

The Development of Advanced Nursing Practice Globally

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Purpose: To examine the development of advanced nursing practice globally.

Methods: Data were collected from documentary resources available in the International Nurse Practitioners/Advanced Practice Nurse Network (INP/APNN) of the International Council of Nurses. The areas examined were guided by the “key informant survey on advanced nursing practice self-administered questionnaire.” Two core members of the INP/APNN who have rich experience in global advanced nursing development analyzed the data. A total of 14 countries and three regions from five continents were included in the analyses. The development of advanced nursing practice in these areas is facilitated by a need for better access to care in a cost-containment era and the enhancement of nursing education to postgraduate level. The mechanism for regulation of practice is in place in some countries.

Conclusions: Confirms the development of advanced practice in nursing is a global trend.

Clinical Relevance: APNs can improve global health with points to enhanced education in nursing and regulation of advanced practice.

[Key words: advanced practice, advanced nursing practice, international health, global health]

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The development of advanced nursing practice has become a global trend in the last few decades. The prevalence of this trend provided the impetus for members of the International Council of Nurses (ICN) to launch an International Nurse Practitioner/Advanced Practice Network (INP/APNN) in 2000 to facilitate communication among nurses who share the same interest globally. INP/APNN members recognize that, though the evolution of advanced practice nursing differs in each nation, similarities exist. A platform was therefore created to facilitate dialogue among the global nursing community. Specifically, the INP/APNN has five objectives which are: (a) to serve as a forum for exchange of knowledge, (b) To serve as a resource base for the development of advanced practice/nurse practitioner roles and the appropriate educational underpinning, (c) To serve as a vehicle for ICN to harness specialist expertise, (d) to help ICN more effectively meet its mandate as the global voice of the profession, and (e) to provide a mechanism for promoting and disseminating information from any of the network members and ICN (Cross, 2007).

ICN International NP/APN Network (n.d.) defines advanced practice nurses (APNs) as registered nurses who have acquired the expert knowledge base, complex decision-making skills, and clinical competencies for expanded practice, the characteristics of which are shaped by the context

or country in which they are credentialed to practice. A master's level degree is recommended for entry level. This definition is the essence of advanced practice but at the same time indicates that countries will need to interpret and realize the practice of advanced nursing in their specific context of healthcare environment.

APN has been used as an umbrella term signifying nurses practicing at a higher level than do traditional nurses. Specific roles of APNs have also been differentiated. They include nurse practitioner, clinical nurse specialist, nurse anesthetist, nurse midwife, and case manager (Bigbee & Amidi-Nouri, 2000). The United States is probably the only country that has all five roles developed and in practice in the health-care system. Most countries develop APN roles with a focus on nurse practitioners (NPs) and clinical nurse specialists

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(CNSs). In this paper we will use APN as a generic term for nurses practicing at a higher level, but will use terms such as NP or CNS if those terms are used by specific countries.

The aim of our paper is to examine the global development of advanced nursing practice. The primary source of data is information available in the INP/APNN, including conference publications, bulletins, and network communication. We examined the information that was focused on four key areas guided by the "Key informant survey on advanced nursing practice self-administered questionnaire" developed by Schober and Affara (2006). These key areas are historical development, roles, education, and regulation and we selected places that have provided adequate information for review. These places included America (Canada, Latin America, United States); Africa, Asia (China, Japan, Korea, Singapore, Thailand); Australia; New Zealand; and Europe (Belgium, Germany, the Netherlands, Switzerland, Nordic countries and the United Kingdom). We believe we have selected places that show what is happening with APN development globally. In fact, ICN is the largest nursing organization in the world and INP/APNN is the only global network that brings APNs and those interested in advanced practice nursing together. The data in this review were analyzed by the authors who are core members of the INP/APNN and experienced in global advanced nursing development.

America

Canada

The concept of APN was embraced by the Nurse Practitioners' Association of Ontario in the early 1970s (Patterson, 1997). Graduates of newly established programs formed the organization in 1973 to provide networking and support for the new role. The NP model was designed for primary healthcare settings but also included secondary and tertiary settings. Throughout the years an acute-care NP role emerged in Canada, together with the CNS role to serve clients in acute-care settings. Energetic APNs participated in research studies that determined NPs were providing safe, cost-effective care that was acceptable to consumers (Patterson, 1997).

In 2005 the Canadian Nurse Practitioner Initiative (2006) funded by the Canadian government and sponsored by the Canadian Nurse Association developed a framework for the integration and sustainability of the NP role in Canada. The report indicates standardization of education, regulation, and adoption of payment models to increase NP mobility and assist governments to improve access to care.

The scope of practice for APNs is legislated and regulated at the provincial/territorial level. The Canadian Nurses Association works with the federal government to develop regulations that would enable NPs to prescribe controlled drugs and substances (Rieck-Buckley, 2008). Canada prepares APNs at the master's level.

Latin America

Countries in Latin America are struggling with the provision of basic health care especially in rural areas. Nurses help to provide primary healthcare services to underserved groups (Thampy, 2004), which seems to fit well with the expected role of an NP, but the development of APNs in different capacities including the NP role has not been widely reported. There was an attempt to introduce an NP program in Puerto Rico but a lot of hurdles seemed to exist including education, legislation, and acceptance of the role by healthcare professionals and others (Rodriguez, 2004).

The role of APNs is difficult to implement in Latin America, maybe because the ratio of nurses to physicians is similar, and the physicians are the first line in primary care. Nurses in the hospital frequently do not have the initial educational background at the university level to move into the advanced practice roles (P. Bernal de Pheils, personal communication, November 29, 2007; Bernal de Pheils, 2008).

United States

The first APN roles in the US were nurse anesthetist and nurse midwives; both emerged in 1940s. The first CNS program in psychiatric nursing was established in 1954, by Peplau at Rutgers University (Bigbee & Amidi-Nouri, 2000). A monumental step in the progression of advanced practice occurred with the development of the first NP program in 1965. The initial pilot, introduced by Dr. Loretta Ford and Dr. Henry Silver was in response to escalating healthcare costs, health manpower shortages, and maldistribution of health care resources (Ford, 1997). Although the program was successful and rapidly expanded into multiple specialty areas, it was not without controversy (Hawkins, 1977). There was significant opposition to the new role. Evidence supporting APN practice gradually built over time. Results showed that APNs can enhance clinical outcomes and reduce healthcare costs (Naylor et al., 2004) and NPs provide care comparable to physicians in ambulatory care settings (Mundinger et al., 2000).

The five roles of APNs, including nurse practitioners, clinical nurse specialists, nurse anesthetists, nurse midwives and nurse case managers, are all currently active in the US, with NPs being the largest group. Most national and state regulations integrate case managers into the other roles. The majority of APNs are prepared at the master's level and all are required to have a license or certificate or both for practice (Bigbee & Amidi-Nouri, 2000). Doctor of nursing practice (DNP) programs are being developed to meet the current trend to move advanced nursing preparation to the doctoral level.

Africa

Nurses in Botswana and South Africa are evolving into the advanced practice role. Swaziland had an NP program that was discontinued, but efforts are being made to re-establish the program at the postbaccalaureate level

(Schober & Affara, 2006). Africa is experiencing significant health issues including limited resources, extreme poverty, overwhelming chronic diseases such as HIV/AIDS, and a shortage of healthcare providers. In an opening address for the ICN NP/APN conference in Sandton, South Africa, Hlongwa (2006), a member of the Executive Council for Health, Gauteng, South Africa, acknowledged the contribution of nursing in health care, improving the quality of care with little resources.

World Health Organization officials estimate that in some nations, over 80% of the healthcare needs are met by nurses (Hancock, 2005). Cape Town University is increasing the level of education for nurses (Khalil, 2006). Botswana is moving from a health system where care was provided by missionaries to a system of primary, district, and hospital care. The Institute of Health Sciences in Gaborone, is educating nurses at the master's level (Pilane, Ncube, & Seitio, 2007; Seitio, 2006). The challenges faced include lack of role models, definition of scope of practice, and reimbursement mechanisms.

Asia

China

The level of advanced nursing practice development in China varies, with what is happening in Taiwan and Hong Kong being different from what is happening in mainland China. The variations are linked with socioeconomic and political backgrounds.

The first APNs appeared in 1994 in Taiwan, mainly acting as CNSs taking care of patients who had cardiovascular surgery. The opportunity for developing APNs in Taiwan arose in 1995 when there were reduced numbers of medical residents employed in the hospital during healthcare reform. In 2000, the government of Taiwan passed an ordinance to formally recognize the status of APNs (Chien, n.d.). In 2003, a document on the education plan and regulation proposal was issued. In 2004, the Ministry of Health in Taiwan issued the regulation for NP accreditation (Chao, 2005). Since 2000, APNs in Taiwan are educated at the postgraduate level (Tang, 2005).

In Hong Kong, the APN role was first introduced as the role of CNS in 1993. Postgraduate education for APNs was introduced in 1995 at the Hong Kong Polytechnic University. Studies have been conducted to show the value of these APNs including improvement of patient health outcomes, decreased health care utilization, and enhanced satisfaction (Wong, 2001; Wong, Mok, Chan, & Tsang, 2005). Nurses now in Hong Kong can see patients independently in nurse clinics. The nurse clinics in the Hospital Authority of Hong Kong are accredited based on a set of criteria derived from a study in which investigators examined 34 nurse clinics (Wong & Chung, 2006). Hong Kong now has a preparatory committee to establish an Academy of Nursing with goals to establish regulations and accreditation of APNs in the future.

In mainland China, the need to develop APNs is described in the China Nursing Development and Planning Strategic Planning (2005-2010) document (Ministry of Health of the People's Republic of China, 2005). However, the development of APNs in mainland China is deterred by two factors. First, nursing education at the tertiary level was only re-established in 1984 after the Cultural Revolution from 1966 to 1975 (Wong, Ng, Chan, & Yeung, 2000). Second, the number of physicians is higher than the number of nurses. However, some hospital administrators have introduced clinical nurse specialists in selected service areas such as diabetes and stoma care. Specialty courses have been available to nurses in collaboration mainly with their counterparts in Hong Kong in areas of intensive care, geriatrics, diabetes, infection control, and orthopaedics (Li et al., 2005).

Japan

Japan has introduced CNSs in the areas of family, adult, women, community, child, gerontological, cancer, critical-care, and infection-control nursing. The Japanese Association for Nursing Programs in University governs approval for CNS programs offered by different graduate schools of nursing. Currently, 25 universities offer CNS programs and 186 CNSs in the registry occupy 0.024% of the nursing population, in a certification system operated by the Japanese Nurses Association (Maru, Inoue, & Sasaki, 2007).

Korea

Korea has a history of APN development that goes back to the early 1950s when nurse midwives and nurse anesthetists were certified under the nurse midwifery law and healthcare law respectively. In 1973, the titles of community health nurse, nurse anesthetist, and mental health nurse were listed as special field nurses in the healthcare law. In 1990, homecare nurses were added to the list under the national healthcare law. In the year 2000, all of the above-mentioned nurse specialists were put under one umbrella title, APN.

Ten types of APNs are now in nursing services including community health, anesthesia, mental health, home care, infection prevention/control, industrial health, emergency and first-aid, gerontology, critical care, and palliative and hospice. The Ministry of Health is the authorizing agency that certifies the APNs. APNs are prepared at the graduate level (Kim, 2003).

Singapore

Singapore started a master's of nursing program in 2003, and the first cohort of 15 APNs graduated in 2004. In a follow-up study (Kanusamy, 2007), the APNs were shown to have increased competency. They were able to furnish clients with medications and were protected by hospital liability. Singapore plans to increase the number of APNs to 200 which would be 1.4% of the general nurse population. The areas of specialties that APNs serve include acute care, community care, mental health care, and medical/surgical

care. In 2006, Singapore established a registry for APNs (Kannusamy, 2007).

Thailand

The concept of advanced practice nursing received attention in Thailand in 1998 and the first group of APNs was certified in 2003. These APNs were certified in five areas including medical and surgical, paediatrics, maternal and child, community, plus psychiatric and mental health nursing. APNs are included as part of the strategy to meet the goal of the National Health Care Reform and Development Plan in 2004 (Payap, 2004). The drive for more NPs to practice in the community is escalated by healthcare reform and introduction of universal healthcare coverage in 2002. The National Health Security Office and Thailand Nursing and Midwifery Council have signed a mutual agreement to educate 7,000 NPs over 7 years; 4,100 NPs were recently certified by the National Nursing Council of Thailand (Hanucharunkul, 2007).

Australia

The first APN program was introduced in New South Wales in 1990 where APNs are prepared under the work titles of CNSs (Appel, Malcolm, & Nahas, 1996) and NPs (Professional News, 1999). New South Wales has successfully established evidence and won the support of the government in introducing accreditation for these NPs (Professional News, 1999). Other provinces have introduced APNs in different areas according to the respective needs. The NPs (approximately 250) were able to contribute to health needs of people particularly in rural areas. Some of the provinces allow prescription rights to NPs and some do not. In the latter situation, protocols are used to facilitate NP prescriptions to address health needs of clients (Nurse Practitioner Taskforce, 2000). There is a movement towards national registration and leaders generally accept that a master's level of education is required for advanced practice (Report from "Down Under" Australia, 2007).

New Zealand

The first NP program received recognition in 2000. The title of NP is regulated by the New Zealand Nursing Council; 38 have been granted the title with 17 NPs having prescribing rights. NPs are prepared at the master's level. The NPs work mostly in secondary care, with some in primary care or their own private practices (Crawford, 2008)

Europe

Western and Central Europe

Efforts to develop advanced practice emerged in Belgium, Germany, the Netherlands and Switzerland in the 2000s. The United Kingdom has a longer history of APN

development and will be discussed separately. Belgium is divided into two parts the northern part which is Flemish speaking and the southern part which is French speaking. The APN development differs in the two areas. In the northern part of Belgium, a clinical master's curriculum preparing advanced practice nurses was implemented at the Catholic University of Leuven, graduating the first class in 1989. The initial graduates were employed by the University Hospital of Leuven in the cancer and transplant programs. Since that time the number of APN positions has continued to multiply. (De Geest, personal communication May 3, 2008) In 2007 the University began a new APN program at the masters level (Delanoy and Mairlot personal communication February 19, 2008).

In 2004, the Belgian faculty from the Catholic University of Louvain, interested in developing an advanced practice role, consulted with faculty from the US and Canada. The interest arose because of a physician shortage and the desire to increase the level of nursing to meet healthcare needs. Initially, the role of CNSs was favored because nurses were reluctant to move into a role that involved diagnoses and prescriptive privileges (Delannoy & Mairlot, 2005). Now, a curriculum for preparing NPs is awaiting approval.

The system of nursing education in Germany is complex involving different paths from career ladder to advanced educational programs for public health and the care of children and elderly adults (Leser, 2004). Currently little support exists for the APN role, maybe because of an oversupply of general-practice physicians and few resources to support significant changes in the nursing educational system.

Advanced practice in the Netherlands developed as an inpatient role at the University Medical Center Groningen. Dr Petri Roodbol, established a new career option for nurses in 1997 (Roodbol, Sheer, Woung-Ru, Loke, & Usami, 2007). Later that year, Els Borst, Minister of Health, suggested that experienced nurses might take over medical tasks. With this political commitment, the opportunity was utilized to invite Minister Borst to speak at the opening ceremony of the first conference in the Netherlands to introduce nurse practitioners in 1998. Beginning as a hospital practice in Groningen, today over 2,000 APNs are in hospital and general practice; and educational programs exist in nine cities (Roodbol et al., 2007). The NPs diagnose and manage common medical conditions including chronic diseases and are viewed as a solution to cost-effective care for aging populations.

The Institute of Nursing Science at the University of Basel, Switzerland has a master's program that prepares for nurses for advanced practice with a special focus on managing chronic illness since 2000. The development of APN roles in Switzerland has been stimulated by the launching of this program (Lindpaintner, 2004).

Although the U.K. nurse practitioner movement had significant global importance, there was limited impact within Europe until recently (Walsh, 2007). With the aid of European Union Funding, St Martin's College in England is establishing a European nurse practitioner master's program.

They will be collaborating with 13 universities within the European Union (EU), including educational institutions in the Republic of Ireland, Slovenia, Sweden, and Italy. The program will include distance-learning as well as classroom opportunities. Students will be able to study at their own universities and have clinical placements in their own countries. This new development should encourage the advanced practice movement across the EU.

Nordic Countries

The advanced practice role in Scandinavia began with a pilot study in 2002 to evaluate outcomes of expanding the knowledge base in assessment, diagnosis, and treatment of the elderly (Nilsson & Paulson, 2002). Ella Danielson, a faculty member at Mid Sweden University and a member of the ICN-NP/APN Network organized the first Nordic NP conference in 2003 (Danielson, 2003). The first Nordic conference was attended by over 200 delegates from Sweden, Norway, Iceland, Denmark, and Finland to discuss the potential for a CNS/NP role. Although the concept of the expanded role was new, nurse prescribing had been in effect in Sweden for over 10 years (International Nursing Conference Advanced Nursing Practice, 2005).

A study funded by the Ministry of Education in Finland in 2004, supported the need for APNs to care for elderly people with chronic diseases. The first cohort of 19 students graduated in December 2006 from the educational program at the master's level based on the ICN definition of NP/APN (Fagerstrom, 2007).

The United Kingdom

While nurses in North America were advancing the role in the early 1980s, Barbara Burke-Masters and Barbara Stilwell brought the advanced practice role to underserved populations in the UK (Jones, 1997). In 1991 the first NP program was developed by Barbara Stilwell for the Royal College of Nurses in London. The program was focused on primary care and later included roles in accident and emergency care. In subsequent years, universities developed programs at the master's level. Although Barbara Stilwell utilized the title NP, the title was not protected (Stilwell, 1984). Titling and competencies for APNs continue to be discussed. The title "Registered APN" is protected and regulated by the Nursing Midwifery Council (Ward, 2006). Progress has been made and a White Paper published in February 2007 indicates a government plan to reform professional regulation (Maclaine, 2008). All registered nurses who have successfully completed an approved nonmedical prescribing program can prescribe treatments.

Discussion

The advanced practice nursing role has expanded rapidly in the last decade. Most countries began to develop the APN role at the turn of the century. Before discussing findings of this review, we acknowledge the limitation of

this paper. We only used sources of information available at the INP/APNN. The authors tried to supplement and validate information with documents that were available in Chinese or English, the two languages that could be comprehended by the authors. This review has not included information reported in other languages and not available via the INP/APNN.

Table 1 shows a summary of our review including the historical development, role titles used, regulatory measures, and highest educational level for APNs for the places reviewed globally. Currently approximately 50 nations either have APNs or are developing the role (Schober & Affara 2006; Sheer, 2007.). This global trend is an outcome of the interplay of factors related to dynamic changes in health-care services as well as in the nursing profession. The emergence of APNs requires a healthcare environment that treasures multidisciplinary efforts and the unique contribution of APNs in improving access to care particularly in a cost-containment era for health care. Together with a favored external environment, the development of advanced practice requires the readiness of the profession. Each place has its unique social, cultural, and economic context in which APNs exist. The challenge lies within each place for clearly defining the APN role, providing education needed for advanced practice, and establishing the scope of practice and regulations.

Experiences in different countries show that APNs emerged as a result of the need to contain costs, improve access to care, reduce waiting time, serve the underprivileged, and maintain health among specific groups. Research was conducted to provide evidence to support the values of APNs. In the US, Brooten et al. (2002) have confirmed contributions of the APN transitional care model applied to a wide range of client groups including low-birth-weight infants, women with varied conditions, and general medical patients. In Canada, Higuchi, Hagen, Brown, & Zieber (2006) have reported the success of enhancing health of a rural older adult group by introducing gerontological APNs in rural western Canada. Similarly, in Hong Kong, APNs address health issues of chronically ill patients and reduce waiting time for healthcare appointments. Studies have shown that APNs are able to bring about positive health outcomes, contain health costs, and enhance care satisfaction (Wong et al., 2005; Wong & Chung, 2006). This evidence helps to persuade policymakers to include APNs as key partners on the healthcare team.

The pace of APN development varies. This review indicates an important factor that affects development, which is the readiness of the nursing profession itself to advance to a higher level. The readiness refers to the presence of a substantial general-nurse population and well-developed nursing education at the baccalaureate level to allow further development of the discipline.

Places where roles of APNs are established are places where nursing education exits at the postgraduate level and these places also have reasonable nurse to population ratios. Referring to the review above and figures shown in Table 2,

Table 1. Historical Development, Role Titles Used, Regulatory Measures and Highest Education Level for APNs for the Places Reviewed Globally

Continent/country	Historical development	Role titles used	Regulatory measures	Highest education level for APNs
America / Canada	Commenced in early 1970s; APNs help improve access to care	CNS, NP, APN	Provincial / territorial legislation	Master level
America / Latin America	Efforts initiated in 2000s	NP	No reported document	No Advanced level education established
America / United States	Commenced in 1940s; APNs help improve health outcome, access to care, contain cost	CNS, NP, nurse anesthetist, nurse midwife, nurse case manager	State legislation	Master level
Africa	Commenced in 2000s, improve access to care	NP	No reported document	Master level
Asia / China	Commenced in 1990s (in Hong Kong and Taiwan); improve health outcome, access to care	NP, CNS, APN	National legislation in Taiwan, Professional certification in Hong Kong, no regulation in mainland China	Master level
Asia / Japan	Commenced in 2000s, improves access to care	CNS	Professional certification	Master level
Asia / Korea	Commenced in 1950s, improves access to care	APN	National regulation	Master level
Asia / Singapore	Commenced in 2000s, improves access to care	APN	National registry	Master level
Asia / Thailand	Commenced in 2000s, improves access to care	NP, APN	National regulation	Master level
Australia	Commenced in 1990s, improves access to care	CNS, NP, APN	State / territorial legislation	Master level
New Zealand	Commenced in 2000s, improves access to care	CNS, NP, APN	National legislation	Master level
Europe/ Belgium, Germany, Switzerland and the Netherlands	Commenced in 2000s, improves access to care, cost effective care	NP, APN	No reported document	Master level
Europe / Nordic countries	Commenced in 2000s, improves access to care,	CNS, NP, APN	No reported document	Master level
Europe / The United Kingdom	Commenced in 2000s, improves access to care, cost effective care	CNS, NP, APN	National regulation	Master level

the places with an environment facilitative to APN development include Australia, Hong Kong, Korea, New Zealand, United Kingdom, United States, and Taiwan. The places with a scarcity of APNs, such as Africa, Latin America, and mainland China, seem to share common issues that hinder APN development. These issues are under-developed postgraduate nursing education programs, low nurse population ratio, and often the number of physicians is similar to the number of nurses. Nurses are confined to meeting basic care needs because of an inadequate number of nurses and over-supply of physicians.

Development of APN programs often begin with demands for healthcare services. Nurse leaders attempt to respond to these demands by extending the scope of practice and introducing a higher level of practice. Because APN is a new role and the services APNs provide are innovative, issues about legality of practice often arise. Many countries experience this challenge and overcome it by granting APN privileges such as prescribing medication and the ordering of diagnostic tests by providing protocols when legislation is not yet in place (Williams et al., 2000; Wong & Chung, 2006). However, this is only an interim measure. The ultimate goals are to establish legislation that formalizes the practice of APNs. In the US, NPs are now well covered

with legal authority to practice, reimbursement for services, and prescriptive authority. Phillips (2006) states that this is a developmental process and that arriving at such an autonomous stage can take decades. Establishment of the APN title, scope of practice, and regulations remain a challenge for many nations as indicated in **Table 1**.

Reviewing the global development of APNs reveals a disturbing issue, that is, the inequity of human-resource distribution for health around the world. The World Health Organization (2006) indicates that North America (the US and Canada inclusive) consumes 52% of the world's financial resources for health care and 37% of the world's health workers while that region only has 10% of the global burden of disease. In contrast, Africa has 24% of the global burden of disease but only 3% of health workers serving the need. The same inequity occurs in Southeast Asia which has the largest share of the world's burden (29%), but consumes just over 1% of the financial resources and 12% of the health workforce. These underserved places can benefit from APNs providing basic health care and promoting health. Unfortunately, as discussed earlier, these places are the worst in terms of nurse population ratio and are lagging behind in development of higher education in nursing.

Table 2. Nurse and Physician Ratio of Different Countries

Continent	Country/ City	Nurse/1000 population	Physician/1000 population
America (Latin)	El Salvador	1.54	0.80
	Panama	1.50	1.24
	Puerto Rico	1.98	1.68
America (North)	Canada	9.95	2.14
	United States	9.37	2.56
Africa	Botswana	2.65	0.40
	South Africa	4.08	0.77
Asia	Hong Kong ^a	5.28	1.70
	Taiwan ^b	4.49	1.47
	Mainland China	1.05	1.06
	Japan	7.79	1.98
	Korea	3.85	2.29
	Singapore	4.24	1.40
	Thailand	2.82	0.37
Australia	Australia	9.17	2.41
	New Zealand	8.16	2.37
Europe	Belgium	5.83	4.49
	Germany	9.72	3.37
	Netherlands	13.73	3.15
	Switzerland	10.75	3.61
	United Kingdom	12.12	2.30

Note. Source of statistics: World Health Organization, 2007, except for ^aCalculated from the Hong Kong report (2006); ^bHealth care financing policies of Canada, the United Kingdom and Taiwan (2006).

Conclusions

In each nation, nursing roles are evolving to fill needs in hospitals and primary care. APNs as generalists and specialists are found in primary care, in communities, hospitals, and long-term-care settings. They care for the disenfranchised, women, children, the poor, elderly adults, and people with chronic illnesses. Some nations begin with the role and then develop the title, scope, and regulation. Other nations begin with regulation and move on to educational programs and development of the role. Advanced nursing throughout the world is related to the perceived status of nursing and women, the need for healthcare services, existing health policy and resources, and the ratio of physicians to nurses. Although the evolution of APN differs in each nation, similarities exist.

In 2002, (Goodyear & Sheer, 2002) the ICN-NP/APNN identified challenges facing advanced practice nurses in every nation. The challenges are: educational standards, regulation, titling, reimbursement, prescribing privileges, and clearly identified scope and standards of practice. Opposition and lack of understanding of the role by other nurses, other professions, and the public often exists.

The ICN-NP/APNN is committed to helping nurses in leadership positions and policymakers to continue the momentum and progress. The network has established a Web-

site (www.icn-apnetwork.org), publishes bulletins, and has an annual conference. Research is being conducted to identify education, regulation, and titling in each nation. Fact sheets are being compiled to identify sources of information for member nations of the ICN.

The current global health care crisis creates opportunities for advanced-practice nurses to develop policy, educational changes, and professional advancement to meet growing population needs. APNs are in the forefront assisting in the WHO goal of health for all.

Clinical Resources

- <http://www.icnapnetwork.org>

References

- Appel, A.L., Malcolm, P., & Nahas, V. (1996). Nursing Specialization in New South Wales, Australia. *Clinical Nurse Specialist*, 10(2), 76–81.
- Bernal de Pheils, P. (2008, January). Is the APN role developing in Latin America? *INP/APN Network Bulletin*, 8. Retrieved March 21, 2008, from <http://www.icn-apnetwork.org>
- Bigbee, J.L., & Amidi-Nouri, A. (2000). History and evolution of advanced nursing practice. In A.B. Hamric, J.A. Spross, & C.M. Hanson (Eds.), *Advanced nursing practice: An integrated approach* (3rd ed., pp. 3–32). Philadelphia: W.B. Saunders.
- Canadian Nurse Practitioner Initiative. (2006). Retrieved December 5, 2007, from <http://www.cnpi.ca>
- Brooten, D., Naylor, M.D., York, R., Brown, L.P., Munro, B.H., Hollingsworth, et al. (2002). Lessons learned from testing the quality cost model of advanced practice nursing (APN) transitional care. *Journal of Nursing Scholarship*, 34(4), 369–375.
- Chao, Y.Y. (2005). Designing nurse practitioner system in Taiwan. Paper presented at the International Council for Nurses, May 24, 2005. Retrieved January 2, 2008, from <http://www.aanp.org/INP+APN+Network/Conferences/Conference+Highlights+and+Reports>
- Chien, C. (n.d.). The current issues in advanced practice nursing roles in Taiwan. Retrieved January 2, 2008, from www.icn.ch/NPTaiwan.pdf
- Crawford, J. (2008). Report on the nurse practitioner pathway in New Zealand. *INP/APN Network Bulletin*, 8. Retrieved March 21, 2008, from <http://www.icn-apnetwork.org>
- Cross, S. (2007). *Network history*. Retrieved December 15, 2007, from <http://icn-apnetwork.org>
- Danielson, E. (2003, June). New initiatives and developments in advanced practice and NP roles. Powerpoint presentation at ICN International Nurse Practitioner/Advanced Practice Nursing Network Conference/NPAPNN. Geneva, Switzerland. Retrieved December 15, 2007, from <http://www.icn-apnetwork.org>
- Delannoy, C., & Mairlot, A.F. (2005, May). Development of advanced practice in French Belgium. *ICN-Advanced Practice Nursing Network Bulletin*, 4. Retrieved December 15, 2007, from <http://www.icn-apnetwork.org>
- Fagerstrom, L. (2007, May). Education for advanced nurses in Finland. *ICN-Advanced Practice Nursing Network Bulletin*, 7. Retrieved December 15, 2007, from <http://www.icn-apnetwork.org>
- Ford, L. (1997). A voice from the past: 30 fascinating years as a nurse practitioner. *Clinical Excellence for Nurse Practitioners*, 1(1), 3–6.
- Goodyear, R., & Sheer, B. (2002). 2nd ICN International Nurse Practitioner/Advanced Practice Nursing Network Conference. *Medscape Nurses*, 4(2). Retrieved December 15, 2007, from <http://www.medscape.com/viewarticle/446221>

- Hancock, C. (2005, May). Official greetings: Program and abstracts of the International Council of Nurses 23rd Quadrennial Congress. May 21-27. Taipei, Taiwan.
- Hanucharurnkul, S. (2007). Nurse practitioner practice in Thailand. Retrieved March 15, 2008, from <http://www.aanp.org/INP%20APN%20Network/Practice%20Issues/Practice%20Issues.asp>
- Hawkins, J.W. (1977). From a rich heritage to an international future. *Clinical Excellence for Nurse Practitioners*, 1(1), 1-2.
- Health care financing policies of Canada, the United Kingdom and Taiwan. (2006). Retrieved March 22, 2008, from <http://legco.gov.hk/yr06-07/english/sec/library/0607rp02-e.pdf>.
- Higuchi, K.A.S., Hagen, B., Brown, S., & Zieber, M.P. (2006). A new role for advanced practice nurses in Canada: Bridging the gap in health services for rural older adults. *Journal of Gerontological Nursing*, 32(7), 49-55.
- Hong Kong Government (2006) Hong Kong Report. Author.
- Hlongwa, B. (2006). Welcome ICN INP/APN Network Conference: Commitment to care: Advanced practice nurses making a difference. Retrieved October 5, 2007, from <http://www.info.gov.za/speeches/2006/06062911451008.html>
- ICN International NP/APN Network. (n.d.). Frequently asked questions. Retrieved March 14, 2008, from <http://icn-apnetwork.org/>
- International Nursing Conference Advanced Nursing Practice: Moving Forward. (2005, March). Singapore. Retrieved December 16, 2007, from <http://www.aanp.org/INP%20APN%20Network/Conferences/Conference%20Highlights%20and%20Reports/Conference%20Highlights.htm>
- Jones, M. (1997). Innovative practice in the United Kingdom. *Clinical Excellence for Nurse Practitioners*, 1(2), 143-150.
- Kannusamy, K. (2007). Advanced nursing practice: Singapore's perspectives. Modernizing Nursing Conference, Hong Kong, June 4-7. Retrieved December 15, 2007, from http://www.hksne.org.hk/course/icn_handout/14.pdf
- Khalil, D. (2006). Advanced practice nurses in South Africa. Program and abstracts of the 4th ICN International Nurse Practitioner Advanced Practice Nursing Network Conference, June 28-30, Sandton, South Africa.
- Kim, D.D. (2003). APN in Korea. ICN 2003 Conference INP/APN network session, Geneva, Switzerland. Retrieved December 14, 2007, from <http://icn-apnetwork.org>
- Leser, G. (2004). The future of nursing in Germany. Program of the 3rd International Nurse Practitioner Advanced Practice Nursing Network Conference, June 29-July 2, Groningen, the Netherlands.
- Li, Y.J., Cheung, L.W., Pang, K.Y., Wong, K.Y., Liu, S.K., Lai, M., et al. (2005). The establishment of Guangdong province post-graduate level nursing education. *Nanfong Nursing Journal*, 12(5), 67-69.
- Lindpaintner, L. (2004). Teaching clinical assessment skills: The Basel curriculum. Program of the 3rd International Nurse Practitioner/Advanced Practice Nursing Network Conference, June 29-July 2, 2004. Groningen, the Netherlands.
- Maclaine, K. (2008, January). United Kingdom update. *ICN-Advanced Practice Nursing Network Bulletin*, 8. Retrieved March 22, 2008, from <http://www.icn-apnetwork.org>
- Maru, M., Inoue, T., & Sasaki, Y. (2007). APN in Japan. Presented at ICN 2007 Conference INP APN Network session, Yokohama, Japan. Retrieved December 14, 2007, from <http://icn-apnetwork.org>
- Ministry of Health of the People's Republic of China. (2005). 中國護理發展及規範策略 2005-2010 Strategies of Development and Regulation of Nursing in China (2005- 2010). China: Author.
- Mundinger, M.O., Kane, R.L., Lenz, E.R., Totten, A.M., Tsai, W., Cleary, P. et al. (2000). Primary care outcomes in patients treated by nurse practitioners or physicians: A randomized trial. *JAMA*, 283(1), 59-68.
- Naylor, M., Brooten, N., Campbell, R.L., Maislin, G., McCauley, K., & Schwartz, J.S. (2004). Transitional care of older adults hospitalized with heart failure: A randomized controlled trial. *Journal of the American Geriatrics Society*, 52(5), 675-684.
- Nilsson, A.M., & Paulson, M. (2002, October). Nurse practitioners in geriatric care: A new epoch in nursing in Sweden. Program and abstracts of the 2nd ICN International Nurse Practitioner/Advanced Practice Nursing Network Conference. Adelaide, Australia.
- Nurse Practitioner Taskforce. (2000). The Victorian nurse practitioner report: Final report of the taskforce, 2000. Retrieved February 25, 2006, from www.dhs.vic.gov.au/nursing/publications
- Patterson, C. (1997). Visions and voices: The nurse practitioner today. Toronto, Canada: Lugin.
- Payap, P.L. (2004). Advanced practice nurses are born in Thailand. *INP/APN Network Bulletin*, 3. Retrieved January, 2008, from <http://www.icn-apnetwork.org>
- Phillips, S.J. (2006). 18th annual legislative update: A comprehensive look at the legislative issues affecting advanced nursing practice. *Journal of Nursing Administration's Healthcare Law, Ethics, & Regulation*, 8(2), 60-64.
- Pilane, C.N., Ncube, R., & Seitio, O.S. (2007). Ensuring quality in affiliated health training institutions: Advanced diploma programs in Botswana. *ICN-Advanced Practice Nursing Network Bulletin*, 7. Retrieved December 15, 2007, from <http://www.icn-apnetwork.org>
- Professional News. (1999). NSW proclaims historic nurse practitioner law, 1999. Retrieved February 25, 2006, from www.anf.org.au/02_anf_news_professional/
- Rieck-Buckley, C. (2008). *ICN-Advanced Practice Nursing Network Bulletin*, 8. Retrieved March 20, 2008, from <http://www.icn-apnetwork.org>
- Rodriguez, J. (2004). The challenges of developing the nurse practitioner role in Puerto Rico. *INP/APN Network Bulletin*, 3. Retrieved January, 2008, from <http://www.icn-apnetwork.org>
- Report from 'Down Under' Australia. (2008). *ICN-Advanced Practice Nursing Network Bulletin*, 8. Retrieved March 15, 2008, from <http://www.icn-apnetwork.org>
- Roodbol, P., Sheer, B., Woung-Ru, T., Loke, A., & Usami, S. (2007, May). Policy in action: A comparison of the development of regulation for advanced practice nurses in several countries. Symposium presentation ICN conference, Yokohama Japan.
- Schober, M., & Affara, F. (2006). *Advanced nursing practice*. Oxford, UK: Blackwell.
- Sheer, B. (2007). Advanced practice nurses: Networking in the international arena. *Medscape Topics in Advanced Practice Nursing E-Journal*, 7(1). Retrieved December 18, 2007, from <http://www.medscape.com/viewarticle/554740>
- Seitio, O. (2006, June). Advanced practice education in Botswana. Program and abstracts of the 4th ICN International Nurse Practitioner Advanced Practice Nursing Network Conference, Sandton, South Africa.
- Stilwell, B. (1984). The nurse in practice. *Nursing Mirror*, 158, 17-22.
- Tang, J. (2005). Education of advanced practice nurse in Chang Gung University. Paper presented at the International Council for Nurses 23rd congress. May 24. Retrieved January 2, 2008, from <http://www.aanp.org/INP+APN+Network/Conferences/Conference+Highlights+and+Reports>
- Thampy, A. (2004). Promoting primary health care nursing in Central America. *INP/APN Network Bulletin*, 3. Retrieved January, 2008, from <http://www.icn-apnetwork.org>
- Walsh, M. (2007). A European masters for nurse practitioners. *INP/APN Network Bulletin*, 7. Retrieved March 20, 2008, from <http://www.icn-apnetwork.org>
- Ward, H. (2006). Update from the United Kingdom (England, Scotland, Wales and Northern Ireland) on the regulation of Advanced Nurse Practitioners and nurse prescribing in England. *INP/APN Network Bulletin*, 5. Retrieved March 20, 2008, from <http://www.icn-apnetwork.org>
- Williams, K.S., Assassa, R., Smith, N.K., Jagger, C., Perry, S., Shaw, C., et al. (2000). Development, implementation and evaluation of a new nurse-led continence service: A pilot study. *Journal of Clinical Nursing*, 9, 566-573.
- Wong, F.K.Y. (2001). Evaluation of senior clinical nurse specialist pilot scheme in Hong Kong. *Clinical Nurse Specialist*, 25(4), 169-176.
- Wong, F.K.Y., Ng, T., Chan, S., & Yeung, S. (2000). Trends in nursing education in China. *Journal of Nursing Scholarship*, 32(1), 97-99.
- Wong, F.K.Y., & Chung, L. (2006). Establishing a model for nurse-led clinic: Structure, process and outcome. *Journal of Advanced Nursing*, 53(3), 358-369.
- Wong, F.K.Y., Mok, M., Chan, T., & Tsang, M.W. (2005). Nurse follow-up of patients with diabetes: Randomized controlled trial. *Journal of Advanced Nursing*, 50(4), 391-402.
- World Health Organization. (2006). *World health statistics 2006*. Geneva, Switzerland: Author.