

What is evidence-based practice?

Learning objectives

After reading this chapter, the participant should be able to

- define evidence-based practice (EBP)
- differentiate between evidence-based practice, research, research utilization, and quality improvement
- describe the importance of EBP to nursing practice and high-quality patient care

Evidence-based practice

During the 1980s, the term “evidence-based medicine” emerged to describe the approach that used scientific evidence to determine the best practice. Later, the term shifted to become “evidence-based practice” as clinicians other than physicians recognized the importance of scientific evidence in clinical decision-making. Various definitions of evidence-based practice (EBP) have emerged in the literature, but the most commonly used definition is, “the conscientious, explicit, and judicious use of the current best evidence in making decisions about the care of individual patients” (Sackett, Rosenberg, Gray, Hayes, & Richardson, 1996).

Subsequently, experts began to talk about evidence-based healthcare as a process by which research evidence is used in making decisions about a specific population or group of patients. Evidence-based practice and evidence-based healthcare assume that evidence is used in the context of a particular patient’s preferences and desires, the clinical situation, and the expertise of the clinician. They also expect that healthcare professionals can read, critique, and synthesize research findings and interpret existing evidence-based clinical practice guidelines.

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Nurses ask numerous questions when looking to integrate evidence-based practice into their clinical environment:

- What exactly is EBP?
- Is EBP the same as nursing research?
- What is the difference between EBP and quality improvement?
- Is EBP relevant to nursing practice?

This book examines EBP and demonstrates its relevance to professional nursing practice and high-quality patient care.

Definitions of research utilization, quality improvement, and nursing research

Evidence-based practice is not research utilization, quality improvement, or nursing research, although it may be related to each of these processes. For example, quality improvement projects may be evidence-based, and the findings may contribute to other EBP or research initiatives. Also, an evidence-based practice project can lead to a research study or quality improvement initiative.

What is research utilization?

For decades, nurses have used available research to guide nursing practice and their efforts to improve patient outcomes. This process involved critical analysis and evaluation of research findings and then determining how they fit into clinical practice. Incorporating pertinent research findings into clinical practice (and evaluating the changes' effectiveness), helps close the gap between research and practice.

More recently, research utilization efforts in nursing have been replaced by evidence-based practice, which will be described in further detail later in this chapter.

What is quality or performance improvement?

Quality, clinical, or performance improvement focuses on systems, processes, and functional, clinical, satisfaction, and cost outcomes. Typically, quality improvement efforts are not designed to develop nursing practice standards or nursing science, but they may contribute to understanding best practices or the processes of care in which nurses are actively involved.

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A commonly accepted view is that quality improvement activities in healthcare are not intended to generate scientific knowledge but rather to serve as management tools to improve the processes and outcomes within a specific healthcare organization or setting. More recently, experts have focused on improving care by examining and working within clinical microsystems or the specific places where patients, families, and care teams meet (Nelson, et al., 2002). To improve and maintain quality, safety, and efficiency, clinical teams must blend analysis, change, and measurement into their efforts to redesign care within these clinical microsystems.

Quality improvement initiatives generally address clinical problems or issues, examine clinical processes, and use specific indicators to help evaluate clinical performance. Data are collected and analyzed to help understand both the process and the related outcomes. The findings help contribute to efforts to achieve and maintain continuous improvement through ongoing monitoring and improvement activities.

For example, a hospital might be interested in improving its smoking cessation education for hospitalized patients, so it may convene a multidisciplinary team to address the issue. The team may decide to measure the hospital's performance using the percentage of discharge summaries that indicate that a smoker received instruction about smoking cessation. The team might implement an educational program and an electronic discharge summary that prompts clinicians to indicate whether the patient is a smoker and, if so, whether he or she received smoking cessation advice. They would monitor the rate of compliance and modify the interventions until compliance with the requirement to provide smoking cessation advice is greater than 95%.

Quality improvement projects vs. research projects

Many have asked whether quality improvement projects are the same as research projects—they are not. In clinical practice, these efforts may seem similar in that, for example, both may seek answers to clinical problems and use similar data collection and analysis methods. However, factors that may differ include participant or subject recruitment, the study's methods, and how the results are used.

For example, in most quality improvement activities, the participants generally are the patients within a specific clinical microsystem. In research efforts, the investigator recruits human subjects using approaches that will ensure a representative sample of the population. In many improvement activities, the intervention may change as it is evaluated, whereas in a research study the treatment or intervention remains the same.

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Furthermore, in most quality improvement initiatives, the healthcare team is trying to solve a problem in a particular setting instead of trying to generalize the results of the study to other settings and populations. Although it might be helpful to learn about the activities and experience of other improvement teams, their findings may not apply to or be appropriate in other settings or patient populations. The intent of research, however, is to develop new knowledge that can be generalized to other similar populations and clinical settings.

Despite the differences between research and quality improvement projects, however, one must consider the protection of human subjects in both. To ensure that you adequately protect the rights of patients or subjects, always ask an Institutional Review Board (IRB) to review the research proposal or quality improvement project before implementing the study and beginning data collection.

Also note that, whether the effort is research or quality improvement, one goal may be to disseminate the results of the project in a published paper or oral report. For any dissemination project, address adequate human subject protection and adherence with the Health Information Portability and Accountability Act of 1996 (HIPAA) guidelines *before* beginning the improvement project or research study. Individuals involved in either quality improvement or research projects should seek advice from their organization's IRB, privacy officer, and risk management department to ensure that data are managed in a manner consistent with any pertinent federal or state regulations and organizational policies and procedures.

Examples of quality improvement projects

Sample quality improvement projects that have been conducted in healthcare organizations work to do the following:

- Reduce the time interval between when a provider writes an antibiotic order to when the patient receives the first dose
- Evaluate the effectiveness of a targeted ergonomic program to prevent injuries in nursing personnel
- Assess the effectiveness of a fast-track program on patient satisfaction in the emergency department
- Optimize the prevention and treatment of anemia during coronary artery bypass surgery

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- Improve the care of patients with Type II diabetes using shared medical appointments
- Decrease blood stream infections associated with central venous catheters
- Improve adherence with recommendations for education about smoking cessation
- Improve and maintain adherence with core best practices in the intensive care unit
- Improve patient satisfaction through noise reduction activities
- Assess the effectiveness of using a fall-risk assessment in decreasing the number and severity of patient falls

The above example related to falls could also be an evidence-based practice or research project. If after searching the nursing literature you found another fall-risk assessment tool and you changed practice in your organization, the information you collected could contribute to an evidence-based project. You also might find multiple best practices or nursing interventions related to falls prevention. You can use this information to formulate a research question and conduct a nursing research study within your organization to see which interventions provide the best outcomes in your specific patient population.

Multidisciplinary efforts

Within clinical settings, many such opportunities exist for both nursing and multidisciplinary improvement efforts. Improvement activities for nursing can be as simple as reducing time in giving verbal report or improving compliance with documentation requirements. Multidisciplinary collaborative efforts may address complex health issues, such as the care of acute myocardial infarction patients or individuals with community-acquired pneumonia.

These initiatives are becoming more important in acute care hospitals as the national focus on public reporting increases. Such efforts help consumers compare the quality of care that various hospitals provide. The Centers for Medicare & Medicaid Services (CMS); various organizations that represent hospitals, doctors, and employers; accrediting organizations; other federal agencies; and the public have combined efforts to develop Hospital Compare (www.hospitalcompare.hhs.gov) and, thus, have made key clinical outcome measures available to the public. In this way, the public can monitor per-

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formance indicators to related common medical conditions and certain evidence-based interventions that are consistent with achieving the best patient outcomes.

Collaboration within multidisciplinary teams creates opportunities to address clinical problems and issues using various perspectives and expertise. Nurses play key roles in such efforts and often benefit from the synergy that can be realized by working with others interested in or concerned about the problem. For example, if an organization determines that patients are experiencing elevated blood sugars and not achieving good glucose control, a decision might be made to address this issue. Nurses alone can't solve this problem and need the support of physicians, dietitians, pharmacists, and perhaps other specialists. Bringing together a team of nurses, physicians, and other clinicians concerned about diabetic care provides opportunities for all members of the team to solve problems creatively. The group can work together while measuring their progress against pre-determined objectives.

What is nursing research?

Nursing research involves systematic inquiry specifically designed to develop, refine, and extend nursing knowledge. As part of a clinical and professional discipline, nurses have a unique body of knowledge that addresses nursing practice, administration, and education. Nurse researchers examine problems of specific concern to nurses and the patients, families, and communities they serve.

Nursing research methods may be quantitative, qualitative, or mixed (i.e., triangulated):

- In **quantitative studies**, researchers use objective, quantifiable data (such as blood pressure or pulse rate) or use a survey instrument to measure knowledge, attitudes, beliefs, or experiences
- **Qualitative researchers** use methods such as interviews or narrative analyses to help understand a particular phenomenon
- **Triangulated approaches** use both quantitative and qualitative methods

Regardless of the method they use, researchers must adhere to certain approaches to ensure both the quality and the accuracy of the data and related analyses. The intent of each approach is to answer questions and develop knowledge using the scientific method.

Examples of nursing research projects

Examples of nursing research projects include the following:

- Randomized clinical trial examining best practice for orthopedic-pin site care
- Efficacy of examination gloves for simple dressing changes
- Reliability of methods used to determine nasogastric tube placement
- The effects of relaxation and guided imagery on preoperative anxiety
- Quality of life in patients with chronic pain
- The relationship of a preoperative teaching program for joint replacement surgery and patient outcomes

The scientific method involves collecting observable, measurable, and verifiable data in a prescribed manner so as to describe, explain, or predict outcomes. For example, one might collect data to describe the effects of massage on blood pressure, explain decreased needs for sedation, or predict lower levels of anxiety.

Research methods demand that the collected data remain objective and not be influenced by the researcher's hypotheses, beliefs, or values. In the massage example, the researcher could easily bias the results by administering the massages or collecting the data. Using certain approaches to subject recruitment, performing faulty data collection, and not controlling for other confounding variables also can bias research findings. Therefore, when developing a study proposal, the researcher must develop a plan that minimizes these risks and supports the development of reliable information and results.

Conducting nursing research is not as simple as saying, "I want to do research." To conduct a scientific investigation, the researcher must have adequate training and resources. Developing and implementing a well-designed study with adequate control requires extensive knowledge of research methods and processes. Therefore, nurses interested in conducting research may work with an experienced researcher or develop their own skills by taking statistics and research methods courses and by being mentored by someone with research skills. One approach that staff nurses can take to get involved in research is to learn about and get involved in efforts related to evidence-based nursing practice. Working with others who have expertise in evidence-based practice serves as a helpful introduction into the processes of critiquing, analyzing, and evaluating published research, which is a necessary step in any research activity.

EBP implications for nurses

Nurses serve instrumental roles in ensuring and providing evidence-based practice. They must continually ask the questions, “What is the evidence for this intervention?” or “How do we provide best practice?” and “Are these the highest achievable outcomes for the patient, family, and nurse?” Nurses are also well positioned to work with other members of the healthcare team to identify clinical problems and use existing evidence to improve practice. Numerous opportunities exist for nurses to question current nursing practices and use evidence to make care more effective.

For example, a recently published evidence-based project describes the potential benefits of discontinuing the routine practice of listening to the bowel sounds of patients who have undergone elective abdominal surgery. The authors reviewed the literature and conducted an assessment of current practice, and they subsequently developed and evaluated a new practice guideline. These authors reported that clinical parameters such as the return of flatus and first postoperative bowel movement were more helpful than bowel sounds in determining the return of gastrointestinal mobility after abdominal surgery. The authors found that this evidence-based project resulted in saving nursing time without having negative patient outcomes (Madsen et al., 2005).

Nurses throughout the country also have been involved in multidisciplinary efforts to reduce the number and severity of falls and pressure ulcers/injuries. Such projects can help save money and improve care processes and outcomes. By implementing existing evidence-based guidelines related to falls and pressure ulcers/injuries, care has improved, and the number and severity of negative outcomes have decreased. Other examples of evidence-based healthcare efforts include projects to increase compliance with requirements for screenings for cancer and improving glucose control.

Importance of evidence-based practice

Evidence-based practice helps nurses provide high-quality patient care based on research and knowledge rather than because “this is the way we have always done it,” or based on traditions, myths, hunches, advice of colleagues, or outdated textbooks.

For example, when clinical questions arise, should one look to a nursing textbook for the answers? Remember that books are not published every year, and new information may not be included in the edition you have. Also, when using textbooks, consider whether you have the most current edition. There are also issues to consider when asking colleagues for advice—specifically, be mindful that their

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responses may be based on their personal experiences, their observations, what they learned in school, what was reviewed during nursing orientation, or myths and traditions learned in clinical practice.

A recent study provided evidence that most nurses provide care in accordance with what they learned in nursing school and rarely used journal articles, research reports, and hospital libraries for reference (Pravikoff, Tanner, & Pierce, 2005). That finding, combined with the fact that the average nurse is more than 40 years of age, makes it apparent that many nurses' knowledge is probably outdated. Practice based on such knowledge does not translate into quality patient care or health outcomes. Evidence-based practice provides a critical strategy to ensure that care is up to date and that it reflects the latest research evidence.



Tips for Success

Why bother with EBP? It allows nurses to implement the most up-to-date, research-tested, and high-quality patient care.

Why is EBP important to nursing practice?

- It results in better patient outcomes
- It contributes to the science of nursing
- It keeps practice current and relevant
- It increases confidence in decision-making
- Policies and procedures are current and include the latest research, thus supporting JCAHO-readiness
- Integration of EBP into nursing practice is essential for high-quality patient care and achievement of Magnet recognition

Often, nurses feel that they are using “evidence” to guide practice, but their sources of evidence are not research-based. In a study conducted by Thompson, et al., (2003), nurses reported that the most helpful knowledge source was experience or advice from colleagues or patients. Of concern were reports that up-to-date electronic resources that included evidence-based materials were not useful to nurses in clinical practice. This barrier contributes to significant gaps in clinicians applying research

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findings to practice and dissemination of innovations. The failure to use evidence results in care that is of lower quality, less effective, and more expensive (Berwick, 2003).

Evidence-based practice can be easier for nurses to use if they refer to already-developed evidence-based or clinical practice guidelines. Numerous expert groups have already undertaken systematic efforts to develop guidelines to help both healthcare providers and patients make informed decisions about care interventions. Guideline developers use a systematic approach to critique the existing research, rate the strength of the evidence, and establish practice guidelines. The overall goal of these types of efforts focuses on guiding practice and minimizing the variability in care.

For example in 2002, the Centers for Disease Control and Prevention published *Guideline for Hand Hygiene in Health-Care Settings*, which provides healthcare workers with a review of data regarding hand-washing and hand antisepsis in healthcare environments. Furthermore, it makes recommendations to improve hand-hygiene practices and reduce transmission of pathogenic microorganisms to both patients and healthcare personnel. See Chapter 3 for further discussion of accessing clinical practice guidelines.

What are the barriers to implementing evidence-based practice?

The barriers that prevent nurses from using research in everyday practice have been cited in numerous studies, and some common findings have emerged (Clifford & Murray, 2001; Funk, Champagne, Wiese, & Tornquist, 1991; Newhouse, Dearholt, Poe, Pugh, & White, 2005; Pravikoff, et al., 2005). Nurses often report the following:

- Lack of value for research in practice
- Difficulty in changing practice
- Lack of administrative support
- Lack of knowledgeable mentors
- Insufficient time to conduct research
- Lack of education about the research process
- Lack of awareness about research or evidence-based practice
- Research reports/articles not readily available
- Difficulty accessing research reports and articles
- No time on the job to read research
- Complexity of research reports

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- Lack of knowledge about EBP and critique of articles
- Feeling overwhelmed by the process

Despite these barriers, nurses are engaging in EBP and making a difference in patient outcomes. Furthermore, barriers can be overcome through organizational efforts focused on integrating research in practice and using strategies such as journal clubs, nursing grand rounds, and having research articles available for review (Fink, Thompson, & Bonnes, 2005). Case studies presented in Chapter 8 showcase the integration of EBP into everyday nursing practice.

Is your organization ready for the challenge? Are you ready for the challenge? Do the supports and resources exist in your environment? To be successful with evidence-based practice, one needs to be willing to challenge one's own assumptions and be willing to work with others to improve care processes and patient outcomes. Evidence-based practice takes resources, work, time, and effort, but the outcomes make them worthwhile. Every patient deserves care that is based on the best scientific knowledge and that ensures high-quality, cost-effective care.

Practice exercises

1. Log on to the Cochrane Collaboration Web site at *www.cochrane.org*. Find the topic list and read some reviews. Did you find information on this site useful to your practice setting? Why or why not?
2. Develop a list of the resources you need to participate in evidence-based practice. Identify resources that exist in your organization. Consider ways of accessing resources that do not currently exist in your clinical setting. Create an action plan for getting involved in evidence-based practice, and include a time frame and economic resources. Identify potential collaborators for your efforts related to evidence-based practice.
3. Visit *www.hospitalcompare.hhs.gov* and compare the performance of hospitals in your town/city, region, or state. Ask your colleagues whether they know about public reporting. Find out more about what your organization is doing to address acute myocardial infarction care, heart failure care, and pneumonia care. Learn more about multidisciplinary evidence-based projects in your organization.
4. Do a Web search on “evidence-based nursing.” Review various Web resources to identify the most helpful Web sites. Visit a medical or public library and learn more about evidence-based resources that patients might access to inform themselves about their health condition or related interventions.

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