Research for Advanced Practice Nurses
From Evidence to Practice

MAGDALENA A. MATEO, PhD, RN, FAAN
KARIN T. KIRCHHOFF, PhD, RN, FAAN
Magdalena A. Mateo, PhD, RN, FAAN, is Associate Professor at Northeastern University School of Nursing in Boston, where she teaches research courses at all levels. She received her BSN and MN degrees in the Philippines and her PhD from The Ohio State University. While working in clinical and academic settings as a clinical nurse specialist, director of nursing and faculty in the Philippines, Canada, and the United States she conducted studies and used results of studies to improve patient care. Her recent work has focused on a multidisciplinary approach to improve care for patients with memory difficulties following mild traumatic brain injury. She has taught the conduct and use of research in clinical and academic settings.

Karin T. Kirchhoff, PhD, RN, FAAN, is Professor Emeritus at the University of Wisconsin-Madison School of Nursing. Prior to that appointment in 2000, Dr. Kirchhoff was a professor at the University of Utah College of Nursing and research consultant at University Hospital in Salt Lake City. She is an ICU nurse who has improved care for critically ill patients and their families by both conducting studies and using the results of completed studies. Most recently she has worked to improve care at the end of life, garnering regional and national awards. She has lectured and written about the conduct and use of research since her doctoral work on diffusion of coronary precautions. She has taught this content at all educational levels and in many clinical institutions.
<table>
<thead>
<tr>
<th>Contributors: xi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface: xiii</td>
</tr>
</tbody>
</table>

## Contents

**PART I: EVIDENCE-BASED PRACTICE  1**

1  Overview of Evidence-Based Practice  3  
   Karin T. Kirchhoff

2  General Searching: Finding Research Reports  13  
   Ulrike Dieterle and Christopher Hooper-Lane

3  Research and the Mandate for Evidence-Based Practice, Quality, and Patient Safety  43  
   Kathleen R. Stevens, Katherine McDuffie, and Paula C. Clutter

**PART II: BUILDING BLOCKS FOR EVIDENCE  71**

4  Appraising a Single Research Article  73  
   Mary Schira

5  Identifying a Focus of Study  87  
   Lea Ann Matura and Vivian Nowazek

6  Theoretical and Conceptual Frameworks  105  
   Magdalena A. Mateo and Marge Benham-Hutchins

7  Quantitative Designs  115  
   Karin T. Kirchhoff
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Qualitative Research for Nursing Practice</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td>Beth Rodgers</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Sampling Methods</td>
<td>155</td>
</tr>
<tr>
<td></td>
<td>Karin T. Kirchhoff</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Designing Questionnaires and Data Collection Forms</td>
<td>167</td>
</tr>
<tr>
<td></td>
<td>Karin T. Kirchhoff</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Physiological Data Collection Methods</td>
<td>187</td>
</tr>
<tr>
<td></td>
<td>Kathleen S. Stone and Susan K. Frazier</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Psychosocial Data Collection Methods</td>
<td>211</td>
</tr>
<tr>
<td></td>
<td>Carol Glod</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Analyzing Quantitative Data</td>
<td>225</td>
</tr>
<tr>
<td></td>
<td>Mary R. Lynn</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>PART III: USING AVAILABLE EVIDENCE</strong></td>
<td>247</td>
</tr>
<tr>
<td>14</td>
<td>Systematic Reviews</td>
<td>249</td>
</tr>
<tr>
<td></td>
<td>Kathleen R. Stevens</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Finding and Appraising Clinical Practice Guidelines</td>
<td>267</td>
</tr>
<tr>
<td></td>
<td>Mary D. Bondmass</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Program Evaluation</td>
<td>287</td>
</tr>
<tr>
<td></td>
<td>Marita G. Titler</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Implementing Evidence-Based Practice</td>
<td>329</td>
</tr>
<tr>
<td></td>
<td>Susan Adams and Marita G. Titler</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>PART IV: EVALUATING THE IMPACT OF EBP AND COMMUNICATING RESULTS</strong></td>
<td>361</td>
</tr>
<tr>
<td>18</td>
<td>Cost as a Dimension of Evidence-Based Practice</td>
<td>363</td>
</tr>
<tr>
<td></td>
<td>Robert J. Caswell</td>
<td></td>
</tr>
</tbody>
</table>
19 Outcomes Evaluation 387
Leah L. Shever

20 Ethical Aspects of a Study 407
Marquis D. Foreman and Julie Johnson Zerwic

21 Communicating Research Through Oral Presentations 427
Suzanne P. Smith and Magdalena A. Mateo

22 Reporting Results Through Publication 441
Suzanne P. Smith and Magdalena A. Mateo

Appendix A: Preparing Families for Withdrawal 457
Appendix B: Iowa EBP Policy Sample 461
Index 465
Contributors

Susan Adams, PhD, RN
Associate Director
Research Translation and Dissemination Core
Gerontological Nursing Interventions Research Center
College of Nursing
University of Iowa
Iowa City, IA

Marge Benham-Hutchins, PhD, RN
Assistant Professor
School of Nursing
Northeastern University
Boston, MA

Mary D. Bondmass, RN, PhD
Assistant Professor
School of Nursing
University of Nevada Las Vegas
Las Vegas, NV

Robert J. Caswell, PhD
Associate Professor Emeritus
Division of Health Services Management and Policy
Ohio State University
Columbus, OH

Paula C. Clutter, RN, PhD, CNS-BC
Assistant Professor
Clinical, Acute Nursing Care
The University of Texas Health Science Center at San Antonio
San Antonio, TX

Ulrike Dieterle, MA, MLS
Head of Access Services
Health Sciences Libraries
University of Wisconsin-Madison
Madison, WI

Marquis D. Foreman, PhD, RN, FAAN
Professor and Chair
Adult Health and Gerontological Nursing
College of Nursing
Rush University
Chicago, IL

Susan K. Frazier, RN, PhD
Associate Professor
College of Nursing
University of Kentucky
Lexington, KY

Carol Glod, Ph.D., CS, FAAN
Professor
School of Nursing
Director of Research
Bouvé College of Health Sciences
Northeastern University
Boston, MA

Christopher Hooper-Lane, MA, AHIP
Instructional Services Coordinator
Senior Academic Librarian
Ebling Library
Madison, WI
Mary R. Lynn, PhD
Professor, School of Nursing
Assistant Director, Operations, Office of Human Research Ethics
University of North Carolina at Chapel Hill
Chapel Hill, NC

Lea Ann Matura PhD, RN, NP-C, CCRN
Assistant Professor
Northeastern University
Boston, MA

Katherine McDuffie, RN, MSN
Doctoral Student
The University of Texas Health Science Center at San Antonio
San Antonio, TX

Vivian Nowazek, PhD, MSN, RN-BC,
CNS-CC, CCRN
Assistant Professor
University of Houston—Victoria at Sugar Land
Sugar Land, TX

Beth Rodgers, PhD, RN, FAAN
Professor and Center Scientist
Self Management Service Center
College of Nursing
University of Wisconsin—Milwaukee
Milwaukee, WI

Leah L. Shever, PhD, RN
Advanced Practice Nurse
Center for Nursing Quality, Professional Development, and Research
Department of Nursing Services and Patient Care
The University of Iowa Hospitals and Clinics
Iowa City, IA

Mary Schira PhD, RN, ACNP-BC
Associate Dean, MSN Program
School of Nursing
The University of Texas at Arlington
Arlington, TX

Suzanne P. Smith, EdD, RN, FAAN
Editor-in-Chief
The Journal of Nursing Administration and Nurse Educator
Bradenton, FL

Kathleen R. Stevens, RN, EdD,
FANE, FAAN
Professor and Director
Academic Center for Evidence-Based Practice
The University of Texas Health Science Center
San Antonio, TX

Kathleen S. Stone, RN, PhD, FAAN
Professor Emeritus
College of Nursing
Ohio State University
Columbus, OH

Marita G. Titler, PhD, RN, FAAN
Associate Dean for Practice and Clinical Scholarship
Rhetaugh Dumas Endowed Chair
University of Michigan School of Nursing and UMHS
Ann Arbor, MI

Julie Johnson Zerwic, PhD, RN, FAAN
Associate Professor and Interim Head
Department of Biobehavioral Health Science
College of Nursing
University of Illinois at Chicago
Chicago, IL
The increasing focus on evidence needed for practice decisions propels us to integrate how we teach graduate students about research. The use of research summaries and the need for evidence-based quality and safety practices and for clarifying the conduct of research are all requirements for nurses functioning professionally in practice. We hope that this book meets all those needs in a single introductory volume that includes evaluation of single research reports along with summaries and guidelines that may be of use when establishing evidence-based practice (EBP). When using results from an individual report, one must have a working knowledge of the conduct of research if one is to evaluate the scientific merit and relevance of a single study.

Evidence-based practice concepts related to patient care are integrated throughout the chapters, with important points highlighted in exhibits. Clinically relevant examples present ways students and staff nurses can apply knowledge to daily clinical practice. We have also expanded, from previous versions of this book, the information on evidence-based practice and examples of clinical protocols.

Part I: Evidence-Based Practice. Chapters focus on an overview of EBP: the definitions of evidence-based practice that have evolved over time, types of evidence, and models of EBP. Ways of finding evidence are presented to guide the reader to respond to the mandate for EBP. This information on EBP is vital to graduate students who are developing skills that will prepare them to assume their advanced practice role in health care.

Part II: Building Blocks for Evidence. The section starts with appraising a single research article, a building block for evidence. Components of the research process are presented from a reviewer’s perspective of using the article as supporting evidence for practice in subsequent chapters. One of the documented barriers to research utilization is that practitioners feel inadequate to read and interpret research findings. Gaining knowledge about the research process is crucial for clinicians who must
read, interpret, and determine the relevance of research findings (evidence) to practice and to consider those that may be used in developing practice guidelines. It also allows them to advocate for patients who are considering whether or not to participate in research.

**Part III: Using Available Evidence.** Meta-analyses, systematic reviews, and practice guidelines from various sources such as professional organizations and government Web sites are other types of evidence that may be used in establishing EBP. Appraising information from these sources is suggested in this section. Program evaluation provides an opportunity for use of evidence. Considerations when planning and implementing EBP activities are also included in this section: identifying the focus of EBP activities (unit or organizational) and developing an EBP protocol.

**Part IV: Evaluating the Impact of EBP and Communicating Results.** Cost, outcomes, and ethical aspects are essential aspects of EBP. Communicating ideas through oral and written avenues is valuable in making EBP a reality. Techniques for acquiring oral and written methods for presenting ideas are included; such techniques are helpful in writing protocols and reporting outcomes of EBP activities.

Although graduate students are the primary audience for this book—a textbook for a graduate course in nursing research or an interdisciplinary health care, course—nurses in clinical settings also will find the book helpful in fulfilling their research role toward achieving hospital Magnet Status. Our hope is that the information provided in this book can be used to provide optimal cost-efficient care to patients that will increase their quality of life.

Magdalena A. Mateo, PhD, RN, FAAN
Karin T. Kirchhoff, PhD, RN, FAAN
To provide the best possible patient care, health professionals must obtain a quality education. After a series of publications on quality and safety in patient care, the Institute of Medicine (IOM) recommended that five core competencies be taught to ensure quality in patient care (Institute of Medicine [IOM], 2003). These are:

- Patient-centered care
- Interdisciplinary skills
- Evidence-based practice
- Quality improvement skills
- Information technology

Although evidence-based practice (EBP) had been discussed for more than a decade by this time, some nursing publications still questioned its necessity. The IOM reasoned that “clinicians are confronted with a rapidly expanded evidence base—upon which health care decisions should ideally be made—but are not consistently schooled in how to search and evaluate this evidence base and apply it to practice” (IOM, 2003). Obviously, the IOM did not consider EBP optional.

Other pressures to promote EBP also began to appear. Granting of the Magnet Hospital designation required that staff be involved in
research and use evidence in practice. The Joint Commission began requiring that health care organizations demonstrate standards for the use of evidence in order to gain or sustain accreditation. Links to evidence became prompts in electronic medical records. In some settings, documentation was required as part of treatment recommendations or assessments of patients that matched them with a certain disease. Recently, the North Carolina Board of Nursing required that all schools of nursing teach EBP for state accreditation.

DEFINITIONS OF EVIDENCE-BASED PRACTICE

In medicine, it was Gordon Guyatt who, in the 1990s, first began using the term “evidence-based medicine” (EBM). As the lead author on a series of articles, published in the *Journal of the American Medical Association*, called the Users’ Guides to the Medical Literature, he and colleagues detailed how to critique and use different types of research reports (Guyatt, Sackett, & Cook, 1993; Oxman, Sackett, & Guyatt, 1993).

Definitions for evidence-based medicine (EBM) have changed over time. In 2000, Sackett (Sackett, Straus, Richardson, Rosenberg, & Haynes), in the 2nd edition of *Evidence-Based Medicine*, defined it as the “Integration of best research evidence with clinical expertise and patient values.” Some of the early criticism of EBM was that the expertise of the clinician was not valued and that everyone was treated the same—in other words, cookbook medicine. This definition in 2000 counters the notion of evidence as the sole criterion upon which to make medical decisions. The 3rd edition added the notion of circumstances (Straus, Richardson, Glaziou, & Haynes, 2005, p. 1): “Integration of best research evidence with clinical expertise and patient values and circumstances.”

The use of evidence has a different history in nursing than in medicine. Early studies on whether or not research was used in practice were conducted by Ketefian (1975), who asked about the correct use of glass thermometers, and by Kirchhoff (1982), who surveyed nurses’ use of coronary precautions. Because there was a desire to promote the use of research in practice, several studies were funded to provide summaries of research for use, such as the 10 medical-surgical protocols for practice developed by Joann Horsley (Horsley, Crane, Crabtree, & Wood, 1983) and the thematic conferences at the University of North Carolina scheduled by Sandra Funk (Funk, Tornquist, Champagne, Copp, & Wiese, 1989).
These efforts in nursing, called research utilization (RU), were defined as the application of research findings in patient care (Kirchhoff, 1991) or the process of using research findings as a basis for practice (Titler, Mentes, Rakel, Abbott, & Baumler, 1999). A number of nurses developed models for RU (Kirchhoff, 2004).

After physicians at McMaster began the evidence-based medicine movement, however, a number of nursing leaders in research utilization followed suit by updating their RU models as EBP models. Kirchhoff (2004) listed a number of advantages of EBP over RU. In EBP many groups produce high-quality summaries of the evidence, at times inclusive of studies in several languages, and post the summaries and their recommendations on the Internet for ease of access. These group members are frequently experts in the area and may be government sponsored, with reports made available without charge to the public. The evidence is graded, and expert opinion is used to supplement weak or missing evidence.

In contrast, RU work might be done at a clinical site by a nursing group searching for answers to a clinical problem. The nurses were required to identify and summarize the literature and to make decisions for practice with little help from topic experts. RU was seen as based on a dichotomy (was there or was there not sufficient evidence for practice), rather than as a graded, strength-of-evidence approach like EBP.

Most nursing EBP models begin with a problem to be solved through use of evidence. Titler et al. (1994) included knowledge-focused triggers, which occur when a useful guideline or summary is published, as well as problem-focused triggers.

**RESEARCH UTILIZATION AND EVIDENCE-BASED PRACTICE**

The term *EBP* has been used in the nursing literature interchangeably with *RU*. EBP and RU, however, are not identical. If one accepts the definition of EBP as the integration of clinical expertise with the best scientific evidence from systematic research, then the sources for EBP are broader than those for RU. Both qualitative and quantitative studies are employed in RU; in addition, RU does not limit itself to findings from randomized controlled trials (RCT). EBP is not limited to RCTs but values those studies as offering the highest level of evidence for or against the use of an intervention. In RU, the studies found require integration,
which includes accessing, appraising, and summarizing findings. Then practice decisions can be made and changes in practice implemented institutionally.

EBP includes some steps in RU but adds other sources besides research, such as scientific principles of pathophysiology, case report data, and expert opinion, when studies are lacking. In some cases, the best available evidence may be case reports or expert opinion. The steps required in RU—finding the studies, appraising them, and summarizing—also are done by clinical experts when EBP sources are used, resulting in time and quality improvements. And, while appraisal is still done in EBP research, it is done at the level of the summary (guideline or systematic review), rather than at the level of the individual study (as in RU). The application to practice and evaluation of impact are the same for both EBP and RU.

ONE MODEL OF EVIDENCE-BASED PRACTICE

Steven’s ACE Star Model of Knowledge Transformation

Steven’s ACE Star Model of Knowledge Transformation (Stevens, 2004) is graphically displayed as a 5-point star. This model follows the development of evidence from the initial study to the evaluation of the impact of summaries and translation of that evidence. Point 1 is Discovery—a knowledge-generating stage. Research results are generated through the conduct of a single study, which becomes a brick in the wall of evidence.

Point 2 is Evidence Summary, where a number of studies are synthesized into a single, meaningful statement of what we now know. The Cochrane Handbook (Cochrane Collaboration, 2008) lists the steps in this process. The Agency for Healthcare Research and Quality uses the term evidence synthesis in this regard. When meta-analysis (a statistical procedure) occurs, the authors have combined the results of several studies that address a set of related research hypotheses. Other terms such as review of literature and state of the science reviews are seen as less rigorous and, therefore, less reliable summary processes. Producing high-level research summaries is now termed the science of research synthesis.

Point 3 is Translation, where evidence summaries are transformed into clinical recommendations so that they can be brought into actual practice. These recommendations are called practice guidelines or clinical practice guidelines. Statements should appear on how care should be
performed, with links to strengths of evidence and strength of recommend-

Point 4 is Integration, with care recommendations disseminated to all clinicians and institutions involved. It will be necessary to find ways to implement necessary changes so that the recommended practice becomes the norm, including changes at the individual and at the organization level. How to foster the adoption and overcome the barriers that prevent the adoption of evidence is a focus of much effort (Dopson, FitzGerald, Ferlie, Gabbay, & Locock, 2002; Sinuff, Cook, Giacomini, Heyland, & Dodek, 2007).

Point 5 is Evaluation. The impact of the practice change should be evaluated in order to see if the desired effect was obtained. If not, one must ask whether the plan was implemented consistently. Are there differences in the setting that might have prevented the desired effect? Possible outcomes to be measured include patient health outcomes, provider and patient satisfaction, efficacy, efficiency, economic analysis, and health status impact.

Competencies

Stevens developed competencies in EBP for the 5 points of the star arranged by educational levels (Stevens, 2005). For example, under star point 2, Evidence Summary, an undergraduate would be expected to locate a systematic review, a graduate student would be expected to do the same using multiple sources, and a doctoral student would be expected to conduct an evidence synthesis with an interdisciplinary team.

APPLICATION OF EVIDENCE TO PRACTICE

Types of evidence that can be used in practice have become numerous over time. Initially, only single articles were available as evidence for specific topics of care. At that time, that was considered the best evidence available. Recently, summaries of single articles on the same topic have been written, and these summaries overcome the inconsistency in findings and methodological shortcomings of one single study. These summaries or systematic reviews (if done according to scientific standards) have a close cousin, meta-analysis, which combines statistical findings into a common metric across all studies related to the topic. Although these two types of summaries tell us what “we know,” they might
not make it sufficiently clear what “we do” in practice. Another form of evidence, guidelines, provides that type of guidance. Where, then, does one start in the application of evidence?

Although nurses might be involved in the entire process, as outlined in the ACE Star Model, or at a single step in that process, nurses most commonly use evidence compiled by others. When using such evidence, however, it is important to look for a summary in the form of a guideline that tells us “what to do.” If no guidelines are available or relevant to our population because of recency or specificity of the practice, then the next best source of evidence is a systematic review or a meta-analysis. These summaries should detail the decisions made about which studies to include because of quality and what conclusion(s) prevail(s). Although this evidence clearly depicts “what we know,” “what to do” requires additional work. When both categories are not available or helpful, searching for original research articles becomes imperative. More detail on searching for guidelines, summaries, and research articles is found in Chapter 2, “General Searching: Finding Research Reports.”

The important Web site of the Agency for Healthcare Research and Quality (AHRQ), with links to the National Guideline Clearinghouse (NGC) (www.guideline.gov) and the U.S. Preventive Services Task Force (USPSTF) (http://www.ahrq.gov/clinic/uspstfix.htm), is a gold mine. These guidelines are of a more general nature. The Centers for Disease Control & Prevention (CDC) (www.cdc.gov) has guidelines about immunizations, infection control, prevention, and so on. Guidelines for specific clinical conditions may be found on professional Web sites such as those for the American Diabetes Association, the Society for Critical Care Medicine, and the Oncology Nursing Society. Another useful site is UpToDate (www.uptodate.com), which provides evidence derived from a number of resources, including but not limited to hand-searches of more than 375 peer-reviewed journals, electronic searches of databases, including those of Medline, the Cochrane Database, Clinical Evidence, and ACP Journal Club, as well as consensus guidelines, information (such as reports from the Food & Drug Administration [FDA], the CDC, and the National Institutes of Health [NIH]), and proceedings of major national meetings.

Once a guideline is found that seems relevant, appraisal is the next step. One site that offers an appraisal form for use by several raters is the AGREE collaboration (http://www.agreecollaboration.org/pdf/agree instrumentfinal.pdf). Another system of appraisal is called GRADE (Atkins et al., 2004). In both, the quality of the evidence, the importance
of outcomes, and the considerations of benefits and harms are used to appraise the guideline. The issue of timeliness of the guideline is relative, since some clinical topics change rapidly in terms of their knowledge base, whereas knowledge about other topics remains more stable. Be that as it may, guidelines must be updated at least every 5 years. Guidelines on rapidly changing topics may be updated more frequently to keep them current.

When guidelines do not provide clinical answers, the next best source of evidence includes high-quality systematic reviews, such as the preferred Cochrane Collaboration, where great effort is made to secure publications of high quality in all languages. As the Cochrane Database of Systematic Reviews on clinically relevant topics, with more than 660 topics, requires a subscription, it is available at most large universities and medical centers. The Database of Abstracts of Reviews of Effects (DARE), with more than 2,700 topics, is available without a subscription but only in the form of abstracts. Other free evidence-based summaries are found at the AHRQ Evidence-Based Practice Centers (EPCs) (http://www.ahrq.gov/clinic/epcindex.htm). If a topic has been selected by a center, helpful summaries of the research will be found there. Another federally sponsored site is the Physician Data Query (PDQ) at the Web site of the National Cancer Institute (http://www.cancer.gov/cancer topics/pdq). The PDQ cancer information summaries are peer reviewed and are updated monthly by six editorial boards made up of specialists in adult treatment, pediatric treatment, supportive care, screening and prevention, genetics, and complementary and alternative medicine. The boards review current literature from more than 70 biomedical journals, evaluate its relevance, and synthesize it into clear summaries.

The bibliographic databases, such as PubMed and CINAHL, can be searched with limits to find published guidelines and systematic reviews. The limit is publication type and the terms to be selected for the PubMed database are practice-guideline, review, and meta-analysis to find summaries; randomized controlled trial or clinical trial for research; and consensus development conference (with or without NIH) to find expert consensus. CINAHL’s terms with publication type as limit are abstract or research to pull research summarized in clinical journal; clinical innovation or practice guidelines for guidelines; and systematic review; if enough are not found, the search can be expanded to all review articles (also a publication type).

The advantage of systematic reviews is that they are frequently performed when evidence accumulates or are evidence driven. Guidelines,
Evidence-Based Practice

on the other hand, tend to be necessity driven and developed because of a need in practice (Straus et al., 2005, p. 166). The evidence may not be rich in the guideline and some of the interventions will vary in the strength of their support.

Another interesting source of evidence is Bandolier, a monthly print and Internet journal about health care that uses evidence-based medicine techniques to provide advice about particular treatments or diseases for health care professionals and consumers (http://www.jr2.ox.ac.uk/bandolier/index.html). The content is tertiary publishing, distilling the information from (secondary) reviews of (primary) trials and making it comprehensible. PubMed and the Cochrane Library are searched for systematic reviews that can be rewritten for ease of understanding. Bandolier also writes its own systematic reviews.

The TRIP database is set up to be the Database of databases (http://www.tripdatabase.com/index.cfm). A search box takes a term and then returns articles, summaries, guidelines across Web sites, and databases. A membership allows access to additional functions on the site. The site gives direct, hyperlinked access to the largest collection of evidence-based material on the Web, as well as to articles from premier online journals such as the British Medical Journal.

When systematic reviews or meta-analyses are found, they also require appraisal. One helpful site is http://www.cche.net/usersguides/overview.asp, where such a review is labeled an overview. The topics covered include the results, the validity of those results, and whether they are helpful to the patient.

Last, when there is little evidence, reliance on expert opinion or consensus is preferable to guessing. The sources for this weaker type of evidence are professional societies’ Web sites and information obtained by using a search limit, consensus conference, for publication type.

Although many professionals turn first to Medline or CINAHL, when one is advocating for practice changes, use of guidelines and systematic reviews is preferable to reliance on single research articles that have not been replicated or quality filtered. Medline has more than 11 million references, and finding the right ones can be difficult. It is the most up-to-date database, and, where recency is critical, it may provide the answers. Having finely honed searching skills has become ever more critical, and, as technology changes, researchers should take classes at a health science library to make sure their skills are current. Some people are deluded by the retrieval of a large number of articles, but quantity alone is not adequate and may mislead the researcher. The strength of the evidence
presented in the studies consulted should be evaluated when one searches for articles and finds differing results. It is critical that the applicability of the study’s findings to the local setting be evaluated, since the outcomes may not be the same in the two settings. Implementation into practice requires careful planning and the coordination of all the groups required to make the change; institutional support might also be required in the form of documentation or policy changes. Last, after implementation, research should be done to determine whether the guideline was implemented correctly and whether the desired outcomes were seen. This last stage can be performed through the usual quality and safety monitoring.

**SUMMARY**

In summary, EBP is an excellent way to communicate about practice across disciplines where the focus is on the evidence, rather than on the discipline of the practitioner. Using available evidence is easier than reinventing summaries of research and is more likely to be comprehensive, especially when the information has been found on high-quality Web sites, but, in order to find all these sources, nurses will need to develop new search skills.

**SUGGESTED ACTIVITIES**

1. Select a topic or clinical problem. Go to several of the recommended Web sites to find any information available in summaries or guidelines. Is the information on these sites as up-to-date as the results of a Medline or CINAHL search on the same topic? How do you explain any discrepancies in your findings?

2. Use the same topic and find a professional organization that might have a guideline for it. Was this the same guideline that you found with your bibliographic database?

**REFERENCES**


