

How I Use My Research in Daily Practice

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March 22, 2010

I chose the topic “How I use my Research in Daily Practice,” as the topic of this paper, but I really want to choose two of the selected TNA topics and include “How You Influence the Use of Evidence-based Practice in the Setting in Which You Work” as part of my topic. I believe evidence-based nursing practice frames well designed nursing practice research initiatives. The most essential component of achieving success in my research is using identified evidence-based practice (EBP) interventions as the standard to consistently drive the achievement of specific outcomes in my research initiatives. According to Newhouse (2007 p. 4) “EBP ensures that nurses use evidence to promote optimal outcomes.” As I have focused my research on improving patient health status outcomes, I have found it imperative to include as part of the research design the identification of specific evidence-based practice interventions that the nurse will implement in order to drive the patient outcomes that are the outcome measurements for the research study.

The goal of patient outcome research is to provide patient access, improve effectiveness, reduce variation in practice and control costs. This paper describes how I incorporate research into my daily nursing practice and how I use evidence-based practice as the dominant intervention/treatment in the research design of my nursing research initiatives. I do research to prove that the identified nursing care actions result in positive outcomes for the patient and that those care interventions compare positively to other interventions. The identified problem for this research is lack of positive health outcomes for the patient population. The design process implements a proposed solution with the delivery of evidence-based nursing interventions. Data is collected to see if the solution worked and if improvement in outcomes is statistically significant when compared to other solutions and/or baseline.

## Background on Patient Outcome Research

In my research I strive to test and achieve what the Institute of Medicine (IOM) guides clinical practitioners to provide patients; the IOM (2001) asks care providers to execute patient care interventions which are effective, efficient, equitable, safe, timely, and patient centric. In order to accomplish proposed research results of improved patient health status for individuals and populations, the success of a research project is dependent on identifying condition specific evidence-based standards of care that have been proven through research to be the most effective when compared with other care interventions. Consistently instituting these standards of care interventions increases the probability of achieving a standard response from patients that leads to improved health status for each patient. Identifying pre-determined evidence-based patient outcome metrics, for which the nurse aspires to help the patient achieve, reflects a prospective method to impact changes in patient health status. Finally, success of the research depends on nurses consistently intervening with the evidence-based standards of care, collecting data on those interventions, and measuring the outcome of the interventions on the population of patients.

The IOM (2001) challenges the health professions to deliver EBP interventions. By viewing all nursing care as needing to be evidence-based and research as a method to prove the effectiveness of those nursing interventions, the daily practice of nursing presents with the opportunity to test the extent of nursing's influence on helping patients improve their health status. Through ongoing evidence-based intervention research, applied to daily practice, nurse researchers contribute to the body of knowledge that proves the value of the profession.

The IOM (2009b) has called for a national initiative of comparative effectiveness research that would help determine what care interventions and delivery system strategies drive optimum

improvement in health status outcomes. Research evidence defining the most effective interventions supports better decision making by the clinician when choosing interventions in health care. The IOM defines comparative effectiveness research (CER):

CER is the generation and synthesis that compares the benefits and harms of alternative methods to prevent, diagnose, treat and monitor a clinical condition, or to improve the delivery of care. The purpose of CER is to assist consumers, clinicians, purchasers, and policy makers to make informed decisions that will improve health care at both the individual and population level (IOM, 2009b, p. 1).

Study results from CER lay a foundation for better health care decisions by providers and as a result will guide providers in achieving better outcomes for patients. Research results will be translated into standards of care for provider practices and will encourage innovative delivery system strategies. Acknowledging that the present health care system is flawed, the IOM (2009a) asks for the establishment of a process to assess and compare the clinical and cost-effectiveness of clinical interventions and the systems for delivering care.

Nursing practice has an opportunity to step to the practice table and respond early to the IOM's challenge to participate in and respond to findings of CER. Nurses must be prepared for evaluation of their daily practices by comparing the effectiveness of patient care interventions with identified best practice that is proven to be the most successful in driving positive patient outcomes. I am using my experience in evidence-based patient outcome research as a starting point in delivering care based upon the evidence of past research.

I plan to review findings from CER, change nursing care interventions when indicated, and to serve as a role model in assisting nurses, students and institutions to implement findings from research studies. Research findings help confirm the most effective interventions for different

conditions and the delivery systems best equipped to influence positive patient outcomes. I guide clinicians in setting up research design projects that measure the outcome of their EBP interventions and contribute outcome data from their research to the CER database. Through research and testing of evidence-based interventions, EBP will advance over time (Newhouse, 2007). CER has the potential to accelerate this advance in evidence-based provider performance.

#### Outpatient Research Initiative

The IOM has obtained extensive support for the comparative effectiveness research initiative. The president signed into law the American Recovery and Investment Act of 2009 which allotted \$1.1 billion to encourage this type of research (Health & Human Services, 2010). Based on knowledge of this government support for comparative effectiveness research and based upon my past success with driving improved patient health status outcomes, I am leading a school of nursing team in a funded innovative pilot delivery system research project. This research uses faculty nurse practitioners (NPs) as primary care providers and community health BSN students as care coordinators and disease managers. Three faculty NPs manage a population of underserved patients at a community health center 12 hours a week, and eight BSN community health students support the faculty NPs' plans of care for assigned patients.

This project measures the effectiveness of a school of nursing care delivery team providing evidence-based primary care, health promotion, care coordination, and chronic illness management for the underserved population. The research design uses identified evidence-based care interventions as the basis for the nursing care given to an underserved population that has hypertension, diabetes, and/or asthma. Standard evidence-based care plans are used as the basis for delivering care interventions. The interventions and patient outcome measurements are recorded in the electronic health record. Interventions and outcome data are downloaded,

aggregated, and analyzed for measuring effectiveness and improvement in the patient population's health status.

Examples of health status outcome metrics include HbA1c for the diabetes population, blood pressure values for hypertension, and peak flow readings for asthma patients. These outcome measures correlate with what the IOM (2001) defines as intermediate outcome measures and clinical outcome indicators. Using diabetes as an example, evidence based interventions for diabetes (ADA, 2010) include teaching the patient blood glucose monitoring, assisting the patient in adherence to taking hypoglycemic agents and/or insulin to control the blood glucose, and helping the patient understand that control of their blood sugar prevents long-term complications. Using the evidence-base knowledge that approximately 50% of a population is not compliant to taking their medications as prescribed (Osterberg & Blaschke, 2005), BSN nursing students contact the patients telephonically to determine if they filled their medication orders prescribed by the faculty NP and if they are having any issues with taking the medication. Lifestyle changes, such as exercise, diet and weight loss, are discussed with the patient, including identification of goals and actions needed to achieve the goals. The BSN student supports the patient in goal setting regarding implementing actions that promote adherence to prescribed interventions for control of his/her disease and prevention of complications. Barriers to implementing prescribed interventions are discussed, and the student and patient problem-solve methods to remove the barriers.

This nurse led care delivery model is used as a systems approach to improve the health outcomes for the identified population. Primary care is provided by a faculty NP, and a BSN student nurse provides coordination of care and chronic disease interventions that support the faculty NP in implementing the plan of care with the patient. In order to optimally drive research

outcomes, both the faculty NP and assigned BSN student work as a team to facilitate patient involvement in implementing evidence-based interventions that will improve the identified outcome metrics. The faculty/student team provides patient centric care and is attuned to the patient's clinical experience, concerns, and unique history and how that context affects adherence to the treatment plan.

The BSN student's clinical participation as a nurse provider team member prepares the student to take responsibility as an essential member of a team that provides direct care for an underserved population that needs access to quality care. The student partners with the patient over the course of the semester to problem solve and intervene to help the patient improve his or her health status. Participation in the research project prepares the student for clinical learning and inquiry, while giving them hands-on practice in the research process. The clinical experience requires the student to develop inquiry skills to work through the clinical concerns over time with the patient in order to facilitate improvement in the patient's health status. The student is required to learn research skills in actual practice as proposed by Benner, Sutphen, Leonard, and Day, (2010). Interventions are recorded in the health record, while the student correspondingly monitors and records the health status outcomes for the patient and collects the data for the assigned patient population. Finally, the student is included in the data analysis process so that the student can experience seeing the outcome of his/her nursing interventions.

The student delivers evidence based nursing interventions and executes applied nursing research methodologies. Outcome metric data for all patients that are managed by the faculty NPs and BSN students are assessed per individual team and aggregated for the entire population. Data is compared with baseline every three months. The team can see the results of their

evidence based interventions. Students are taught how to aggregate data and use regression analysis to measure outcome metric improvement from baseline for the patient population.

Research, from planning and intervention to data analysis, becomes an actual hands-on experience for the student nurse and faculty NP. Faculty and students participate in research efforts that improve the health status of an underserved population. The student embraces the research process and is comfortable designing and executing research projects. The care model provides an avenue for the faculty NPs to practice and maintain their certification. The nurse managed care delivery system serves as a cost effective strategy to provide quality care for an underserved population and offers a research design that assures measurement of provider performance and patient outcome.

#### Inpatient Research Initiative

A second area that I use research in my daily practice is to plan and facilitate research efforts at our hospital partners. Hospitals, as provider organizations, have an opportunity to use research and evidence-based practice as a framework for providing care interventions that assure patients that they are receiving value that compares positively with other provider organizations.

Inpatient facilities strive to exhibit the use of evidence-based interventions and demonstrate outcomes that are competitive or serve as benchmarks in the comparative effectiveness research arena. Hospitals focus consistently on achieving optimum health status outcomes and preventing adverse events for all hospitalized patients.

The research project that I am just now beginning is a study of the effect of rounds conducted every hour on a medical-surgical unit compared to the patient effect on a medical-surgical unit in the same organization that is not participating in the standard rounding procedure. During the rounds the nurse executes specific evidence-based actions with each patient. On the unit

participating in practicing rounds the nurse rounds on the assigned patients and performs standard nursing interventions with each patient. Staffing variables are controlled.

One of the goals for this hospital based research effort is to pro-actively intervene to prevent errors and injury. The IOM (2000) encourages health care organizations to develop systems that incorporate safety into the processes of care. The nursing rounding research project is a research effort to design a systematic method of identifying factors that contribute to errors and institute standard evidence based nursing interventions during hourly nurse rounds on a medical-surgical unit. Using a Six Sigma approach for process improvement, combined with controlled research design, the research project attempts to prevent errors and injury as compared to what occurs on a floor where nurses round on an as needed basis.

Standard interventions during rounds focus on factors that have been identified as contributors to errors. Medication errors are a frequent contributor to compromising a safe environment for the hospitalized patient. Specific interventions during rounds related to dispensing, administering, monitoring and communicating are part of the standardized research treatment. Additional performance standards performed during regular rounds focus on care management actions, such as preventing infections, falls, medicating errors, delays in treatment, severe hypoglycemia, and pressure ulcers. This research study will add to the understanding of error prevention by executing evidence-based interventions during frequent formal nursing rounds as a method for preventing untoward events in the hospital setting.

Through a Six Sigma process improvement initiative the opportunity for improvement is systematically analyzed and planned. Expected performance is defined, and patient outcomes centered on error prevention are identified and measured. By using a Six Sigma process management approach (Pande, Neuman, & Cavanagh, 2002), cultural change and management of

the human factor of nursing intervention are optimized to influence the clinician change in behavior while delivering the research interventions. This research project combines process improvement to positively impact quality and support cultural change, while instituting a controlled research design to manage research interventions and measure the response to those interventions as compared to a control group not receiving the research treatment.

### Conclusion

These two research initiatives, one in the outpatient setting and one in the hospital setting, describe my present research activities. Each research enterprise represents the application and execution of research methods to answer a nursing question or solve a nursing problem that has presented in my daily nursing practice. Both projects have the potential to add to the evidence base of nursing practice by substantiating nursing interventions that lead to improvement in patients' health. Nursing research can validate evidence-based changes in practice and contribute to the CER body of knowledge that is presently being studied nationally. With the many challenges of the present health care system and the need for innovation in solving access, quality, and cost questions, nursing has the opportunity to provide solutions; however, proposed solutions must be tested through research.

In my nursing practice I look for evidence-based actions that will positively impact patients' health and safety and prevent disease progression. Those actions are then tested for effect, reliability, and validity by implementing research methods. I challenge all nurses to view their practice as an arena to use the research process as a method to measure the impact of evidence-based nursing care.

## References

- American Diabetes Association 2010 Guidelines. (2010) Retrieved March 15, 2010 from [http://care.diabetesjournals.org/content/33/Supplement\\_1](http://care.diabetesjournals.org/content/33/Supplement_1)
- Benner, P., Sutphen, M., Leonard, V., & Day, L. (2010). *Educating Nurses: A call for radical transformation*. San Francisco, CA: Jossey-Bass..
- Institute of Medicine. ((2000). *To err is human: Building a safer health system*. Washington, DC: National Academy Press.
- Institute of Medicine. (2001). *Envisioning the national health care quality report*. Washington, DC: National Academy Press.
- Institute of Medicine. (2009a). *Informing the future: critical issues in health*. (5<sup>th</sup> ed.). Washington, DC: National Academy Press.
- Institute of Medicine. (2009b). *Initial national priorities for comparative effectiveness Research-report brief*. Retrieved March 12, 2010 from <http://www.iom.edu/Reports/2009/ComparativeEffectivenessResearchPriorities>
- Newhouse, R. P., Dearholt, S. L., Poe, S. S., Pugh, L.C., & White, K. M. (2007). *Johns Hopkins nursing evidence-based practice model and guidelines*. Indianapolis, IN: Printing Partners.
- Osterberg, L. & Blaschke, T. (2005). *Effectively managing medication adherence*. New England Journal of Medicine, 353(5), 487-97.
- Pande, P.S., Neuman, R.P., & Cavanagh, R.R. (2002). *The six sigma way: An implementation guide for process improvement teams*. New York, NY: McGraw-Hill.
- U.S. Department of Health & Human Services. (2010). Text of the recovery act related to comparative effectiveness funding: American Recovery & Reinvestment Act of 2009. Washington, DC. Retrieved March 15, 2010 from <http://www.hhs.gov/recovery/programs/ceer/recoveryacttext.html>