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A review of advanced practice nursing in the United States, Canada, Australia and Hong Kong Special Administrative Region (SAR), China

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ABSTRACT

This paper provides an overview of Advanced Practice Nursing (APN) in the USA, Canada, Australia and Hong Kong. It is based upon documents presented to the China Medical Board (CMB) China Nursing Network (CNN) as background for discussions held by the CNN in Shanghai. It discusses the APN role in these countries and regions according to topics identified by the CNN. These are APN educational preparation; role legitimacy; capacity requirements; scope of practice, domains of activities and limited rights for prescription and referral; professional promotion ladder; accreditation system; and, performance evaluation system. Both Canada and Australia have adapted many aspects of the USA model of APN to fit their specific legislative requirements and local conditions. Hong Kong has taken a different path which may be of interest in the Chinese context.

1. Introduction

The need for advanced practice nurses (APNs) with post baccalaureate graduate education is increasingly recognized around the globe including in China. The authors were invited by the China Medical Board (CMB) China Nursing Network (CCNN) to provide background papers about advanced practice nursing in the USA, Canada, Australia and Hong Kong SAR China to inform discussions to at a meeting held on 26 June 2015 in Shanghai. The CCNN is made up of nursing schools in eight leading universities in China: Central South University, China Medical University, Fudan University, Peking Union Medical College, Peking University, Sichuan University, Sun Yat-sen University, and Xi'an Jiaotong University. Supported by CMB, these schools have collaborated in leading higher nursing education, nursing research and nursing service in China since the early 1990s. Also present at the meeting were the Directors of Nursing of the universities' primary affiliated hospitals. The authors were informed that three policy priorities for Chinese nursing were below.

1.1. Developing a clinical career ladder system for APNs

The nursing career ladder in China had been organized within a management organized structure with no clear direction for professional and clinical career development and progression. It was recognized that in the context of an aging population and medical and surgical technological advances, and in line with international trends, it was imperative for nurses to not only be prepared for a more advanced role but also to be recognized and rewarded for taking on roles with greater scope and complexity.

1.2. Expanding the nursing role from hospital to community

It is notable that many countries in Asia, including China, do not have a well-developed primary health care system. With increasing pressure on hospitals and long waiting lists, the need for community based care is urgent. This is particularly so in the context of a growing elderly population suffering from chronic conditions with co-morbidities whose conditions could be monitored and managed at home rather than in hospital.

1.3. Building a specialty nurse accreditation system and practice models

If nurses were to be educated to take on more complex roles, it

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was considered imperative that accreditation systems be developed and a range of practice models implemented.

Within the context of these three priorities the authors were invited to discuss a number of key topics. These included: APN educational preparation, APN role legitimacy, capacity requirement, scope of practice, domains of activities, and limited right for prescription and referral, professional promotion ladder, accreditation system, and performance evaluation system.

This paper summarizes key aspects of the content of the background papers referred to above. It first discusses the background to APN in general and moves on to discuss APN in the USA, Canada, Australia and Hong Kong SAR China with reference to the topics referred to above. Both Canada and Australia have adapted many aspects of the USA model of APN to fit their specific legislative requirements and local conditions. Hong Kong SAR China has taken a slightly different path which may be of interest to the broader Chinese context.

2. Background to APN

Today numerous countries have well established APN programs and approximately 70% of hospitals in the world have some form of advanced practice [1]. The evidence is plentiful that APNs are contributing significantly to improving patient care and outcomes and lowering hospitalization and readmission rates and thereby lowering costs [2]. The demand for advanced practice nurses has grown as their clinical expertise, leadership and effectiveness as change agents has been recognized and built into nursing career ladders [3]. The awareness that these nurses are an important human resource for improving access to high-quality, cost-effective and sustainable models of healthcare has positively facilitated integrating advanced practice nursing in government and academic policies in many countries [4]. A range of titles is used to describe various advanced practice nursing roles in various countries. However, for sake of consistency, this paper will differentiate between two types of advanced practice nurses, Nurse Practitioners (NPs) who are licensed to practice under specified legislation with a broader scope of practice than that of the Registered Nurse (RN); and other APNs who work within the scope of practice of the RN.

2.1. USA

The term APRN is commonly used in the USA to refer to Advanced Practice Registered Nurse with four types of APRNs recognized; clinical specialists, nurse practitioners, nurse midwives and nurse anesthetists [5]. This paper does not discuss nurse midwives or nurse anesthetists and refers to nurse practitioners as NPs and clinical specialists as APNs.

The nurse practitioner role involving formal training, education, certification and legal authority began over 40 years ago in the USA at the University of Rochester Hospital Pediatric Center when Loretta Ford, RN, and Henry Sliva, MD, partnered to increase well child care and management of common chronic non-life threatening diseases such as otitis media. Early evaluations demonstrated that physicians could precept nurses in ambulatory clinical settings and collaborate with these nurses to develop protocols that defined the processes of assessment, diagnosis, treatment and evaluation. Recognition and appreciation for the contributions of these first pediatric nurse practitioners grew, including greater access to care, more efficient throughput of patients, greater coordination of care and follow up and physician relief from heavy caseloads. At the same time patient, physician and nurse satisfaction increased.

2.1.1. Educational preparation

"On the job" NP training programs began to proliferate and evolved to include certification of the individual nurses. Additionally, nursing academic leadership assumed responsibility for moving NP training programs into schools of nursing at the master's level, consolidating core curriculum, defining faculty qualifications and accreditation of programs. Almost simultaneously, the opportunity to train adult NPs to increase the amount and quality of adult health care was recognized. This was accelerated by national guidelines recommending the screening of the adult population for hypertension, diabetes and other common chronic diseases and the inability of physicians to meet the demand.

Initially NPs were taught by physicians, pharmacists, and other medical professionals until the number of NPs with academic credentials and experience to serve on college and university faculties grew. The desire to formalize the NP role led to certification of individual nurses and integration of "on the job" training programs into masters and post masters programs in schools of nursing. The increasing professionalization of the role led to accreditation of programs and certification of graduates.

APN education curriculum is based on competencies defined for the role and degree, and accreditation and certification [5]. The core masters curriculum includes 'the three p's: (physiology, pharmacology, pathophysiology); critical thinking; planning skills including comprehensive assessment, accurate diagnosis and evidence-based care; ethics, law, leadership, technologies such as informatics, data acquisition and common standards. Today's graduates are expected to be leaders and to see themselves as able to influence practice to improve patient care and outcomes. Continuing education programs offer preparation and refresher courses on this content as well as career development courses on subjects such as achieving process and outcome results, resilience in demanding times, success under stress and effective and confident leadership.

The most common barriers for nurses seeking advanced education include the cost of tuition, gaining release time from work and the possibility of not recovering lost income or advancing up the career ladder.

A major insatiable challenge for NP programs is having sufficient numbers of clinically competent and academically qualified faculty. Joint clinical-academic appointments are a particularly effective mechanism to meet this challenge. Clinically competent faculty and preceptors are needed to help students gain clinical as well as cognitive skills, learn roles and be familiar with transitional settings.

As NPs increasingly collaborated with pharmacists, social workers, physical therapists and other practitioners prepared at the doctoral level, the American Association of Colleges of Nursing (AACN) committed to the aspirational goal that APNs would be prepared at the doctoral level by 2015. This aspirational goal was interpreted by many nursing schools as a mandate a rather than an aspirational goal. Doctor of Nursing Practice (DNP) programs proliferated rapidly [6]. While progress in the opening and accreditation of these programs has been rapid, many controversial issues exist. These include numbers of qualified faculty to teach at the doctoral level, tuition cost, and reluctance of nurses to return for yet another degree, as well as the reality of actual opportunities for career advancement have led to differing opinions of the need for and value of the DNP degree.

2.1.2. Legitimacy of the advanced practice role

The legitimacy of the roles of NPs and other APNs is reinforced by population and health system needs. In addition to extensive data on their effective contributions, there is increasing recognition that they help to meet the needs of an aging population with multiple chronic illnesses requiring self-management [2]. Currently in the context of USA health care reform initiatives, priority is

placed on providing more community-based and preventive care and improving efficiency and effectiveness of care at lower cost through inter-professional collaboration.

The legitimacy of these roles is also reinforced by the increased emphasis on evidence based practice. Methods to define, measure and analyze nurse sensitive variables have been a challenge. With the emphasis today on collaborative team approaches to care and the development of electronic medical record data sets it is imperative that data are collected that allow documentation of process as well as outcomes and individual providers. NPs and other APNs with the right knowledge and skills can contribute to these initiatives by developing protocols and evaluation methods that provide evidence and have the potential to modify practice.

Case management is an expanding role for nurses with advanced skills, especially for patients with multiple, complex diagnoses. Coordinating the transitioning patients across settings is increasingly recognized as a valuable nursing role. Multiple effective models have been studied with varying numbers and skill levels of nurses including APNs. Outcomes include reduced hospitalizations, reduced length of hospital stay, decreased multiple physician visits, and increased patient, family and provider satisfaction and decreased costs.

In 2010 the landmark Institute of Medicine (IOM) report, The Future of Nursing: Leading Change, Advancing Health [7] was published. The report made the following recommendations:

- Remove scope of practice barriers
- Expand opportunities for nurses to lead and diffuse collaborative improvement efforts;
- Implement nurse residency programs;
- Increase the proportion of nurses with a baccalaureate degree to 80% by 2020;
- Double the number of nurses with a doctorate by 2020
- Ensure nurses engage in lifelong learning
- Prepare and enable nurses to lead change to advance health
- Build an infrastructure for the collection and analysis of inter-professional healthcare workforce data

In 2015 the IOM Committee for the Evaluation of the Impact of the Institute of Medicine Report on The Future of Nursing [8] assessed the changes to the field of nursing and peripheral areas over the past five years as a result of the IOM report on the future of nursing [8]. A major focus of this work was the data from and evaluation of the Robert Wood Johnson Foundation National Campaign for Action to implement the report's recommendations. The Committee assessed the type, amount, and quality of data and information available to measure impact. They also identified efforts, successes and barriers to implementing the recommendations from stakeholders regarding education and training, policy and regulation and health care organization, delivery and providers.

The barriers to advanced practice include outdated laws, push-back from medicine, tactics to scare the public about the safety of APN care, lack of reimbursement policies by insurance companies, lack of public knowledge about APN education and efficacy and failure to recognize APN as a valuable resource. The uptake of the APN roles and their effectiveness in the clinical setting depends on the extent to which their immediate supervisors in the clinical areas accept and champion the APN role. If these clinical supervisors and managers do not support the APNs they can block their success and job satisfaction and undermine the efforts to have APNs improve patient care and outcomes.

2.1.3. Capacity requirement

The need for and the availability of APNs have grown organically based on patient and system needs, physician recognition of the APN contribution and impact, and nurses' desire to practice in an expanded role and thus capacity is difficult to calculate. The needs of population subgroups and health care delivery organizations for skilled APNs have also led an increasing number of APN specialty programs and related organizations. These include family care, adult health, pediatric care, women's health, geriatrics, primary care, school/college health, mental-health, long-term and home care. In addition to pre and peri-natal care of mothers and children and hospital based acute care continue to be areas of priority need. Emerging areas of need for APNs are memory and movement disorders.

2.1.4. Scope of practice, domains of activities, limited right for prescription and referral

These are critically important issues that have dominated and challenged the evolution of APN roles and practice. Many of the challenges have come from segments of organized medicine which believe that no health professional except a physician should be allowed to diagnose, refer, or treat any medical condition and that these acts are the sole responsibility of physicians. This conviction is imbedded in the medical practice acts in numerous states in the USA and in limitations on practice in the acts regulating the practice of nurses, pharmacists, and psychologists among other health professionals.

A wide variety of practice models of care have been developed based on local need and availability of physicians and APNs. For example, in a specialty hypertension clinic a NP might work five days a week seeing patients with nine physicians each attending one morning a week. Today on the surgical service at a high volume specialty hospital each surgeon may work with one or two NPs who manage the inpatients and outpatients all day and provide 24 h coverage while the surgeon is in the operating room all day.

Other models include nurse run clinics, virtual roles across settings such as transitions of care coordination and home based programs addressing behavioral and social needs as well as medical and nursing care needs. The specialization of APN care is directly related to the specialization of medical care. Specialties from neonatal intensive care to occupational health have proliferated as the value of APNs increased.

Independent prescribing by a NP does not require collaboration with a physician and is a key element of scope of practice for NPs, as well as being part of the APRN Consensus Model, which seeks to achieve uniformity of state regulation of APRN practice. However, despite the existence of the consensus model, there are extensive disparities among the states with respect to prescriptive authority. In some states, prescriptive authority is granted at the time of APRN licensure; in others, the APRN must apply separately for these privileges. Differences exist in how much and what type of educational preparation is required and whether and how much supervision of prescribing practice must take place before independent prescriptive authority is granted.

2.1.5. Professional promotion ladder

In the USA professional promotion ladders are the legal responsibility of employers and they vary by the employers' human resource policies and labor laws. These policies describe positions, hiring criteria including credentials and prior experience, and set salaries and steps on career ladders for promotion. Historically, nurse practitioners were hired by individual physicians, groups of physicians, hospitals, health departments and community based agencies. Clinical specialists, however, were hired by hospital nursing departments to be consultants and educators for the nursing staff.

NPs today develop protocols with physicians and other professionals for team based care which permits them various degrees

of independent protocol based autonomy for decision making. For example, diagnostic evaluation, making referrals, and prescribing medications are approved actions and responsibilities. As with other types of employees, a major factor in career progression is how the employee demonstrates value to the employing organization.

For the NPs whose primary or joint position is in an academic setting academic promotion policies are applied. Universities and colleges have an integrated set of expectations; research-scholarship, teaching, practice and community/professional service. The emphasis on each these roles vary according to the mission of the employing institution. In general, NPs who are considered expert in their field must practice a certain number of hours per year to remain certified and clinically competent. NPs with primary appointments on a faculty often have a joint appointment with a clinical partner hospital or health care agency to practice a half to two or three days a week. If NPs are hired by the Departments of Surgery, for example, they may be employees of the School of Medicine. Their position descriptions, salaries and benefits may vary from those of the NPs employed by other School of Medicine departments, the School of Nursing or the hospital department of nursing. In all employment situations, however, it is common for the employers to recognize education, experience, skills and performance including scholarship and leadership, when evaluating an NP for promotion.

2.1.6. Accreditation system

In the USA the accreditation system for schools of nursing was built by Deans and Directors of nursing schools. They set common standards and methods to assess quality and outcome assessment on a regular schedule. Student metrics include number of applications, matriculations and graduations. Grade point averages, test scores, state board pass rates and employment rates and settings are monitored. Faculty qualifications, teaching performance, scholarly productivity and leadership are monitored. School resources including technology, simulation laboratories and clinical sites are also evaluated. Curriculum content, organization and delivery strategies are monitored as well. Special reviews are conducted for NP programs.

Additionally, there are organizations that certify individual nurses as APNs. Further, licensure to practice as an RN and approval to practice as an APN is granted by individual states. Thus, nurses must be familiar with the licensure and certification requirements as well as the accreditation status of the educational programs they are considering attending. As APNs consider becoming employed in another state they need to ask if they meet the requirements to practice as an APN in that state, if they have the appropriate certification to practice in that state, and if their training/experience match within the scope of practice required to practice.

2.1.7. Performance evaluation system

There is no unified APN performance evaluation system. Career ladders with progressive expectations and metrics for success exist. They provide APNs and their employers with tactics and metrics for motivation and ways to avoid stagnation. As mentioned above, specialty organizations certify individual APNs. Some certify at entry to the role and repeatedly to assess demonstration of continuing competency. This may be done by observation, examination, psychometric testing, portfolio and resume and recommendations of supervisors. Peer evaluation is a method that is gaining interest. Finally, employers have methods with which to evaluate how well the APN fits into the workforce.

2.2. Canada

The 2008 Canadian Nurses Association publication, Advanced Nursing Practice: A National Framework [9] included the following definition:

> Advanced nursing practice is an umbrella term describing an advanced level of clinical nursing practice that maximizes the use of graduate education preparation, in-depth nursing knowledge and expertise in meeting health needs of individuals, families, groups, communities and populations. It involves analyzing and synthesizing knowledge; understanding, interpreting and applying nursing theory and research; and developing and advancing nursing knowledge and the profession as a whole.

The 2010 landmark report by DiCenso and Bryant-Lukosius [10] provides a comprehensive view of the field. Three types of APNs focused upon are clinical specialists (CNSs), primary healthcare nurse practitioners (PHCNPs) and acute care nurse practitioners (ACNPs).

The main focus in Canada has been on preparing and supporting nurse practitioners [11]. Importantly they organized and had support from the Canadian Nurses Association and others to seek legal protection of the title and role of NP. In contrast, the CNS role varies widely and is less well understood because it lacks the legal protection of title and role. Thus the proportionate number of clinical specialists is smaller than in the USA. It is worth noting that Canada does not have national standards for either there NP or the clinical nurse specialist role. There is thus inconsistency within and between provinces in the educational preparation for these roles.

As the states in the USA regulate professional practice, in Canada the provinces regulate practice. Compared to the USA they are progressive. For example they have segmented the drug formulary into categories and allow NPs to prescribe according to their assessment of their own competencies within categories related directly to their practice. In Ontario in Eastern Canada prescriptive authority is not restricted to formularies of allowed medications. Canada has 26 certifying organizations, which is too many in the some people's view. All, however, are coordinated by the Canadian Nurses Association which assures some consistency of standards and methods.

In summary, the exceptions between USA and Canada are due in large part to the cohesive and articulate influence or organized nursing in Canada and a progressive response by the government.

2.3. Australia

The Federal government of Australia made the decision in the middle of the 1980s to shift nursing education from hospital based programs to the higher education sector. With the shift, nursing education came under the jurisdiction of the Federal Government having previously been under the jurisdiction of the six state governments and two territory governments and their departments of health. Following the transfer, education became a federal responsibility and nursing practice and the regulation of nursing remained a state or territory responsibility.

However, the Health Practitioner Regulation National Law came into effect in each state and territory in 2009, thereby shifting responsibility for the regulation of all health practitioners (medical, nursing and midwifery, pharmacy, dentistry, physiotherapy, Chinese medicine and others) from the states and territories. The majority of health care continues to be under the jurisdiction of the states and territories.

Thus the Australian system of higher education and professional health regulation is markedly different from both the USA and Canada in being organized nationally, rather than on a state or provincial basis.

The impetus for nurse practitioners in Australia came about because of a shortage of doctors in rural and remote areas who, it was thought, could be replaced by specifically trained nurses [12]. Arguments were developed by the profession about the importance of an advanced nursing role which could meet service gaps in many areas apart from rural and remote.

Pilot NP projects were established in rural and remote areas, midwifery, well women's screening, emergency services, urban homeless men's service and general medical practice. Evaluations indicated that they were feasible and the NPs were safe and effective in the provision of quality health services. Amendments were made to relevant acts of parliament to protect the title Nurse Practitioner, to grant supply rights to NPs for substances in sections of the poisons schedules and to dispense medications prescribed by NPs. The year 2000 saw the first accredited NPs in Australia and in 2005 the Australian Nursing Midwifery Council endorsed competency standards for NPs for implementation in States and Territories [13].

The clarity enabled by national registration for NPs ensures that a national framework can be adopted within States and territories. However, there continues to be ambiguity and lack of clarity surrounding many aspects of the non NP role of APN [14] which is gradually being addressed through recommendations arising out of research studies [15–17] and by the work being undertaken by the various specialty nursing colleges as they move towards accrediting various programs [18].

2.3.1. Educational preparation

RN education in Australia is normally at Bachelor level and conducted in a university. Some universities conduct entry-to-practice Masters Programs. All nursing programs are accredited by the Australian Nursing and Midwifery Accreditation Council (ANMAC) and satisfactory completion of an ANMAC accredited course makes them eligible for registration [19]. Thus, in contrast to the USA and Canada, state or provincial nursing board examinations are not requires for registration. Post basic specialty education at Masters level may be undertaken following consolidation of practice and is normally conducted collaboratively by universities and clinical agencies with nurses employed in the specific areas of specialty practice in which they are undertaking study.

Registration as an NP requires the equivalent of three years' full-time experience in an advanced practice nursing role, within the past six years. Additionally, successful completion of a Board-approved nurse practitioner qualification at Master's level or education equivalence as determined by the Board is required. Compliance with the Board's National Competency Standards for the Nurse Practitioner and compliance with the Board's registration standard on continuing professional development are also required [13] Educational content is similar to that in the USA and Canada with an emphasis on pharmacology, physiology pathophysiology, critical thinking; planning skills; ethics, law, leadership, and technologies such as informatics.

For Non NP APNs educational preparation beyond that of Bachelor of Nursing is not mandated. However, most hold at least a Graduate certificate in their area of specialty and many also hold a Master's degree.

2.3.2. Role legitimacy

A role is legitimate when definitions of nursing are consistent with accepted international definitions, are relevant to the health needs of the population, are formalised through documents setting out scope of practice and are accepted by all stakeholders. In Australia NPs have role legitimacy in terms of consistency, relevance and formalised scope of practice. However, stakeholder acceptance is variable and mixed. It is anticipated that this will improve over time as the roles become more entrenched within the healthcare system. Nevertheless, there are a number of barriers to be overcome and, similarly to the USA, it may take considerable time for the effectiveness of these roles to be fully appreciated [20].

As far as APNs other than NPs are concerned, the lack of role definition, title consistency, and clarity of role appears to be an international issue [20]. The roles are integral to health care delivery, the scope of practice is formalised at the level of RN and stakeholder acceptance occurs at level of individual health agency. These APNs play key roles in service delivery in both hospital and community contexts.

2.3.3. Capacity requirements

Because health care is under jurisdiction of states and territories, requirements for NPs are determined by state and territory health departments. As the NP role is relatively new and is still being established in many settings, it is clear that capacity has not yet been met and studies have sought to examine the emerging status of NPs in Australia [22–24].

As APNs who are not NPs work within the scope of practice of a RN there are no national statistics on numbers. In fact these roles are characterized by lack of title consistency and lack of role definition. Categories include clinical nurse consultant, clinical nurse specialist, nurse coordinator, care manager, clinical coordinator, nurse liaison, nurse researcher. Capacity appears to be determined at health agency level in relation to skill and qualification mix of nursing staff and the service requirements of the agency. Several studies have suggested ways to standardise titles and scope of practice of various categories of APN other than NPs [15–17].

2.3.4. Scope of practice, domains of activities, limited right for prescription and referral

Nurse practitioners are expected to be competent in the specific area of practice required to meet the needs of their client group. A number of documents have been produced providing comprehensive guidelines for practice and they are supported by robust clinical governance frameworks. NP services are evaluated within a multidisciplinary environment to ensure needs of target populations are met and opportunities to expand or improve services occur.

The scope of practice for RNs is clearly defined and regulated. APNs (other than NPs) work within the scope of practice of an RN albeit at an advanced level and practice in both the hospital and the community context.

It needs to be noted, however, that nursing specialization areas developed over time in an ad hoc and unstructured manner without a classification system to guide the process and confusion about the nomenclature and scope of advanced practice nursing has continued to abound with multiple advanced nursing roles emerging and lack of consistency in both the scope of the roles and their responsibilities.

The domains of activities undertaken by NPs are consistent with the strategic plans for deployment of NPs in the various states and territories. Areas include emergency care (adult/paediatric); acute pain management (adult/paediatric); mental health (adult); respiratory disease (adult); wound management; neonatal services; cystic fibrosis (adult/paediatric); chronic heart failure; heart transplant recipients; inflammatory bowel disease (adult); palliative care (adult/paediatric); aged care (altered cognition); type 1 and type 2 diabetes mellitus; sexual and reproductive health; chronic kidney disease (including dialysis); urology services (adult); primary health care; cancer services (adult/paediatric); rural and remote; substance use disorders. There is currently a move to ensure a greater primary health care focus in NP education programs.

The accreditation standards used to assess and accredit nurse practitioner programs of study have been reviewed and revised by ANMAC. In undertaking this review ANMAC synthesised and translated contemporary evidence, expert opinion and stakeholder feedback to update and improve the standards so they continue to safeguard and promote the health, safety and wellbeing of those Australians receiving services provided by nurse practitioners. The amended NP standards for practice were approved by the Nursing and Midwifery Board Australia effective from 1 January 2014. Prescribing is limited by a nurse practitioner's scope of practice. A collaborative arrangement between a nurse practitioner and a medical practitioner must provide for consultation between the nurse practitioner and a medical practitioner; referral of a patient to a medical practitioner and transfer of the patient's care to a medical practitioner.

2.3.5. Professional promotion ladder

There is no nationally consistent approach to a promotion ladder for Advanced Practice Nurses (non NPs) as these are developed at the local level and negotiated in conformity with Enterprise Bargaining Agreements. There is a very well developed community nursing role in Australia in urban, rural, regional and remote locations, with roles for specialist and advanced practice nurses. The primary health and community role for NPs is set to expand.

While there are no formal accreditation standards for APNs other than NPs, various specialty areas have developed practice standards through their professional colleges which are envisaged to be an adjunct to the generic professional practice standards for RNs provided by the NMBA. An example is the Practice Standards for the Emergency Nursing Specialist produced by the College of Emergency Nursing Australia. Graduate Certificates and Diplomas in specialty nursing offered by universities take account of such documents in curriculum development.

Because of a lack of national agreement of what constitutes a specialty, each State and Territory may have different understandings of what constitutes a specific specialty and the skill sets required. There is highly complex interplay of service settings, industrial, regulatory, professional and education factors in the specialization debate. It will be difficult to find a national framework that suits all jurisdictions and service settings. NPs may be in private practice or employed in the public sector. For those employed in the public sector, salaries are set through Enterprise Bargaining Agreements and vary by State and Territory.

Salaries normally progress through with each grade allowing for a number of yearly increments. Grade 2 is the level of the clinical nurse and has an annual progression of salary increments for 9 years. Clinical Coordinators and Liaison Nurses are at Grade 4, Assistant Directors of Nursing (ADON), Teachers and Midwives are at Grade 5, Deputy Directors of Nursing, Clinical Consultants, NPs are at Grade 6 and Directors of Nursing is at Grade 7.

2.3.6. Performance evaluation system for NPs and other APNs

The NMBA has developed a framework for assessing national competency standards for NPs based on the principles of accountability, performance-based assessment, evidence-based assessment, validity and reliability in assessment, participation and collaboration setting in order to source adequate and essential information.

As an essential part of the assessment process, assessors conduct interviews with nurse candidates being assessed. It is through this process that the important practice of reflection on and reinterpretation of performance and assessment judgments should occur, enabling judgments made by the assessor to be validated.

The Performance Evaluation System clinical audit and review evaluates the performance NPs using validated tools (AUSPRAC 2009) [24]. It examines structures, processes and outcomes. Structures include facilities, equipment surrounding care delivery, access to diagnostic information and IT and other resources; support for training and development and the integration of NP role into the organization using survey interviews of nurse practitioners and stakeholders. Processes include audit of data influenced by nurse practitioner services (such as wait times and other specific services, KPIs; e.g., diagnostic tests, prescribing, referrals, technical competence, scope of NP practice, availability and use of specific and relevant evidence-based guidelines patient chart review etc. Outcomes include, e.g., the number patients/clients accessing nurse practitioner service in a defined period (measurement will be relevant to the nurse practitioner model). Evaluation includes progress/improvement/cure of presenting condition and/or symptoms; evaluation of patient attitudes and satisfaction; improved patients' knowledge and self-care competencies; recording of adverse events.

Other APNs are evaluated with tools in use at the clinical agency in which they work. These are not standardized and will vary from setting to setting.

2.4. Hong Kong SAR China

Prior to establishment of the Hospital Authority in Hong Kong SAR, nursing was organized in a management oriented structure with no clear direction for professional and clinical career development. However, with health care reform in the 1990s, the line of responsibilities was revised and a clinical pathway introduced. A formal position of Nurse Specialist was established in 2002 [25] and subsequently the role of Nurse Consultant was established in 2011 [26]. Additionally, in line with the reform agenda, the professional nurse was expected to have a higher and broader level of competencies and a number of nursing programs now prepare students at a baccalaureate level. There is no perceived need to develop nurse practitioner roles in Hong Kong or to allow for extensions to current limitations upon prescription and referral rights. Nursing is regulated through the Nursing Council of Hong Kong which ensures the quality of nursing practice through its registration and accreditation system.

2.4.1. Educational system

Entry-to-practice degree level nursing programs are conducted by universities. Entry-to-practice nursing higher diploma programs are conducted by Hospital Schools of Nursing. A two year Preceptorship Program is offered to all newly graduated RNs to strengthen the foundation of their generic nursing skills. They rotate to 2 or 3 clinical areas in these two years to broaden their scope of clinical experience and examine their career options in nursing specialization.

The Institute of Advanced Nursing Studies (IANS), the training arm of the Nursing Services Department of the Hospital Authority Head Office, aims to enhance the competencies of nurses and the quality of care through the provision of continuing nursing education for nurses in the Hospital Authority. It offers Specialty Nursing Certificate Courses, Enhancement Programmes and e-Learning Programmes. It is noteworthy that a Master's degree is not mandated for an advanced practice role.

The Provisional Hong Kong Academy of Nursing (PHKAN) is based on the model of the HK Academy of Medicine. The latter was formed in recognition of the need for essential postgraduate medical education and training in Hong Kong and is an independent institution with the statutory power to organize, monitor, assess and accredit all medical specialists training and to oversee the provision of continuing medical education. The PHKAN aims to

establish the Hong Kong Academy of Nursing as a statutory body to regulate the nursing profession and enhance excellence in nursing service and health care in Hong Kong through promotion of specialist nursing education and practices.

2.4.2. Role legitimacy

Role legitimacy refers to definitions of nursing consistent with accepted international definitions and relevant to health needs of the population and formalised through documents clearly setting out scope of practice. Role legitimacy also requires acceptance by all stake holders. APNs in Hong Kong SAR have role legitimacy in relation to each of these indicators.

2.4.3. Capacity

Capacity for advanced practice nurses is determined in relation to strategic plans developed within HA. However capacity is not being met due to shortage of nurses throughout Hong Kong SAR. This appears to be related to issues of both recruitment and retention. All graduates of preregistration programs appear to find employment. Additionally NCHK appears to limit opportunities for overseas trained nurses to practice in Hong Kong SAR.

2.4.4. Scope of practice

The scope of practice of both Specialist Nurses and Clinical Consultants is within that of a Registered Nurse as set out by the NCHK. However, advanced practice roles (within the RN scope of practice) are delineated within the new HA structure. The nurse specialist role was first piloted in 1993 and an advanced practice nurse role piloted in 2003. The new Nursing Career progression model was promulgated in 2008, and a nurse consultant pilot conducted in the same year. In 2011, the nurse consultant role was implemented. In a pilot project the roles and responsibilities of the Advanced Practice Nurse were identified as follows:

- Lead and supervise a nursing team within a clinical unit.
- Develop professional nursing standard, care protocol and clinical pathway.
- Provide complex patient care in a specialty/subspecialty.
- Act as a resource and referral agent on clinical expertise.
- Manage nurse-led services to provide specialized patient care.
- Train and supervise nurse learners in advanced nursing specialty training.
- Initiate and participate in evidenced-based practice and nursing research.
- Participate in the planning, implementation, and evaluation of the service.
- Enhance supervisory support and senior coverage in every shifts of duty
- Coordinate and implement new service/ward improvement initiatives.
- A pilot project for the Nurse Consultant role set out requirements as follows:
- At least Master's degree
- Specialty/Clinical Competency
- Postgraduate specialty training
- Rich Specialty experience
- Expert clinical skills in specialty
- General training in other specialties
- Management, leadership & research kills
- Educational planning and teaching skills
- Personal qualities and ethical behavior—
- Good communication/interpersonal skills, innovative mind, highly initiative.

The scope of practice of the clinical consultant includes: service development (35%), expert practice (47.7%), research (3.6%), continuous quality improvement (5%) and education (8.7%).

2.4.5. Accreditation

Programs leading to registration are accredited by the Nursing Council of Hong Kong. There is no formal accreditation by the Council for post basic certificates programs, Graduate Diplomas and Master's degrees. The PHKAN aims to accredit advanced practice nurses using tools developed by specific nursing specialty groups.

2.4.6. Domains of activities

The Nurse Specialist APN provides expert care, expands their autonomy in direct patient care, demonstrates competence in managing patient's complex health problems, plans and implements clinical education, engages in staff development through educating peers and staff training, undertakes quality improvement through maintaining quality services, reviews and is instrumental in developing clinical guidelines and protocols, and undertaking research and evidence based practice.

Much of the role of APN development in Hong Kong SAR has been in inpatient settings and includes advanced clinical assessment, education, research, and consultation with physicians [1]. However, nurse-led clinics, run by Clinical Nurse Specialists, have been continuing to expand and have demonstrated sound health outcomes [27]. The nurses manage up to 90% of patients for outpatient disease-specific care. Nurses practice either independently or undertake supervised adjustments of medications and initiate treatments according to protocols [28]. In some circumstances however, the CNS will prescribe medication, such as nicotine patches for smoking cessation for COPD patients.

In a study of nurse led out of hours care, respondents viewed the benefits of introducing these roles in Hong Kong SAR as outweighing any challenges. A major perceived benefit relates to improving the quality and safety of patient care. The greatest challenges associated with the role related to acceptance of the role by other healthcare professionals, and difficulties associated with the general public's traditional attitudes to healthcare provision in Hong Kong SAR [29].

Nurse consultants have responsibilities for strategic planning ensuring care standards, enhancing clinical patient care, monitoring standards ad outcomes of care, consultation services, community care development and networking. They also develop and implement care delivery models, care pathways ad clinical guidelines and provide direct care and management of complex and high risk cases.

One study [26] explored the roles and responsibilities of seven newly appointed Nurse Consultants. Five major roles and responsibilities were identified, namely providing expert practice, initiating service development, leading education, guiding continuous quality improvement and conducting research and providing evidence-based practice. The NCs within this study achieved building professional excellence, respect and trust within their own spheres. Roles of advanced practice nurses in Hong Kong appear to have increased acceptance, due to improved health care quality and safety [29].

Limited rights for prescription and referral in the NP model are not applicable in the Hong Kong context and it appears unlikely that such a development will occur.

2.4.7. Professional promotion ladder

This system was brought into being in HA hospitals in Hong Kong to provide better role delineation of nurses, to strengthen the clinical focus and accountability of nursing practice and to enable nursing specialization in line with health care developments.

This is a three-tier pathway. Tier 1 applies to the Registered Nurse (RN) with up to 6 years of experience as a pre-specialty nurse. A specialty nurse requires 7–10 years of experience.

Tier-2 applies to the Advanced Practice Nurse (APN)/Ward Manager (WM) requires twelve or more years of experience. Tier-3 applies to the Nurse Consultant (NC)/Department Operations Manager (DOM) with 18 years plus of experience. This system provides for two streams of career progression, Management or Clinical.

2.4.8. Performance evaluation system

Nurses employed within HA participate in an annual Staff Development Review, conducted by their immediate supervisor. There is a face to face and assessment is based on the observed performance and the required standard for the job. Prior to the interview, the nurses have to list out the key objectives achieved and the staff development activities undertaken within the year. Nurses are rated in their evaluation as Outstanding, Superior, Good, Effective, Marginal and Below Standard Performance.

Hong Kong SAR does not have a well-developed system of primary health care. In 2008, the Government proposed a comprehensive and integrated package of proposals for reforming the health care system in which emphasis was placed on enhancing primary care [30]. The responses from public consultation confirmed a broad-based support for reforming the existing health care system and strengthening primary care. A strategic plan to enhance and develop primary care in Hong Kong was formulated and an overall primary care development strategy for Hong Kong developed.

3. Discussion

Nursing leaders are expected to create environments of excellence in nursing care in all settings for all levels and types of nurses. Evidence-based practice allows greater inclusion of nurses in decision making and monitoring quality and safety of patient care and analyzing root causes of harm present opportunities for expert nurses to participate collaboratively in developing and supporting protocols, procedures and policies.

The pressure to improve patient care and outcomes and to contain costs has driven health care plans and systems to appreciate team approaches to patient centered care, particularly in the USA, Canada and Australia. Task sharing/shifting diversify teams based on numbers of patients and their needs – for example, only one dietitian or pharmacist may be needed while numerous nurses and physicians may be needed. Success is seen where APNs are part of creative planning for change in practice protocols and policies and establishing evaluation and feedback procedures.

It is essential that support is provided for APNs by employer organizations and professional societies if they are to be successful as they develop and enhance their roles. Conferences, e-newsletters webinars, and other continuing education methods are needed for developing greater clinical competencies and leadership skills. As the complexity of health care delivery has increased APNs are more and more expected to be able to think critically about how patient care and outcomes are improved and costs are lowered. Thus, the ability to gather, manage, analyze and report data, develop business plans and communicate effectively with diverse audiences is expected. An additional area of continuing professional growth is personal and professional advancement which requires self-awareness of one's own capabilities and building and utilizing a network of peers and mentors.

Hong Kong SAR has a small contained population with clearly defined advanced practice roles as nurse specialists and clinical consultants. There is no perceived need to develop nurse practitioner roles or to allow for extensions to current limitations upon prescription and referral rights, although the increased focus on primary care may lead to further advanced practice roles. Much can be learned from the Hong Kong SAR experience, in particular its well-developed clinical career path for APNs through three tiers of progression. The current move to develop community nursing is in line with aspirations for APN in mainland China.

While APNs do not have accreditation beyond that of RNs, planning is underway by the Academy to have an accreditation function for advanced practice. The practice models of the specialty nurse, the APN and the Nurse Consultant are clearly set out. The HK model could be helpful in the areas identified and as a model of a jurisdiction with strong health governance.

In regard to the three priority areas identified for China, it has been shown that a clinical/career ladder/professional promotion system for APNs is well developed in each country in conformity with local agreements. There is a very well developed community nursing role in the USA, Canada and Australia and is in the process of being developed in Hong Kong SAR. Specialty nurse accreditation systems have been developed in the USA, Canada and Australia and a range of practice models implemented. These are in early stages in Hong Kong. APN educational preparation, role legitimacy, capacity requirement, scope of practice, domains of activities, and limited right for prescription and referral, professional promotion ladder, accreditation system, and performance evaluation systems have been described for each country.

4. Conclusion

This paper has discussed advanced practice nursing in four jurisdictions, the US, Canada, Australia and Hong Kong SAR. The advanced practice nursing role began in the US and both Canada and Australia have followed the US model in regard to both NPs and other APNs. Differences between these jurisdictions stem primarily from differing legislative and educational requirements. Hong Kong SAR, by contrast, has taken a different path, having not taken the NP route. In each jurisdiction, it is clear that advanced practice nurses are working to the extent of their scope of practice, demonstrating the skills and capabilities required to meet the complex health care needs of the communities in which they practice.

Appendix A. Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.ijnss.2017.01.002.

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