance for helping stakeholders maintain a common vision of the role relevant to health care systems needs (Seymour *et al*. 2002). Thus the process for APN role development, implementation, and evaluation is iterative. Long-term evaluations should revisit each stage of the PEPPA framework and make appropriate changes to the APN role, role supports and model of care.

Strengths and limitations of the PEPPA framework

This framework uses a health-oriented, patient-focused, participatory and stakeholder-driven process as a strategy for overcoming obstacles to implementing APN roles. Although not empirically developed or evaluated, the framework applies accepted principles of PAR and evidence-based processes, as outlined by Spitzer (1978), and draws on a large body of research on the implementation of APN roles. Future research should determine the framework's effectiveness for improving the implementation and evaluation of APN roles. On a practical level, the framework is a valuable guide for introducing new APN roles and promoting understanding of them and factors that influence their implementation. The PEPPA framework illustrates the complexity and interrelatedness of steps involved in APN role development, implementation, and evaluation.

The effort and resources to implement the framework may appear overwhelming. However, it can be used as a flexible guide in which the scope is tailored to meet temporal and resource restrictions. For example, limiting the patient population to one group at one point in the care continuum, and restricting the model of care to a team rather than a region, narrow the scope of the process. The needs assessment can be limited to one or two rather than multiple patient needs. The evaluation design can be practical and feasible, while maintaining methodological rigor. Limiting the scope will narrow the potential impact, but recognizing and responding to environmental constraints will enhance the likelihood that priority goals for the APN role and model of care will be achieved.

The underlying principles of the framework and the focus on patient health needs are consistent with the central mandate of nursing and the collaborative relationships associated with APN roles. These principles and values often conflict with the bureaucratic and disease-focused culture of health care systems and may pose barriers to applying the framework. Strong administrative and organizational support that values patient-focused, multi-disciplinary, and goal-oriented care is required to overcome these barriers (Gerteis & Roberts 1993). Application of the framework is dependent on the quality of group function and leadership and the extent to which participants are able to assume responsibility for identifying problems, determining goals, making decisions and working to achieve goals (Brill 1976, Wheelan 1994). Consensus on priority problems and goals may be difficult to achieve, given the competing and conflicting interests of patients and families, health care providers, and administrators (Smith & Cantely 1985, Vincor 1995, Opie 2000).

Other challenges to applying the PEPPA framework include lack of resources to support participant activities, lack of physician support, inability to access data to accurately determine needs and priority problems; lack of evaluation expertise; and frequent turnover in APNs. Stakeholder reluctance to invest in the process may indicate a health care environment not yet ready for an APN role or change in the model of care. An advantage of the framework is that it facilitates identification of resource needs, barriers and facilitators for implementing change. Administrators can make informed decisions about proceeding with the introduction of an APN role, setting realistic role outcomes and implementing strategies to overcome role barriers.

Conclusions

The process required for the successful implementation of APN roles is as complex and dynamic as the roles themselves. The PEPPA framework articulates steps and strategies for role implementation that are relevant to APNs and their work environments. Engaging stakeholders in the process gives opportunities to establish the need and identify shared goals for a clearly-defined APN role. The framework promotes increased understanding of APN roles and optimal use of APN expertise. Effective planning and implementation strategies create environmental conditions necessary to support APN role development and long-term integration. The goal-directed and outcome-based process also provides the basis for prospective evaluation, and thus continued improvement of the APN role and delivery of health care services.

References

Alderfer C.P. (1972) *Existence, Relatedness, and Growth*. Free Press, New York.

ANA (1995) *Nursing's Social Policy Statement*. American Nurses Association, Washington, DC, USA.

Andrusyszyn M., van Soeren M., Spence Laschinger H., Goldenberg D. & DiCenso A. (1999) Evaluation of distance education delivery methods for a primary care nurse practitioner program. *Journal of Distance Education* **14**, 14–33.

Beal J.A., Steven K. & Quinn M. (1997) Neonatal nurse practitioner role satisfaction. *Journal of Perinatal Nursing* **11**, 65–76.

Bowling A. (1997) *Research Methods in Health: Investigating Health and Health Services*. Open University Press, Philadelphia.

Brill N. (1976) *Team-work. Working Together in the Human Services*. Lippincott, Toronto.

Brooten D. & Naylor M.D. (1995) Nurses' effect on changing patient outcomes. *Image: Journal of Nursing Scholarship* **27**, 95–99.

Brown S. (1998) A framework for advanced practice nursing. *Journal of Professional Nursing* **14**, 157–164.

Brown M.A. & Olshansky E.F. (1997) From limbo to legitimacy: a theoretical model of the transition to the primary care nurse practitioner role. *Nursing Research* **46**, 46–51.

Bryant-Lukosius D., DiCenso A., Browne G. & Pinelli J. (2004) Advanced practice nursing roles: development, implementation, and evaluation. *Journal of Advanced Nursing* **48**, 519–529.

Burns S.M. (2001) Selecting advanced practice nurse outcome measures. In *Outcome Assessment in Advanced Practice Nursing* (Kleinpell R.M., ed.), Springer, New York, pp. 73–90.

Byers J. & Brunell M. (1998) Demonstrating the value of the advanced practice nurse: an evaluation model. *AACN Clinical Issues* **9**, 296–305.

Cameron A. & Masterson A. (2000) Managing the unmanageable? Nurse Executive Directors and new role developments in nursing. *Journal of Advanced Nursing* **31**, 1081–1088.

Centre for Nursing Studies and the Institute for the Advancement of Public Policy (2001) *The Nature of the Extended/Expanded Nursing Role in Canada. A Project of the Advisory Committee on Health Human Resources*. Centre for Nursing Studies, Newfoundland, Canada. Retrieved on 15.3.2002 from http://www.cns.nf.ca/research/research.htm.

Chang K.P.K. & Wong K.S.T (2001) The nurse specialist role in Hong Kong: perceptions of Nurse specialists, doctors, and staff nurses. *Journal of Advanced Nursing* **36**, 36–40.

CNA (2000) *Advanced Nursing Practice: A National Framework*. Canadian Nurses Association, Ottawa.

Dayhoff N.E. & Lyon B.L. (2001) Assessing outcomes in clinical nurse specialist practice. In *Outcome Assessment in Advanced Practice Nursing* (Kleinpell R.M., ed.), Springer, New York, pp. 103–130.

Deshler D. & Ewert M. (1995) *Participatory Action Research: Traditions and Major Assumptions*. http://www.oac.uoguelph.ca/~pi/pdrc/articles/article.1.

Dillon A. & George S. (1997) Advanced neonatal nurse practitioners in the United Kingdom: where are they and what do they do? *Journal of Advanced Nursing* **25**, 257–264.

Dowling S., Martin R., Skidmore P., Doyal L., Cameron A. & Lloyd S. (1996) Nurses taking on junior doctor's work: a confusion of accountability. *British Medical Journal* **12**, 1211–1214.

Dunn K. & Nicklin W. (1995) The status of advanced nursing roles in Canadian teaching hospitals. *Canadian Journal of Nursing Administration* **Jan–Feb**, 111–135.

Endicott R. (1997) Clarifying the concept of need: a comparison of two approaches to concept analysis. *Journal of Advanced Nursing* **25**, 471–476.

Foote Whyte W. (1991) *Participatory Action Research*. Sage, London.

Gerteis M. & Roberts M.J. (1993) Culture, leadership and service in the patient-centred Hospital. In *Through the Patient's Eyes: Understanding and Promoting Patient-centred Care* (Gerteis M., Edgman-Levitan S. & Delbanco T.L., eds), Jossey-Bass, San Franscisco, pp. 227–259.

Gerteis M., Edgman-Levitan S. & Delbanco T.L. (1993) Introduction: medicine and health from the patient's perspective. In *Through the Patient's eyes: Understanding and Promoting Patient-centred Care* (Gerteis M., Edgman-Levitan S. & Delbanco T.L., eds), Jossey-Bass, San Franscisco, pp. 1–15.

Gray R.E. (1992) Persons with cancer speak out: reflections on an important trend in Canadian health care. *Journal of Palliative Care* **8**, 20–37.

Gray R., Fitch M., Greenberg M. & Shapiro S. (1995) Consumer participation in cancer system planning. *Journal of Palliative Care* **11**, 27–33.

Grimes D.E. & Garcia M.K. (1997) Advanced practice nursing and work site primary care: challenges for outcomes evaluation. *Advanced Practice Nurse Quarterly* **3**, 19–28.

Guest D., Peccei R., Rosenthal P., Montgomery J., Redfern S., Young C., Wilson-Barnett J., Dewe P., Evans A. & Oakley P. (2001) *Preliminary Evaluation of the Establishment of Nurse, Midwife and Health Visitor Consultants*. Report to the Department of Health. University of London, Kings College.

Hamric A. (2000) A definition of advanced nursing practice. In *Advanced Nursing Practice: An Integrative Approach* (Hamric A.B., Spross J.A. & Hanson C.M., eds), W.B. Saunders, Philadelphia, pp. 53–73.

Hamric A.B. & Taylor J.W. (1989) Role development of the CNS. In *The Clinical Nurse Specialist in Theory and Practice*, 2nd edn (Hamric A.B. & Spross J., eds), W.B. Saunders, Philadelphia, pp. 41–82.

Harrison M.B., Juniper E.F. & Mitchell-DiCenso A. (1996) Quality of life as an outcome measure in nursing research 'may you have a long and healthy life'. *Canadian Journal of Nursing Research* **28**, 49–68.

Hunsberger M., Mitchell A., Blatz S., Paes B., Pinelli J., Southwell D., French S. & Soluk R. (1992) Definition of an advanced nursing practice role in the NICU: the clinical nurse specialist/neonatal practitioner. *Clinical Nurse Specialist* **6**, 91–96.

ICN (2003) *Definition and Characteristics of the Role. International Council of Nurses*. Retrieved 05.05.2003 from http://www.icn-apnetwork.org.

Irvine D., Sidani S. & McGillis Hall L. (1998) Finding value in nursing care: a framework for quality improvement and clinical evaluation. *Nursing Economics* **16**, 110–116.

Irvine D., Sidani S., Porter H., O'Brien-Pallas L., Simpson B., McGillis Hall L., Graydon J., DiCenso A., Redelmeir D. & Nagel L. (2000) Organizational factors influencing nurse practitioners' role implementation in acute care settings. *Canadian Journal of Nursing Leadership* **13**, 28–35.

Kinney A., Hawkins R. & Hudman K. (1997) A descriptive study of the role of the oncology nurse practitioner. *Oncology Nursing Forum* **24**, 811–820.

Kleinpell-Norwell R.M. (1999) Longitudinal survey of acute care nurse practitioner practice: year 1. *AACN Clinical Issues* **10**, 515–520.

Knaus V.L., Felten S., Burton S., Fobes P. & Davis K. (1997) The use of nurse practitioners in the acute care setting. *Journal of Nursing Administration* **27**, 20–27.

Levenson R. & Vaughan B. from the findings of the ENRip project (1999) *Developing New Roles in Practice: An Evidence-based Guide*. School of Health and Related Research (ScHARR), University of Sheffield, Sheffield.

Manley K. (1997). A conceptual framework for advanced practice: an action research project operationalizing an advanced practitioner/consult nurse role. *Journal of Clinical Nursing* **6**, 179–190.

Marsden J., Dolan B. & Holt L. (2003) Nurse practitioner practice and deployment: electronic Mail Delphi study. *Journal of Advanced Nursing* **43**, 595–605.

Martin P.D. & Hutchinson S. (1999) Nurse practitioners and the problem of discounting. *Journal of Advanced Nursing* **29**, 9–17.

Maslow A. (1970) *Motivation and Personality*, 2nd edn. Harper & Row, New York.

McFadden E.A. & Miller M.A. (1994) Clinical nurse specialist practice: facilitators and barriers. *Clinical Nurse Specialist* **8**, 27–33.

Minnick A. (2001) General design and implementation challenges in outcomes assessment. In *Outcome Assessment in Advanced Practice Nursing* (Kleinpell R.M., ed.), Springer, New York.

Mitchell-DiCenso A., Pinelli J. & Southwell D. (1995) *Assessment of the Need for Nurse Practitioners in Ontario*. The Quality of Nursing Work Life Research Unit, Hamilton, Ontario, Canada.

Mitchell-DiCenso A., Pinelli J. & Southwell D. (1996) Introduction and evaluation of an advanced nursing practice role in neonatal intensive care. In *Outcomes of Effective Management Practice* (Kelly K., ed.), Sage, Thousand Oaks, CA.

Offredy M. (2000) Advanced nursing practice: the case of nurse practitioners in three Australian states. *Journal of Advanced Nursing* **31**, 274–281.

Opie A. (2000) *Thinking Teams/Thinking Clients: Knowledge-based Teamwork*. Columbia University Press, New York.

Ostwald S.K., Abanobi O. & Kochevar L.K. (1984) Nurse practitioners' perceptions of workplace encroachment. *Pediatric Nurse* **September/October**, 337–340.

Pinelli J.M. (1997) The clinical nurse specialist/nurse practitioner: oxymoron or match made in Heaven? *Canadian Journal of Nursing Administration* **Jan–Feb** 85–110.

Read S.M. (1999) Nurse-led care: the importance of management support. *Ntresearch* **4**, 408–420.

Read S.M. with the ENRiP team (2001) *Exploring New Roles in Practice: Final Report*. University of Sheffield, Sheffield. Retrieved 8.3.2003 from http://www.snm.shef.au.uk-research-enrip.pdf.

Sanchez V., Lee K.A. & Bosque E.M. (1996) A descriptive study of current neonatal nurse practitioner practice. *Neonatal Network* **15**, 23–29.

Seymour J., Clark D., Hughes P., Bath P., Beech N., Corner J., Douglas H., Halliday D., Haviland J., Marples R., Normand C., Skilbeck J. & Webb T. (2002) Clinical nurse specialists in palliative care. Part 3. Issues for the Macmillan Nurse role. *Palliative Medicine* **83**, 46–52.

Sidani S., Irvine D., Porter H., O'Brien-Pallas L., Simpson B., McGillis Hall L., Nagel L., Graydon J., DiCenso A. & Redelmeir D. (2000) Practice patterns of acute care nurse practitioners. *Canadian Journal of Nursing Leadership* **13**, 6–12.

Smith S.E. (1997) Deepening participatory action-research. In *Nurtured by Knowledge: Learning to do Participatory Action-Research* (Smith S.E. & Willms D.G., eds), Apex Press, New York, pp. 173–264.

Smith G. & Cantely C. (1985) *Assessing Health Care: A Study in Organisational Evaluation*. Open University Press, Philadelphia.

Smith S.E., Pyrch T. & Lizardi A. (1993) Participatory action-research for health. *World Health Forum* **14**, 319–324.

Soltis-Jarrett V. (1997) The facilitator in participatory action research: Les raisons d'etre. *Advances in Nursing Science* **20**, 45–54.

Spitzer W.O. (1978) Evidence that justifies the introduction of new health professionals. In *The Professions and Public Policy* (Slayton P. & Trebilcock M.J., eds), University of Toronto Press, Toronto, pp. 211–236.

Spitzer W.O., Sackett D., Sibley J., Roberts R., Gent M., Kergin D. & Olynich A. (1974) The Burlington randomized trial of the nurse practitioner. *New England Journal of Medicine* **290**, 251–256.

Tugwell P., Bennett K., Sackett D. & Haynes B. (1985) The measurement iterative loop: a framework for the critical appraisal of need, benefits, and costs of health interventions. *Journal of Chronic Disease* **38**, 339–351.

Vincor F. (1995) Interdisciplinary and intersectoral approach: a challenge for integrated care. *Patient Education and Counselling* **26**, 267–272.

Vlasic V., McKay C., Bisnaire D., Doyle-Pettypiece P., Keizer M., Krawiec F. & Ridely J. (1998) Bridging the gap: medical directive for acute care nurse practitioners. *Canadian Journal of Nursing Administration* **Sept–Oct**, 9–24.

Wheelan S. (1994) *Group Processes: A Developmental Perspective*. Allyn & Bacon, Needham Heights, MA, USA.

Woods L. (1998) Implementing advanced practice: identifying the factors that facilitate and inhibit the process. *Journal of Clinical Nursing* **7**, 265–273.

Woods L. (1999) The contingent nature of advanced nursing practice. *Journal of Advanced Nursing* **30**, 121–128.