CNE ARTICLE

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Showcasing Differences Between Quality Improvement, Evidence-Based Practice, and Research

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Instructions: 2.3 contact hours will be awarded for this activity. A contact hour is 60 minutes of instruction. This is a Learner-paced Program. Vindico Medical Education does not require submission of the quiz answers. A contact hour certificate will be awarded 4-6 weeks following receipt of your completed Registration Form, including the Evaluation portion. To obtain contact hours:

1. Read the article: "Showcasing Differences Between Quality Improvement, Evidence-Based Practice, and Research," on pages 57-68, carefully noting the tables and other illustrative materials that are provided to enhance your knowledge and understanding of the content.
2. Read each question and record your answers. After completing all questions, compare your answers to those provided within this issue.
3. Type or print your full name and address and your Social Security number in the spaces provided on the Registration Form. Indicate the total time spent on the activity (reading article and completing quiz). Forms and quizzes cannot be processed if this section is incomplete. All participants are required by the accreditation agency to attest to the time spent completing the activity.
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Objectives: After studying the article, "Showcasing Differences Between Quality Improvement, Evidence-Based Practice, and Research," in this issue, the participant will:

1. Identify one key finding from the literature that illustrates the main difference between quality improvement (QI), evidence-based practice (EBP), and research.
2. Compare and contrast QI, EBP, and research along a minimum of five dimensions.
3. Identify one way in which nurses in academia can use the QI, EBP, and research comparative table presented in this article.
4. Identify one way in which nurses in clinical practice can use the QI, EBP, and research comparative table presented in this article.
5. Identify one way in which nurses in research can use the QI, EBP, and research comparative table presented in this article.

AUTHOR DISCLOSURE STATEMENT

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abstract

The literature confirms that much confusion exists regarding the terms quality improvement (QI), evidence-based practice (EBP), and research. A multifaceted approach was used to provide clarity regarding these three equally important concepts. First, the authors present a synthesis of the literature that discusses differences between QI, EBP, and research. Second, the authors introduce a newly created comparative table that synthesizes current literature and showcases differences between QI, EBP, and research. Finally, the authors highlight uses of the comparative table within multiple settings. *J Contin Educ Nurs* 2011;42(2):57-68.

The national trend toward Magnet-designated hospitals in the United States has "raised the bar" for professional nursing practice. Inherent in the Magnet forces (American Nurses Credentialing Center, 2009) is the requirement that nurses practice based on best evidence and within a culture of inquiry that incorporates ongoing quality improvement principles. Quality improvement infrastructures and environments that also include evidence-based practice and research are so valuable that a recent meta-analysis identified these components as essential for a healthy workplace (Kramer, Schmalenberg, & Maguire, 2010). Accordingly, it becomes increasingly important to distinguish between evidence-based practice (EBP), research, and quality improvement (QI) such that all elements may completely coexist within any professional nursing setting. Leaders in practice, academia, and research must possess the requisite knowledge to understand concept distinctions, articulate unique differences and commonalities, and ensure that needed supportive infrastructures exist.

To facilitate dialogue relative to QI, EBP, and research within their geographic region, doctorate of nursing practice (DNP) students enrolled in a health systems leadership course at the University of Southern Indiana in Evansville, Indiana, created an informative tool. Following a faculty-led class assignment that required synthesis of the literature regarding QI, EBP, and research (Table 1), a new comparative table (Table 2) was developed. It was determined that the tool might be useful to others beyond the student group and thus the idea for this article was born.

This article has three purposes. First, the authors present a synthesis of the literature that explores differences between QI, EBP, and research. Second, the authors introduce a comparative table (Table 2) that synthesizes the current literature and highlights differences between QI, EBP, and research. This table develops these comparisons using multiple dimensions and a comprehensive format. Third, the authors discuss uses of the comparative table within multiple settings: practice, academia, and research.

SYNTHESIS OF THE LITERATURE

The literature confirms that much confusion exists regarding the terms QI, EBP, and research. Table 1 represents a brief synthesis of the literature that explores differences between these key terms. Using MEDLINE, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), and manual cross-reference checks, the authors reviewed English-language articles using three terms alone or together: quality improvement, evidence-based practice, and nursing research. Focusing on journal articles published between 1999 and 2009, 20 publications were found that provided clarity and distinction between the three concepts of interest.

Of the 20 articles reviewed (Table 1), five (Hill & Small, 2006; Kring, 2008; Newhouse, 2007b; Newhouse, Pettit, Poe, & Rocco, 2006; Reinhardt & Ray, 2003) provide comparative tables that partially address one or more of the key terms, but not all three together. One article (Newhouse, 2007b) provides definitions and examples of QI, EBP, and research, but presents this information using separate tables. Of the 20 articles reviewed, none presents a side-by-side comparison of QI, EBP, and research together and none extensively explores multiple contrasting dimensions. This gap in the literature justifies the need to develop the new comparative table (Table 2).

COMPARATIVE TABLE

Overview

The literature in Table 1 was used for synthesis and to guide development of Table 2, a concise document that compares and contrasts QI, EBP, and research. Table 2 addresses many of the most commonly reported areas of confusion regarding QI, EBP, and research to provide concept clarity. Other useful comparison grids (Hill & Small, 2006; Kring, 2008; Reinhardt & Ray, 2003) may be available in the literature; however, these do not comprehensively address the broad dimensions noted in Table 2. Specifically, Table 2 uses three main categories (background and descriptors, uses and applications, and scholarship integration) to capture in 26 dimensions the basic essence of what nursing professionals need to know relative to QI, EBP, and research. Table 2, with its concise format, represents a useful and portable document helpful to many nurses working in a variety of settings.

Main Categories

Background and Descriptors. The first main category in Table 2, background and descriptors, explores differ-

TABLE 1
SYNTHESIS OF LITERATURE INFORMING DISTINCTIONS BETWEEN QUALITY IMPROVEMENT (QI), EVIDENCE-BASED PRACTICE (EBP), AND RESEARCH

Author and Year in Chronological Order	Purpose	Comparative Table
Rosswurm & Larrabee (1999)	To describe a model that guides nurses and other health care professionals through a systematic process toward EBP based on theory and research	No
Reinhardt & Ray (2003)	To present a literature review that provides differentiation between QI and research	Yes; compares QI and research on four criteria (intervention, risk, audience, data sources); does not address EBP
Lynn (2004)	To provide reflective discussion that raises questions regarding which projects need research review and how to ensure ethical implementation of QI efforts	No
Hill & Small (2006)	To present a literature review that generates a distinction between what constitutes audit, QI, and research	Yes; algorithm begins with an activity and assists with classifying the activity as routine care, audit, QI, or research; does not address EBP
Newhouse (2006)	To provide clarity surrounding the leadership strategies needed to create supportive infrastructures for EBP	No
Newhouse, Pettit, Poe, & Rocco (2006)	To provide distinction between QI and research and caution against incorrectly referring to QI as research	Yes; various tables compare QI and research using various parameters (definition, risk, intent, regulation); EBP not integrated into the comparisons
Hedges (2006)	To distinguish between research, QI, and EBP as different forms of inquiry	No
Newhouse (2007a)	To describe potential collaborations in EBP between clinical settings and colleges or universities	No
Newhouse (2007b)	To assess the unique and overlapping relationships among QI, EBP, and research	Yes; separate tables provide definitions and examples relative to QI, EBP, and research
Newhouse, Dearholt, Poe, Pugh, & White (2007b)	To describe the strategic approach used to support maturation of the Johns Hopkins Nursing EBP model	No
Winsett & Cashion (2007)	To define the nursing research process along with providing overviews of process improvement and EBP	No
Dearholt, White, Newhouse, Pugh, & Poe (2008)	To share educational strategies used to develop EBP mentors	No
Kring (2008)	To differentiate between QI and research	Yes; comparisons made between QI and research; author conceptualizes QI and research as two sources commonly used for EBP, yet does not integrate into comparative table
Meeker, Jones, & Flanagan (2008)	To discuss the restructuring of an undergraduate nursing research course from an evidence-based perspective	No
Newhouse (2008a)	To describe an interprofessional initiative to develop a model of evidence-based behavioral practice	No
Newhouse (2008b)	To describe an evidence-based approach to improve nurse retention through use of a hospital association collaborative	No
Krugman (2008)	To provide an introduction to definitions and sources regarding QI, EBP, and research	No
Gale & Schaffer (2009)	To report on the findings of a study that explored the barriers affecting the adoption or rejection of EBP	No
Hedges (2009)	To provide a review of definitions and interconnections relative to QI, EBP, and research	No
Satterfield et al. (2009)	To describe historical context and current developments relative to EBP and introduce a model of evidence-based medicine that is transdisciplinary	No

ences between QI, EBP, and research along five dimensions. These dimensions include historical evolution, definition, commonalities and distinctions, rigor, and key features.

QI, EBP, and research have different historical evolutions. QI comes from the business world, EBP derives from medicine, and early research in nursing is credited to Florence Nightingale. Despite their different historical origins, QI, EBP, and research together produce a solid foundation for nursing practice. To illustrate the important interrelationship between QI, EBP, and research, Hedges (2006) uses a three-legged stool as a model. In imagining the three-legged stool, nursing practice is the stool's seat and QI, EBP, and research each represent a leg of the stool. Without all three legs (QI, EBP, and research) intact, the stool's seat (nursing practice) cannot remain stable and strong.

Although the definitions of QI, EBP, and research suggest they are all systematic approaches to problem solving, each possesses different intents. QI analyzes existing data to improve systems related to business processes and outcomes (i.e., cost, productivity, quality). EBP analyzes existing data for purposes of ranking evidence that will be used to answer burning clinical, education, or administrative questions that guide practice. Research, on the other hand, validates and refines existing data or generates new knowledge to influence nursing practice, systems, and policies.

Whereas QI uses existing knowledge to address internal organizational systems and improve performance, research influences outcomes through a more rigorous scientific process that generates new knowledge. EBP integrates best evidence (often derived from research) into practice to produce desired outcomes. All three approaches have an important, yet different, relationship with knowledge: research generates it, EBP translates it, and QI incorporates it. Answering the unanswered questions (inquiry) drives research, whereas existing evidence usually directs both EBP and QI efforts.

Uses and Applications. The second main category in Table 2, uses and applications, explores differences between QI, EBP, and research along 14 dimensions. These dimensions include purpose, beneficiaries, use of protocols, data collection, Institutional Review Board (IRB) approval, and funding. Also included are dimensions related to oversight, limitations, overlaps, challenges, risks and burdens, tools and instruments, methodology, and application examples.

Although the complete comparative table (Table 2) captures 26 dimensions to help decipher differences between QI, EBP, and research, the literature (Kring, 2008; Newhouse et al., 2006) considers the purpose of a study or project to be *the* definitive distinguishing dimension. The purpose of QI is to improve internal processes and practices within a specific patient group or organization (Kring, 2008; Reinhardt & Ray, 2003). The purpose of EBP is to evaluate evidence along a continuum (DiCenso, Guyatt, & Ciliska, 2005) to identify the strongest or best evidence to guide nursing practice within an organizational setting and with a specific patient population. The purpose of research is to generate new knowledge within the broader scientific community (Kring, 2008; Reinhardt & Ray, 2003) to produce knowledge that is generalizable beyond the study sample. Determining the purpose of a study guides whether to undertake a QI, EBP, or research project.

QI, EBP, and research all benefit patients, families, health care professionals, and institutions. Given its greater rigor and potential for generalizability, research benefits the broader scientific community. Although QI, EBP, and research may all use protocols, the conduct of research follows strict federal regulations (U.S. Department of Health and Human Services, 2002) and necessitates a priori IRB approval for such protocols. A common misconception related to QI data is that these data produce evidence of nursing's engagement in active research and thus meet the Magnet designation's research requirement (Newhouse et al., 2006). Although this belief may be widely held, it is based on a flawed assumption and presents a "slippery slope" for nursing (Newhouse et al., 2006). Because QI does not generally meet federally mandated design requirements and human subject protection, QI cannot and should not be referred to as research. Accordingly, institutions pursuing Magnet designation must understand and respect the distinctions between QI, EBP, and research and not confuse one approach for the other. Similarly, leaders within these organizations should facilitate distinct, yet collaborative, venues to cultivate QI, EBP, and research initiatives.

QI, EBP, and research all use distinct protocols. QI protocols are less formal and rigorous and may change throughout the course of a QI project. EBP protocols are stricter and more prescriptive than QI protocols, yet they are not as strict as research protocols. QI protocols do not generally control for extraneous variables, whereas EBP projects may or may not control for these same variables. Research protocols generally have tight controls for extraneous variables to provide confidence that outcomes occur as a result of defined interventions and not chance. An IRB must approve a research project's original protocol. If the researcher wants to change the original study protocol, a formal amended protocol necessitating new IRB approval must be submitted.

Data collection in QI is usually rapid cycle and uses

TABLE 2
COMPARING AND CONTRASTING QUALITY IMPROVEMENT (QI), EVIDENCE-BASED PRACTICE (EBP), AND RESEARCH

	QI	EBP	Research
Background and Descriptors			
Historical evolution	Credited to the work of William Deming, who improved production in the automotive industry through the monitoring and testing of product quality	Birth of EBP credited to Archie Cochrane, a Scottish epidemiologist who believed that scientific evidence should guide clinical decision making	Earliest uses of the scientific method in nursing are attributed to Florence Nightingale
Definition	Data-driven systematic approach by which individuals work together to improve specific internal systems, processes, costs, productivity, and quality outcomes within an organization	Problem-solving approach that integrates a systematic search for and critical appraisal of the most relevant evidence (may or may not be research based) to answer a burning clinical, education, or administrative question This approach then applies current best available evidence using clinical expertise and patients' unique circumstances and preferences	A scientific process that validates and refines existing knowledge and generates new knowledge that directly and indirectly influences nursing practice or health systems The scientific process is systematic and methodical
Commonalities and distinctions	Systematic problem-solving approach that is data driven	Systematic problem-solving approach that is evidence driven	Systematic problem-solving approach that is inquiry driven
Rigor	Least rigorous; provides for lowest level of evidence	Somewhat rigorous	Most rigorous; provides for highest level of evidence
Key features	Incorporates existing knowledge into process improvement activities	Translates new knowledge into clinical, administrative, and educational practice	Generates new knowledge for a discipline Assists in scientifically testing theories or interventions
Uses and Applications			
Purpose	Improves work-flow processes to enhance quality and efficiencies May address clinical, administrative, or education problem	Provides foundation for best quality patient care based on integration of the strongest evidence available May address clinical, administrative, or education problem	Develops new knowledge that is generalizable Reinforces existing knowledge May address clinical, administrative, or education problem that informs decision making
Beneficiaries	Current and future patients, families, and staff are beneficiaries Benefit usually is immediate	Future patients, families, staff, and possibly professional community are beneficiaries Benefit may be delayed	Future patients, families, staff, and possibly broader scientific community are beneficiaries Benefit may be delayed
Use of protocols	Yes Usually with rapid testing, the protocol may change to provide immediate improvement Does not involve control of extraneous variables	Yes Usually strict and may or may not vary during the pilot phase May or may not control for extraneous variables	Yes Usually strict and unable to vary during an IRB-approved study Involves tight protocol controls for extraneous variables
Data collection	Rapid cycle Uses minimal to moderate time, resources, and money	Likely intermediate and not rapid cycle Uses varying resources depending on project's scope	Not rapid cycle; uses tightly controlled and time-consuming protocols Requires planned resources that may vary depending on project's scope
IRB approval requirements	IRB approval not usually required unless outcomes are intended for publication or projects go beyond organizational improvement and potentially expose patients to harm	IRB approval not usually required unless outcomes are intended for publication or projects potentially expose patients to harm	IRB approval is required and must be obtained before implementation of research protocol
Funding	Usually internal	Usually internal	May be internal or external depending on scope of the study
Oversight	Institutional	Institutional	Involves compliance with local, state, and federal laws

Limitations	Usually not theoretically based Does not establish cause-and-effect relationships Methodology has numerous weaknesses primarily threats to internal validity Although approach is rapid cycle and affords for quicker integration into daily work, this also limits QI's reliability and sustainability	Originates from clinical or practice question; requires practitioners to ask questions and search for best evidence Outcome of EBP is only as good as the "best" evidence that is used for integration	Usually theoretically based Depending on type of statistical analysis, can establish cause-and-effect relationships All phenomena not researchable, thus knowledge from research is limited to that which has been researched Generally takes time to complete research process and thus this approach is not rapid cycle
Overlaps	Informs EBP Informs opportunity for research Research also informs QI efforts	Informs QI Informs opportunity for research Gaps in evidence support need for research	Informs EBP Informs QI Research may derive from QI projects that are not working or EBP projects that lack adequate evidence
Challenges	Requires investment in infrastructure with QI expertise and support for training and mentoring in various QI methodologies QI expertise may come from advanced practice nurses or QI-certified individuals	Requires investment in infrastructure with EBP expertise and support for training and mentoring EBP expertise may come from advanced practice nurses or doctorally prepared nurses Varying classification schemes for levels of evidence make for lack of a unified approach to rating evidence	Requires investment in infrastructure and support for training and mentoring in the research process Research expertise may come from advanced practice nurses and nurse scientists with access to statisticians, grant writers, editorial assistance, and transcription services
Risks and burdens	Usually none or minimal If risk or burden is moderate or high, may need to evaluate as research	Usually none or minimal If risk or burden is moderate or high, may need to evaluate as research	None, minimal, moderate, or high risk Informed consent may be needed or waived depending on risk
Tools and instruments	Vary based on QI methodology used	Vary based on EBP model used	Vary based on type of research methodology used: qualitative or quantitative or mixed methods
Methodology	Involves choice from multiple methodologies: 1. Six Sigma 2. Lean Six Sigma 3. FOCUS-Plan Do Study Act (PDSA) 4. FOCUS-Plan Do Check Act (PDCA) The initial question or problem guides methodology selection. A review of the appropriate literature is common, as is benchmarking with similar institutions prior to or concurrent with data collection and analysis. Data interpretation and implementation into practice with ongoing evaluation follows.	Generally uses one of the following specific models: 1. Iowa Model of EBP—Titler and colleagues at the University of Iowa (Titler et al., 2001) 2. Advancing Research and Clinical Practice through Close Collaboration Model (ARCC)—Melnyk and Fineout-Overholt at Arizona State University (Melnyk & Fineout-Overholt, 2005) 3. Academic Center for EBP Star Model of Knowledge Transformation (ACE)—Stevens and colleagues at the University of Texas at San Antonio (Stevens, 2004) 4. Stetler Model (Stetler, 2001) 5. Rosswurm and Larrabee Model (Rosswurm & Larrabee, 1999) 6. Johns Hopkins Hospital Nursing EBP model (Newhouse, Dearholt, Poe, Pugh, & White, 2007a) 7. Promoting Action on Research in Health Services Framework (PARIHS) (Rycroft-Malone, 2004) The EBP process, regardless of the model used, usually begins with a question that is followed by a thorough literature review and critical appraisal of the literature. The EBP process ends with a determination of whether a practice change is needed based on the reviewed evidence.	Uses the scientific method, which includes: 1. Understanding background and purpose of phenomenon of interest 2. Statement of the problem 3. Selection of a conceptual or theoretical framework for the study 4. Formulation of research questions or hypotheses 5. Research design (qualitative, quantitative, or mixed methods) and selection of methods, including choice of valid and reliable instruments and planning for internal controls 6. Sampling techniques 7. Data collection methods 8. Data analysis inclusive of statistical or thematic analysis 9. Data interpretation 10. Synthesis of findings with identification of related implications and need for future research 11. Knowledge dissemination

Application examples	PDSA improvement project to improve door to balloon times in AMI	Implement protocol for turning patients every 2 hours after reviewing supporting evidence for preventing and minimizing skin breakdown and determining protocol based on best evidence	Qualitative research related to reasons why new graduate nurses leave the nursing profession within 5 years
Scholarship Integration			
Theoretical underpinnings	No	Varies	Yes
Generalizability	No Results not generalizable to other organizations beyond that in which the QI project was undertaken; others, however, may benefit from the lessons learned	Yes EBP results may be transferable to other settings with the caveat that organizational context may have a bearing on actual EBP implementation success	Yes Depending on research design, findings may be generalizable beyond individuals and organizations
Expectations for knowledge dissemination	Knowledge dissemination following QI project generally expected within facility in which QI project undertaken and not necessarily beyond that organization	Knowledge dissemination following EBP project is increasingly becoming an expectation within facility in which EBP project undertaken and beyond that setting	Knowledge dissemination following research is a commonly held expectation; broad dissemination within the larger profession is the norm
Potential for knowledge dissemination	Completed QI project may be publishable in professional journals; generally requires facility permission to release its data to the journal and its target audience Completed QI projects may be accepted or invited for presentation at local, regional, or national performance improvement or patient safety/quality venues Interest in QI publications usually limited to lessons learned from locally focused project Opportunities for knowledge dissemination are more limited	Completed EBP project data may be publishable in professional journals; generally requires facility permission to release its data to the journal and its target audience Completed EBP projects may be accepted or invited for presentation at local, regional, national, or international EBP venues Interest in EBP projects usually focuses on how evidence is applied to affect outcomes Opportunities for knowledge dissemination related to EBP are growing	Completed research projects are publishable in professional journals; requires IRB approval and manuscript reference to human subject protection and IRB approval Completed research projects may be accepted or invited for presentation at local, regional, national, or international research venues Interest in research projects extends beyond lessons learned to generalizable knowledge that can be applied in similar settings Opportunities for knowledge dissemination are broad and vast
Examples of venues for publications	*Journal of Healthcare Quality* (the official journal of the National Association for Healthcare Quality [NAHQ])	*Worldviews on Evidence-Based Practice* (one of several official journals of Sigma Theta Tau International)	*Nursing Research* (the official journal of the Eastern Nursing Research Society)
Examples of venues for presentations	Annual NAHQ meeting held in the fall Annual Worldwide Conventions and Business Forums (WCBF) *Lean Six Sigma and Performance Improvement in Healthcare Summit* (spring)	Annual EBP conferences: 1. Arizona State University (summer) 2. University of Iowa (spring) 3. University of Texas at San Antonio (summer) 4. Sigma Theta Tau International biennial convention (fall every other year) 5. Sigma Theta Tau International research conference, which includes an EBP venue (summer)	Nursing research conferences of the various nursing research societies (Eastern Nursing Research Society, Midwestern Nursing Research Society, Southern Nursing Research Society, Western Institute of Nursing) Sigma Theta Tau International biennial convention Sigma Theta Tau International research conference
Foundational scholarly resources	Pelletier & Beaudin (2009)	Melnyk & Fineout-Overholt (2005)	Polit & Beck (2008)

Note. IRB = Institutional Review Board; AMI = acute myocardial infarction.

minimal to moderate time and resources. EBP data collection may not be rapid cycle and involves varying resources. Research is not rapid cycle and involves the use of resources that may vary according to project scope. Because research project protocols are generally more complicated and precise, research data collection may be more time intensive and rigorous.

All research activity requires IRB approval. QI and EBP projects do not generally require IRB approval. QI and EBP projects that are intended for publication and could potentially expose patients to risks and burdens should be considered research and have IRB approval. Individuals involved in QI and EBP must understand if and when IRB approval may be needed and proceed accordingly (Lynn, 2004).

Funding for QI and EBP projects is generally internal within the sponsoring institution. Funding for research, however, may be either internal or external to the

institution where the research is conducted. Oversight for QI and EBP may be institutional, whereas research requires external oversight that entails compliance with local, state, and federal laws.

QI and EBP have one major limitation: they do not establish cause-and-effect relationships. Also, QI and EBP may not be theoretically based and thus may not be consistent with tested theoretical frameworks. Although research can establish causal relationships and be theoretically based, research takes time and is not as quickly integrated into practice as are QI and EBP. Independent of their individual limitations, QI, EBP, and research collectively provide beneficial overlaps and synergies. QI and research inform EBP, whereas EBP informs QI.

A unique challenge relative to QI, EBP, and research is that for these approaches to be successfully implemented, they require infrastructure investment. All approaches benefit from human, financial, and technological resource allocation. Specifically needed are mentors with experience and advanced educational preparation to build QI, EBP, and research capacity. For QI, EBP, and research to be conducted effectively, employee release time is essential. Given their different purposes and methodologies, QI, EBP, and research projects take time to complete and thus require realistic time lines and supportive structures.

QI, EBP, and research use different tools, instruments, and methodologies. Whereas research follows the scientific method, QI and EBP follow one of many discipline-accepted methodologies (Table 2). The purpose of the study and the questions being asked guide methodology selection. An extensive discussion of methodology selection for QI, EBP, and research is beyond the scope of this article.

Scholarship Integration. The third and last main category in Table 2, scholarship integration, explores differences between QI, EBP, and research along seven dimensions. These dimensions include theoretical underpinnings, generalizability, expectations and potential for knowledge dissemination, examples of venues for publications and presentations, and foundational scholarly resources.

Much research is theory based, whereas QI is not generally based on theory and EBP may or may not have theoretical underpinnings. Depending on the research design used (experimental designs using random samples are best), research findings may be generalizable beyond the individuals and organizations studied. In the case of QI and EBP, study results are not usually generalizable beyond the organization in which the projects were undertaken.

There is learning to be gained from QI, EBP, and research. For this reason, knowledge dissemination related to QI, EBP, and research may be valuable. Although there are scientific purists who argue that QI findings "ordinarily are not publishable in peer reviewed literature" (Lynn, 2004, p. 69), QI peer-reviewed scholarly journals do exist (e.g., *Journal of Healthcare Quality*). EBP peer-reviewed journals (e.g., *Worldviews on Evidence-Based Practice*) and research journals (e.g., *Nursing Research*) also exist. Table 2 identifies available scholarly venues for oral and poster presentations to share QI, EBP, and research findings.

It is commonly expected that knowledge dissemination will follow research. This same expectation has not always applied to EBP and QI. The recent National Institutes of Health (NIH) road map emphasizes translation science (NIH, 2008). The nursing profession's increasing focus on EBP, the emphasis on patient safety and ongoing process improvement, and the national growth of DNP programs are building additional momentum for knowledge dissemination and translation science. Knowledge dissemination through publications and presentations is increasingly becoming a professional nursing expectation independent of practice setting. No longer does knowledge dissemination fall within the exclusive domain of researchers and academics.

Although generalizability of QI, EBP, and research findings may vary, they each have value and limitations. Accordingly, selecting the proper venue to disseminate knowledge is crucial to building scholarly nursing practice and advancing the profession. Knowledge dissemination activities may also provide a competitive advantage for individuals and institutions. Using Table 2 as a resource may help to build knowledge dissemination across multiple settings.

USING THE COMPARATIVE TABLE WITHIN MULTIPLE SETTINGS

Practice

The comparative table (Table 2) may be used in practice in three important ways. First, it provides distinctions between QI, EBP, and research to avoid confusion regarding whether to seek IRB approval. At a minimum, understanding these distinctions raises the notion that IRB approval should be contemplated. Table 2 allows for parallel visualization of key concepts to provide clarity and facilitate comprehension.

Second, the comparative table may facilitate conversation relative to QI, EBP, and research between various disciplines. Dialogue across disciplines may enhance much needed interprofessional collaboration. The comparison table may assist practitioners to understand the three concepts and to decipher which one would best fit actual clinical problem solving. The table defines and

clarifies QI, EBP, and research in such a way that practitioners may more readily adopt an approach to then move a project forward (Green, 2008).

Third, understanding that QI, EBP, and research should be seen as separate concepts supports development of each. Discussion and education relative to strategic planning should dictate incorporating all three concepts within organizational life. When mentioning professional practice models, care delivery models, nursing practice report cards, career development ladders, staffing parameters, and performance onboarding efforts, questions should arise as to how these specific topics relate to QI, EBP, and research. Is practice based on best evidence? Is QI well incorporated into daily practice? How can research inform practice and QI? How can practice inform research and QI?

A required employee competency should be the ability to articulate differences between QI, EBP, and research. Incorporating this competency into daily performance and annual evaluations may help to further QI, EBP, and research within a given organization and the broader profession. Pursuing these performance expectations is consistent with rewarding what is valued and what the literature recommends as a professional requirement for practicing nurses and nurse leaders (American Organization of Nurse Executives, 2005; Greenley, 2003; Newhouse, 2007b). Having these performance expectations encourages all nurses to strengthen their commitment to QI, EBP, and research.

Academia

The American Association of Colleges of Nursing (AACN) and the National League for Nursing Accreditation Commission (NLNAC) clearly state it is imperative that entry-level nursing professionals employ QI, EBP, and research principles (AACN, 2008; NLNAC, 2008). Both NLNAC (2008) and AACN (2008) require that undergraduate and graduate nursing programs provide a curricular framework that clearly delineates how QI, EBP, and research support and enhance nursing practice. Learning to systematically integrate QI, EBP, and research into daily patient care helps ensure delivery of safe, quality care and desired patient outcomes. Given the current dynamic health care environment, understanding these principles will better prepare nurses to transition from novice to expert practitioners.

Regardless of whether they are novice or expert practitioners, many nurses often have difficulty understanding the distinct differences between QI, EBP, and research. In the academic setting, Table 2 can help faculty and students distinguish between QI, EBP, and research. This table has unlimited potential for use in the academic environment. Four examples follow.

First, a small group discussion with beginning-level students may facilitate concept application. The students may be assigned a review of preselected journal articles that illustrate QI, EBP, or research principles. Students may be asked to use information from Table 2 to identify with supporting rationale whether an article falls within the QI, EBP, or research category. Faculty can then facilitate a large group discussion that highlights each assigned article's QI, EBP, or research dimensions. Focusing on a specific clinical topic, faculty can further challenge students to identify and evaluate additional QI, EBP, and research articles to recognize how each methodology uniquely enhances clinical practice.

Second, faculty can help link QI, EBP, and research to clinical practice and reinforce this content through interactive e-learning modules. Faculty can develop or employ clinical scenarios to illustrate QI, EBP, or research implications and use Table 2 to guide these discussions.

Third, academic faculty may collaborate with the practice sector to sponsor an integrated QI, EBP, and research community conference. This activity can incorporate multiple disciplines to illustrate both the differences and the similarities between QI, EBP, and research projects shared among disciplines. The conference content could include interprofessional activities and dialogue explaining why each topic falls within the QI, EBP, or research domain. This collaborative activity is consistent with the notion that QI, EBP, and research should be core to all health care professional practice and academic programs.

Fourth, faculty members have ongoing learning needs, too. Because many faculty members may not fully understand or embrace the distinctions between QI, EBP, and research and therefore may not be able to effectively teach these concepts, they may derive benefit from studying Table 2. Academic deans may contract with outside experts to facilitate workshops relative to building QI, EBP, and research capacity. Schools of nursing can also develop mutually beneficial joint partnerships between faculty and clinical nurse scientists, quality improvement coordinators, and patient care staff. The desirable outcomes from these partnerships may include service learning opportunities, relationship-building initiatives, project development, curriculum enhancements, and knowledge dissemination.

The NLN (2002) discusses the core of knowledge dissemination as the nurse educator's "ability to facilitate learning, advance the total development and professional socialization of the learner, design appropriate learning experiences, and evaluate learning outcomes" (NLN, 2002, p. 5). The challenge in nursing education is to em-

key points

Quality Improvement, Evidence-Based Practice, and Research

Shirey, M. R., Hauck, S. L., Embree, J. L., Kinner, T. J., Schaar, G. L., Phillips, L. A., Ashby, S. R., Swenty, C. F., McCool, I. A. (2011). **Showcasing Differences Between Quality Improvement, Evidence-Based Practice, and Research.** *The Journal of Continuing Education in Nursing, 42*(2), 57-68.

1. Quality improvement (QI), evidence-based practice (EBP), and research are equally important concepts.
2. Much confusion exists regarding the terms QI, EBP, and research. Nursing needs concept clarity relative to these terms.
3. QI, EBP, and research vary across multiple dimensions. The authors use a comprehensive table to compare and contrast QI, EBP, and research across multiple dimensions.
4. If well understood, QI, EBP, and research have applicability to multiple settings: practice, academia, and research.

bed the integration of QI, EBP, and research throughout the nursing curriculum and ensure ongoing faculty expertise relative to these concepts. Ideally, nursing graduates should leave academic settings well prepared to enthusiastically use QI, EBP, and research within their professional practice.

Research

Engaging registered nurses in clinical and scholarly inquiry is an essential component of professional nursing practice. Depending on their educational preparation and training, nurses participate in various research activities (American Nurses Association, 2004) to facilitate safe and effective care and improve patient health outcomes. Nurses are taught to question the processes and systems used to deliver care. As such, they continually participate in reviewing and revising nursing practices to incorporate the most current evidence and generate research questions. Establishing priorities for improving patient care and nursing practice thus requires nurses to clearly distinguish between QI, EBP, and research. The approaches may overlap, yet no one is more important than the others (Winsett & Cashion, 2007).

Determining the appropriate approach to use when improving practice is challenging (Hedges, 2009; Kleinpell, 2009; Kring, 2008; Newhouse, 2007b; Tagney & Haines, 2009). All problem-solving approaches use systematic processes to address relevant clinical, administrative, or educational conundrums. QI, EBP, and research all start with a question that drives the selected approach. Nurses must choose the approach that most clearly delineates their inquiry's purpose. Table 2 provides accepted definitions for each approach and thus helps with selecting which problem-solving category to pursue: QI, EBP, or research.

In this section, the authors provide an example used to select the best approach to answer a clinical question. The example highlights use of three criteria from Table 2 to determine which approach to employ. The specific decision criteria include purpose or intent, risk, and oversight (Newhouse et al., 2006).

First, the nurses at an acute care community hospital formed a project team. They reviewed the literature and established that there was inconclusive evidence to support their current use of local analgesia with peripheral intravenous insertion. Given the lack of reliable evidence, the nurses, assisted by the hospital's doctorally prepared nurse scientist, crafted their clinical research question (Kahre, Fortune, Hurley, & Winsett, 2008, 2009) that would generate the needed evidence. The project team decided to test differences in pain perception comparing two peripheral intravenous insertion protocols, one using bacteriostatic normal saline and the other using 1% buffered lidocaine. Because the purpose or intent of their project was to generate knowledge (research) and not to improve an existing process (QI), they chose a research methodology.

Second, the nurses examined the risks and burdens related to their project. Because the protocol involved human subjects and some risk and burdens (pain to the participants and possible reaction to the lidocaine), this confirmed the need to pursue research. Project team members prepared their protocol and sought IRB approval for their study.

Finally, the nurses determined the necessary project oversight. The nurses implemented their IRB-approved research protocol incorporating compliance with applicable laws. The nurses were able to establish that although using the 1% buffered lidocaine procedure seemed to be the hospital's practice standard, there was no statistically significant difference in pain scores to substantiate broad use of this practice with patients. The nurses then translated their findings into their practice (EBP) and modified their internal practices (organizational oversight) to be consistent with their research findings and the institution's Iowa model of EBP (Titler et al., 2001).

CONCLUSION

This article confirms the importance of QI, EBP, and research and provides clarity relative to these three con-

cepts. After reviewing and critically evaluating the literature relative to QI, EBP, and research, the authors created a comparative table that synthesizes key concept distinctions. Using the newly created comparative table (Table 2), the authors were able to illustrate the various dimensions of QI, EBP, and research to enhance concept applicability to multiple settings: practice, academia, and research.

Understanding key concept differences helps to better integrate and use QI, EBP, and research. Achieving concept clarity builds confidence to enhance further QI, EBP, and research use and interprofessional collaboration. In the case of this article, this comparative exercise and discussion served to both facilitate learning and concurrently produce nursing scholarship. Additional applications for this table are limited only by the reader's imagination.

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