Evaluating Continuing Education for Rural Nurse Practitioners:

Literature Review and Annotated Summary

Kate Tilleczek, Ph.D.
Linda Liboiron-Grenier, B.A.
Raymond Pong, Ph.D.

May 26, 2004

Centre for Rural and Northern Health Research
(CRaNHR)
Laurentian University
Sudbury, Canada

www.cranhr.ca
<table>
<thead>
<tr>
<th>Reference</th>
<th>Country</th>
<th>Objective</th>
<th>Research Method</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andrusyszyn, M. A., Cragg, E. D., &amp; Humbert, J. (2001). Nurse Practitioner Preferences for Distance Education Methods Related to Learning Style, Course Content, and Achievement. Journal of Nursing Education, 40(4), 163-170.</td>
<td>Canada</td>
<td>Evaluate delivery of the PNCHP program</td>
<td>• Questionnaire • Interviews</td>
<td>• No one size fits all methodological approach for all students or all content, therefore consider student preferences and offer several delivery methods</td>
</tr>
<tr>
<td>Andrusyszyn, M. A., van Soeren, M., Laschinger, H. S., Goldenberg, D., &amp; DiCenso, A. (1999). Evaluation of Distance Education Delivery Methods for a Primary Care Nurse Practitioner Program. Journal of Distance Education, 14(1), 14-33.</td>
<td>Canada</td>
<td>Evaluate structure, process, outcome of PNCHP program</td>
<td>• Questionnaire • Focus group • Interviews</td>
<td>• Participants satisfied with all delivery methods. • Developed new technological skill sets • Satisfied with face-to-face delivery • Increased comfort with computer conferencing • Require ongoing technical support</td>
</tr>
<tr>
<td>Atkin, K., Hirst, M., Lunt, N. &amp; Parker, G. (1994). The role of self-perceived needs of nurses employed in general practice: Observations from a national census of practice nurses in England and Wales. Journal of Advanced Nursing, 20, 46-52.</td>
<td>England and Wales</td>
<td>Evolving role of NPs and their educational needs.</td>
<td>• Census • Questionnaire N=12,589 questionnaires sent out 81% response rate</td>
<td>• The numbers of practice nurses have increased dramatically • Their role has also evolved i.e. health promotion, home visiting, advice, counselling • Many practice nurses express a need for training bit barriers exist • Continuing education for practice nurses is important in ensuring practice nurses are fully qualified and trained for the tasks they undertake</td>
</tr>
<tr>
<td>Bell, P.F., Daly, J. &amp; Chang, E M. L. (1997). A study of the educational and research priorities of registered nurses in rural Australia. Journal of Advanced Nursing, 25, 794-800.</td>
<td>Australia</td>
<td>Identify the educational and research priorities of registered nurses practising in rural and remote areas of Australia To obtain the most reliable consensus of a group of experts by the use of the Delphi technique</td>
<td>• Questionnaire • Delphi method • List of registered nurses working in rural and remote settings • 100 RN selected from lists</td>
<td>• 13 high priorities were identified • Study findings highlight perceived needs for clinical nursing research and continuing education for nurses practising in rural Australia • There were significant differences between the responses of rural and remote nurses • Data from the study may be used to inform development of continuing education and research programs for the study population and their colleagues • The majority of rural health nursing workforce are women and particular attention is needed to ensure equitable access to the training and education resources necessary to maintain their skills and competence</td>
</tr>
</tbody>
</table>

USA

3 goals of project:
1. describe the process of using focus groups to conduct a needs assessment
2. report findings of focus groups
3. critique the process of using the focus group approach

- Focus groups
- 27 female APN participated in 6 focus groups
- Questionnaire

- Three major continuing education themes emerged from the content analysis:
  1. need to enhance clinical practice skills and knowledge in specialty areas
  2. education about future changes in the APN role
  3. education in management strategies for the changing health care delivery system

- Several benefits of using a focus group method for needs assessment were identified
- The information was most useful in developing a state-wide calendar of CNE offerings


Canada

Needs assessment of distance education needs of rural/remote NPs

- Questionnaire
- Tracking Data
- Interviews

- Rural and remote NPs in Ontario have educational needs in content and delivery modality.
- Content should be geared to practice and involve both clinical and professional issues.
- Delivery should be flexible, short and utilize multiple methods


Australia

The aim of the study was to investigate Queensland critical care nurses' post-registration education needs and to determine whether nurses working in metropolitan and rural critical care units had different education needs

- Questionnaire
- Sample drawn from 89 hospitals
- Study drew on the 'Madrid consensus' of broad subject areas that should be included in any critical care nursing program

- Most respondents, irrespective of geographic location, wanted critical care education to be located in hospitals and to be accredited as a graduate diploma course
- Rural and metro nurses had similar education needs and may worked for hospitals that were not offering adequate orientation or in-service critical care education
- Nursing staff turnover was a problem in metro units and that the rural workforce was more stable have implications for the development of education programs
- Many hospitals were not meeting their CCU nurses' basic educational needs


Australia

Aim is to describe the development, implementation and evaluation of a mental health continuing education program for nurses employed in rural and remote areas of New South Wales Australia.

- A training needs questionnaire
- Focus group

- Project was rated very favourably, and represents a cost-effective, convenient method of enabling rural and regional nurses to update and improve their skills in mental health nursing
- The evaluation found the program to be very effective and to have met its aims
- The project provides a foundation for the development of new models of educational delivery in the future
- The project demonstrates how careful planning of a distance education mode mental health program that bases its content on the perceived needs of the target group can result in a highly successful, economical program
- While the program has assisted the participants it is evident that additional continuing education programs in mental health/psychiatric nursing, including practical aspects, are seen as necessary
<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Country</th>
<th>Title</th>
<th>Methods</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapman, L.</td>
<td>2000</td>
<td>UK</td>
<td>Distance Learning For Post-Registered Nursing: The Facts. <em>Nursing Standard</em>, 14(18), 33-36.</td>
<td>To explore nurses' perceptions and evaluate the potential of distance learning for teaching post-RNs working in the community. To assess nurses' educational needs.</td>
<td>- Open-ended questions in focus groups. - Each group consisted of 9 students. - The interviews were taped and transcribed (n=18). - The respondents saw distance learning as a necessary way of updating their knowledge, as long as the education provided was relevant to their practice. - They also saw this method of learning as an opportunity to take responsibility for their own learning. - There was conflict of opinion, however, as some respondents felt the courses to be a flexible way to teach and learn, while others found the courses to be too focussed and not necessarily relevant. - Distance learning offers a flexible approach to adult teaching and learning. - Student misunderstandings re distance learning can be dealt with through introductory session highlighting method of teaching and effective learning. - Learners want to be involved in design of program. - Need for support and motivation from teacher and/or peer support networks.</td>
</tr>
<tr>
<td>Cole, F. L. &amp; Ramirez, E.</td>
<td>1999</td>
<td>USA</td>
<td>Evaluating an Emergency Nurse Practitioner Educational Program For Its Relevance to the Role. <em>Journal of Emergency Nursing</em>, 25(6), 547-550.</td>
<td>Examine whether the knowledge and skills taught were consistent with implementation of the ENP role in actual clinical practice. To assess graduates' ability to interpret diagnostic tests, as well as their performance skills, the procedures and skills taught to ENPs was compared with the. Examine the congruency between what the program taught and what graduates were doing in practice.</td>
<td>- Questionnaire. - Used discharge diagnoses as proxy for level of triage category. - The results of this project were useful for validating the beliefs upon which the program was founded and for making decisions about changes. - The first belief concerned the ability of graduates to assess, diagnose, and treat patients of all ages with conditions ranging from non-urgent through emergent. - The second belief was related to graduates’ ability to interpret diagnostic tests, as well as to perform diagnostic and therapeutic non-invasive and invasive skills for these patients. - The third belief was that ENPs need to be able to determine the disposition of ED patients. - Because the role of the ENP was not well delineated in the published literature, little information was available to assist in the development of this program.</td>
</tr>
<tr>
<td>Cole, F. L., Ramirez, E., &amp; Mickanin, J.</td>
<td>1998</td>
<td>USA</td>
<td>Skill station models for teaching incision and drainage of abscesses, felons, and paronychia to emergency nurse practitioners. <em>Journal of Emergency Nursing</em>, 24, 455-456.</td>
<td>Development of models to be used for demonstration and practice experience.</td>
<td>- N/A - These models have proved useful for educating ENP students about the procedures used to treat felons, abscesses and subungal hematoma. - The models are easy to construct, relatively inexpensive, and are as realistic as possible for teaching purposes. - The models also provide an excellent means for students to practice the skills that are within their scope of practice before they attempt them on a human being.</td>
</tr>
<tr>
<td>Source</td>
<td>Country</td>
<td>Summary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>---------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coppel, A. (1999). Nurse prescribing: continuing education and support. <em>Nursing Times, 92</em>(2), 44-45.</td>
<td>UK</td>
<td>Discussion of how the National Prescribing Centre can help nurses to develop new skills and to extend their roles in primary health care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Nurse prescribing has opened up new avenues for the profession</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Nurses will now be able to work even more closely with other health care professionals to improve patient care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Pharmaceutical support and life long learning are essential to ensure a sound knowledge base behind prescribing decisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The NPC will support nurse prescribers and their managers through educational information and in the future may be able to offer additional support through workshops to nurses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consortium for Quality Nurse Practitioner Education. (n.d.). White Paper of the Consortium for Quality Nurse Practitioner Education.</td>
<td>USA</td>
<td>The Consortium was formed to identify mechanisms to improve evaluation of nurse practitioner programs and to make recommendations regarding the national need for accreditation of nurse practitioner programs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Three processes were identified and prioritized by the Consortium as viable methods for undertaking this activity with the specificity necessary to meet the educational and practice standards required of nurse practitioners in the current health care areas. They are:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. have specific nurse practitioner education program evaluation integrated into the Commission on Collegiate Nursing Education (CCNE) and National League for Nursing Accrediting Commission (NLNAC) accreditation processes now undertaken by schools of nursing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. reconfigure the current DOE-recognized women’s health accreditation program to encompass all nurse practitioner specialities, or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. create a new accreditation program</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The Consortium contends that through the development and utilization of such an accreditation process, the established quality of nurse practitioner education will be continually strengthened, and nurse practitioners will be recognized as leaders in both present and future healthcare systems in this country and around the world</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- The functions of nurses are changing primarily because nurses have demonstrated their competence to perform a greater variety of functions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- On can easily speculate on the future applications of the NP trained and experienced in emergency care delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- What is clear is that NPs have more that just paid their dues for the last quarter of the century; they have earned our professional support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Identify several factors that influence the availability of NPs in the ED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Discuss the similarities and differences between NPs and physician assistants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Author(s)</td>
<td>Country</td>
<td>Research Focus</td>
<td>Methods</td>
<td>Key Findings</td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>---------</td>
<td>----------------</td>
<td>---------</td>
<td>--------------</td>
<td></td>
</tr>
<tr>
<td>Delva, M. D., Kirby, J. R., Knapper, C. K., &amp; Birtwhistle, R. V. (2002).</td>
<td>Canada</td>
<td>To understand the approaches to learning of practising physicians in their workplace and to assess the relation of these approaches to their motivation for, preferred methods of, and perceived barriers to continuing medical education.</td>
<td>Postal survey of 800 Ontario physicians; 373 responses; Correlations of approaches to learning and perceptions of workplace climate with methods, motives, and barriers to CME</td>
<td>Perception of the workplace climate affects physicians’ approaches to learning at work and their motivation for and perceived barriers to CME. Younger, rural, family physicians may be most vulnerable to feeling overworked and adopting less effective approaches to learning. Further work is required to determine if changing the workplace environment will help physicians learn more effectively.</td>
<td></td>
</tr>
<tr>
<td>Dusmohamed, H. &amp; Guscott, A. (1998).</td>
<td>Australia</td>
<td>Describe the preceptorship program aimed at empowering individual nurses in rural health units of South Australia to develop their roles and responsibilities in identifying education needs and to make changes to meet contemporary standards of nursing practice.</td>
<td>Interviews; Written evaluations from students; Questionnaire</td>
<td>The program has now been offered on their occasions, involving 44 nurses representing 25 rural health units. Documentation from course evaluations suggest that the programs have achieved predicted aims in empowering individuals within their health units. It has encouraged the acceptance of responsibility for the provision of staff development and the facilitation of change strategies to meet the emerging needs of rural health units. Anecdotal evidence accruing since the completion of the first program has demonstrated continuing development among participants within their health units. The degree to which the changes identified are directly related to the program. Fundamental to this program is that significant learning has occurred, resulting in shifts in attitudes and behaviours. It has enabled participants to re-examine, redefine, and reinterpret their roles at both personal and professional levels.</td>
<td></td>
</tr>
<tr>
<td>Eggenberger, S. K. &amp; Huntley, M. I. (1999).</td>
<td>USA</td>
<td>Describes the use of a 1993 continuing education (CE) conference focused on a process of envisioning health care 5 years into the future and then reviewing the reality of those outcomes in 1998</td>
<td>Concept analysis of narratives; CE participants (n=147) generated their design for a health future by responding to six story scenarios. Stories (n=2502) related to quality of health care were analyzed in a three-step process</td>
<td>Visioning in a CE environment creates valuable direction for an improved health care future. A CE conference provides the seeds and opportunities for dialogue and partnership by people responsible for implementing action plans that potentially would create a health community. Reporting back to the participants the results of the story-writing process created the momentum for participants to affirm their person and professional visions for a LifeHealth future. During the envisioning conference a clear message was communicated by participants – when health providers work and learn in partnership with each other and with clients and families, the LifeHealth of communities becomes reality.</td>
<td></td>
</tr>
<tr>
<td>Country</td>
<td>Region/Study Description</td>
<td>Methodology</td>
<td>Findings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------</td>
<td>-------------</td>
<td>----------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Scotland | Examined the potential of the Internet, and other networked information resources, to improve access to information for trained nurses working in remote areas | • Questionnaire to all the community nurses, midwives and health visitors working in the Western Isles (n=71)  
• Response rate 89%  
• Workshops (n=51)  
• Literature Review | • Taken together, the findings from this project reveal that many nursing staff lack information searching skills, awareness of information resources and skills in using information technology  
• The results also indicate the while nursing staff recognize that improved access to information is important, they lack the time to search effectively  
• Project has revealed some gaps in the nursing information available on the Internet  
• The Internet and networked resources do have considerable potential to improve access to information for nurses working in remote and rural areas.  
• However, information skills, along with professional guidance, are also required  
• Health professionals need skills to cope with this ever-growing library, along with access to guidance from a skilled information professional  
• Access to the Internet without any support is not a solution  
• Provision of basic information awareness, searching and using skills are important so that nursing staff can do some of their own searching  
• The results of this study seem to indicate that in a ‘ideal’ model of service, trained nursing staff would have information available at their fingertips (via computer networks) as well as the support of a skilled information intermediary |
| USA | Discuss the funding / implementation process of a continuing nursing education program focusing on cancer care delivery in the rural setting | • Data synthesis using books, published articles and personal experience | • The strategise for designing and funding this rural program were successful  
• The conference was received enthusiastically by rural homecare, nursing home and administrative nurses  
• More continuing education of rural nurses is needed because many patients with cancer are returning home sooner and remaining home longer  
• Individual Oncology Nursing Society chapters can make a difference in the nursing care of their communities and can obtain financial support for their projects  
• Urban nurses can mentor and network with their rural colleagues by offering their services proactively  
• With the changing complexion of health care funding it is imperative that nurses at all levels learn to access the funding sources available for the enhancement of community nursing services |
<table>
<thead>
<tr>
<th>UK</th>
<th>USA</th>
<th>USA</th>
<th>UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greenhalgh, T. &amp; Douglas, H.R. (1999). Experiences of general practitioners and practice nurses of training courses in evidence-based health care: A qualitative study. <em>British Journal of General Practice</em>, 49, 536-540.</td>
<td>Hannon, P. A., Umble, K. E., Alexander, L., Francisco, D., Steckleer, A., Tudo, G., &amp; Upshaw, V. (2002). Gagne and Laurillard's Models of Instruction Applied to Distance Education: A Theoretically Driven Evaluation of an On-line Curriculum in Public Health. <em>International Review of Research in Open and Distance Learning</em>, 3(2).</td>
<td>Hartley, S., Gill, D., Walters, K. Bryant, P. &amp; Carter, F. (2001). Twelve tips for potential distance learners. <em>Medical Teacher</em>, 23(1), 12-16.</td>
<td><strong>To report the experiences of GPs and NPs in training in this area</strong></td>
</tr>
</tbody>
</table>
| USA | Outline of four community organizations in a geographically isolated area who shared resources and collaborated in providing a continuing education program on trauma care to meet the needs of the healthcare community. The process, from initial needs assessment and educational design through the steps involved in program planning and implementation among co-providers is outlined. | • Workshop  
• Written course evaluations  
• Process outlined by ANA’s Standards for Continuing Education in Nursing (1984) | • Response was overwhelmingly positive from the participants  
• Goal to provide a cost-effective, quality continuing education program on trauma care was achieved in spite of some limitations related to the program’s development  
• The positive aspects of the cooperative effort included sharing resources and expertise and using the strengths of each co-provider  
• An additional positive outcome of the conference was that this diverse group of healthcare professionals developed a deeper understanding and respect for the various roles needed to provide quality healthcare for trauma victims in Alaska |
| Hemman, E., McClendon, B., & Lightfoot, S. (1995). Networking for educational resources in a rural community. *Journal of Continuing Education in Nursing, 26*(4), 170-173. | USA | Evaluate the efficacy of telemedicine interventions for health outcome in two classes of application: home-based and office/hospital-based | • Data sources included reports of studies from MEDLINE and other databases, searching of bibliographies of review and other articles and consultation of printed resources as well as investigators in the field | • A total of 25 articles met inclusion criteria and were assessed  
• The strongest evidence for the efficacy of telemedicine in clinical outcomes comes from home-based telemedicine in the areas of chronic disease management, hypertension and AIDS  
• There is also reasonable evidence that telemedicine is comparable to face-to-face in emergency medicine and is beneficial in surgical and neonatal intensive care units as well as patient transfer in neurosurgery  
• Despite the widespread use of telemedicine in virtually all major areas of health care, evidence concerning the benefits of its use exists in only a small number of them  
• Further randomized controlled trials must be done to determine where its use is most effective |
| Hersh, W. R., Helfand, M., Wallace, J., Kraemer, D., Patterson, P., Shapiro, S., & Greenlick, M. (2001). Clinical outcomes resulting from telemedicine interventions: a systematic review. *BMC Medical Informatics and Decision Making, 1*, 5-12. | USA | Clarify the meaning of the term distance learning, identify some of the advantages and challenges in its use, and the practicalities of facilitating distance learning | • Literature Review | • Distance learning courses must be designed and developed in such a way to enable the provision of adequate tutorial support  
• When considering incorporating technology into such course it is essential to determine the ability of students to effectively utilise the technology associated with the course. This will ensure enhancement, rather than distraction from the student’s learning  
• Despite the concerns regarding individual learning styles not being conducive to distance learning approaches, through the |
<table>
<thead>
<tr>
<th>Authors</th>
<th>Title</th>
<th>Country</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hicks, C. &amp; Hennessy, D. (2001).</td>
<td>An Alternative Technique for Evaluating the Effectiveness of Continuing Professional Development Courses for Health Care Professionals: A Pilot Study With Practice Nurses. <em>Journal of Nursing Management</em>, 9, 39-49.</td>
<td>UK</td>
<td>Exploratory pilot investigation into the use of a valid and reliable training needs analysis questionnaire as a means of evaluating a nurse practitioner training scheme for practice nurses</td>
<td>Overall the course reduced skill deficits in all but seven of the tasks. Of these, six related to research and audit and the seventh to clinical examination of patients. The study is discussed in terms of the implications of the technique for course development and planning to take account of local needs, as well as the instrument’s reliability and validity, for use in this way. This study has highlighted a potential alternative means by which course evaluation can be conducted, but without the distorting elements, such as lecturer preference or environmental (dis)comfort. The current technique goes some way towards overcoming the methodological shortcomings of existing evaluation tools and may provide a relatively objective measure of course effectiveness, which is based on a more appropriate competency assessment. For a nurse manager concerned to commission suitable courses that meet the precise competencies needed by an specified nurse group, whilst simultaneously assessing the education provided to develop these, this instrument may be of benefit.</td>
</tr>
<tr>
<td>Hill, P. &amp; Alexander, T. (1996).</td>
<td>Continuing Professional Education: A Challenge for Rural Health Practitioners. <em>Australian Journal of Rural Health</em>, 4, 275-279.</td>
<td>Australia</td>
<td>Describe the strategies adopted to meet the continuing education needs of a group of health professionals working in diabetes education and discusses how other specialist areas can provide similar educational opportunities. Discusses a project designed to address the challenges of continuing education for rural health professionals in the field of diabetes education and management.</td>
<td>Health professionals in rural and remote areas of Australia are disadvantaged when accessing continuing education. Their geographical isolation influences attendance at seminars, workshops an even informal discussions with colleagues. Formal working agreements were established to achieve the aim of relevant continuing education for rural health professionals and to ensure ongoing ventures. All programs have been positively received, and evaluation identify the need to develop other, related subjects. Future developments will further utilise advances in technology to extend access and add to the current modes of education delivery. The self-directed learning habits, together with the professional networks established while involved in the programs will help to maintain and increase the participants’ knowledge as specialist diabetes health professionals. Through the development of these associations, professional status and education needs have been met. Initiatives such as these projects reaffirm the commitment to the University and the Diabetes Outreach Service to education for students, professionals and the community. Future subjects in this and other areas of professional need are planned through the continued alliance of The Queen Elizabeth Hospital Diabetes Centre, Diabetes Australia and the Faculty of Nursing, University of South Australia.</td>
</tr>
<tr>
<td>Source</td>
<td>Country</td>
<td>Study Details</td>
<td>Methodology</td>
<td>Findings</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>---------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Hovenga, E., Hovel, J., Klotz, J., &amp; Robbins, P. (1998). Infrastructure for reaching disadvantaged consumers: Telecommunications in rural and remote nursing in Australia. <em>Journal of American Medical Informatics Association, 5</em>(3), 269-275.</td>
<td>Australia</td>
<td>Defines rural and remote communities, then reviews rural and remote health services, information, and telecommunication technology infrastructures and their use in Australia to establish the current state of access to information tools by rural and remote communities and rural health workers in Australia today</td>
<td>Literature review, Informed opinion survey</td>
<td>Both consumers and health service providers need access to up-to-date information, including patient and practice guidelines, that allows them to make decisions in partnership about individual and public health in line with the primary health care mode of health service delivery. It is argued that a suitable telecommunication infrastructure is needed to reach disadvantaged persons in extremely remote areas and the inter-sectoral support is essential to build this infrastructure. In addition, education will make its utilization possible. The infrastructure required for high quality information and health service delivery is far from universally available or reliable. Governments must have the will and the fiscal objectives to resource the necessary telecommunication infrastructure for their citizens irrespective of location. The disadvantaged in rural and remote areas can benefit significantly from these technologies.</td>
</tr>
<tr>
<td>Jarrett, P., Wainright, P., &amp; Lewis, L. (1997). Education and training practices of nurses. <em>Journal of Telemedicine and Telecare, 3</em>(S1), 40-42.</td>
<td>UK</td>
<td>Assess the value of video-conferencing using simple technology, as a means of providing such education opportunities</td>
<td>Training sessions</td>
<td>Seventeen nurse in eight rural general practices participated in a distance education project. Low-cost video-conferencing equipment was assessed for its suitability in two training sessions, concerning asthma and travel immunization. The intended learning outcomes were reached and although initially apprehensive, the nurses quickly become accustomed to the medium. Video-conferencing has now become an accepted part of in-service training. Technical reliability remains the most important problem.</td>
</tr>
<tr>
<td>Kennerson, R. &amp; Chiarella, M. (1996) Going the Distance: Education for Rural Nurses. <em>Lamp, 53</em>(8), 4-7.</td>
<td>Australia</td>
<td>Support and education opportunities currently provided to rural and remote nurses</td>
<td>Literature Review</td>
<td>Following a research project commissioned by the NSW Health Department Chief Nursing Officer, to identify specific areas of concern regarding nursing vacancies, particularly in specialty areas, a Nursing Retention and Recruitment Taskforce was established by the Minister for Health. One of the issues identified by the Taskforce was that of professional isolation and access to education for nurses working in rural and remote areas. In preparation for undertaking any form of continuing education, nurses must investigate all their options and gather as much information as possible so as to make an informed decision. This investigation should not be restricted to local or State offered education but also include those courses available at facilities in other State of Australia by distance education.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Citation</td>
<td>USA</td>
<td>Summary</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
<td>----------</td>
<td>-----</td>
<td>---------</td>
</tr>
<tr>
<td>Kezar, A. (n.d.)</td>
<td>Higher Education Trends (1997-1999): Program Evaluation. (No additional citation information available)</td>
<td>USA</td>
<td>Review of approaches to program evaluation</td>
<td>• The amount of literature on program evaluation is down from previous years, although that on assessment is on the rise • One of the most notable trends is that systemic or comprehensive evaluation is not widespread in the literature, the research, or programs in practice • Most evaluation occurs as students leave school, some occurs after students have graduated and occasionally research or evaluation is performed while students are still in school</td>
</tr>
<tr>
<td>Kilmom, C. A. (1996).</td>
<td>Computerized Approaches to Teaching Nurse Practitioner Students. <em>Pediatric Nursing, 22</em>(1), 16-18.</td>
<td>USA</td>
<td>Description of two computerized applications and highlights one such personal computer program NP Clinic, which was designed for use with pediatric and family nurse practitioner students</td>
<td>• NP Clinic software is also suitable for providing continuing education to nurses in primary care settings • Advantages of this type of learning include: 1. fosters a problem-solving approach similar to that of the actual patient encounter 2. the student receives immediate feedback 3. the possibility of studying individually ‘at a distance’ allows the learner to select his or her own time and place for studying • Disadvantages of this type of learning include: 1. lack of access to computers may be a problem for some educational institutions and students 2. many students enter education programs with inadequate computer skills 3. the cost of computer-assisted instruction may be a concern</td>
</tr>
<tr>
<td>Knebel, E. (2001).</td>
<td>The Use and Effect of Distance Education in Healthcare: What Do We Know? Operations Research Issue Paper 2(2). Bethesda, MD: Published for the U.S. Agency for International Development (USAID) by the Quality Assurance Project.</td>
<td>USA</td>
<td>Review of the current body of published and unpublished research on the use and effect of distance education in health care in developing countries</td>
<td>• This paper reviews: 1. Definition and Characteristics of Distance Education (including advantages and disadvantages of distance education; models of delivery; choice of media 2. Distance education in healthcare (including historical development; relevance of distance education to quality assurance in healthcare) 3. Studies of Distance Education in Healthcare (including comparison studies; factors related to satisfaction; technology and media; costs; culturally appropriate; performance; socialization; gender and completion rates) 4. Distance Education in Developing Country Settings (including collaboration; access) 5. Research issues 6. Research and Implementation Needs</td>
</tr>
<tr>
<td>USA</td>
<td>Exploratory research effort in which the extent of MBA student learning on twelve specific competencies relevant to effective business performance was assessed</td>
<td>Established assessment instrument – Learning Skills Profile</td>
<td>Affirms the high quality of learning that can occur via distance education and proposes a strategy to conduct summative, program-level assessment</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Comparative measures of student competencies at beginning and end of educational experience</td>
<td>Participants in all three groups self-reported significantly higher scores on seven of twelve outcomes (e.g., goal setting, help, information gathering, leadership, quantitative, theory, and technology skills)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Distance MBA students self-reported significantly higher scores than on-campus students on the learning outcomes related to technology, quantitative, and theory skills and higher scores on technology skills than the executive MBA group.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Study adds to the body of literature that attests to the quality of learning that takes place via distance education programs</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Distance education is no longer a trend, nor is it a mode of education to be implemented in the future</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>Describes the continued evolution of the Geriatric Resource Nurse Model at the University of Virginia. Geriatric Nursing, 23(3), 128-132.</td>
<td>Literature Review</td>
<td>The model developed slowly, unit by unit, a few nurses at a time, and has evolved with a multidisciplinary focus</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Position paper</td>
<td>Flexibility, mentoring relationships, a core curriculum, additional stimulating offerings and a strong leadership have been key influences on sustainability and growth</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>Overview of results of 1992 NP Clinical Preventive Services Survey</td>
<td>Survey</td>
<td>Survey sent to 2000 randomly selected NPs to obtain information concerning the percentage of their patients who “routinely” receive the specified assessment and intervention services</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Data from 892 completed and returned survey instruments indicated that NPs already exceed the Health People 2000 objective targets in some important clinical preventive assessment and intervention areas</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In some areas, however, NP provision of preventive services was report to be below the health People 2000 targets</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>This data has far-reaching implications for NP practice, basic and continuing education, and curriculum reform</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The baseline data provides an unprecedented picture of NP clinical preventive assessment and intervention practices in the US</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The results of the NP Clinical Preventive Services Survey can guide NP providers and educations in spearheading practice and curriculum changes to promote their achievement</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The findings can also guide researchers in identifying and removing barriers to NP delivery of specific CPSs</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>Report the results of an evaluation of the effectiveness of a CD-ROM for distance education for PCNPs in a one-semester pathophysiology course</td>
<td>Questionnaire</td>
<td>This data set was too small to yield statistically significant relationships</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>However, descriptive analyses of the data, couple with qualitative responses from the free-text statements, yielded a number of interesting observations</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Generally the CD-ROM was rated very highly on clarity of instruction, level of interest, ease of use, and convenience</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The survey results show that students generally indicated that the program was easy and convenient to use, thus fulfilling one of the basic goals of the package</td>
<td></td>
</tr>
</tbody>
</table>
The questionnaire data indicate that the kind of instructional design and technology involved in this package worked very well in maintaining student interest.

The generally high grades and pass rates achieved, especially by those using the CD-ROM, indicate that the required material was being conveyed effectively, and that students found the distance education package an effective study aid.

The data can be used to explore questions of relationships between ratings and background variables such as age, family and work status, and computer background.

The results reported suggest that students benefit from computer adjuncts to traditional distance education material (i.e., written course material packages and textbooks).


- USA
- Examined premature mortality by country in the US and assessed its association with metro/urban/rural geographic location, socioeconomic status, household type and availability of medical care.
- Age-adjusted years of potential life lost before 75 years of age were calculated and mapped by country.
- Predictors of premature mortality were determined by multiple regression analysis.
- Community structure factors statistically explain much of the variation in premature mortality.
- The degree to which premature mortality is predicted by percentage of female-headed households is important for policy-making and delivery of medical care.
- The relationships described argue strongly for broadening the biomedical model.
- For physicians and other health providers, the data provided suggest that more attention should be given to the social components of the biopsychosocial model.
- Physicians and other should learn how to become more effective in health promotion and prevention to encourage patients to change behaviours.


- Australia
- To develop, implement and evaluate a self-paced distance education program on violence against women for rural community-based health workers.
- Pre and post Questionnaire
- There are no reported education programs specifically focusing on the needs of rural health workers in the area of violence against women.
- Analysis of the quantitative data identified significant changes in participants’ knowledge, and the qualitative data highlighted an increased sense of confidence in assisting women, forming support networks and using resources more effectively.
- Participants reported the most useful aspects of the package were modular and user-friendly format, flexible, practical, health-focused content and real world examples.
- Participation in education increased knowledge and effectiveness of package can be attributed, in part, to needs assessment.
- Refinement undertaken based on evaluation results.
- Further research is required to evaluate the long-term and sustained role of an education package on the effectiveness of health workers who provide services to women affected by violence.
<table>
<thead>
<tr>
<th>Reference</th>
<th>Methodology</th>
<th>Findings</th>
</tr>
</thead>
</table>
| Minnesota Office of Rural Health and Primary Care. (2001). Survey of Graduates from Minnesota Graduate Nurse Practitioner/Nurse-Midwifery Education Programs. Minneapolis: Minnesota Office of Rural Health and Primary Care. | To determine if the number of NPs/CNMs employed in rural communities increased. Determine the effectiveness of the Collaborative Rural Nurse Practitioner Project in achieving its goals. | • Survey of NP graduates  
• The survey data strongly suggest that recruitment efforts employed through the project were successful in increasing the number of CNPs/CNMs employed in rural communities  
• Nurse practitioners and nurse-midwives continue to be very successful in obtaining national certification and prescriptive privileges  
• The use of computers by CNPs/CNMs has increased  
• The participants continued to emphasize the need for more opportunities for clinical experience and to learn and practice specific primary care skills  
• Future surveys should continue to attempt to track previous respondents to provide a longitudinal analysis of the respondents’ employment and professional characteristics. |
| Mullins, R. G., Havens, D. H., & Lowe, M. (1998). Distance Education in Pediatric Nurse Practitioner Programs. Journal of Pediatric Health Care, 12(6 Part I), 332-334. | Research was undertaken to answer the following questions:  
To what extent is PNP education offered nationwide using a distance education option?  
Does a relationship exist between the various structural components of the distance learning option and the level of perceived satisfaction with the program by the program directors? | • Survey and review of all PNP programs approved by National Certification Board  
• 63 PNP programs were surveyed regarding their use of a distance education option. 91 percent responded  
• PNP education was found to be well established with seasoned faculty at the responding institutions, with most faculty having in excess of 10 years experience as educators  
• The finding of perceived need for ongoing and regular communication among all parties involved was expected  
• Improved satisfaction was found to be significantly related to perceived community enthusiasm with the option and a similar finding was noted when on-campus students were involved in preplanning activities  
• Almost all respondents felt competent with the technology used to deliver content and rated effective technology support as highly associated with program satisfaction  
• Faculty are more satisfied when written materials and e-mail, relatively unsophisticated technologies are also used  
• Overall, reservation was expressed in relationship to the quality of didactic content delivered, and dissatisfaction with the option in general was expressed by more than half of the respondents  
• The experiences of these initial programs should provide insight for the 24 PNP programs that plan to initiate a distance education option in the next 3 years. |
• 106 item multiple choice knowledge test  
• self-efficacy questionnaire  
• The study demonstrated that a valid and reliable measure of self-efficacy could be developed from program objectives and used in conjunction with pre-and post-knowledge measures to gain a broader perspective of learning outcomes  
• Measurement of self-efficacy was a useful adjunct in post-instruction evaluation and may be a cost-effective alternative to longitudinal impact evaluation  
• Both knowledge and self-efficacy scores increased significantly and had large effect rations following instruction  
• The relatively low correlations between the knowledge and self-efficacy measure suggest that each may tap a different dimension of the learning outcomes, thus providing a broader perspective of learning  
• Study falls short of demonstrating a predictive relationship. |
Future studies should focus on assessing these predictive relationships using larger samples so that post-instruction distinctions can be drawn between the actual performance of those showing high and low self-efficacy for the target task or skill.

### National Association of Nurse Practitioners in Women’s Health (2002). *NPWH Professional Issues: Alliance for Nursing Accreditation Statement on Distance Education Policies.*

USA  
Statement of the policies of distance education of the Alliance for Nursing Accreditation  
- Policy Statement  
- Position paper  
- All nursing education programs delivered solely or in part through distance learning technologies must meet the same academic program and learning support standards and accreditation criteria as programs provided in face-to-face formats, including the following:
  1. Student outcomes are consistent with the stated mission, goals, and objectives of the program; and
  2. The institution assumes the responsibility for establishing a means to assess student outcomes. This assessment includes overall program outcomes, in addition to specific course outcomes, and a process for using the results for continuous program improvement.


USA  
Focus is on faculty, curriculum, evaluation, students, organizations and administration, and clinical resources / experiences for all NP educational programs  
- Position paper  
- The *Criteria for Evaluation of Nurse Practitioner Programs* reflects ongoing emphasis on the quality of nurse practitioner education. However, dissemination of the criteria is only the first step in ensuring the quality of that education. Significant questions remain regarding the impact of the criteria on education programs. For example, do the criteria actually improve the educational process? What elements of the criteria are most important in creating change? Can we confidently move to more outcome-based criteria that would consume less faculty time in gathering and recording information? Nurse practitioners needs to focus on these broad questions to be prepared for the challenges of the future.


USA  
To measure changes in knowledge and self-efficacy immediately following and 5 months after the program  
- Post-program evaluation instruments at home returned by mail  
- Cognitive and self-efficacy questionnaire  
- Found significant gains in knowledge and self-efficacy immediately following the program, although deterioration, still cognitive and self-efficacy scores significantly greater than pre-program.


USA  
Examines pediatric nurse practitioners’ (PNP) self-assessed competencies in addressing the common health concerns of adolescents  
- National Survey data  
- The greatest deficits in self-perceived knowledge or skill, as well as low interest in training and low perceived relevance to practice, were around issues of gangs, gay/lesbian/bisexual/transgender youth, HIV/AIDS, and counselling about a positive pregnancy test. PNP identified the lack of resources appropriate for adolescent referrals as the greatest barrier to working with this population. PNP assessed their lowest competencies in some of the areas that
present the greatest threats to adolescents’ health and well-being.

- These deficits suggest needed curricular shifts in entry-level and advanced-level preparation for PNP s, as well as new priorities for continuing education.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Country</th>
<th>Research Methodology</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ockene, J., Wheeler, E. Adams, A., Hurley, T., &amp; Hebert, J. (2003). Provider Training for Patient-Centered Alcohol Counselling in a Primary Care Setting. <em>Archives of Internal Medicine, 157</em>, 2334-2341.</td>
<td>USA</td>
<td>To assess the impact of a brief training program on primary care providers' skills, attitudes, and knowledge regarding high-risk and problem drinking.</td>
<td>Questionnaire, Audiotape of counselling session. After training, providers scored significantly higher on measures of counselling skills, preparedness to intervene, perceived usefulness and importance of intervening, and knowledge. A group training program plus brief individual feedback can significantly improve primary care providers’ counselling skills, attitudes, and knowledge regarding high-risk and problem drinkers.</td>
</tr>
<tr>
<td>Peden, A. R, Rose, H., &amp; Smith, M. (1990). Transfer of Continuing Education to Practice: Testing an Evaluation Model. <em>The Journal of Continuing Education in Nursing, 21</em>(2), 68-72.</td>
<td>USA</td>
<td>Measure impact of CE on nursing practice by testing the individual nurse participant’s receptiveness to a proposed change, supportiveness of the social system, and applied knowledge attempts as measured by the nurse and the supervisor.</td>
<td>Seminar, Questionnaires, four variables: the transfer / application of CE learning in the workplace, the relationship between the nature of change and an individual’s attempts to alter nursing practice, the effect of social system on an individual’s efforts to change nursing practice, the similarity of views held by nurses and their supervisors about social system and nature of change. A continuing education (CE) program is successful only to the extent that a recommended practice or behaviour is implemented. The social system in which the nurse practices and the nurse’s own receptiveness to change also influence the application of new knowledge. It appears that patient education increased as a result of participating in the CE program. It appears that those in the study say patient education as a desirable change. Evidence indicated that both participants and supervisors viewed their social system as receptive to change. There was no significant difference between participants and supervisors in their view of the nature of change and social system. Developing a new skill in a nurse through CE does not ensure that the practice will be implemented when the participant returns to the social system. This study showed a significant change in behaviour and indicated that the nature of the change and the receptiveness of the social system to change are rated highly by both participants and supervisors.</td>
</tr>
</tbody>
</table>
dentists in an area and insurance coverage affect dental service utilization, the effects of human resources supply and insurance do not appear to be consistently linear.

- Although some of the factors affecting regional variations in dental service utilization are individual-level variables, such as dental health behaviours and satisfactions with health, they tend not to be randomly distributed.
- Unless these are unlimited resources for health promotion and education, it may be necessary to target those regions where a substantial proportion of the population exhibit negative health attitudes and behaviours.
- The study of regional variations helps identify those regions where remedial actions should be targeted.

---


- To describe the development and validation of a test of knowledge and skills in evidence based medicine.
- Cross sectional study.
- Fresno test.

- The Fresno test is a reliable and valid test for detecting the effect of instruction in evidence based medicine. Its use in other setting requires further exploration.
- The Fresno test can assess the effectiveness of teaching in evidence based medicine and identify strengths and weaknesses in curriculums and individuals.


- Exploratory study of the information needs and information seeking in a sample of nurse practitioners approved to practice in North Carolina.
- Questionnaire.

- There is a paucity of research on information needs and information seeking of NPs, a growing segment of the health care professional population.
- NPs can have an important and direct impact on the health of the patients they serve.
- It is important they have access to current and accurate information by which they can use as the basis for decision making for diagnosis and treatment of patient conditions.
- This study suggests important issues related to the effective use of...
<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Methodology</th>
<th>Findings and Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanders, D. &amp; Marzillier, J. (1990). Development and Evaluation of a Training Course for Practice Nurses: Helping People to Stop Smoking.</td>
<td>UK</td>
<td>Describes a 2-day training course for practice nurses in advice-giving to smokers.</td>
<td>The results showed that the nurses gained significantly in both knowledge and confidence following the course.</td>
</tr>
<tr>
<td>Shepherd, J. C. (1992). Analysis of training needs of nurse practitioners.</td>
<td>UK</td>
<td>Outlines a study that attempts to identify a systematic approach to the assessment of training needs of qualified nurse practitioners within three separate health authorities.</td>
<td>Continuing education needs to address issues relating to the preparation of nurse practitioners in relationship to their current and future developmental role within the care environment.</td>
</tr>
<tr>
<td>Shepherd, J. C. (1995). Findings of a training needs analysis for qualified nurse practitioners.</td>
<td>UK</td>
<td>Describes the results of training needs analysis of nurse practitioners across three health authorities in England.</td>
<td>The study has shown a major need for revision of current education programmes and provision in order to ensure that post-registration education corresponds directly with the assessed learning needs of the individual learner.</td>
</tr>
<tr>
<td>Source</td>
<td>Country</td>
<td>Methodology</td>
<td>Results/Findings</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
<td>-------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Sheppard, L. &amp; Mackintosh, S. (1998). Technology in Education: What is appropriate for rural and remote allied health professionals? <em>Australian Journal of Rural Health</em>, 6(4), 189-193.</td>
<td>Australia</td>
<td>Discussion of the variety of technologies that can form an educational strategy, including audio-conferencing, videoconferencing, email, CD-ROM, Internet and the world wide web</td>
<td>Recent technological advances provide exciting opportunities for the delivery of education to rural and remote allied health professionals. Distance education modes can overcome barriers of distance and cost. The use of technologies may allow distance education to be more interactive for rural and remote professionals. The important objective is to create a learning environment that maximizes interactivity and develops information literacy. Technology can be implemented to advantage to bring postgraduate and continuing education to healthcare professionals in rural and remote areas. Technology offers the opportunities to overcome the barriers of time, cost and distance to the rural and remote professional.</td>
</tr>
<tr>
<td>Sowell, R. &amp; Opava, W. (1995). The Georgia Rural-Based Nurse Model: Primary Care for Persons with HIV/AIDS. <em>Public Health Nursing</em>, 12(4), 228-234.</td>
<td>USA</td>
<td>Describe the development and implementation of an education program in HIV/AIDS for rural public health and community nurses.</td>
<td>The results of the qualitative evaluation show high levels of satisfaction with course content and teaching methods. Results of data analysis reveal that all program participants reported they were willing to treat persons with HIV disease at the onset of training. However, participant levels of willingness to treat persons with HIV/AIDS increased an average of 11% after completing the program. Clinical-preparedness scores increase also, as did scores in non-clinical focus areas after completing the program. The initial outcomes of the program evaluation strongly support the value of the Rural-Based Nurse Training Model as an approach for educating rural nurses in HIV/AIDS care. The model may be especially helpful as a guide in developing rural HIV/AIDS education programs in states and regions with demographic and geographic characteristics similar to those of rural Georgia.</td>
</tr>
<tr>
<td>Sowell, R., Seals, G., Wilson, B., &amp; Robinson, C. (1998). Evaluation of an HIV/AIDS Continuing Education Program. <em>The Journal of Continuing Education in Nursing</em>, 29(2), 85-93.</td>
<td>USA</td>
<td>Reports a continuing education program for public health and community nurses designed to increase specific knowledge of HIV/AIDS and to provide information about the availability of HIV/AIDS services in rural Georgia.</td>
<td>This article gives an overview of this demonstration project, though it focuses on the evaluation and outcome portions of the project. Program evaluations revealed that after completing the course, participants’ professional preparedness, attitudes toward people with HIV/AIDS and knowledge had improved. Nurses participating in the program reported in a follow-up survey that they felt better prepared to care for people with HIV/AIDS. Results of the program support its potential use as a model for other rural communities.</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Year</td>
<td>Country</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>St.Clair, C. &amp; Brillhart, B.</td>
<td>Rural Nurses as Self-Directed Learners: Overcoming Obstacles to Continuing Education. The Journal of Continuing Education in Nursing, 21(5), 219-223.</td>
<td>1990</td>
<td>USA</td>
</tr>
<tr>
<td>Steele, L. L.</td>
<td>Incorporating Research Application Into Nurse Practitioner Education. The Online Journal of Knowledge Synthesis for Nursing, Education Column, Document Number 3E.</td>
<td>2001</td>
<td>USA</td>
</tr>
</tbody>
</table>

**References**

<table>
<thead>
<tr>
<th>Authors</th>
<th>Year</th>
<th>Country</th>
<th>Title</th>
<th>Credit Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varnell, G., Pollock, S., Klotz, L., Green, A., &amp; Sportsman, S.</td>
<td>2003</td>
<td>USA</td>
<td>Institutional Collaboration Not Competition: Preparing Family Nurse Practitioners to Serve Rural Areas. <em>Journal of Professional Nursing, 18</em>(3), 165-169.</td>
<td>The development of the collaborative model, strategies used for implementation, and evaluation of this collaborative effort To identify outcomes for the communities, students and faculty; challenges and future plans</td>
</tr>
<tr>
<td>Walsh, M.</td>
<td>1999</td>
<td>UK</td>
<td>Nurses and Nurse Practitioners 1: Priorities in Care. <em>Nursing Standard, 13</em>(24), 38-42.</td>
<td>Views of a group of nurse practitioner graduates and undergraduates are compared with the views of a group of other nurses taking continuing education courses</td>
</tr>
<tr>
<td>Wambach, K., Boyle, D., Hagemaster, J., Teel, C., Langner, B., Fazzone, P., Conners, H., Smith, C., &amp; Forbes, S.</td>
<td>1999</td>
<td>USA</td>
<td>Beyond correspondence, video conferencing and voice mail: Internet-based Master’s degree courses in nursing. <em>Journal of Nursing Education, 28</em>, 267-271.</td>
<td>Describes Internet-based courses as a unique distance learning platform for preparing primary care nurse practitioners at the University of Kansas School of Nursing</td>
</tr>
</tbody>
</table>

- Literature Review
- Course description
- Nurses in rural areas that are underserved by primary care practitioners often are faced with time and distance barriers to returning to school for advanced education
- Learner-centered principles, flexibility, and methods to overcome time and physical barriers were employed in this Internet-based course pilot program
- Student evaluation of the courses to date has been positive
- Accomplishment of course objectives compares similarly to campus-based versions of the courses
- Faculty members enjoy the challenge of creating learning environments which foster independent learner-centered experiences
- Faculty report that student discussions are insightful and written assignments are of equal quality to those of students who were taught on campus
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Way, D., Jones, L., Baskerville, B. &amp; Busing, N. (2001). Primary health care services provided by nurse practitioners and family physicians in shared practice. Canadian Medical Association Journal, 195, 1210-1214.</td>
<td>To determine what primary health care services are provided to patients by FPs and NPs working in the same rural practice setting</td>
<td>The Diabetes Care from Diagnosis study aimed to increase patient involvement in consultations, through appropriate training of practice nurses and general practitioners. Focuses upon the practitioners’ beliefs, attitudes and behaviour during the trial, as reported by themselves and their patients</td>
<td>Review the use of distance learning in nursing education and summarizes key questions that must be addressed by programs or students considering advanced practice nursing education using distance technology</td>
<td>The technology is now available for providing new and innovative methods for preparing APNs</td>
</tr>
<tr>
<td></td>
<td>• Baseline data from 2 rural Ontario primary care practices that participated in a pilot study of an outreach intervention • Unique patient encounter data</td>
<td>• Randomized trial with Postal questionnaire</td>
<td>• Literature review</td>
<td>• To date, however, use of multimedia telecommunications and information technology in offering graduate nursing courses has been limited</td>
</tr>
<tr>
<td></td>
<td>• The most frequent reason for visiting an NP was to undergo a periodic health examination, whereas the most frequent reason for visiting an FP was cardiovascular disease other than hypertension • Delivery of health promotion services was similar for NPs and FPs • Delivery of curative services was lower for NPs than for FPs, as was provision of rehab services • In contrast, NPs provided more services related to disease prevention and more supportive services than FPs • For the practices of this study NPs were underutilized with regard to curative and rehab care • Referral patterns indicate little evidence of bidirectional referral (a measure of shared care) • Explanations for the findings include medicolegal issues related to shared responsibility, lack of interdisciplinary education and lack of familiarity with the scope of NP practice</td>
<td>• Trained nurses rated relative importance of patient-centred to professional-centred care as greater than comparison nurses • Trained nurses became less keen on the approach during the trial, and perceived time constraints persisted • Patients diagnosed later in the study were less likely to recognise intervention materials • Trained nurses rated delivery of important aspects of care and satisfaction with style of care as lower than comparison nurses, but patients were more positive about delivery of care from trained than comparison nurses • Although nurses rated patient-centred care as important, whether or not they had been trained as part of the trial, the short, gnereralisable training programme significantly reduced nurse perceptions of their ability to deliver it • Patients reported that important aspects of diabetes care were delivered more if their nurses had been trained in patient-centred consulting • This raises issues concerning measurement scales completed by trained professionals</td>
<td>• Knowledge of available technology and components of distance education can enhance the ability of nurses to evaluate and choose educational programs to meet their needs</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Continuing Education Registration Form
First Name: [Input]
Initials: [Input]
Last Name: [Input]
Address:
1. [Input]
2. [Input]
3. [Input]
Home Phone: (____) ____-____
Work Phone: (____) ____-____ ext. ____
Mobile Phone: (____) ____-____
Fax Number: (____) ____-____
City: [Input]
Email: [Input]
Province: [Input] ON - Ontario
Postal Code: [Input]
Country: [Input] Canada

COURSES SELECTION
Course(s) to which you are registering:
☐ Emergency Health Care In Rural Settings
☐ Issues In Mental Health
☐ Issues In Persistent Illness
☐ Pharmacotherapeutics

PERSONAL DATA
Date of Birth: 19____ yyyy mm dd
Sex: ☐ M ☐ F

Are you a member of a First Nations community or of Aboriginal heritage? ☐ Yes ☐ No

Age Group: ☐ 18-24
☐ 25-34
☐ 35-44
☐ 45-54
☐ 55-64
☐ 65 +

First Language: ☐ French
☐ English
☐ Other, please specify: [Input]

Language(s) At Work: ☐ French
☐ English
☐ Other, please specify: [Input]
EDUCATION

What is the highest level of education you have attained in nursing?

- Diploma
- Baccalaureate
- Master's
- Doctorate

Name of the Institution referred above:

Year you graduated from the above: 19

Do you have other nursing specialty education that is not captured by the question above (i.e. Northern clinical program, outpost nursing, gerontology)?

- No
- Yes, please specify:

EMPLOYMENT

Please select the best representation of your nurse practitioner preparation:

- Nurse Practitioner Certificate from the Council of Ontario University Program in Nursing (COUPN)
- Nurse Practitioner Certificate from another Educational Institution
- Other, please specify:
- No Nurse Practitioner preparation

Please select one of the following that best represents your primary practice setting:

- Aboriginal Health Access Center
- Health Service Organization
- Community Health Center
- Hospital Ambulatory
- Community Home Care Agency
- Hospital Emergency
- Community Care Access Centre
- Hospital Inpatient
- Long-Term Care Facility
- Physician's Office / Family Practice Unit
- Nursing Station / Outpost Nurse Clinic
- Public Health Unit
- Not Currently Practicing In Nursing
- Other, please specify:

Which of the following categories best describes your nursing registration situation?

- Registered Nurse With A College Of Nurses Of Ontario Extended Class (EC) Registration
- Registered Nurse (Without Extended Class Registration) Working In An Expanded Role Or Under Some Medical Directives In Primary Care Setting
- Registered Nurse, General Class
- Registered Nurse, General Class
- Registered Nurse, General Class

28
Nursing registration body (please indicate the full name & province):

Nursing registration number:

Do you currently practice as a primary health care practitioner? ☐ Yes ☐ No

How many years have you practiced in this role?  ☐ less than 5  ☐ between 5 and 10  ☐ between 10 and 15  ☐ between 15 and 20  ☐ more than 20

What are your total years of RN experience?  ☐ less than 5  ☐ between 5 and 10  ☐ between 10 and 15  ☐ between 15 and 20  ☐ more than 20

How many employers do you presently have?  ☐ 1  ☐ 2  ☐ 3  ☐ 4

What is your primary employment status?  ☐ Full-Time Permanent  ☐ Full-Time Contract  ☐ Part-Time Permanent  ☐ Part-Time Contract  ☐ Other, please specify:

How many hours do you work in a week?  ☐ N/A  ☐ 1-20  ☐ 20-40  ☐ 40-60  ☐ 60 +

What is the name of the community in which you live?

What is the name of the community in which you practice?

☐ Same as above

☐ If not same, specify:
COMPUTER ACCESS

Regarding your access to a computer (check all that apply):

- [ ] I own a computer
- [x] I can access a friend's computer
- [ ] I can access a computer at Work
- [x] I can access a computer at an Internet Café
- [ ] I can access a computer at a School
- [x] I can access a computer at the Library
- [ ] I can access a computer somewhere else (please specify):
- [x] I do not have access to a computer

How "strong" are your computer skills?

- [ ] Not At All
- [ ] Somewhat
- [ ] Moderately
- [ ] Very
- [ ] Extremely

Choose one of the following regarding your Internet connection:

- [ ] N/A
- [x] High speed (T1/Cable/DSL)
- [ ] Dial-up (modem 56 Kbps)
- [ ] Dial-up (modem 28.8-33.6 Kbps)

LEARNING METHODS

When will you be studying (check all that apply):

- [ ] Morning (5am-noon)
- [x] Afternoon (noon-5pm)
- [ ] Evening (5pm-midnight+)
- [ ] Weekends

Do you have any previous experience with distance learning?  
- [ ] No
- [x] Yes

If yes, please specify « Year; Course Title; Modality »:
OTHER

What are your personal learning goals from this course?

What is(are) your main reason(s) for taking this course (check all that apply)?

☐ Personal Interest  ☐ Career Advancement

☐ Salary  ☐ Quality Assurance

☐ Extended Class Registration Exam Preparation  ☐ Remediation

☐ Other, please specify:

How did you hear about our project (check all that apply)?

☐ Referral by a peer/colleague  ☐ Read about it in print

☐ Internet  ☐ Link on a Website

☐ Referral by employer  ☐ Referral by nursing organization

☐ Other, please specify:
Appendix C: Continuing Education Module Evaluation Form
Please complete the following questionnaire as directed under each category. Click on "Continue" when complete. Confidentiality will be respected. The data will be released and used as only as group data and not as individual responses. Your responses will help guide future course development.

Evaluation of Module X - Topic

A) Time Commitment
1. Please estimate the amount of time you have spent working on this module and enter the number in the space provided.
   a) How many HOURS did you spend completing the readings for this module? 0 Hours
   b) How many HOURS did you spend on the case studies for this module? 0 Hours
   c) How many HOURS did you spend on this module in TOTAL? 0 Hours

B) Module Format (please select one response only. You may also enter comments in the space provided.)
1. How helpful did you find the cited references (supporting the correct answer) in supporting your overall learning?
   Not at all Somewhat Moderately Very Extremely
   Comments:
   2. How helpful did you find the Problem/Practice-based scenarios (i.e. Case Studies) in supporting your learning?
   Not at all Somewhat Moderately Very Extremely
   Comments:
   3. How helpful did you find the Interactive Quizzes in supporting your learning?
   Not at all Somewhat Moderately Very Extremely
4. How helpful did you find the Identified Websites in supporting your learning?

[ ] Not at all  [ ] Somewhat  [ ] Moderately  [ ] Very  [ ] Extremely

Comments:

5. How helpful did you find the quiz at the end of the module in supporting your learning?

[ ] Not at all  [ ] Somewhat  [ ] Moderately  [ ] Very  [ ] Extremely

Comments:

6. How would you rate the number of questions contained in the QUIZ?

[ ] Far Too Few  [ ] Too Few  [ ] Just Right  [ ] Too Many  [ ] Far Too Many

Comments:

7. How helpful did you find the assigned readings in supporting your learning?

[ ] Not at all  [ ] Somewhat  [ ] Moderately  [ ] Very  [ ] Extremely

Comments:

C) Module Content (please select one response only. You may also enter comments in the space provided.)

1. How comprehensive was this module as a review for this topic area (e.g. cardiovascular, respiratory, gastrointestinal)?

[ ] Not at all  [ ] Somewhat  [ ] Moderately  [ ] Very  [ ] Extremely
2. **How difficult** did you find the material presented in this module?

   1. Not at all
   2. Somewhat
   3. Moderately
   4. Very
   5. Extremely

Comments:

3. **How helpful** did you find this module in assisting you to **identify your relevant strengths**?

   1. Not at all
   2. Somewhat
   3. Moderately
   4. Very
   5. Extremely

Comments:

4. **How helpful** did you find this module in assisting you to **identify your learning needs**?

   1. Not at all
   2. Somewhat
   3. Moderately
   4. Very
   5. Extremely

Comments:

5. **How helpful** did you find this module in **building your knowledge** in this topic area?

   1. Not at all
   2. Somewhat
   3. Moderately
   4. Very
   5. Extremely

Comments:

6. **OVERALL, how successful was this module in MEETING** your original learning goals?

   1. Not at all
   2. Somewhat
   3. Moderately
   4. Very
   5. Extremely
7. What other topics, if any, should have been included in this module?
   Topic 1:
   Topic 2:
   Topic 3:

8. Do you anticipate that your learning from this module will have a positive effect on your future clinical practice?
   1 Not at all positive  2 Somewhat positive  3 Moderately positive  4 Very positive  5 Extremely positive

Other Comments: