

PICO Question: Considering the lack of access to health care in the pediatric population would advance practice nurses (APNs) in independent practice lead to increased access to care and increased wellness compared to populations without APNs in independent practice?

Review of Literature

Perry, Thurston, Killey and Miller (2005) conducted a study in the United Kingdom (UK) to evaluate the ability of a nurse practitioner to facilitate access to care that met the patients' needs. The site chosen for the study was a personal medical services pilot serving 4,000 patients with high rates of unemployment, unskilled workers and single parents. The practice wanted to adhere to the UK's government regulation of providing patient access within forty-eight hours and hired a full time nurse practitioner to help reach this goal. The data was collected via semi-structured interviews with eleven members of the staff, using a non-randomized method thereby allowing the researcher to choose people with knowledge valuable to the research process (Perry et al., 2005). Fourteen patients were interviewed using a convenience sample consisting of patients seen by the nurse practitioner and willing to give an interview during the times the researcher was present at the site. The results of this study found that both groups, staff members and patients, felt that access had been improved and that patients were satisfied with the services they had received. Appointments were made within the forty-eight hour goal and patients were happy with the care provided by the nurse practitioner (Perry et al., 2005).

Some restrictions to access were identified through the course of this study: the nurse practitioners inability to perform full prescribing services as well as referrals not being accepted by local secondary care services "because she was a nurse" (Perry et al., 2005) Further, the staff felt that the nurse practitioner should have the autonomy to organize her workload and undertake professional development on a level equal to the physicians (Perry et al., 2005).

While the nurse practitioner improved access to care in general there were still unmet demands on the physicians which maybe related to the fact that adding just one nurse practitioner was not enough, increased access increased demand or that it may reflect the idea that some patients will always prefer to see a physician (Perry et al., 2005). Nurse practitioners are capable of widening access to care and becoming the solution to the physician shortage, however until the legislative, bureaucratic and professional obstacles identified in this study are addressed and resolved this solution cannot be fully implemented. A reconfiguring of professional identities is necessary; work previously provided by a physician can now be provided by a nurse practitioner however, physicians may feel it is important to sustain hierarchical differences and this may explain the lack of control the nurse practitioner had on her workload and professional development (Perry et al., 2005). Strength of evidence = 4 (individual case)

In 1980, in response to changes in the health care climate, a group of researchers at the University of Pennsylvania developed the Quality Cost Model of Advanced Practice Nursing (APN) Transitional Care to serve as a safety net for fragile patients discharged early from the hospital (Brooten, Naylor, York, Brown, Munro, Hollingsworth et al., 2002). Brooten et al. (2002) conducted a review of seven randomized clinical trials using this model including very low birth-weight (VLBW) infants, women with unplanned cesarean births, high risk pregnancies, hysterectomy, elders with cardiac medical and surgical diagnoses and common diagnostic related groups in order to describe the effect of the Quality Cost Model of APN Transitional Care on patient outcomes and health care costs in the United States over a 22 year period. The model was initially designed to decrease hospitalization for high-risk, high-cost, high-volume groups of patients by substituting APN transitional care for a portion of the hospital stay. This model development was guided by a three-variable framework consisting of outcome, patient

satisfaction and cost (Brooten et al., 2002). The model was modified to work with different patient groups and showed success in all populations in which was tested, consistently improving outcomes and reducing health care costs. The random clinical trials reviewed demonstrated a decrease in hospital charges ranging from 6% to 44% and a 22% decrease in mean physician charges. In the VLBW infants this translated to a cost savings of 18,000 per infant, the high risk pregnancy group showed a total savings of 2,496,145 for mothers and infants. Further, Medicare reimbursements for the elderly control group were double that of the intervention group, 1.2 million compared to 0.6 million, saving the health care system literally millions of dollars. The Quality Cost Model of APN Transitional Care demonstrated decreased health care costs and reduced hospital readmissions across all groups tested (Brooten et al., 2002). Strength of evidence = Ia (systematic review of RCT's).

Laurant, Reeves, Hermens, Braspenning, Grol, and Sibbald (2009) conducted a systematic review of three types of studies: randomized controlled trials (RCT), controlled before and after studies (CBA), and interrupted time series (ITS) in order to evaluate the impact of substituting nurses for doctors on patient outcomes, processes of care and resource utilization, including cost. After a thorough review of the existing research Laurant et al. (2009) found no appreciable difference in outcomes, processes of care or cost between nurses and doctors. Appropriately trained nurses were found to provide high quality care and achieve patient outcomes equal to doctors. Also, 25% to 75% of the work done by doctors could be handled by nurses, in particular health promotion and routine management of chronic diseases. However, for nurses to truly decrease the workload of doctors, doctors must discontinue the services transferred to nurses and focus on activities that only doctors can perform (Laurant et al., 2009).

The care provided by nurses demonstrated higher levels of patient satisfaction, compliance and longer consultations, but showed higher rates of lab testing; outcomes were similar when compared to doctors (Laurant et al., 2009). The reason for higher patient satisfaction rates for nurses compared to doctors was unclear but speculated to be because of the longer consultation time, more patient education and more frequent follow up in order to support patients and answer their questions. Patient preference was mixed, some preferring to see the nurse and others the doctor, this was thought to be related to the nature of the problem. If the patient perceived the problem as minor or routine the nurse was preferred, if it was perceived as serious or difficult the doctor was preferred (Laurant et al., 2009).

Nurses had lower productivity compared to doctors this was thought to be related to the longer consult times and higher rates of patient recall but not related to inexperience (Laurant et al., 2009). Nurse-doctor substitution was found to have the potential to decrease the direct cost of care however it is highly dependent on the salary differentials between doctors and nurses. The cost savings on nurse salaries may be offset by nurses' lower productivity compared with doctors leading to no overall cost savings. Few studies were found to have been done on cost and Laurant et al. (2009) recommend that future research focus on this aspect. Strength of evidence = Ia (Systematic review of RCT's).

Forgeron and Martin-Misener (2005) conducted a study to examine the factors influencing parental intent to use nurse practitioner services in the emergency department (ED). One hundred questionnaires were completed by parents visiting a pediatric emergency department over a five month period, evenly distributed across times of day as well as days of the week. Overall, 83% of parents indicated intent to use the services of the pediatric nurse practitioner (PNP) and 17% would not use the services of the PNP. A 95% confidence level

calculation revealed a range of 75.6% to 90.36% of parents intending to see the PNP for their child's ED visit (Forgeron & Martin-Misener, 2005). Internal consistency was confirmed with Cronbach alpha values ranging from 0.612 to 0.517. P-values on the independent variables having statistically significant influence on parental intention to use PNP services ranged from 0.027 to < 0.001 . Compatibility of PNP service with parental beliefs was the most statistically significant ($p < 0.05$) predictor of a parents intent to use the PNP service. Even though 83% of parents intended to use the PNP services, some indicated that they would not be comfortable with PNPs performing some activities including some clearly within the PNPs scope of practice (Forgeron & Martin-Misener, 2005). This indicates the need to further educate the public on the scope of professional nursing practice reinforcing the concept that registered nurses possess a body of knowledge specific to their own profession. With the increasing strain on the health care system nurses are uniquely positioned to be instrumental in health care reform. Nurses need to advocate for the public by making responsible recommendations for reform and influencing health policy using well-conducted well-presented research (Forgeron & Martin-Misener, 2005). Strength of evidence = 4 (individual case).

References

- Brooten, D., Naylor, M.D., York, R., Brown, L.P., Munro, B. H., Hollingsworth, A.O., 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. Retrieved July 29, 2009, from MEDLINE with Full Text database.
- Perry, C., Thurston, M., Killey, M., & Miller, J. (2005, March 10). Nurse-led care. The nurse practitioner in primary care: alleviating problems of access?. *British Journal of Nursing (BJN)*, 14(5), 255-259. Retrieved July 29, 2009, from CINAHL Plus with Full Text database.
- P, F., & R, M. (2005, November). Parents' intentions to use paediatric nurse practitioner services in an emergency department. *Journal Of Advanced Nursing*, 52(3), 231-238. Retrieved July 29, 2009, from MEDLINE with Full Text database.
- Laurant, M., Reeves, D., Hermans, R., Braspenning, J., Grol, R., & Sibbald, B. (2009). Substitution of doctors by nurses in primary care (review). *The Cochrane Collaboration* 3, 1-42. Retrieved July 30, 2009, from <http://www.thecochranelibrary.com>