

Facilitating a Culture of Evidence-Based Practice and Quality Improvement Excellence

Streamlining Processes to Improve Care

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This article defines evidence-based practice (EBP) and quality improvement (QI) and examines the positive impact on patient care when they are in place, as well as the barriers to their implementation. An effective tool, Ovid Synthesis, was created to enable clinicians and administrators to streamline the processes for EBP and QI, provide oversight on the initiatives underway, and enable clinical educators to help nursing staff develop the necessary competencies and successfully execute their EBP and/or QI projects.

Since the time of Nightingale, nurses have been committed to providing safe, high-quality health care to people. In 2003, the Institute of Medicine (IOM) identified evidence-based practice (EBP) and quality improvement (QI) as two of the required competencies for all healthcare professionals (IOM, 2003). But how well

are we doing with this mandate? Many would say not as well as we need to, because until recently, there have not been consistent and predictable processes for guiding us on how to do this.

The purpose of this article is to define EBP and QI, examine the positive impact on patient care when they are in place, and explore barriers to their successful implementation. Of most benefit, we will describe an effective tool, Ovid Synthesis, created to enable busy clinicians and administrators to streamline the processes for EBP and QI and provide oversight on the EBP and QI initiatives that are underway. The use of Ovid Synthesis also enables clinical educators to help nursing staff develop the necessary competencies and successfully execute their EBP and/or QI projects.

DEFINITIONS OF EBP AND QI

EBP is defined as practice based on the best available evidence that also incorporates patient values and preferences, and clinician judgment and expertise (Cronenwett et al., 2007, 2009). EBP is a broad process, spanning the creation of a clinical question, synthesis of the literature, and translation into practice with evaluation of outcomes (Buckwalter, et al., 2017).

QI involves the use of data to monitor the outcomes of care processes and improvement methods to design and test changes to continuously improve the quality and safety of healthcare systems (Cronenwett et al., 2007). In order to improve care, nurses must first know the baseline metric of quality of care provided and the evidence for interventions to improve care. The EBP and QI knowledge, skills, and attitudes all nurses need are specified in the Quality and Safety Education in Nursing competencies (Cronenwett et al., 2007, 2009).

IMPACT OF EBP AND QI

Nurses practicing EBP and participating in QI projects have achieved notable improvements in patient outcomes. For example, prevention strategies for central line-associated blood stream infections (CLABSI) and catheter-associated

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urinary tract infections (CAUTI) for hospitalized people, both viewed as nurse-driven strategies, have achieved significant reductions in these two conditions: a 50% decrease in CLABSI from the 2015 baseline to 2020 (Health and Human Services, 2021) and a 25% decrease in episodes of CAUTI over the same time period (Health and Human Services, 2021). A recent synthesis of the literature examining improved outcomes from nurses' involvement in QI activities included not only improved quality of care and efficiency of operational processes but also measurable cost savings and improved nursing job satisfaction (Robinson & Gelling, 2019).

THE CURRENT STATUS OF EBP AND QI

To enhance the uptake of EBP and QI in healthcare organizations, the IOM also set a target that, by the year 2020, 90% of all clinical decisions would be supported by accurate, timely, and up-to-date clinical information that reflects the best available evidence (IOM, 2009). To date there has been no reported formal assessment of how close we are to meeting the 90% goal; however, there are indications that we are not close. In a study of frontline nurses, Melnyk et al. (2012) found that fewer than 35% agreed or strongly agreed that their colleagues consistently implemented EBP. These findings concur with that of Yoder et al. (2014), who reported that 75% of the respondents in their study said their practice is primarily based on their personal experience of nursing and patients over time. It has been estimated that less than 25% of clinical decisions are based on evidence and translation of evidence into practice continues to take years (Melnyk & Fineout-Overholt, 2019).

To add pressure, various regulatory bodies have issued mandates to incorporate research evidence into healthcare practice, to institute processes to continuously monitor improvements in care delivery, and to measure the outcomes of care. The Centers for Medicare & Medicaid Services (CMS) are increasingly focusing on the performance of hospitals, nursing homes, home healthcare agencies, and dialysis facilities to meet standards for providing evidence-based care and are adjusting reimbursement accordingly. In 2021, 82% of hospitals evaluated for 30-day readmission rates received CMS penalties, as did hospitals reporting an increase in hospital-acquired infections, together costing hospitals more than \$850 million (Rau, 2021). Medicare estimates FY22 penalties will cost a similar amount (Rau, 2021). For 2022 and 2023, hospitals not receiving additional payment for any one of 14 hospital-acquired conditions was deemed avoidable if guidelines based on evidence had been followed (CMS, 2022).

In addition to the CMS requirements, healthcare organizations are increasingly having to demonstrate that nurses are knowledgeable about and are delivering EBP. The American Nurses Credentialing Center (ANCC) requires research findings be applied in practice at Magnet-designated hospitals

(ANCC, 2022). The Magnet Program has two areas that require exemplars related to EBP: (a) exemplary professional practice calls for two examples of an improved outcome associated with an evidence-based change and (b) new knowledge, innovations, and improvements requires two examples of how clinical nurses implemented an EBP project (ANCC, 2022). In addition, nurse residency accreditation standards require that new-to-practice nurses in residency programs design and complete an EBP project (Vizient, 2022). The American Association of Colleges of Nursing in *The Essentials: Core Competencies for Professional Nursing Education* (American Association of Colleges of Nursing, 2021) outlines the requirement that nursing students at all levels be taught EBP and QI.

CHALLENGES IN INCORPORATING QI AND EBP

If nurses are expected to use an evidence base in practice and participate in QI activities and we can point to improvements in patient outcomes from these activities, why are these practices not more widespread? Is it because healthcare providers are unaware the evidence exists? Are they unable to critically evaluate the evidence? Is it easier to continue to practice as you were originally taught? Is tradition difficult to alter? These factors may play a role—and there is a growing suspicion that organizational factors also compromise the use of EBP and QI, such as not having time to devote to EBP and QI, or fully understanding the processes, or having mentors to guide nurses who wish to participate in projects (Carter et al., 2017).

Frontline Nurse Challenges

Melnyk and colleagues surveyed both clinical nurses and nurse executives to assess their thinking on the perceived barriers to EBP (Melnyk et al. 2012, 2016). Staff nurses reported they needed tools to help them implement EBP with patients, education and skills building in EBP, and access to an EBP mentor (Melnyk et al., 2012). Nurse executives identified similar barriers to EBP including inadequate knowledge and skills in EBP by clinicians, lack of EBP mentors and practice facilitators, and inadequate resources such as access to librarians and other experts (Melnyk et al., 2016).

Stavor et al. (2017) identified barriers to EBP implementation in a critical access hospital. Factors identified included lack of knowledge, difficulty formulating research questions, completing a literature search, critiquing information once found, and communicating and collaboration with multidisciplinary stakeholders. In addition, nurses do not always perceive that they have the authority to change patient care (Stavor et al., 2017). A synthesis of 20 studies, related to nurses' experiences with EBP, found that although nurses have a positive attitude to EBP, there is a need for EBP knowledge and implementation (Li et al., 2019). The

authors observed translating knowledge into implementation needs more coordination with nursing leaders to overcome the barriers (Li et al., 2019). Despite the desire to have frontline nurses participate in developing EBP practices, it is unrealistic to expect them to add EBP and QI activities to their list of responsibilities unless they have release time from direct patient care activities and have master's and doctor of nursing practice (DNP) prepared nurses to serve as coaches and champions (Quigley et al., 2022).

Leadership Challenges

Healthcare leaders, in the authors' experiences, are often challenged by the lack of a clear view of all EBP and QI projects within an organization. This can result in duplication of efforts, inability to assess which teams may need additional assistance, failure of certain projects to successfully proceed to completion, and a limited spread of practices shown to be effective. Clearly, healthcare institutions must draw on the best available evidence in providing care to people in order to promote healthy outcomes, and leadership support, systems, and structures need to be in place to facilitate clinicians' work in EBP and QI.

Although some organizations have some processes in place to facilitate EBP and QI projects, the processes are not always linked together in a logical order. Findings from a recent study (Duff et al., 2020) identified four determinants of an effective EBP environment: (a) the importance

of a shared model to guide staff through the process; (b) support in the form of education, hands-on training, and knowledge infrastructure; (c) active team facilitation by direct care nurses and nursing leaders; and (d) a culture and leadership that encourages EBP.

Faculty Challenges

Nurse educators in clinical settings have multiple responsibilities in the area of EBP and QI. Educators direct nurse residency programs for new-to-practice nurses and often serve as a unit-based leader to mentor frontline staff doing EBP and QI projects. They are often the key contact for undergraduate nursing students doing Capstone projects and for DNP students doing their projects. Nurse educators can also face the same challenges as frontline nursing staff and leaders, namely, nurses who may or may not have ever had any preparation for doing EBP or QI projects, lack of standardized processes in place, and difficulty communicating among team members.

A structure and process that ties all the steps together in one application, promotes frontline participation in EBP and QI, and provides a consolidated view of all projects would seem to address the many challenges that have been discussed. Such an application needs to maximize time for critical thinking and analyzing the evidence while minimizing time spent on unessential activities such as retrieving

TABLE 1 Example of Ovid Synthesis Workflow for an Evidence-Based Practice Project as Configured for the Portland VA

Project overview	Title of project Type of project: evidence-based practice, quality improvement, or research Units/areas Team members and roles Identification of project sponsor and mentor
Project background	Describes the purpose of the project, why it is significant, and the PICOT question.
Strategic alignment	States the time frame for the project and a description of how it fits with the organization's mission, strategic plan, and annual goals.
Literature search	Allows teams to search for articles for review based on the PICOT question directly within the tool.
Literature review	A template allows for the critical appraisal of chosen articles by team members.
Summarize findings	A table of evidence is automatically generated and populated from the information in the critical appraisal. The team then writes a concise summary of the literature and the findings/interventions that are applicable for implementation.
Project development and implementation	The team determines the strength, fit, feasibility, risk and acceptability of the best-evidence recommendations and the action steps to implement the recommendations.
Sustainability	Provides a structure for developing an evaluation plan and steps to maintain sustainability.
Dissemination	Composes elements of an abstract that can be used as an executive summary, poster abstract, or abstract for publication.

the evidence or building a table of evidence. Ovid Synthesis was developed with this in mind.

OPPORTUNITIES AFFORDED BY TECHNOLOGY

Ovid Synthesis is a comprehensive tool designed to support ongoing EBP, research, and QI activities across an institution. The development was led by information technology engineers, healthcare experts in EBP and QI, and nursing leaders. The primary purpose of Ovid Synthesis is to assist clinicians (and those who support them) to develop core knowledge and capabilities in EBP and QI and to streamline the related processes to help healthcare organizations build capacity to address identified gaps in care delivery. The application lays out all of the steps in the EBP and QI process in a single place. Beginning with the “why” of each project, Ovid Synthesis moves team members through the process and offers tips for those new to EBP and QI or anyone needing a refresher. All project participants can see the effort being done and work together on the same version, on one platform, at the same time, thus facilitating interprofessional communication and collaboration. This is particularly useful during the literature review phase when a team determines what evidence best contributes to answering their PICO(T) question. Table 1 includes an example of the workflow configured to support EBP at the Portland VA.

Ovid Synthesis integrates all of the required steps into one platform, from start to finish. It promotes more effective use of nursing staff time by taking fewer hours to complete a project, hence being more cost-effective. The dashboard view of projects facilitates an understanding of all projects in process and their progress, as well as easy access for identifying exemplars to be used for Magnet applications and nursing residency accreditation reports.

Table 2 lists the challenges identified with nurses’ participation in EBP and QI and how Ovid Synthesis addresses these. Nationally, there has been a growing interest in using Ovid Synthesis to streamline EBP and QI initiatives to accomplish an organization’s goals. But how does this *really* work in actual situations? Nursing leaders from two healthcare organizations (Mount Carmel Health System and Portland Veterans Administration Hospitals) describe their experiences in the following exemplars (see Figures 1 and 2).

Summary

Although there has been some improvement in increasing the quality of patient care over the past 20 years, much remains to be done. Increasing pressures from the public, professional healthcare organizations and regulatory agencies are evident with both reputation, reimbursement, and recognition at stake. Encouraging busy healthcare professionals to do better and work harder is not enough. Structures and processes are needed to streamline EBP and QI processes, eliminate

TABLE 2 Challenges Identified With Nurses’ Participation in Evidence-Based Practice (EBP) and Quality Improvement (QI) and How Ovid Synthesis Addresses These

Challenges	Ovid Synthesis Application
Formulating EBP/QI question	Whether a team of novices or experts, the project background guides teams through identifying the population, intervention, comparison, outcome, and time frame relevant to the team’s question. This includes examples of well-formulated PICO questions as well as tips.
Lack of identified mentor	Team members and stakeholders for each project are included.
Team communication	The Strategic Alignment section has active linkages to all team members and mentors. It can also link to the institutional librarian for consultation as well as to organization leaders/sponsors who may need to approve the project.
Literature search	The literature search step allows teams to easily search for and identify relevant high-quality articles based on their PICOT. This eliminates several steps in the process for searching for relevant evidence.
Critique of literature	A template walks team members through each step in the process for the critical appraisal of chosen articles. Organizations specify the model and grading system for appraisal that meets their needs.
Standardized model for EBP/QI	The workflow in Ovid Synthesis is configured to align with the organization’s standard or model of EBP or QI so that leadership is confident everyone is using the same approach consistently.
Resources identification	Built-in search capabilities give users the ability to easily search, identify, and appraise articles that can best support their work.
Clear view of EBP/QI	An executive dashboard provides a view of all projects, noting which have been completed and indicating where in the process active projects are currently. This allows leadership to download reports of all initiatives and to follow up when a team seems stuck.

Mount Carmel Health System in Columbus, Ohio uses EBP to guide decisions in the clinical environment. The Nurse Residency Program (NRP) includes teaching nurses how to do EBP projects. The librarian working collaboratively with the coordinator of the NRP reviewed Ovid Synthesis (OS) and agreed it could assist nurses in understanding and applying EBP.

Nurse residents started using OS May, 2022. Following an introduction nurses residents were grouped by specialty area for a monthly project on a different component of EBP (project overview, project background (PICOT), literature search, appraisal of the evidence, summarizing the findings, evaluating outcomes, and dissemination of project findings. Nurse residents uploaded articles and communicated with each other within the Ovid Synthesis platform specific to their specialty area. Initial topics were chain of command, quality improvement, infection prevention, and medication administration safety. The nurse residents (n = 200) reported they needed minimal support to use Ovid Synthesis, navigate easily around the site and that they found the technology helped them understand EBP at the bedside. Labor & delivery (L&D) applied clinical evidence about the use of Vancomycin. Nurse residents in the emergency department designed a policy change allowing use of a “John Doe” for all admissions in cardiovascular arrest rather than just trauma patients. The electronic health record was then activated for rapid medication verification, and order entry to facilitate rapid emergency care. Use of Ovid Synthesis has spread to nursing shared governance councils to guide EBP projects and the Mount Carmel School of Nursing is using the platform to teach graduate students and students use Ovid Synthesis for Capstone projects.

FIGURE 1. Mount Carmel health system exemplar.

“busywork,” and support committed professionals to thoughtfully collect and review data, determine courses of action, implement changes, and measure their impact.

To this end, Ovid Synthesis offers a transformational application developed to streamline and coordinate all the steps in EBP and QI projects. It addresses all of the challenges clinical leaders and frontline nurses have identified

in relation to carrying out effective projects to improve care delivery and outcomes. Nurse educators will be able to use this application as they guide nursing staff and new-to-practice nurses in nurse residency programs, gather exemplars for use in Magnet and other applications, lead staff in carrying out effective EBP and QI projects, and improve the health of patients and their families.

The VA Portland Health Care System in Portland, Oregon was an early adopter of the web-based Ovid Synthesis (OS) tool. Prior to OS, Whole Health Nurse Educators developed an internal reporting platform the “Unit-Based Improvement Portal” (UBIP) to document and track improvement projects so nurses and leaders could visualize projects underway to offer assistance to teams as needed. The team identified that key features of Ovid Synthesis surpassed the UBIP. The executive dashboard, the literature search with embedded critical appraisal and generated evidence table, and system-populated reports and presentations were appealing. The ability to view all projects provided the opportunity for mentoring to ensure the best available evidence was being applied, appropriate metrics were chosen, and results were disseminated within and outside of our organization.

We integrated elements from our UBIP portal into our OS templates including adaptations of the Johns Hopkins EBP model and the PDSA cycle aligned with the classic Model for Improvement. Our design team included the expertise of our medical librarian Sola Whitehead, MLIS and Chair of our EBP Committee, Jennifer Fehlman MS, RN, AGCNS-BC, CNS-PP, CCRN.

We now have a standard that all nurses will utilize OS including nurses in the residency, transition to practice and EBP fellowship programs and those engaged in unit-based QI, ensuring a consistent approach to teaching and reinforcing the process of EBP or QI and towards the IOM’s goal of using the best available evidence to guide the clinical decisions and improve patient outcomes. Respiratory therapy, chaplaincy, and chiropractic care are using OS promoting the use across disciplines to improve the clinical care and patient experience of the Veterans and families we are so privileged to serve.

FIGURE 2. VA Portland healthcare system exemplar.

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