BUILDING CAPACITY FOR NURSING RESEARCH AND ENCULTURATION OF EBP IN NON-MAGNET HOSPITALS: A SYSTEMATIC REVIEW

A DOCTORAL PROJECT

Submitted in Partial Fulfillment of the Requirements

For the degree of

DOCTOR OF NURSING PRACTICE

By

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May 2017
ABSTRACT

Magnet accreditation serves as a hallmark of excellence for nursing practice. Magnet vision solidifies high quality patient care, nursing excellence, and innovative nursing practices that are embedded in the five Forces of Magnetism. Magnet-recognized organizations demonstrate lower hospital mortality rates, improved patient care outcomes, and professional nursing excellence. However, many organizations struggle to obtain Magnet accreditation. Hospitals undertaking the journey toward Magnet designation must build research and evidence-based practice (EBP) infrastructure that support the translation of research and EBP into clinical practice.

A systematic review of the literature was conducted to evaluate relevant data to support the successful implementation of the Magnet principle of New Knowledge, Innovations, and Improvements. Hospitals can use a variety of resources to support and build nursing research capacity, engage in evidence-based nursing care, and develop nursing innovations. There are several innovative ways that can be implemented by non-academic hospitals to close the research-practice gap and to integrate nursing research into clinical practice. Organizations must ensure strong leadership support to empower front-line nurses to reach their full professional potential to conduct research and to disseminate nursing research and EBP into clinical practice.
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ACKNOWLEDGMENTS

First and foremost, I would like to thank our Almighty God for his unwavering love and strength he has given me to complete this journey. Second, the completion of this work would not have been possible without the guidance and encouragement of Dr. Ayman Tailakh who continues to believe and standby me during my most challenging times. Thank you Dr. Ayman Tailakh for your persistent motivation that kept on task. Thank you Dr. Winokur for your support and feedback. Thank you Dr. Armendariz who spent sleepless nights reviewing and editing my project.

I would like to express my gratitude to my parents who have been my inspiration in this journey. To my in-laws, you have been my greatest support on this achievement. Finally, to my husband Ralph, you have been my rock that carried me through this treacherous path when things seem to be daunting. To my three children, Clarisse, Joshua, and Jaden, thank you for your unconditional love and patience.
BACKGROUND

The nursing profession has evolved tremendously throughout the years. Nurses have taken on a pivotal role in maintaining patient’s safety and ensuring high quality of care. According to the U.S. Department of Health and Services (2013), there are 2.8 million registered nurses (RN) and 669,000 licensed practical nurses (LPN) in the nursing workforce. Nurses constitute 54% of all health care workers (Health Resources and Services Administration, 2013). Thus, nursing ranks as the fifth largest employment category in the United States (U.S. Department of Bureau of Labor Statistics, 2012).

With the rapid changes in health care, many health care organizations are faced with increased health care expenditures due to aging populations, advances in technologies, as well as, higher public expectations. To meet the demands related to these changes, the health care system will require a larger, more skilled nurse workforce (Van den Heede et al., 2013). Nurses will be expected to meet those changes with new and innovative skills that are evidence-based. The U.S. Department of Labor Statistics (2012) has projected a 22% increase in the demand for RNs by 2018. Therefore, it is important for every health care organization to be able to retain competent nurses, as they are the key to providing high quality evidence-based patient-centered care.

In 1980, there was a significant nursing shortage along with a high turnover rate in hospitals across the country (Kelly, McHugh, & Aiken, 2011). Nurse leaders observed that some hospitals were able to recruit and retain skilled and motivated nurses. A study by the American Academy of Nursing (AAN, 1983) identified 41 hospitals that were able to retain nurses at rates above the national average. This study aimed to identify and determine whether work environments, staffing, and nurse outcomes differ between
Magnet and non-Magnet hospitals. Findings suggest that Magnet-recognized hospitals have better nurse work environments and nurse outcomes, higher job satisfaction, lower burnout rates, and lower intent to leave, than non-Magnet hospitals (Kelly et al., 2011). Furthermore, Magnet-recognized hospitals demonstrated higher nurse-physician collaboration, lower rate of hospital mortality, safer work environment, and greater opportunities for career advancement. As a result, in 1990, the American Nurses Credentialing Center (ANCC) developed a voluntary recognition program for formally credentialing hospitals as a Magnet designated facilities. In 1994, the University of Washington Medical Center in Seattle was the first Magnet accredited hospital that promoted adoption of practice that ultimately resulted in improved patient outcomes through evidence-based nursing (ANCC, 2015).

Magnet recognition is one of the highest and most prestigious accreditations that a health care organization can receive for quality of nursing care. Magnet-recognized hospitals have common organizational features not found in other hospitals that are associated with nursing excellence, high quality patient care, higher patient satisfaction, and improved patient outcome (Chen et al., 2014; Kelly et al., 2011). The term ‘Magnet’ is used to highlight the success and ability of institutions to attract and retain professional nurses. Currently, there are 389 Magnet hospitals in the nation with 26 of those in California (ANCC, 2015).

In 2010, the Patient Portability and Affordable Care Act (ACA) identified new methods to reduce costs while increasing quality of care. Furthermore, the Centers for Medicare and Medicaid Services (CMS) partnered with Agency for Healthcare Research and Quality (AHRQ) implemented the Hospital Consumer Assessment of Healthcare
Providers and Systems (HCAHPS). The HCAHPS provides standardized data collection methodology to increase the transparency of hospitals and provide valid comparisons among hospitals to support consumer choice and to improve quality of care (CMS, 2015).

The CMS shift of incentive payments based on performance of quality and satisfaction outcomes has created a greater challenges for hospitals. The implementation of Value Based Purchasing (VBP) was the first program that CMS created to incentivize organizations. In VBP payment for care is delivered through an integrated and coordinated system based on performance for standard quality, patient satisfaction, and safety outcomes (Kaiser Family Foundation, 2013). The integration of HCAHPS and VBP by CMS along with Magnet designation by ANCC became a driving force for hospitals to engage in various strategies to provide consistent, high quality care through implementation of best available knowledge and evidence-based practices (EBP) beyond traditional nursing care (Parkosewich, 2013).

Magnet credentialed hospitals have consistently documented improved nurse work environments, have well-trained and competent nurses, and demonstrate improved patient outcomes (ANCC, 2015). As a result, the ANCC Magnet Recognition Program has grown exponentially nationally and internationally in recent years. Thus, Magnet designation has been conferred in five other countries besides the United States. These countries include England, New Zealand, Singapore, Australia, and Lebanon.

The Five Forces of Magnetism

Magnet accreditation serves as a hallmark of excellence for nursing practice. Magnet vision solidifies high quality patient care, nursing excellence, and innovative nursing practices that are embedded in the five Forces of Magnetism. These include
Transformational leadership, structural empowerment, exemplary professional practice, new knowledge, innovations, improvements, and empirical outcomes (ANCC, 2015; Figure 1).

Figure 1 The New Model for ANCCs Magnet Recognition Program. 2009 American Nurses Credentialing Center.

**Transformational Leadership**

Leadership has four components that include process, influence, groups, and common goals. According to Northouse (2016), leadership is a process whereby an individual can influence a group of people to achieve a common goal. The process implies that a leader affects and is affected by followers. Leadership must be interactive and not restrictive to allow change to occur. Strong leaders have the capability to listen and solicit opinions from his followers. Leadership involves the power of influence; without the ability to influence a group of individuals, leadership does not exist. According to Northouse (2016), leadership must occur in groups, which include a community or large organization that works towards a common goal. When the leader and the followers fully understand the importance of achieving a common goal for a
mutual purpose, this strengthens commitment and organizational productivity as well as lessens resistance.

Transformational leadership theory is the most current leadership style that attracts many discussions and research to prove its effectiveness in the current leadership world. It was first coined by Downton in 1973. Transformational leadership is the process whereby a person engages with others and creates a connection that raises the level of motivation and moral in both the leader and the followers (Northouse, 2016). It is also known as charismatic leadership (Northouse, 2016). A transformational nursing leader has the desire to influence other executive stakeholders, demonstrate self-confident with strong moral values that show advocacy, and support for the staff and the organization. A transformational leader can articulate goals and communicate high expectations that strategically align with the organizational mission, vision, and values to improve institutional performance. In this form of leadership, nurses should perceive their voices are heard, their input is valued, and their practice is supported.

**Structural Empowerment**

Magnet recognized organizations involve nurses in decision-making roles at all levels. Nurses engage in shared governance, and council structure to establish clinical practice guidelines and address opportunities for improvement. Shared governance provides an opportunity to promote decision-making that addresses excellence in patient care. Nurses help to achieve best practices in the clinical setting through enhanced communication, improved documentation, ongoing education, and research. Nurse leaders place a high value on feedback from staff nurses since they are on the frontline providing direct patient care.
Communication is a multi-directional component that echoes among professional nurses at the bedside, at leadership levels, among interdisciplinary teams, and with chief nursing officers (Northouse, 2016). Community involvement also plays an integral part of Magnet status. Magnet accredited organizations have developed partnerships with the community to improve health care outcome among vulnerable populations (ANCC, 2015). Often, these organizations provide community-based programs that aid in improving access to health care through free or discounted services to those who are unable to afford health care (Van den Heede et al., 2013).

**Exemplary Professional Practice**

Exemplary professional practice focuses on excellence, collaboration, quality, safety, and best evidence-based practices. The exemplary professional practice is defined as a schematic description of a system, theory, or phenomenon that depicts how nurses practice, collaborate, communicate, and develop professionally to provide the highest quality care for those served by the organization (ANCC, 2015). Exemplary professional practice is the final product achieved by professional nurses. It is about how nurses interact with patients, families, communities, and the interdisciplinary team to impact positive patient outcomes. The exemplary professional practice is grounded in a culture of safety and quality improvement.

**New Knowledge, Innovations, and Improvements**

Magnet recognized organizations integrate the use of current evidence-based practice with an aim to improve patient care and decrease mortality rates (Cheung et al., 2008). The integration of nursing research is a crucial component of New Knowledge, Innovations, and Improvements. The wider adoption of research and EBP implementation
is yet needed to improve quality of care and patient safety to impact improvement in patient outcome. Sparked by several Institute of Medicine reports published since 2001, with focus on quality of healthcare and redesigning systems to ensure patients receive safe, effective, patient-centered, timely, and equitable care, much progress has been made in developing systems to support research and EBP (Tacia et al., 2015). According to Stevens (2013), to affect better patient outcomes, convergence of new knowledge must be translated into clinically useful methods and must be implemented effectively across the spectrum of health care team within a system context, and must yield measurable and meaningful impact on performance and health outcomes.

Within the context of the magnet model, New Knowledge, Innovations, and Improvements components encompass the following categories research, EBP, and innovation that focus on quality improvement. The promotion of research and EBP ensure that the best scientific evidence, clinician expertise, and patient advocacy are used in health care delivery (Tacia et al., 2015). Research provides the ability to explore the safest and best practices for nurses to generate new knowledge. According to ANCC (2015), establishing innovative ways of achieving high-quality, effective, and efficient care is the outcome of transformational leadership, empowering structures and processes, and exemplary professional practice in nursing.

**Research.** Conducting research generates new knowledge. The integration of this new knowledge is translated in EBPs. Integration of EBP into the clinical and operational setting includes the transformation of scientific evidence into recommendations for practice and implementation of quality processes to change practice
and monitor improvement. Healthcare systems and practices need to be redesign and redefine for adoption of EBP innovation.

Magnet organizations must support the advancement of nursing research. Nurses disseminate the organization’s research findings to internal and external audiences, specifically patients. Magnet organizations integrate a Nursing Research Council (NRC) that provides structural support for the participation of Nursing Research and Nursing Research utilization. The NRC can empower clinical nurses to participate in all levels of nursing research to build clinical excellence centered on patients and families through application of best practices. This Doctorate of Nursing Practice (DNP) project will propose a practice guideline to support building nursing research capacity, implementation of EBP, and development of nursing innovations. A hospital that has not achieved Magnet status will be used as the setting for this DNP project.

**Evidence-Based Practices.** Evidence-based practice provides a systematic approach to enhancing practice through the application of research principles (Wise, 2009). Clinical nurses evaluate and use evidence-based findings in their practice. A systematic implementation of EBP is pivotal to effectively improve health care outcomes and provide high quality patient care. A major focus of a NRC is to educate and mentor nurses to engage in nursing research and evidence-based activities. Nursing research may be disseminated internally in an organization through coordination of quarterly Nursing Ground Rounds, Nursing Forums, and periodic unit-based round table research discussions such as Journal Clubs or a quarterly Nursing Research Council Newsletter. These processes will provide support and mentorship for clinical nurses to engage in research opportunities. These processes require a hospital to engage and obtain buy-ins
from executive leadership, nurse managers, and front-line staff to implement changes in practice.

**Innovation.** Innovation in nursing is supported and encouraged. However, the ability to support and sustain the innovative process has become a significant challenge in healthcare due to financial constraints and limited resources. Innovation starts as an idea to change practice with an aim to achieve larger gains in performance that will result in an improved patient outcome (McSherry & Douglas, 2015). Creativity is the driving force of innovation. Innovation cannot be sustained without a supportive and receptive environment. Nurses are involved in the design and implementation of technology and information systems to improve workflow that will enhance the patient experience as well as nursing practice. The innovation process will provide a structure for developing, reviewing, revising, and translating EBPs across the continuum of care.

The incidence of patient mortality related to medical errors is the third leading cause of death in the United States (Leapfrog, 2013). There is an estimated 440,000 Americans who die annually from preventable hospital errors, which are on the rise (Leapfrog, 2013). In an effort to increase patient safety and to ensure cost containment, the implementation of electronic health records and electronic medication administration records are few of the examples that are nurse-led initiatives to improve patient safety. Nursing resources are also integrated into the daily practices of nurses such as the use of Mosby’s Nursing Consult that provides multidimensional resources with up-to-date medical information. With today’s focus on EBP, quality improvement, and Magnet status designation, research initiated by clinical nurses is becoming increasingly common (Jamerson, Fish, & Frandsen, 2011). The aim of this project is to develop a practice...
guideline to ensure that nursing practice is evidence-based, to build nursing research capacity, and to develop nursing innovations.

**Empirical Outcomes**

Empirical refers to a measurable outcome that has been validated by data to show that actual change has occurred because of a particular action (ANCC, 2015). Magnet designation primarily focuses on structure and processes, with an assumption that good outcomes will follow (Smith, 2014). Empirical outcomes begin with pre-contemplated data collection that an organization can use to ascertain an area that needs improvement. Secondly, the organization will set a clear goal that delineates the desired outcome. Once a goal is established, implementation of an intervention takes place. In the final phase, the pre and post implementation data is gathered to identify if these targeted specific interventions made an impact on health care outcomes.

To conclude, Magnet designation aims to create a healthy work environment that empowers nurses to make decisions about nursing practice and supports nurses. Transformational leaders help to facilitate this process by demonstrating exemplary professional practices with excellent nursing care. To improve the quality of care and yield positive empirical outcomes, the Magnet model requires hospitals to engage in research to establish EBPs.

The four concepts of the Magnet model overlap as they are implemented (see figure 1). Magnet accreditation requires that all components of the Magnet model be translated into the clinical setting to implement a culture of change across the institution effectively, then measure outcomes. Magnet designation is an example of how to improve the nurse work environment and improve patient healthcare outcome through
EBPs. The concept of New Knowledge, Innovations and Improvements exemplifies quality improvement through nursing research, EBPs, and nursing led innovations. Thus far, the principle of New Knowledge, Innovations, and Improvements has been hard for many institutions to achieve (Cheung et al., 2008; Ravert & Merrille, 2008).

**Problem Statement**

Magnet status symbolizes nursing excellence and improved patient outcomes in health care industry. It is “the seal of approval” that shows the degree to which a hospital provides nursing care to the highest quality. Only 6% of hospitals in the United States have achieved Magnet status (ANCC, 2016). The Magnet journey requires strong leadership commitment and financial obligation that many organizations cannot afford (Smith, 2014). In addition, a hospital must demonstrate competence in the five Magnet model domains to obtain Magnet status.

Despite the growth of Magnet designation program over the past 30 years, it is difficult to achieve Magnet accreditation that is tied into improve nursing care, improve patient safety culture, improve patient outcomes, and overall job satisfaction. Among the Magnet principles, the evidence suggests that it is difficult to achieve the domain of “New Knowledge, Innovations, and Improvements” due to financial constraints, limited access to partnerships with public universities, and limited expertise in the area of research knowledge and practices. According to Ravert and Merrill (2008), there has been a research-practice gap in nursing practice since the 1800s, when Florence Nightingale, tried to implement a clean patient care environment. There are barriers in meeting the criteria for New Knowledge, Innovations, and Improvements that include lack of time, inadequate resources, lack of understanding of critical appraisal and
statistical analysis, and the organizational perception that research is not realistic (Chan et al., 2010; Pravikoff, Tanner, & Pierce, 2005). However, nurses use research-based practices throughout the course of their working day. Nurses use published research findings to improve patient outcomes. The lack of time, inadequate resources, and organizational support are factors that can lead nurses to be less engaged thus creating a gap between research and clinical practices and compromising patient care and safety (Reigle et al., 2008).

Hospitals affiliated with academic institutions have the infrastructure and resources to conduct and publish nursing research. However, research resources are not readily available to small hospitals (Ravert & Merrill, 2008). As a result, small hospitals, which often provide the majority of patient care in a community may fail to enable nursing research and evidence-based practice (Ravert & Merrill, 2008). Consequently, this inadequacy of translating nursing knowledge to practices leads to failure to achieve Magnet recognition. Thus, there is a need to develop a clinical practice guideline that will facilitate the structural integration of nursing research and innovation in order to facilitate a hospital’s application of the Magnet principle of New Knowledge, Innovations, and Improvements as the core of the Magnet model.

Because the pursuit of Magnet status requires significant financial and human resources, a clear and concise practice guideline is needed to implement nursing research and EBP. Some major limitations of in research and EBP adoption includes constraints in time to conduct researches and a publication bias that signifies positive results are more likely to be published than null results. Another limitation is the language bias. Most non-English articles are excluded in the search criteria to support the findings although
research published in other languages may be equally relevant. The shrinking resources and limited funding is another limitation for the organization to conduct research-based practices. There is a scarcity of funding for clinical research thus, limiting the ability to conduct research. These factors can limit our understanding of implementing Magnet recognition (Shifaza et al., 2014; Tacia et al., 2015).

**Purpose Statement**

A successful magnet journey should be structured to promote nursing research and innovation that will translate knowledge into evidence that will guide nursing practice in improving the quality of care. Therefore, the primary objective for this Doctor of Nursing Practice (DNP) project is to conduct a thorough review of the literature and to evaluate relevant data to support the successful implementation of the Magnet principle of New Knowledge, Innovations, and Improvements. The secondary objective of this project is the development of practice guidelines to support building nursing research capacity, practicing evidence-based nursing care, and developing nursing innovations. The practice guideline will recommend a step by step approach that will involve the establishment of a nursing research council, the design of the role, and planning of a support system to disseminate nursing research and EBP.

**Significance of the Problem**

For a hospital to complete the Magnet accreditation process, the hospital must demonstrate the ability to integrate EBP into the clinical setting. However, limited access to the resources of academia impedes the achievement of Magnet status. Only a few hospitals have academic affiliations that provide the infrastructure needed to conduct nursing research (such as libraries, administrative support, etc.) (Ravert & Merrill, 2008).
Furthermore, a cross-sectional research study with a sample of 458 nurses found that lack of organizational support (time allocation, resources, etc.) was identified as a major barrier to EBP (Brown, Wickline, Ecoff, & Glaser, 2009). Thus, it is imperative to design a guideline for non-academic hospitals to facilitate an implementation of EBP within the organization.

Magnet status has vital financial and clinical importance to hospitals. However, the Magnet designation process is costly. Completing the Magnet application and designation process takes 4.25 years to complete. The initial application fee is $5,000 with an appraisal fee that ranges from $18,000 to $65,000 that is dependent on the organizational bed size (ANCC, 2015). An additional site visit fee is $1,850 per day if a Magnet appraiser conducts an institutional visit. Furthermore, all travel expenses including hotel and per diem expenses of Magnet appraiser are covered by the applicant institution (ANCC, 2015). According to Robert Wood Johnson Foundation (2014), the total annual cost of initial Magnet application can range from $100,000 to $500,000 per year depending on the size of the institution and can vary yearly.

However, the actual benefit of Magnet designation becomes evident in improving the work environment and had documented an increase in hospital revenue. According to the Robert Wood Johnson Foundation (2014), Magnet hospitals have average increased revenue of $1,229,770 to $1,263,926 per year, and many hospitals realized the return on investment from achieving Magnet Status takes two to three years. Magnet designated hospitals reflect better patient outcomes, lower mortality rates, shorter lengths of hospital stay, and higher patient satisfaction compared to non-Magnet organizations (Robert Wood Johnson Foundation, 2014). Magnet status is also of clinical importance because
patients from accredited organizations have improved healthcare outcomes (Wolf, Triolo, & Ponte, 2008). Drenkard (2010) found that Magnet hospitals have lower (10.3%) fall rates, which can cost institutions between $1,019 to $4,235 per case that is worsened by CMS regulations which stop payment (Unruh, 2008). Magnet hospitals also have a 5% lower decubitus ulcer rates among adults than non-Magnet hospitals (Dall et al., 2009). More importantly, Magnet status is associated with higher rates of nursing satisfaction and increased retention rates (Kelly et al., 2011).

Hospitals have a stake in achieving Magnet status, but only a few have the established resources to fulfill the nursing research requirement. Moreover, organization barriers are the top perceived impediments for nursing research such as limited organizational support, financial costs, and limited flexibility in staffing. With the potential fiscal and clinical advantages of the designation, preparing a clinical guideline that facilitates the implementation and evaluation of EBP will be helpful to completing the Magnet application. The guideline will address the requirements needed to achieve the Magnet principle of New Knowledge, Innovations, and Improvements.

**Supporting Framework**

The Academic Center for Evidence Based-Practice (ACE) Star Model served as a framework that guided the project and assisted in fulfillment of the objective by conducting an extensive literature review, analyze and translate findings into evidence-based clinical guidelines. Moreover, the model will be used as the framework for hospitals as the organization translates evidence into practice. The framework outlines the pathway that is necessary to integrate research into clinical practice (Saunders, Stevens, & Vehviläinen-Julkunen, 2016). The ACE Star Model will aid in the
achievement of the Magnet principle of New Knowledge, Innovations, and Improvements.

**Application of ACE Star Model to Practice**

Stevens (2004) developed the ACE Star Model of Knowledge Transformation to address the gap between research and practice. Knowledge transformation is the process by which organizations utilize research findings to aid in clinical decisions (Stevens, 2004). Furthermore, it also serves as a tool for operationalizing the transfer of knowledge to bedside nursing to enhance patient outcomes. The use of the ACE Star Model is a suitable framework for the project because the adoption of EBPs in the clinical setting is a sophisticated process where many elements may hinder buy-in from staff members.

The ACE Star Model provides a systematic approach to the integration of research into both educational and clinical settings. Bonis, Taft, and Wendler (2007) utilized the ACE Star Model to develop and implement educational strategies to increase National Council Licensure Examination (NCLEX) scores among nurses in a baccalaureate program. A literature review showed growth in the pass rate when the exam was delayed and included a review strategy. The study recommended a regimented review strategy consisting of assessment testing and simulated tests. After a three-year implementation period, the strategies produced an increase in the pass rate from 87.76 percent to 94.81 percent (Bonis et al., 2007).

Furthermore, the model has been used to design competencies and educational EBP frameworks (Heye & Stevens, 2009; Kring, 2008). In the clinical setting, researchers have used the model to design clinical practice guidelines (CPGs). Abbott et al. (2006) used a quasi-experimental design to develop a guideline to decrease ventilator-
associated pneumonia (VAP) incidence rates and reduce hospital length of stay (LOS). The guideline included evidence-based nursing interventions such as head-of-bed elevation and ventilator tubing condensate removal. Researchers have also used the model to design a framework for providing social support and positive health practices among adolescents (Mahon et al., 2007).

The proposed framework outlines the five steps of knowledge transformation and is represented by a five-pointed star (Figure 1): (1) discovery of new knowledge; (2) summary of the evidence following a rigorous review process; (3) translation of the evidence for clinical practice; (4) integration of the recommended change in practice; and (5) evaluation of the impact (Stevens, 2004). The model decreases the cognitive load needed to acquire knowledge by providing sequential steps for each stage in the adoption of EBPs. Stevens (2013) stated that this reduces the number of studies for knowledge acquisition and enhances the rigor of the literature.

The model recognizes that the application of evidence to practice is a prerequisite to improving patient outcomes. More importantly, it recognizes factors, such as organizational culture and staff readiness for research as affecting the adoption of EBP by front line staff. As a result, rather than obligating front line staff to gain research expertise to conduct critical appraisals of EBP, the model’s five steps facilitate a focused approach to EBP adoption, from summary to translation. Thus, EBP, nursing research, and innovation can utilize the ACE Star model as a roadmap in guiding the use of literature to produce best practice recommendations.
Figure 2. ACE Star Model of Knowledge Transformation Sample. Adapted with expressed permission by Kathleen R. Stevens, Ed.D., RN, ANEF, FAAN, Copyright 2015, Stevens.

Discovery Research

Masters or doctoral prepared nurses along with front-line staff members integrate EBPs to improve patient outcomes. The purpose of research is to assist in practice changes or address clinical issues. Thus, EBP is derived from new knowledge through traditional approaches such as literature review, meta-analysis, and pilot studies (Schaffer, Sandau, & Diedrick, 2013). The knowledge-generating phase will encourage members to seek nursing knowledge from scientific journals. This phase also includes the critique of studies to engage in best practices at the bedside (Kring, 2008).

Evidence Summary

Research increases the adoption of best practice interventions by critically appraising studies for quality and rigor, which are then summarized into systematic reviews. During this phase, members participate in research synthesis, characterized as meta-analysis, integrative reviews, or review of the literature (Parkosewich, 2013).
Summarizing quantitative and qualitative studies from the first phase will assist in disseminating EBPs.

**Translation into Guidelines**

Knowledge usability refers to the level to which evidence is in a form that is understandable for front line staff to integrate into clinical practice easily (Saunders et al., 2016). Evidence-based practice increases the usability of research for frontline staff to adopt best practice interventions by translating evidence summaries into clinical practice guidelines (CPGs) (Cohen et al., 2010). These documents are concise and evidence-based protocols that are intended to aid clinical decision-making. By presenting the evidence in a usable format for everyday practice, nurses will facilitate adaptation of EBP.

According to Singer and Vogus (2013), it is imperative to tailor CPGs to the organization’s patient population. Thus, another important aspect of usability is local knowledge (Saunders 2015). Combined clinical literature with local studies (such as population needs assessment and prevalence studies) and organizational quality improvement data (i.e. readmissions, falls, etc.) increases the usability of knowledge. This component places research evidence in the context of the local setting. Singer and Vogus (2013) add that it is imperative to include organizational circumstances (such as population, clinical gaps, etc.) in designing CPGs to produce a robust integration process.

**Practice Integration**

Evidence-based practices will be shared throughout the hospital for a full translation into practice. This can be done in a using a variety of methods. Evidence-based practices can be disseminated through staff meetings, newsletters, quality
improvement boards, poster presentations, journal clubs, and journal publications (Duffy & Marshall, 2006). Furthermore, evidence-based practices can also be shared in detailed through meeting minutes with staff members to demonstrate transparency (Duffy & Marshall, 2006). Another key component of practice integration is gaining executive leadership support and approval. Organization leaders can place evidence-based practices in the context of the hospital’s mission and vision, which will encourage buy-in from front-line staff (McLaughlin et al. 2013). Education is another component of this phase. Evidence-based practices can facilitate and develop the skills needed to build a base for formulating CPGs. One strategy is to utilize skills laboratories and annual competencies to ensure standardized execution of CPGs. Thus, evidence-based practices can be integrated into Nursing Education.

**Process, Outcome Evaluation**

The last phase of the ACE Star Model focuses on evaluation, which the entire model works and compliments the components of New Knowledge, Innovations, and Improvements. In this phase, it is important to monitor improvements in pertinent patient outcomes based on developed CPGs (such as readmissions, falls, etc.). Aside from quality improvement, organization engagement of EBP should be established by the external dissemination of information in published studies in local and regional presentation. The Evaluation of outcomes provides a detailed evaluation plan, which can then be utilized by nursing staff to be implemented across the organization.
Evidence-based practices are the integration of best available research evidence that equates to a best practice that reduces costs and improves patient outcomes. The Institute of Medicine (IOM, 2010) recommended that 90% of clinical decisions should be evidence-based by 2020 (Orta et al., 2016). However, there are only a few nurses who received the proper education and training to conduct and implement EBP in clinical settings (Saunders et al., 2016). A study by Orta et al. (2016) was conducted with an aim to develop EBP educational resources to increase nursing faculty knowledge and competency of EBP in a southeastern college in the RN-BSN curriculum. In order to attain this goal, the focus of nursing education programs must emphasize teaching research methods to prepare graduates with the knowledge and strategies to evaluate literature for incorporation into practice (Levin & Feldman, 2012).

A pre- and post-survey design using the ACE Star Model of Knowledge Transformation and Evidence-Based Practice Readiness Inventory (ACE-REI) determined the effectiveness of the education intervention. The result showed that faculty’s self-confidence about their competence in EBP increased significantly from pre-survey to post-survey, $t(17) = -2.04, p = .028$. The results of the study suggest that educational programs for RN-to-BSN faculty are vital in increasing participant’s readiness for EBP.

Nosocomial infections impose a greater risk to the well-being of patients. Health associated infections (HAIs) occur throughout the world of health care. According to Centers for Disease Control and Prevention (CDC), five to ten percent of hospitalized patients develop HAIs (2015). There were an estimated 1.7 million infections and 99,000
associated death in the hospital in 2002 (Kusek, 2012). Central line-associated bloodstream infections (CLABSI) are one of the HAI that is preventable with adherence to EBP guidelines. As valuable as EBP may be, the availability alone does not result in directly changing the behavior (Kusek, 2012). The lack of leadership support, lack of safety culture, unavailability of resources, inadequate training and education, sub-optimal nurse-to-patient ratio are few of the common barriers that hinder the translation of evidence into practice. According to McHugh et al. (2013), the hallmarks of successful organizations include an organizational structure with accessible and informed managers, decentralized decision-making, and the empowerment of front-line worker. When staff are empowered and feel supported by the organization, they feel valued resulting in compliance and willingness to change.

A study conducted by Sedwick et al. (2012) used EBP to prevent ventilator-associated pneumonia (VAP). The objective of the study was to develop bundle and care practices based on current evidence to reduce the rate of VAP in critical care units. The ventilator bundle developed by the Institute for Healthcare Improvement was modified to include protocols for mouth care and hand washing, head-of-bed alarms, subglottic suctioning, and use of electronic compliance feedback tool. The result showed compliance rate were greater than 98% for prophylaxis for peptic ulcer disease and deep vein thrombosis, interruption of sedation, and elevated off the head of the bed. Furthermore, the compliance rates for oral care protocol increase from 76% to 96.8%. The readiness for extubation was assessed daily and reached at least 92.4%. The rates of VAP decreased from 9.47 to 1.9 cases per 1000 ventilator days resulting in an estimated savings of approximately $1.5 million. The use of EBP and strict adherence to CPG for
preventing VAP had shown improve patient outcome and produced marked savings in hospital costs.
METHODS

The section outlines the methods used to gather evidence in the development of the clinical guideline. The project began with an in-depth analysis of research articles used to synthesize the evidence for the process of Magnet accreditation or designation. The research articles focused on new knowledge, innovations, and improvements disseminated through research. Inclusion and exclusion criteria were explained as well as a description of the instrument used to evaluate the study selection process. In accordance with the ACE Star Model, a PRISMA flow diagram was used to provide a graphical representation of the process used to evaluate the research articles based on the Cochrane process and to identify influential concepts surrounding New Knowledge, Innovations, and Improvements. Data collection, data extraction, and data analysis were included in the PRISMA flow diagram (Figure 3). A table of evidence (TOE) from a systematic literature review was utilized for the implementation of New Knowledge, Innovations, and Improvements in a non-Magnet hospital (Appendix B).
Several electronic databases searched in reviewing relevant research articles regarding Magnet status includes CINAHL, PubMed, Google Scholar, Science Direct, Cochrane Library, and EBSCO Host. The search was limited to peer-reviewed articles dated from 2008 to 2016. The articles included potential and relevant studies that pertained to Magnet status and accreditation. MeSH terms used to identify relevant
resources included “Magnet,” “Magnet status,” “Magnet accreditation,”
“transformational leadership,” “structural empowerment,” “exemplary professional
practice,” “new knowledge,” “innovations,” “improvements,” “empirical outcomes,”
“nursing research,” “forces of Magnetism,” “mortality,” “patient outcomes.” The
literature review focuses on studies that supported Magnet, new knowledge, innovations,
nursing research, and improvements.

**Inclusion and Exclusion Criteria**

Articles selected for inclusion were published in English, peer-reviewed, and
publication dated from 2008 to 2016. Articles included hospitals size, staff size,
university partnerships, EBP, shared governance, community partnerships, staff retention
rates, publications, and improved patient outcomes. Improved patient outcomes include
decreased mortality rate, decreased readmission rates, overall patient, and staff
satisfaction rates. Articles were excluded if the study was conducted before 2008 as the
new model configures the 14 Forces of Magnetism and integrated it into five broader
Components and a new conceptual Magnet model and vision emerged. The new and
simpler model focuses on measuring outcomes and allows for more streamlined
documentation while retaining the 14 Forces as foundational to the program (ANCC,
2015). Only English and full-length papers were included in the final review. The
bibliographies of the papers identified through the search strategies were further screened
for additional relevant literature.

**Study Selection**

Two people who are doctorally prepared and mastered prepared reviewed the
articles to prevent selection bias. The individuals screened the articles based on the
eligibility criteria and performed the data extraction for all studies. The title of the articles and abstracts were screened for relevance to the project objective. The results of the studies reviewed were entered into Endnote library. Full-text articles were retrieved and assessed after inclusion criteria were determined. The methodological quality of the included studies was assessed using the Cochrane Process to eliminate risk for bias. The articles were evaluated based on A Measurement Tool to Assess Systematic Reviews (AMSTAR). The instrument included 11 questions to scrutinize and evaluate the strength and evidence of the articles in the Table of Evidence. The score is based on level and quality of evidence, research design, sample, measurement, and statistical analysis of studies. These ratings were balanced between benefits, risks, reliability, and validity focusing on the articles methodological quality and expert consensus. The evaluation of the outcomes was conducted utilizing three experts in Magnet accreditation process who had undergone prior Magnet initial designation or re-designation process. Furthermore, these three experts have a minimum of two-years experience with nursing research and EBP and independently evaluated practice guidelines based on potential impact on patient outcomes, patient safety, and overall satisfaction.

**Project Product**

The final product of this doctoral project is a systematically developed practice guideline (see Appendix A) designed to enable non-academic hospitals to integrate nursing research practices as part of the New Knowledge, Innovations, and Improvements principle of the Forces of Magnetism. This guideline will assist hospitals in gaining Magnet accredited status. The guideline is intended to promote optimal patient care and improve patient outcomes through the engagement of EBP and research.
Search Results

Thirty-six titles and abstracts were reviewed (Figure 3). English abstracts of non-English papers were also examined even though they did not meet the study inclusion criteria. Thirty articles were screened for inclusion criteria, and 22 articles were excluded. Quality assessments were completed for 11 papers. Following the quality assessment, two more quantitative papers were excluded, because their focus did not specifically pertain to this systematic review’s objective. One qualitative paper was excluded for the low quality of reporting findings. Eight studies comprised the final group of included studies (Figure 3).

Characteristics of Studies Included

The characteristics of the studies included in this review consisted of three quantitative studies and five qualitative studies. The final set of studies reviewed and their characteristics are presented in Appendix B. Of the eight studies, published between 2010 and 2016, six studies were conducted in the United States; one study was carried out in Canada and one in Hawaii. Two studies explored the use of research-focused academic-service partnership and collaboration with selected nurses to engage these individuals in research (Duffy et al., 2016; Hatfield et al., 2016). Both studies engage the participants in 8 to 16 hours of didactic, clinical research activities that include conducting literature reviews, analyzing research articles, research proposals, and publication.

Only one study used an explicit theoretical framework to guide the research. Berger and Polivka study conducted in 2015 used Kanter’s Organizational Empowerment theoretical framework to develop the nursing research infrastructure. Kanter’s theory is
based on the premise that structural conditions can impact an employee’s power in organizations; power is the ability to mobilize resources to accomplish goals; and empowered employees exhibit work effectiveness behaviors. When applied to nursing research, empowerment of nurses lead to production of research, increased autonomy, work satisfaction, and professional development (Berger & Polivka, 2015).
DISCUSSION

This study focused on a review of literature examining research, performance improvement and evidence-based practices that are essential for advancing nursing practice and improving patient outcome. While many studies have focused on Magnet status, less research has investigated EBPs. A total of eight studies reflects the small group of studies that advance our understanding of how to build an EBP and research environment among nurses. There were several recommendations noted throughout the literature and from expert consultation. The infrastructure established within hospitals is noted to support clinical nurses in successfully conducting research. This support must provide leadership, knowledge, and expertise in all aspects of research to empower nurses. In the absence of an in-house research expert, the leadership must identify an external expert who is willing and able to help the organization achieve its nursing research goals.

Although there are no national standards that mandate a requirement for a minimum level of education for research competency, the findings suggest that hospitals must have a nurse researcher (Duffy et al., 2016; McLaughlin et al., 2013; Wilson et al., 2013). The ideal candidate must hold a Ph.D. and be affiliated with a university. They must possess extensive research and publishing experience. University affiliation will provide access to resources that are not available at a hospital setting. The resources include research assistants, statisticians, and an Institutional Review Board. Once a doctoral prepared nurse is contracted, the organization can establish a hospital-wide Nursing Research Council (NRC) as one of the key concepts of shared governance to create avenues for carrying out research studies. A national survey that investigated
scholarly outcomes for RN-led research studies found that the majority of Magnet hospital respondents had research teams led by a doctoral level nurse researcher (McLaughlin et al., 2013). Wilson et al. (2013) recognized that the presence of a full-time doctoral-prepared research nurse is an exemplary creative approach to increasing hospital-based nursing research. This individual can support front-line nurses in research activities (such as scholarly writing, data analysis, project implementation, etc.) and lead hospital-based research councils. Furthermore, the study found that doctoral prepared registered nurses that functioned as principal investigators, had a higher number of initiated studies, podium presentations, funded grants, and publications in peer-reviewed journals (Brockopp et al., 2016; McLaughlin et al., 2013).

As stated earlier, another recommendation to achieve Magnet accreditation is to form a hospital-based NRC, which is a formal structure to integrate evidence-based practices into bedside care (Duffy et al., 2016; Latimer & Kimbell, 2010; McLaughlin et al., 2013). The NRC consists of different stakeholders who will meet monthly to foster EBP, innovation and translational research.

The ACE Star Model of Knowledge Transformation was used to provide a comprehensive approach to translate evidence into practice. The ACE Star Model explains how various stages of knowledge transformation reduce the volume of scientific literature and provide forms of knowledge that can be directly incorporated into patient care and strategic organizational decision making. As mentioned earlier, the model is a five-pointed star (Figure 1): (1) discovery of new knowledge; (2) summary of the evidence following a rigorous review process; (3) translation of the evidence for clinical
practice; (4) integration of the recommended change in practice; and (5) evaluation of the impact (Stevens, 2004).

**Discovery of New Knowledge**

A main purpose of research is to address clinical issues and to assist in practice change. The use of hospital-wide Clinical Quality Indicators, National Agencies, Organizational Standards and Guidelines, and Philosophies of care are few knowledge focused triggers that can be used to provide the trends in standard of care of the healthcare organization, providing transparency to the consumers. The use of various knowledge focused triggers will aid in identifying health care issues that need improvement. In this phase, the NRC can conduct literature reviews utilizing bibliographic databases such as CINAHL, EBSCO, and Cochrane Library. This will allow participants to synthesize studies.

**Evidence Summary**

During this phase, the NRC can engage members to participate in research synthesis activities related to patient care, conducting a critical appraisal of meta-analysis, and integrative reviews, or review of the literature on clinical topics that will aid in disseminating EBPs. The use of Cochrane Collaboration Databases of Systematic Reviews can provide evidence to support specific clinical research to improve patient safety and outcome. According to Latimer and Kimbell (2010), the NRC can increase research productivity by conducting research activities related to patient care, inspiring front-line staff involvement, and promoting collaboration/mentorship between bedside nurses and research nurses. Hatfield et al. (2016) also recognized that the council builds
a foundation of responsibility and accountability for nursing research, which are key components in Magnet accreditation.

**Translation into Guidelines**

For EBPs to be successfully adopted and sustained, system leaders, policy makers, and stakeholders must buy-in to the benefits of research. Leadership support must be secured to build the nursing research infrastructure. The Magnet Recognition Program has been the catalyst in EBP adoption, using it as a marker of excellence. The translation of evidence summaries can be achieved through pilot studies, development of clinical practice guidelines, clinical pathways, protocols, and algorithms (Cohen et al., 2010).

**Practice Integration**

Evidence-based practices must be disseminated throughout the hospital for a full translation into practice. The NRC should coordinate quarterly meeting through Nursing Grand Rounds, Nursing Forums, poster presentations, newsletters, staff meetings, journal publications, and periodic roundtable discussions (i.e. Journal Clubs) to disseminate EBPs across the continuum of care.

**Process, Outcome Evaluation**

The final phase of the ACE Star Model focuses on evaluation. In EBP, outcomes are evaluated to assess consistency, establish generalizability across participants, treatment variations, or settings, and to improve true reflection of reality that reduces bias. Evaluation of EBP can be measured through patient health care outcomes (i.e., readmission rate, falls), provider and patient satisfaction (i.e., HCAHPS, Press Ganey), and health care cost analysis.
The last recommendation is to secure executive leadership support. This can streamline access to hospital infrastructure for research. Also, these leaders can put research initiatives in the context of the hospital’s mission. Duffy et al. (2016) found that the main barriers to research productivity include low organizational priority and insufficient research resources. Executive leaders have the capability to minimize the impact of these organizational impediments. In one study that analyzed the establishment of nursing research infrastructure in a hospital that achieved Magnet accreditation, executive leaders approved eight hours per month of paid time for staff nurses participating in research activities (Latimer & Kimbell, 2010). Furthermore, the Chief Nursing Officer also allotted a budget for textbooks, supplies, and speaker honorariums. According to McLaughlin et al. (2013), executive leaders can also facilitate the dissemination of scholarly work in the organization by recognizing nursing-led studies during boardroom and hospital-wide meetings.

Ultimately, these recommendations contribute to the development of a culture that is supportive of research and dissemination of scholarly outcomes. Future researchers can validate these recommendations by using a propensity score to match to identify matched control populations within the hospital. This would enable the comparison of outcomes (e.g., initiated studies, publications, and Magnet Accreditation) for the intervention population to the control hospitals (i.e., the hospital does not have a doctoral-prepared nurse, research committee) in a statistically meaningful manner. Propensity score matching causes a set of variables (e.g., bed size, geography, and other hospital characteristics) to identify a matched control organization. The outcomes for the intervention and control hospitals could then be compared to determine if significant
differences exist between the two populations post-intervention. This analysis could be performed using a national survey, similar to the study conducted by McLaughlin et al., 2013.

**SUMMARY**

The aim of this project is to develop a practice guideline to support building nursing research capacity, practicing evidence-based nursing care, and developing nursing innovations. The practice guideline was evaluated and revised by three experts in the Magnet accreditation process who had undergone prior Magnet initial designation or re-designation process. Also, these three expert panels have doctoral degree with a minimum of two years’ experience with nursing research and EBP. Even though the practice guideline has content and construct validity since it is based on a systematic review of literature and a theoretical framework, pilot testing of the practice guideline in a non-Magnet hospital is needed to establish effectiveness and usability of the guideline. The feasibility of the guideline will be based on the results on the impact on patient outcomes, patient safety, performance measures, and overall satisfaction. A quarterly report must be generated and should be presented to the organizational executive leadership in order to evaluate the effectiveness of the practice guideline.

There are several innovative ways that can be implemented by non-academic hospitals to close the research-practice gap and to integrate nursing research into clinical practice. A strong leadership and dedication are needed to empower front-line nurses to reach their full professional potential to conduct research. In an era when the emphasis is placed on culture of research and translation of evidence-based practice, organizational
leadership and nurses must work collaboratively to flourish a strong professional practice to achieve New Knowledge, Innovations, and Improvements (ANCC, 2015).


doi:10.1016/j.apnr.2009.08.004

doi:10.1097/01.NNA.0000499763.44984.d8

doi:10.1097/NNA.0b013e31822eddbd


Pravikoff, D. S., Tanner, A. B., & Pierce, S. T. (2005). Readiness of US nurses for evidence-based practice: Many don’t understand or value research and have had little or no training to help them find evidence on which to base their practice. *AJN The American Journal of Nursing, 105*(9), 40-51.


APPENDIX A

Evidence-Based Practice Model

[Flowchart depicting the steps involved in evidence-based practice, including increasing hospital-based nursing research capacity, assembling relevant research and related literature, identifying the clinical problem, forming an EBP committee, critiquing and synthesizing research for use in practice, and conducting research to evaluate quality of care and new knowledge.]

*Will need to collaborate with PhD nurse researcher*
# APPENDIX B

## TABLE OF EVIDENCE

*Building Capacity for Nursing Research and EBP in Non-Magnet Hospitals*

<table>
<thead>
<tr>
<th>Purpose (Author(s), year)</th>
<th>Design &amp; Key Variables</th>
<th>Sample &amp; Setting</th>
<th>Measurements, Operational Definitions of Variables</th>
<th>Results or Findings</th>
<th>Authors’ Conclusions; Study Limitations &amp; Your Notes</th>
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<tr>
<td>To describe program requirements and scholarly outcomes for registered nurse-led research in US hospitals. (Mclaughlin, Speroni, Kelly, Guzzetta, &amp; Desale, 2013)</td>
<td>Descriptive/comparative electronic survey using Dillman’s tailored design with a purposive convenience sample of nursing research representatives from US hospitals.</td>
<td>A total of 798 hospitals from 3 types: Magnet designated (n=202); Children’s Hospital Association (CHA) (n=195); and the Joint Commission (TJC) accredited hospitals (n=401) participated. A total of 160 surveys were returned, response rate was 20.05%.</td>
<td>Descriptive/comparative 60-item web-based questionnaire developed to measure hospital RN-led research &amp; associated scholarly outcomes. The survey was divided into 7 subsections: (1) demographics; (2) educational and qualification requirements for nurse PIs; (3) nursing research mentoring process; (4) nursing research education and training; (5) nursing research peer review process; (6) factors that facilitate or hinder RN-led research studies and research</td>
<td>There was no minimum educational requirement for nurses to be designated principal investigators (PIs). On average, hospitals reported an annual total of 4 studies initiated, 4 disseminated via podium or poster presentations, 1 published, and 2 funded. Most of the hospitals (n = 126, 87.5%) had their own IRB or were affiliated with an academic institutional IRB. More Magnet (n = 76, 87%) versus non-Magnet (n = 30, 63%) hospitals had nurses holding academic appointmens (P &lt; .0001) and employed doctoral prepared nurses who held academic appointmens (Magnet, n = 46, 85%; non-Magnet, n = 18, 60%).</td>
<td>Findings provide a prototype and benchmark information for nursing administrators to plan, establish, evaluate, and/or expand nursing research programs. A limitation is that the findings are based upon the respondent’s familiarity with institutional work. Another limitation is the sample distribution between Magnet and non-Magnet hospitals is not representative of the current proportion of Magnet hospitals in US. Low response rate</td>
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<th>Purpose (Author(s), year)</th>
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<tr>
<td>To describe the facilitators and hindrances associated with the conduct of registered nurse-led research in US hospitals.</td>
<td>The 2 open-ended Hospital-Based Nursing Research Requirements and Outcomes (HNRRO) survey questions from part 1 were used in this analysis regarding facilitators and</td>
<td>Of the 160 completed HNRRO surveys, 95% (n=152) included comments; 960 data units were sorted into facilitators (n=477 Magnet, n=107)</td>
<td>Codes were grouped into 3 categories to summarize how RN-led research was facilitated or hindered in this sample: (1) hospital infrastructure; (2) hospital culture; and (3) productivity; and (7) scholarly research outcomes.</td>
<td>Magnet, n = 13, 57%; P &lt; .0001. More Magnet (n = 103, 98.1%) than non-Magnet (n = 28, 52.83%) hospitals had research mentors (P &lt; .0001) More Magnet (82.86%) than non-Magnet (30.19%) hospitals had a NRC/committee (P &lt; .0001). Of the 160 hospital respondents, 132 (82.50%) specified that there had been RN-led research studies conducted by nurse PIs in the 5-year period (2004-2008). Of the 132 respondents with RN-led research, 103 (64.38%) were Magnet designated and 29 (18.13%) were not (P &lt; .0001). Ninety-five percent of surveys were classified into 24 facilitator and hindrance codes. Both Magnet and non-Magnet hospitals identified the presence of a research mentor as the top facilitator.</td>
<td>The findings were limited by the type of qualitative data available for analysis. Data included comments offered spontaneously by survey respondents, which limited generalizability.</td>
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<td>(Kelly, Turner, Speroni, McLaughlin, &amp; Guzzetta, 2013)</td>
<td>hindrances of conducting nursing research in hospitals. Using content analysis, 15 pages of verbatim responses were analyzed and then divided into Magnet and non-Magnet hospital groups. Three researchers divided comments into phrases. Phrases were grouped into codes and then defined. To ensure accurate coding, 10% of the data were independently coded by 2 other researchers.</td>
<td>non-Magnet) and hindrances (n=279 Magnet, n=97 non-Magnet).</td>
<td>building a nursing research program.</td>
<td>Many respondents described Magnet designation as a key facilitator of nursing research. Respondents reported the importance of library services, online resources and databases, biostatistical consultation, and an onsite IRB as essential to conducting research.</td>
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<td>To evaluate the effect of a research training program on clinicians' knowledge, attitudes, and practices related to research and evidence-based practice.</td>
<td>A mixed-methods design was utilized to support the evaluation of the training program. A pre- and post- survey design was used to assess the effect of the training program on clinicians. Focus groups and interviews</td>
<td>Participants were recruited from organizational employees who had applied, in teams, to be part of a 2-year training program. Each research team was required to</td>
<td>The Knowledge, Attitudes, and Practice (KAP) survey assessed 33 research activities that an RN or other health professional might encounter in clinical practice, including utilization and research conduct.</td>
<td>Significant improvement in research knowledge and ability was observed. Participants and administrators identified benefits of the training program, including the impact of EBPs. For administrators, the research-training program illustrated a successful model.</td>
<td>There were several limitations to the study. The sample was restricted to clinicians working at a Canadian healthcare organization. The majority of participants were females practicing in acute care. Future RCT is</td>
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<td>Purpose (Author(s), year)</td>
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<td>(Black, Balneaves, Garossino, Puyat, &amp; Qian, 2015)</td>
<td>were conducted with clinicians and administrators to explore their perceptions of the training program.</td>
<td>have at least one point-of-care clinician whose job was limited to clinical practice and did not include administrative or research responsibilities. A total of 27 teams and 153 clinicians (including 78 RNs) were accepted into the training program (2011-2013). Participant clinicians completed a baseline survey and 2 follow-up surveys as well as participated in focus groups. The administrative leaders of the participant clinicians were interviewed as well.</td>
<td>The KAP consisted of 5 factors: (1) identifying clinical problems, (2) establishing current best practices, (3) implementing research into practice, (4) administering and implementing research and (5) communicating findings. A 3-point scale was used to indicate the participant’s level of knowledge, willingness to engage, and ability to perform specific research along with a knowledge translation activity based on the KAP 5 factors. Online surveys were administered in 3 waves at various stages of the training program (baseline survey, 3 months later, and after participants completed the research workshops).</td>
<td>for enhancing EBP while strengthening academic-practice partnerships and creating professional development opportunities for point-of-care clinicians.</td>
<td>required to provide more conclusive evidence. Another limitation found was the potential clustering effect among research team members, which could not be controlled in the data analysis due to the survey.</td>
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<td>Compare baseline and year 1 findings from a research-focused academic-service partnership (ASP) designed to increase research capacity, EBP use, and research productivity. (Duffy, Culp, Sand-Jecklin, Stroupe, &amp; Lucke-Wold, 2016)</td>
<td>Using a non-experimental pretest-posttest design, 67 acute care nurses who participated at baseline were re-surveyed, and year 1 focus groups were conducted.</td>
<td>This study was conducted in a mid-Atlantic academic medical center. Data were collected at baseline in 2013 and then again from July to October 2014.</td>
<td>Six instruments were used to evaluate year 1 results: (1) An 8-item tool was used to collect demographic information; (2) The Index of Common Research Terms; (3) The EBP Attitudes Scale (EBPAS); (4) The EBP Confidence (EPIC) Scale; (5) The practice of EBP subscale of the EBP Questionnaire (EBPQ) were used to measure research capacity and EBP use. Focus groups were created using the 5-question Academic Service Partnership Interview. Three specific aims of the study were: (1) to compare nurses’ research capacity (knowledge of common research terms, EBP attitudes, EBP confidence) and EBP</td>
<td>Increase in knowledge from baseline to year 1, and nurses who participated on a committee with an embedded scientist were more knowledgeable at year 1 than those who did not. While EBP confidence and self-reported EBP use did not improve, research productivity increased by 33%.</td>
<td>One limitation of the study is the majority of the participants were white and rural nurse compared with the national workforce data, thus, limiting generalizability.</td>
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<td>Purpose (Author(s), year)</td>
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<td>To integrate in the hospital setting practices which facilitate nursing research and EBP through a hospital/university partnership. (Hatfield et al., 2016)</td>
<td>Descriptive study of program using innovative collaboration between university nursing research center with PhD-prepared nurse scientists to integrate practices into a midsize hospital to develop and implement sustainable culture of nursing research and EBP through ongoing nursing research scholarship program (NRSP) for clinical nurses.</td>
<td>The Pennsylvania Hospital (PAH) and the Center for Health Outcomes and Policy Research (CHOPR) at the University of Pennsylvania School of Nursing. Nurses at all levels of the clinical ladder (I, II, III, IV) eligible and encouraged to apply. The clinical nurse directors at PAH NSRP provided educational programs, mentorship, and clinical research activities. Educational programs consisted of 2 days a month (16 hour) research application class (didactic, literature review, analyzing research articles and its clinical implications, and implementing EBP on their units). Mentorship consists of meetings with the full research team to report.</td>
<td>To generate exemplary nursing research in a clinical practice setting requires transformational leadership and a commitment from academia and clinical practice at all nursing levels. The PAH NRSP is an innovative way that can be implemented by hospitals to close the research-practice gap, build nursing science, and optimize patient care. Few limitations were noted in the study. The evaluation of return of investment of the program in the future is needed but due to the insufficient cohort this is yet to be determined. Hiring a hospital-based PhD nursing researcher has tangible long-term financial outcomes. To allow the scholars to experience the full development of a project from conceptualization to publication stage, the</td>
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<td>and CHOPR leaders voted on the selection of 2 applicants. The 1st scholars were selected in 2013 for an appointment of 12 months.</td>
<td>Norton Healthcare system has 5 hospitals and several affiliate hospitals, outpatient facilities, immediate care centers, and physician practices. Kosair Children’s Hospital was the first in the system to successfully conduct RN-led</td>
<td>on the status of the projects every 4-6 wks for an hour. Clinical implications: clinical paper focused on quality and safety of care in neonatal intensive care unit (NICU). Submitting an abstract to a national conference, constructing poster, and submission of a manuscript for publication.</td>
<td>Since 2010, clinical nurse investigators in the Norton Healthcare System have completed 25 studies, presented 30 posters, 10 papers, and have 7 manuscripts published.</td>
<td>There were no limitations identified in the study.</td>
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<td>To develop strategies to promote evidence-based practice changes and engage nurses in conducting nursing research. (Berger &amp; Polivka, 2015)</td>
<td>Descriptive study to describe one healthcare system’s approach to advancing nursing research in 5 hospitals collaboration with school of nursing through local university and development of an infrastructure to support, empower, and mentor clinical nurses to conduct research.</td>
<td>Two theories were used to develop the nursing research infrastructure: 1. Swanson’s Theory of Caring that describes caring as a process involving 5 elements: (a) help the nurses remain hopeful by maintaining belief in their ability to complete each step and by reassuring them along the way;</td>
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<td>research by bedside nurses. As a result, many of the practices adopted by the healthcare system were piloted at Kosair Children’s Hospital prior to system-wide implementation.</td>
<td>(b) know potential personal and professional barriers to accomplishing required research-focused tasks; (c) be present, available, and approachable, whenever help is needed; (d) assist with tedious and time-consuming tasks of the research processes and requirements that they may not have the knowledge, skill, resources, or time to complete (ie: submitting a proposal to the IRB, writing manuscript); (e) enable them to learn and do as much as possible for themselves through teaching, coaching,</td>
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2. Kanter’s Empowerment Theory impacts an employee’s power in organizations; power is the ability to mobilize resources to accomplish goals; and empowered employees exhibit work effectiveness behaviors. When applied to nursing research, empowerment of nurses lead to production of research, increased autonomy, work satisfaction, and professional development.

3. Building the infrastructure

mentoring, facilitating, and providing resources.
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<td>To develop a Nursing Research Fellowship program to educate nurses on the research process and enable nurses to lead research projects to build a research environment and promote research and evidence-based practice. (Latimer &amp; Kimbell, 2010)</td>
<td>A descriptive study of implementing Nursing Institute, a research partnership with University nursing faculty, a nursing research council, and a Nursing Research Fellowship program over four years.</td>
<td>The Queen’s Medical Center (QMC) in Honolulu, Hawaii, is a private, nonprofit, 505 acute care beds. Services provided by 1,160 nurses and 1,100 physicians. A 4-hour research class, offered 6 times, with 17% (n = 170) of nurses attending. The NRF budget of $41,600 supported salary for ten nurses for 8 hrs x 8 months and five</td>
<td>Obtaining magnet status Number of Proposals Submitted for NRF Number of fellows dropped out Satisfaction survey and open-ended questions to identify needs and barriers.</td>
<td>Magnet Status Attained Six proposals were submitted to the QENI Small Fellowships Grants Program. Only five funded.</td>
<td>To provide more individual mentorship, the NRF program will (1) accept fewer participants, (2) require that each fellow has an assigned research coach, and (3) require monthly contact with this coach. Provide time for lit search and implementation. Didn’t describe the process for establishing Nursing Institute and academic collaboration.</td>
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<td>Describe four creative approaches to supporting and conducting institutional nursing research and the implementation of evidence-based care led by nurse staff.</td>
<td>Comparison study of 4 approaches to build a research environment and promote research and evidence-based practice in 4 different hospitals.</td>
<td>small competitive grants of $2,000 each</td>
<td>1. Hospital-Based Nursing Council With Guidance From Academic Researchers This university-affiliated hospital created nursing councils to support shared governance. One council is the New Knowledge Council (NKC) that conducted in-service and research in collaboration with academic collaboration. 2. Contracted Academic Nurse Researcher A 220-bed community hospital in the South-west to</td>
<td>1. To developed a formal EBP program. Evidence-based practice workshops (2-part series) were offered twice yearly by the nurse research consultant. In addition, 4 seasoned RNs were selected as EBP mentors and attended a 5-day evidenced-based mentorship immersion program at a local university. 2. A 6-day workshop was designed and implemented by the Council. Nursing departments sent teams of 6 to 8 nurses to the workshops to learn about EBP, and each team was assigned an EBP mentor from the council. The workshops</td>
<td>See conclusions</td>
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The administration at all four hospitals acknowledged the importance of EBP and supported nursing staff in becoming trained in EBP and implementing it at the bedside. The hospitals all had NR councils composed of nurses with advanced degrees (most commonly the clinical nurse specialists) along with bedside nurses. In all four examples, research councils recognized the importance of advanced knowledge in research and found ways to collaborate with PhD-prepared RNs for study design and rigor.
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<td>support the development of an NR Council (NRC) and the implementation of EBP.</td>
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<td>were taught by the nurse researcher and council members who had attended a 5-day evidenced-based mentorship immersion program at a local university.</td>
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<td>3. Part-time Nurse Researcher In a large 650-bed academic medical center in the Southwest.</td>
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<td>4. Designated Full-time Nurse Researcher a full-time doctoral prepared nurse researcher is taken from a 224-bed nonprofit hospital and affiliated ambulatory care system in the southwest Unites States.</td>
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