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Developing Competency to Sustain Evidence-Based Practice

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Abstract

Organizations must ensure that nursing care delivery is based on best evidence. This paper describes how a clinical research hospital used a competency-based approach to structure the development and execution of a strategic plan and integrated evidence-based practice concepts into the activities of nurses at all levels. The paper will also describe the process for developing and implementing the competency across our department including outcomes achieved.

Evidence-based practice (EBP) has been promulgated in an effort to implement a systematic approach to improve clinical decision-making based on the best data (1). Basing practice on research and evidence requires articulation and acceptance of the evidence, yet nurses often rely on tradition or intuitive processes as rationale for interventions. Nursing interventions may be framed by what the nurse has previously learned through formal education and practice experience hence, variations in practice, without rationale will result. Until recently there were few published papers describing EBP competencies, particularly for registered and advanced practice nurses (2). This paper will describe a systematic approach to the implementation of EBP based on study findings that informed a strategic plan and the development of a tiered EBP competency to direct and sustain ongoing practice development.

The National Institute of Health (NIH) Clinical Center (CC) is a world renowned research facility dedicated to conducting and supporting medical research. Located outside the Washington D.C area, it is a 200-bed research hospital and ambulatory care facility, which supports the intramural research program of the NIH. All patients seen at the CC are research participants and receive clinical care necessitated by their condition in conjunction with their study participation requirements. Although the NIH is a research generating facility, the nursing care is grounded in traditional clinical care driven by clinical trials, requiring critical thinking and a complex understanding of the scientific aspects of clinical

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trials (3). Nursing practice based on evidence is essential to promote improved quality care and practitioner skills, positive patient outcomes, and reduced practice variation and healthcare costs (4). All nursing care at the CC is provided by a clinical research nurse (CRN) who provides specialty nursing care for patients participating in research protocols.

Methodology for Implementation

Implementing EBP required a strategic and thoughtful approach based on the current culture in our organization. In 2006, a study was conducted by Wallen, et al., assessing current knowledge, beliefs and organizational readiness for implementing EBP among clinical research nursing staff at the NIH CC. (1). This study found that participants in the EBP mentorship program had a more substantial increase in perceived organizational culture and readiness for EBP and in EBP belief scores than those who did not participate in the EBP program. Qualitative findings suggested that leadership support for a culture of EBP and the dedication of resources for sustainability of the initiative needed to be a priority for engaging staff at all levels. This study validated and emphasized that in order for EBP to be successful in the organization, a grassroots initiative with concerted strategies and administrative buy in and support at all levels would be essential (1).

Based on the findings of this study, a multifaceted approach was developed for the implementation of this culture changing initiative. In addition to the development of a new clinical competency focused on EBP, a strategic plan was developed that addressed specific areas of focus to promote the adoption of evidence into practice. This combined approach along with strategic activities provided opportunities for engagement of staff at all levels to learn the basics and embrace the benefits of bringing evidence into their practice setting.

Competency Development

Continuing competence is an issue that is relevant to all aspects of nursing practice. A clinical research environment is no different. Research participants may present with complex clinical conditions as patients in this setting. According to the American Nurses Association (ANA) *Scope and Standards of Practice for Nursing Professional Development*, competence is a person's capacity to perform his or her job function (5). A competency statement describes a general or broad area of behavioral performance that is requisite for being competent in a particular role and work setting.

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An initial systematic review of the literature conducted in 2010 using Pub-Med, CINAHL and Scopus found that there were several competencies for EBP based on specialty practice and/or for use in academic settings, but there were no published competencies for clinical practice in a hospital setting at that time. A subsequent analysis of the theoretical models that support translational science (6) validated that many of the models for the knowledge transformation processes describe a systematic or step-wise approach to implementation. The Academic Center for EBP (ACE) Star Model of Knowledge Transformation out of the University of Texas (7) provided the initial framework for the development of a new clinical competency at our institution. Using the framework of competency expectations for various academic levels, starting with the bachelors through the doctoral level, our revised competency focuses on a leveling approach to achieving competence in the EBP process

adapted to a clinical setting. This tiered design was embraced in our institution because it provided a framework that supported the Benner novice to expert concept (8) which is familiar to the nursing profession. Although there were published guidelines and steps for nurses to follow to implement the EBP process, there were no other formal competencies with behavioral indicators available at the time for adoption into our clinical research setting.

With these parameters in mind, the leadership team designed and developed a 5-tier competency which would be the cornerstone for sustaining the implementation of the new EBP initiative. The novice to expert framework for the competency levels was designed to range from orientation (level 1) through champion (level 5) (Figure 1). Once the competency was drafted, the nurse managers and clinical nurse specialists were given opportunities to discuss and revise the behavioral indicators and expected outcomes for performance. The level 1 behavioral expectation for the CRN is to understand the department's philosophy regarding EBP. Nurses are expected to be introduced to the topic of EBP during orientation and in their specialty practice area with a preceptor. The level 2, beginner level, asks the nurse to apply specific skills such as asking a clinical question and naming 1 database that can be used to access the literature. Level 3 is the level most CRNs are expected to attain within 1 year of practice in the clinical setting. Level 3 includes the critical mass of the CRNs and includes about 80% of the staff. The behavioral expectations include being able to develop a clinical question specifying a population, intervention, control and outcome following the population, intervention, comparison and outcomes (PICO) (4) format. Once at level 3, the nurse must be able to conduct a review of the literature using available databases followed by a systematic evaluation of the articles including assessing study validity and reliability. Level 4 is geared towards senior clinical research nurses, and leadership staff. The expectations at this level build on the ability of the nurse to apply the skills of asking a clinically relevant PICO question, accessing the literature, appraising the research articles, and applying the findings to improve patient outcomes. The nurse who achieves this level will be able to lead EBP activities in their practice area, identify and develop program changes, and evaluate effectiveness of specific changes in practice. Level 5 is the champion level and is directed towards clinical nurse specialists (CNS) and steering committee members who have advanced their own skill level through their work with the committee. Nurses at this level are expected to perform advanced literature searches and appraisal of the literature, develop practice guidelines, disseminate evidence based interventions, and evaluate and overcome barriers to adoption of evidence into practice. A sample of a behavioral indicator and evidence of completion for each level of the competency can be found in Table I.

Level 4 of the competency was directed towards the nurse managers, senior clinical managers, and our aspiring leaders within the shared governance structure. Level 5 was for advanced practice nurses including CNS and doctoral prepared nurses. Consistent with the Quality, Safety and Education for Nurses (QSEN) Graduate level EBP competencies (9), the intent was that our EBP champions could role model higher level skills in evidence analysis and application to promote the research agenda for the department. Both the QSEN competencies and our EBP competency were developed to ensure that nursing professionals

are provided the knowledge and tools needed to deliver high quality safe and effective patient centered care (9).

The Strategic Plan

As with any sustained practice change initiative, a strategic plan was required to focus resources towards this prioritized initiative. The strategic plan provided the framework for the activities and areas of focus that supported the implementation of the new competency. The primary elements of the strategic plan included the development of:

- Mentors and champions to facilitate EBP projects
- Competency-based education for staff, mentors and managers
- A monitoring system for oversight and tracking of current and EBP projects and outcomes
- A communication plan for dissemination and translation of findings into practice

Mentors/Champions

Mentorship is known to be a critical factor to the success of EBP (10). Mentorship with direct care nurses on clinical units by the EBP mentor is important in strengthening their beliefs about the value of evidence-based care and their ability to implement it (10). Mentors included EBP steering committee researchers, CNSs and nurse managers at the champion level. The advantage of this approach was that staff had immediate access to mentors at the practice level and direct support from their managers to complete the work. All staff were encouraged to partner in the development of their projects with the CNS of their specialty practice area which provided an ideal opportunity for staff and mentors to learn the EBP process as a team.

Weekly office hours by the EBP steering committee members provided another opportunity for mentoring and personal discussion with staff about their EBP projects. Office hours were protected times on the calendars of the steering committee members to ensure availability to conduct EBP project development, updates and consultation.

Competency-Based Education

Multiple resources were made available to support the knowledge indicators in the competency including on-line tutorials, continuing education library classes on database searching, a website with resources and an interactive workbook aligned with the behavioral indicators to provide knowledge validation, case studies, and worksheets to facilitate development of the PICO question. For example, within the workbook, a case study is provided with an opportunity for the nurse to fill in the blank for the PICO components. A matching game is provided where the nurse can coordinate the word, Ask, Access, Appraise and Apply to the appropriate definition. These examples correspond to Level 2 of the competency, behavioral indicators number 3 and 4. Nurses were able to access the on-line library resources and tutorials from any computer on the nursing unit. Training and face-to-face resources were offered at flexible hours for nurses working on all shifts to take

advantage of the information available. Utilizing a multi-method approach to training and skill development, self-learning modules, 1-on-1 sessions, and/or group sessions provided a large presence of the EBP commitment within the organization.

Monthly interactive educational presentations were also provided to staff by a doctoral prepared statistician from the local University of Maryland, School of Nursing, who guided staff in appraisal techniques of quantitative and qualitative research articles and interpreting reported statistical findings. A library Informationist was available to all staff to assist in refining search terms and to provide assistance with database searches. Classes were offered for continuing education credit on topics related to database searching. The library informationist, served as a personal resource to the EBP committee and to individual staff for consultation and skill development in database searching.

Sustaining the Change

The new skills learned by the clinical research nurses were incorporated into the shared governance (SG) structure to keep the standards of practice and procedures up to date based on current literature. Evidence-based practice was introduced through the Clinical Practice Committee (CPC) through a revision of the guidelines for document review to include the EBP steps (11). Since all SG participants were either at Levels 3, 4 or 5 of the competency, they were well prepared to carry out the necessary steps to ensure that all the standards of practice and procedures were evidence-based. A CPC member was assigned as the primary stakeholder for the document and performed a literature search, completed a table of evidence (TOE) for each publication with full reference, identified the level of evidence and provided comments on how it relates to the document under review. The primary stakeholder had several resources available: a CNS with expertise in a specific practice area, an EBP mentor, the library informationist, and interdisciplinary, extra-departmental experts.

The clinical practice committee started with 1 standard of practice and all members participated in the EBP process and spent time discussing how to access and analyze the literature, then how to apply the literature to the document and nursing practice. Stakeholders then applied this same process to their assigned documents and once the standard of practice or procedure received final approval from the nursing practice council (NPC), it was posted on the nursing intranet along with the TOE. When the document is due for review and revision (every 5 years), the literature is reviewed for new information that applies to nursing practice. Twice a year a refresher session is provided to committee members to enhance new and current members' competence in the EBP process. Other SG committees are also applying the EBP process to guide activities and document development; such as the Nursing Research Participant Education Committee (NRPEC) for educational handouts, and the Recognition and Retention Committee to develop an evidence-based recognition program. To date, all standards of practice and procedures have been reviewed and revised supported by a table of evidence.

Monitoring Outcomes and Dissemination

A data base was developed to track the projects, their outcomes and the team members participating on each project. This allowed for monitoring of status and an opportunity to

identify project outcomes at annual EBP grand rounds. This provided a way to identify annual accomplishments of the EBP projects and tracking for reporting purposes to executive leadership. The primary data tracked on each project included the: 1) unit or clinic where the project was taking place; 2) stakeholders; 3) title of the project/PICO question; 4) status of the project; 5) outcomes; and 6) dissemination plan. Monitoring these components for each project allowed for continuous updates from the project teams and notification of issues if they arose. Highlights and outcomes from selected projects are listed in SDC #1.

Conclusion

Developing competence in nursing skills and knowledge has long been the basis of nursing education. Competencies help to define and develop effectiveness in performance and provide a method of documenting accountability. Studies suggest that successful EBP change in an organization requires senior leadership support and a systematic program for long term practice change (12).

Utilizing a “*top down*”, strategic plan and a “*bottom up*” competency based approach has been effective in sustaining EBP development in our organization. Incorporating leadership engagement and a systematic process for problem-solving and change have been key ingredients to our success. Utilization of a novice to expert competency framework encouraged each nurse to take their own journey integrating EBP into daily practice. The competency provided an opportunity for everyone to begin the learning process and to validate their new knowledge and skills. Using the model of the clinical practice committee, within the SG structure, a framework for adoption was established for the other SG committees to imbed the EBP process into their committee work as well. This approach facilitates sustainability of the culture and expands the CRNs skills through application of evidence to their work.

Since the inception of the EBP competency and steering committee, a framework has evolved which now supports EBP, quality improvement (QI) and research coined INSPIRE (Innovation for nursing-sensitive practice in a research environment)(13). The purpose of this framework is to provide guidance and support for staff and leadership through a solid infrastructure with committed resources and easy access to experts in EBP, QI and research. This program provides an innovative approach that builds upon a strong foundation of EBP and research already in place at our institution.

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Figure 1.
Competency levels and general behavioral expectations

Table 1

Sample of Behavioral Indicators and Evidence of Completion from EBP Competency

Level	Behavior	Evidence of Completion
1. Orientation (CRN 1)	<ul style="list-style-type: none"> Demonstrates understanding of philosophy on scholarly practice by asking questions in day to day practice 	<ul style="list-style-type: none"> Asks questions about the rationale for specific interventions related to patient care
2. Beginner (CRN 2)	<ul style="list-style-type: none"> Completes online EBP tutorials Names one data base for searching evidence based literature Explains the meaning of the PICO mnemonic Describes the four skills of EBP 	<ul style="list-style-type: none"> Presents certificate of completion Describes one of four databases: Cochran, PubMed, CINAHL, Up-to-date Can verbalize Population, Intervention, Control or Current practice, Outcome Can verbalize Ask, Access Appraise, Apply
3. Intermediate (CRN 3)	<ul style="list-style-type: none"> Formulates a clinical question utilizing the PICO format Explains the difference between levels of evidence and quality of evidence Performs a literature search using the library website Seeks designated EBP resources when unsure if search methods were comprehensive 	<ul style="list-style-type: none"> Develops a PICO question Participates in journal club and can identify levels of evidence Works with Clinical Practice Committee on table of evidence Able to identify CNS, Nurse Manager, steering committee members, informationist and website as resources
4. Advanced (CRN 4 and Leadership)	<ul style="list-style-type: none"> Leads unit specific EBP activities critically appraises the evidence for validity, reliability and applicability 	<ul style="list-style-type: none"> Identifies unit specific areas of improvement, Leads journal club, Leads revision of department's standard of practice, supports staff in project implementation
5. Champion (Researchers, CNS, and others)	<ul style="list-style-type: none"> Identifies major and minor flaws in research studies, Communicate and disseminates EBP practice changes 	<ul style="list-style-type: none"> Leads EBP project, Develops practice guidelines, mentors others in EBP process