

Scholarly Project Proposal

Tracking Nurse Practitioner Outcomes: A Quality Improvement Project

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Purpose

The purpose of this scholarly project is to implement a quality improvement program to track patient outcomes influenced by the hospitalist nurse practitioners at Catawba Valley Medical Center (CVMC) in Hickory, North Carolina. This implementation of a quality improvement program will enhance the care provided by these nurse practitioners in the hospital and ensure quality assurance practices.

Background

Nurse practitioners are being utilized in the hospital setting to provide quality, cost-effective care to a broad range of acutely and chronically ill patients. According to Kleinpell (2003), tracking patient outcomes related to advanced practice nursing care is critical to offer value to the services provided, allow for quality assurance practices, and promote evidence-based practice (Kleinpell). Since nurse practitioners are integrally involved in direct care delivery they are better positioned to influence outcomes and directly influence quality improvement strategies (Price, Fitzgerald, & Kinsman, 2007).

According to the Medical College of Medical Quality (MCMQ), quality improvement is defined as the process intended to improve the delivery of care provided in order to improve health outcomes of the patients receiving the care (MCMQ, 2004). Quality improvement programs have been shown to improve patient outcomes and decrease the incidence of complications in the hospital setting (Chelluri, 2008). Quality improvement can be seen in the work done by Florence Nightingale who tracked her nursing interventions and the impact they had upon the patients' outcomes. Nightingale

posited that understanding these outcomes was important to improving patient care (Chelluri, 2008, p. 68). In healthcare it has become recognized that conforming to a standardized delivery of care results in positive outcomes, and that deviations from this standard result in poorer quality of care. This finding has resulted in the implementation of quality improvement initiatives. In 1999 the Institute of Medicine (IOM) issued a report entitled “To Err is Human” outlining the issues surrounding healthcare errors in hospitals and supporting the institution of quality improvement practices (IOM, 1999).

The Society of Hospital Medicine (SHM) has delineated the top ten performance measures for hospitalist programs including: “volume data, case mix, patient satisfaction, length of stay, hospital cost and ancillary utilization, productivity, provider satisfaction, mortality, readmission rates, and Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) core measures” (SHM, 2009, p. 14). For purposes of this project the outcomes to be measured for the hospitalist nurse practitioners will be length of stay, hospital cost, and readmission rates. These three indicators are directly related to cost savings, improved patient outcomes, and reduction in complications.

Environment

Catawba Valley Medical Center (CVMC) is a nonprofit community hospital located in Western North Carolina. Catawba is a Magnet facility that is focused on excellence in patient care and elevation of the nursing profession. The organizational and administrative cultures are supportive of advanced practice nursing and desire to promote the role of acute care nurse practitioners at the facility.

The project will be implemented at CVMC during the spring of 2010 to track outcomes of the nurse practitioners in the hospitalist practice. The Catawba Valley

Hospitalist program began approximately three years ago and has grown to eight physicians and three nurse practitioners. Currently, outcomes are tracked for the physicians in the group, but no outcomes have been followed for the nurse practitioners. This lack of outcome tracking for the nurse practitioners necessitates this quality improvement project.

This quality improvement initiative will have a positive impact on patient safety as it will show areas of deviation from the standard of care and will improve on patient care outcomes. There are no direct patient safety issues related to the proposed project, as only outcomes will be tracked thereby not endangering any patients or compromising patient confidentiality.

Review of Literature

A thorough review of the literature related to quality improvement and tracking nurse practitioner outcomes was performed. Many articles were discovered that examined nurse practitioner outcomes but few were found that specifically addressed tracking outcomes as a means for quality improvement. Search terms included *nurse practitioner outcomes*, *quality improvement*, and *tracking outcomes*.

Chelluri (2008) reviewed the history of quality improvement and the elements related to its implementation in the critical care unit. Several outcomes were reviewed and the protocols implemented based upon national guidelines for standards of care. Variations in outcomes reflected directly on deviations from the standard of care and resulted in wasted resources and finances. Essentials of design and implementation of quality improvement initiatives were also detailed and relied heavily upon the use of multi-disciplinary teams. Chelluri (2008) concluded that quality improvement

monitoring is critical to adhere to the recommendations put forth by the Institute of Medicine that stated, “the delivery of healthcare should be improved so that it is safe, effective, patient-centered, timely, efficient, and equitable” (Chelluri, 2008, p. 75).

A qualitative study conducted by Price, et al. (2007) involved interviewing managers and clinicians exploring the views of quality improvement initiatives and found widely differing views between the groups. It was found that the successful implementation of such quality improvement initiatives was critically linked to the clinicians directly involved in the care. Price et. al found that quality improvement programs should be incorporated into daily practice and that clinicians needed to be involved in the design and implementation process for it to be a success (Price, et al., 2007). Price, et al.’s (2007) work revealed a lack of ownership among nurses and nurse leaders involved in quality improvement initiatives and found that involvement on all levels was vital for successful implementation.

Kleinpell (2003) detailed the importance of measuring and tracking nurse practitioner outcomes as the need to target processes that result in improved outcomes. She elaborated that morbidity and mortality measures alone were insufficient to measure healthcare outcomes. Kleinpell went on to detail from the literature the different outcomes that have been measured for nurse practitioners and reiterated that the selection of the outcomes to be measured need to be chosen for a reason. Several steps were delineated to the measurement of outcomes process including: identification of outcomes to be measured, data collection, analysis of the data, understanding of the results, necessary changes to be made, and reevaluation of measures. Kleinpell does indicate that quality improvement can result from measurement of outcomes in nurse practitioner care

by examining areas needing improvement and tracking these improvements. The measurement of outcomes is not where quality improvement stops but also involves identifying steps to improve the processes in the daily care of patients. Measurement of outcomes related to nurse practitioner care is important for measuring the influence of nurse practitioners on outcomes and allowing for quality improvement purposes.

Irvine, Sidani, and Hall (1998) created the Nursing Role Effectiveness Model (NREM) as a way to relate nursing-sensitive patient outcomes as a means for quality improvement. Irvine, et al. details that rising healthcare costs and patient outcomes are becoming key indicators for quality improvement processes and purported that the NREM could provide direction to communicate the nursing related contributions for quality assurance purposes. Irvine, et al. specifically describes a model that shows application to quality improvement during a patient's hospitalization. The Nursing Role Effectiveness Model was designed to provide value to the services provided by nurses and the positive patient care outcomes that they were able to achieve based upon the relationships of structure, process and outcome described by the NREM.

Sidanie and Irvine (1998) examined the use of a conceptual framework for assessing the role of nurse practitioner in the hospital. This conceptual framework was an adaptation of the Nursing Role Effectiveness Model that was created to examine nursing-sensitive patient outcomes and focused on factors related to nurse practitioner care. The need to evaluate the role of nurse practitioners in the hospital was related to the need for accountability and to address the rising cost of healthcare. The role of the acute care nurse practitioner was introduced in the hospital to meet the new needs of the healthcare system related to efficient, cost-effective care. Examining the impact of the

role of nurse practitioners on excellence of care and expense in the hospital is vital to prove that the contributions by nurse practitioners in the hospital are necessary. The adapted conceptual framework was developed in order to examine the role of nurse practitioners on patient outcomes. It explores the components of structure, process, and outcomes related to care delivery and nurse practitioners. The model also proposes relationships among these components that affect the role of nurse practitioners.

McMullen, Alexander, Bourgeois, and Goodman (2001) examined the impact of nurse practitioners (Nurse practitioner attending collaborative service [NPACS] group) on an inpatient medical service compared to resident and house staff service (traditional service). The patients assigned to the traditional service were more medically complex and this was for the purposes of allowing the residents more learning opportunities. Patient satisfaction, physician satisfaction, and staff satisfaction were outcomes that were compared between the two groups and produced mixed results. Patients were more satisfied with the NPACS group in regards to communication, but were significantly more satisfied with the traditional group regarding how well test results were explained ($p = 0.02$). There was no significant difference found in satisfaction with knowledge, skill, or quality of care. Physician satisfaction was interpreted as positive as 94% of reporting physicians reported agreeing or strongly agreeing that they were satisfied with the care provided by the nurse practitioner group. Staff satisfaction was also interpreted as being high with the implementation of the NPACS group because of the communication involved. McMullen (2001) concluded that as nurse practitioners become more utilized in the hospital setting the role needs to be better defined specifically focused on things such as outcomes of care.

Because of the increasing demand for primary care providers, and in the face of the shortage of primary care providers, Laurant, Reeves, Hermens, Braspenning, Grol and Sibbald (2009) examined the issues surrounding the use of nurse practitioners in substitution for physicians. The factors examined were patient outcomes, patient care, and healthcare costs. The findings indicated that nurse practitioners were able to provide high quality, cost-effective care as efficiently as physicians and that the cost savings were likely related to the lower salary of nurse practitioners.

Cowan, Shapiro, Hays, Afifi, Vazirani, Ward, and Ettner (2006) conducted a quasiexperimental study comparing two groups of patients, one managed by the traditional medical team (control group) and the other group managed by a team including a nurse practitioner, hospitalist, and hospitalist medical director involved in daily multidisciplinary rounds (experimental group). The variables examined were length of hospital stay, costs, mortality and readmission rates within four months of discharge. There was a significant difference between the group for length of stay ($p < .001$) with reduction in length of stay found for the experimental group. Cowan, et al. details that this reduction in length of stay resulted in a \$1591 per patient savings. The authors go on to reason that the unique role of the nurse practitioner in the multidisciplinary team facilitated discharge planning. The nurse practitioners in the study were also responsible for the initial post-hospitalization follow up visit providing further continuity of care.

The review of literature regarding tracking nurse practitioner outcomes indicates that it is essential to track outcomes for quality assurance purposes. Quality improvement is becoming a major focus in healthcare and outcomes monitoring is the foundation for

quality improvement initiatives. The use of the conceptual framework the Nursing Role Effectiveness Model has been shown in the literature to be useful for quality improvement projects and will be used to guide the project design.

Project Design

The project design is to gather information from the database at Catawba Valley Medical Center (CVMC) designed by Premier Healthcare Informatics in Charlotte, North Carolina that measures physician outcomes. This database is part of a collaboration of nonprofit hospitals called the “Quest Project” that according to Premier’s website is designed to “deliver the most reliable and effective care, safely reduce the cost of care, save lives, improve patient safety, and increase satisfaction” (Premier Healthcare Informatics, 2009, para 6). This program is currently used to track the physician outcomes at CVMC. Through collaboration with the Clinical Resource Management department (CRM) we are working to devise a way to track the nurse practitioner outcomes. The director of CRM and myself are working in partnership with the information systems department to add the nurse practitioners as consultants in the program so data can be tracked for the patients that the nurse practitioners follow. Currently no outcomes are tracked for the nurse practitioners so they are essentially invisible providers.

The Society of Hospital Medicine (SHM) has delineated the top ten performance measures for hospitalist programs and three of these metrics or outcomes will be tracked for the nurse practitioners. Each month a report will be generated from the Premier database detailing for each practitioner the average length of stay, average cost per DRG, and mortality rate for that month. This data will be entered into a Microsoft Access

database maintained by the nurse practitioners to track monthly outcomes and any deviations, whether improvement or worsening, of these indicators. This will provide for the quality improvement piece of the project.

The implementation of this outcomes tracking is intended to begin this spring. Outcomes will be tracked monthly by inputting the data from the Premier reports into the Access database. Quarterly reports will be generated from this Access database detailing the progress of the measured outcomes and will be disseminated to nursing administration, the hospitalist nurse practitioners and the hospitalist medical director.

Participants

The main participants for this quality improvement project are the three nurse practitioners in the hospitalist practice at CVMC. Other participants include the information systems department and clinical resource management department who will assist with the data collection component. Privacy and confidentiality are not an issue, as the data will be utilized to promote the role of the nurse practitioners in the hospitalist practice and to instill value to the services they provide. The incentive to track these patient outcomes is to promote the quality of care provided by the nurse practitioners.

Evaluation

The efficacy of the project depends upon buy-in from the hospitalist nurse practitioners and physicians. A multi-disciplinary approach to data collection and interpretation will be necessary for the project to be a success. Staff from the Clinical Resource Management department will provide the raw data for the outcomes and I will input this data into the Access database in order to track these outcomes monthly and generate quarterly reports for review. Ease of data entry into the Access database and

thoroughness of data entry are critical for the quality improvement process. Other key stakeholders are the administrative leaders and hospitalist medical director that will need to review the data collected and understand the implications of such data for the nurse practitioners' practice.

The cost of the intervention will be measured mostly in time. The Premier database is already in use to track the hospitalist physician outcomes and will require some adjustment to allow for tracking the nurse practitioner outcomes. There will be no cost incurrence for this adjustment to the program. The Microsoft Access program is readily available at CVMC and will serve as the database for the project to generate quarterly reports. Time to input the data will be the highest in regards to cost, but with collaboration with the information systems department the goal is to develop a way to integrate the current outcome documentation system to allow for merging of information, thereby decreasing the amount of time necessary for data entry.

In order to sustain results of this quality improvement project at a patient care level, the outcomes input into the database will be adjustable depending on the evolving focus of the nurse practitioner practice. As mentioned earlier, the Society of Hospital Medicine delineates ten quality indicators so more of these indicators may be added for tracking in the future. The literature also delineates a number of patient care outcomes that can be tracked for nurse practitioners, which may be added as well. After implementation of the quality improvement project to track nurse practitioner outcomes at CVMC, the data collected and reports generated will be compared to national standards for hospital care. The data can also be compared to the other providers, including the hospitalist physicians at CVMC. These reports will then be presented at an

organizational level to see if a policy implementation should occur and to show the value and impact of the nurse practitioners on the hospitalist team.

A barrier to this project is the ability to retrieve data specific to the nurse practitioner and the validity of these data as shared billing practices. The inability to be the attending provider may make identification of the nurse practitioner as the provider influencing the outcomes difficult as well. The Clinical Resource Management department is devising a way to tease the nurse practitioner data out of the current data available by adding them as consultants in the computer program. This will allow for identification of patients for which the nurse practitioner provided care.

Another barrier is the perceived impact the project will have upon the hospitalist physicians. With the current changes in healthcare reimbursement providers are concerned about job security and costs related to healthcare services. Some of the physicians have already expressed concerns about tracking outcomes specific to nurse practitioners, as the cost of employing nurse practitioners is substantially less than physicians. To overcome this barrier collaboration with the physicians in the group will be vital, and reassurance that a quality improvement program will have a positive impact on our practice and patients must be communicated.

Plan for Dissemination

The plan for project dissemination is to compare the information gathered and the reports generated to national patient safety standards as set forth by the Society of Hospital Medicine, JCAHO, and Centers for Medicare and Medicaid. The planning process, implementation process and results will be assimilated into a report and sent to

the *Journal of the American Academy of Nurse Practitioners*, *Journal of Nurse Practitioners*, and *Journal of Advanced Nursing* for consideration of publishing.

Quarterly quality improvement reports for the nurse practitioner data will be made available to the nursing administration at CVMC and to the hospitalist group. Areas of deviation from the standard of care will be identified, and strategies devised to cope with these deviations thereby ensuring quality improvement.

Samples of product for scholarly project

Databases

Premier database report detailing data relevant to nurse practitioners

Sample of Microsoft Access database.

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