EVIDENCE-BASED GERIATRIC NURSING PROTOCOLS FOR BEST PRACTICE
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For more than 60 years, the National Institutes of Health (NIH) has supported research to improve the health of and prolong the lives of people in the United States and around the world. Over that time, mean life expectancy worldwide has doubled to more than 70 years, due in large part to medical and public health interventions developed with NIH funding (Fauci & Collins, 2015). More than 60 years of biomedical and social sciences research have yielded much of the scientific foundation on which the knowledge base of nursing has been and is being built.

The editors and contributing authors of *Evidence-Based Geriatric Nursing Protocols for Best Practice* have been well supported by the NIH and other federal and nonfederal funding agencies; many are graduates of the National Hartford Center of Gerontological Nursing Excellence (NHCGNE) and the Patricia G. Archbold Predoctoral and/or Claire M. Fagin Postdoctoral Awards programs. The NHCGNE is a collaboration among the coordinating center housed at the Gerontological Society of America and schools of nursing and international institutions, that have demonstrated the highest level of commitment to the field of gerontological nursing. NHCGNE is unique in that its sole focus is gerontological nursing and because it builds on the legacy of the John A. Hartford Foundation. Their mission is to enhance and sustain the capacity and competency of nurses to provide quality care to older adults through faculty development, advancing gerontological nursing science, facilitating adoption of best practices, fostering leadership, and designing and shaping policy. Their vision is optimal health for all older adults.

The editors and contributing authors of *Evidence-Based Geriatric Nursing Protocols for Best Practice* are experts in gerontological nursing; they are scientists, educators, leaders, and clinicians dedicated to an interdisciplinary approach to clinical practice that can be defined in terms of a “three-legged stool” integrating three basic principles: (a) the best available research evidence bearing on whether and why a treatment works, (b) clinical expertise (clinical judgment and experience) to rapidly identify each patient’s unique health state and diagnosis and the individual risks and benefits of potential clinical interventions, and (c) client preferences and values (Lilienfeld, Ritschel, Lynn, Cautin, & Latzman, 2013; Spring, 2007). This book is uniquely positioned to assist nurses across health care sectors, as well as students and members of an interdisciplinary health team, to improve geriatric patient care and outcomes. For me, since my day job is more research administration than practice, this book keeps me connected and grounded in research evidence, practice, and patient outcomes.

The benefits of having a competent gerontological nurse at the bedside, when needed, cannot be overstated. Nursing is critical for older adults desiring to maintain health, improve health behaviors, avoid unnecessary hospitalizations, and live full and physically functional lives. Gerontological nursing is an evidence-based nursing specialty practice committed to improving the health, outcomes, and lives of older adult patients, their families, communities, and support systems. *Evidence-Based Geriatric Nursing Protocols for Best Practice* should be a part of every gerontological clinician’s toolkit. It helps to make sense of an often confusing system and educates patients, families, and friends about evidence-based best practices for older adults and how to access the valuable resources available to them.

I am most impressed by the behavioral objectives, which immediately provide information about what can be achieved by reading the chapters, the refined and complex case studies that challenge one’s depth of knowledge and skill in diagnosis, and chapter summaries listing nursing standards of practice. In addition, resources are included; many link to organizations that provide relevant tools and current information. For example, in Chapter 26, “Excessive Sleepiness,” the link to the basics-of-sleep guide at www.sleepresearchsociety.org/Products.aspx may prove highly valuable given the
The prevalence of apnea in older adults. References in each chapter are keyed to the level of quantitative evidence available for each clinical topic. If you do not understand or are unable to use the pyramid in Figure F.1, do not miss reading Chapter 1, “Developing and Evaluating Clinical Practice Guidelines: A Systematic Approach.” As the authors state, “Clinical decision making that is grounded in the best available evidence is essential to promote patient safety and quality health care outcomes.” They provide expert guidance on how to best evaluate the evidence.

This book does much to advance clinical decision making based on research evidence. However, there remains critical work to generate research at the highest levels of the pyramid to facilitate evidence-based practice, enhance education, and improve health care systems and patient outcomes. The nursing profession is engaging in more interventions research; however, much of this research suffers from small sample sizes and a lack of seasoned clinical trialists. This is slowly changing.

This text, now in its fifth edition, serves us well as a foundation for clinical decision making in 39 clinical topics. Evidence-Based Geriatric Nursing Protocols for Best Practice saves time for clinicians and educators because the evidence presented, which was exhaustively chronicled, is outstanding and addresses issues, such as the lack of time, knowledge, experience, and skill with evidence-based practice, and is a model for establishing nursing’s best practices. In this fifth edition, there are six new chapters, including “The Frail Hospitalized Older Adult,” “Perioperative Care of the Older Adult,” “General Surgical Care of the Older Adult,” “Care of the Older Adult With Fragility Hip Fracture,” “Care of the Older Adult in the Emergency Department” and “Palliative Care Models.”

As evidence-based practice continues to evolve and adapt, it is time to refine our approaches and enhance the

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**FIGURE F.1**

Level of evidence hierarchy.

![Level of evidence hierarchy diagram](image-url)
levels of evidence supporting gerontological nursing practice. History shows that the tools of modern science and research offer the opportunity to significantly alter major diseases that sap human health and exacerbate instability in the lives of older adults. It is imperative that gerontological nursing sustains momentum and works to deliver care founded on evidence-based protocols for best practices to older adults who need them most.

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The phenomenon of population aging is readily apparent to nurses who work in the acute care setting. Older adults represent the majority of hospitalized patients and also are the most clinically and socially complex patients. Acute care nurses have an enormous responsibility when providing care to older adults in this rapidly changing health care environment with its increasing regulatory requirements, shrinking reimbursement, and variable staffing levels. The nurse who is armed with information on the unique clinical presentations and response to treatment in older adults, and who has knowledge about evidence-based assessment and interventions, is situated to not only prevent complications but also to promote their functional recovery.

As in the previous editions of *Evidence-Based Geriatric Nursing Protocols for Best Practice*, we present assessment and interventions for common geriatric syndromes. Geriatric syndromes are increasingly recognized as being related to preventable iatrogenic complications, or those that occur as a direct result of medical and nursing care, causing serious adverse outcomes in older patients. We have expanded our content to include evidence-based interventions in specialty areas (e.g., surgical, perioperative, fragility hip fractures), geriatric organizational models (including palliative care and senior-friendly emergency departments), and frailty prevention and management.

In this fifth edition, we provide guidelines that are developed by experts on the topics of each chapter and are based on the best available evidence. A systematic method, the AGREE (Appraisal of Guidelines for Research and Evaluation) appraisal process (AGREE Next Steps Consortium, 2013; Levin & Vetter, 2007; Singleton & Levin, 2008), was used to evaluate the protocols and identify a process to help us improve validity of the book’s content. Thus, a systematic process, described in Chapter 1, was developed to retrieve and evaluate the level of evidence of key references related to specific assessment and management strategies in each chapter. The chapter authors rated the levels of evidence based on the work of Stetler et al. (1998) and Melnyk and Fineout-Overholt (2011). The first chapter in this book, “Developing and Evaluating Clinical Practice Guidelines: A Systematic Approach,” details the process of how the clinical practice guidelines were developed and how they complied with the AGREE items for rigor of development (AGREE Next Steps Consortium, 2013). Chapter 1, written by leaders in the field of evidence-based practice in the United States, is an important chapter reference for understanding the rating of the levels of evidence throughout the book.

**HOW TO BEST USE THIS BOOK**

Chapters provide overview and background information on the topic, evidence-based assessment and intervention strategies, and a topic-specific case study with discussion. The text of the chapter provides the context and detailed evidence for the protocol; the tabular protocol is not intended to be used in isolation of the text. We recommend that the reader take the following approach when reviewing the chapters:

1. Review the objectives to ascertain what is to be achieved by reviewing the chapter.
2. Review the text, noting the level of evidence presented in the reference section: Level I, being the highest (e.g., systematic reviews/meta-analyses), and Level VI, the lowest (e.g., expert opinions). Refer back to Chapter 1, Figure 1.1, for the definitions of the levels of evidence to understand the quantitative evidence that supports each of the recommendations. Keep in mind that it is virtually impossible to have evidence for all assessments and interventions, which does not mean they are not going to be used as an intervention. Many interventions that have been successfully used for years have
not been quantitatively researched but are well known to be effective to experts in the field of geriatrics.

3. Review the protocols, and remember that they reflect assessment and intervention strategies for acute care recommended by experts who have reviewed the evidence. This evidence is from all levels of care (e.g., community, primary care, long-term care, etc.) and not necessarily the hospital setting and should be applied to the unique needs of the individual patient.

4. Review the case study on each topic, which provides a more real-life, practical manner in which the protocol may be applied in clinical practice.

The resources in each chapter provide easy access to tools discussed in the chapter and link readers with organizations that provide ongoing, up-to-date information on the topic. A PowerPoint presentation and Test Bank are available to qualified instructors from Springer Publishing by e-mailing requests to textbook@springerpub.com.

Although this book is titled Evidence-Based Geriatric Nursing Protocols for Best Practice, the text may be used by educators for geriatric nursing courses, advanced practice nurses, and by many other disciplines, including interprofessional team members, nursing home and other staff educators, social workers, dietitians, and physicians. Many interventions that are proactively identified and implemented by nurses can make a significant difference in improving outcomes, but nurses cannot provide for the complex needs of older adults in isolation. Research has shown that interprofessional teams have dramatically improved geriatric patient care and outcomes. We know that communication and collaboration are essential to improve care coordination, prevent iatrogenic complications, and improve clinical outcomes and quality of life (Institute of Medicine, 2001). Each of us must work together and be committed to provide the culture of safety that vulnerable older adults need to receive the safest, evidence-based clinical care with optimum outcomes.

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- Those who provided a valuable contribution in previous editions and their ongoing gerontological scholarship
- The institutions that supported faculty and geriatric clinicians who were contributors to this book
- The older adults and families who teach and inspire us to continually seek new and effective ways to improve care delivery
- Springer Publishing Company for its ongoing support of quality geriatric nursing publications
Incorporating Evidence Into Practice

Chapter 1  Developing and Evaluating Clinical Practice Guidelines: A Systematic Approach

Chapter 2  Measuring Performance and Improving Quality
OVERVIEW
Clinical decision making that is grounded in the best available evidence is essential to promoting patient safety and quality health care outcomes. With the knowledge base for geriatric nursing rapidly expanding, assessing geriatric clinical practice guidelines (CPGs) for their validity and incorporation of the best available evidence is critical to the safety and outcomes of care. In the second edition of this book, Lucas and Fulmer challenged geriatric nurses to take the lead in the assessment of CPGs, recognizing that, in the absence of best evidence, guidelines and protocols have little value for clinical decision making (Lucas & Fulmer, 2003). In the third edition of this book Levin, Singleton, and Jacobs (2008) proposed a method for ensuring that the protocols included here were based on a systematic review of the literature and synthesis of best evidence.

The purpose of this chapter is to describe the process that was used to create the fourth and current fifth edition of *Evidence-Based Geriatric Nursing Protocols for Best Practice*. Before the third edition of this book, there was no standard process or specific criteria for protocol development, nor was there any indication of the “level of evidence” of each source cited in a chapter (i.e., the evidence base for the protocol). In the third and fourth editions of this book, the process previously used to develop the geriatric nursing protocols was enhanced and described in detail. That process differed from the procedures followed in the current edition. This chapter is a guide to understanding how the protocols contained in this book were developed, and it details how to use a systematic, efficient, and evidence-based approach to discovering and evaluating evidence, which is the process needed to guide the assessment, development, and updating of practice protocols in any area of nursing practice.

DEFINITION OF TERMS
Evidence-based practice (EBP) is a framework for clinical decision making that uses (a) the best available evidence, (b) the clinician’s expertise, and (c) a patient’s values and circumstances to guide judgments about a patient’s personal health condition (Keefer & Levin, 2013; Melnyk & Fineout-Overholt, 2011; Straus, Glasziou, Richardson, &
Haynes, 2010). Health care professionals often use the terms recommendations, guidelines, and protocols interchangeably but they are not synonymous.

A recommendation is a suggestion for practice, not necessarily sanctioned by a formal, expert group. A CPG is an “official recommendation” or suggested approach to diagnose and manage a broad health condition or problem (e.g., heart failure, smoking cessation, or pain management). A protocol is a more detailed guide for approaching a clinical problem or health condition and is tailored to a specific practice situation. For example, guidelines for falls prevention recommend developing a protocol for toileting elderly, sedated, or confused patients (National Guideline Clearinghouse, 2013). The specific practices or protocols that each health care organization implements, however, are agency specific. The validity of any of these practice guides can vary depending on the type and the level of evidence on which they are based. Using standard criteria to develop or refine CPGs or protocols assures reliability of their content. Standardization gives both nurses, who use the guideline/protocol, and patients, who receive care based on the guideline/protocol, assurance that the geriatric content and practice recommendations are based on the best evidence.

In contrast to these practice guides, “standards of practice” are not specific or necessarily evidence based; rather, they are a generally accepted, formal, and published framework for practice. As an example, the American Nurses Association document, Nursing: Scope and Standards of Practice, contains a standard regarding nurses’ accountability for making an assessment of a patient’s health status (American Nurses Association, 2010). The standard is a general statement. A protocol, on the other hand, may specify the measurement tool(s) to use in that assessment—for example, STRATIFY, an instrument used to measure the risk of falls (Smith, Forster, & Young, 2006).

The AGREE (Appraisal of Guidelines for Research and Evaluation) and AGREE II Instruments

The AGREE instrument, originally created and evaluated by a team of international guideline developers and researchers for use by the National Health Service (AGREE Enterprise, 2003), has been revised and updated and remains a generic tool designed primarily to help guideline developers and users assess the methodological quality of guidelines (Brouwers et al., 2010). This appraisal includes evaluation of the methods used to develop the CPG, assessment of the validity of the recommendations made in the guideline, and consideration of factors related to the use of the CPG in practice. Although the AGREE instrument was created to critically appraise CPGs, the process and criteria can also be applied to the development of clinical practice protocols. Thus, the AGREE instrument has been expanded for that purpose to standardize the creation and revision of the geriatric nursing practice protocols in this book.

The initial AGREE instrument and the one used for clinical guideline/protocol development in the third edition of this book has six quality domains: scope and purpose, stakeholder involvement, rigor of development, clarity and presentation, application, and editorial independence. A total of 23 items divided among the domains were rated on a four-point Likert-type scale from “strongly disagree” to “strongly agree.” Appraisers evaluate how well the guideline they are assessing meets the criteria (i.e., items) of the six quality domains. For example, when evaluating the rigor of development, appraisers rated seven items. The reliability of the AGREE instrument is increased when each guideline is appraised by more than one appraiser. Each of the six domains receives an individual domain score and, based on these scores, the appraiser subjectively assesses the overall quality of a guideline.

Important to note, however, is that the original AGREE instrument was revised in 2009 (AGREE Next Steps Consortium, 2013), is now called AGREE II, and is the version that we used for the fourth and fifth editions of this book. The revision added one new item to the rigor of development domain. This is the current item 9, which underscores the importance of evaluating the evidence that is applied to practice. Item 9 reads: “The strengths and limitations of the body of evidence are clearly described” (Table 1.1). The remainder of the changes included a revision of the Likert-type scale used to evaluate each item in the AGREE II, a reordering of the number assigned to each item based on the addition of the new item 9, and minor editing of items for clarity. No other substantive changes were made. Table 1.1 includes the items that are in the rigor of development domain and were used for evaluation of evidence in the current edition of this book. A 2013 update of the AGREE II instrument includes a history of the project, information about language translations, and enhanced online training tools freely available to support guideline developers (AGREE Enterprise, 2014).

The rigor of development section of the AGREE instrument provides standards for literature searching and documenting the databases and terms searched. Adhering to these criteria to find and use the best available evidence on a clinical question is critical to the validity of geriatric nursing protocols and ultimately to patient safety and outcomes of care.

Published guidelines can be appraised using the AGREE II instrument, as discussed previously. In the process of guideline development, however, the clinician is faced with the added responsibility of appraising all
Developing an answerable question is critical before one can choose relevant sources to search. The information available for its quality and relevance. In other words, how well does the available evidence support recommended clinical practices? The clinician needs to be able to support or defend the inclusion of each recommendation in the protocol based on its level and quality of evidence. To do so, the guideline must reflect a systematic, structured approach to find and assess the available evidence.

### Searching for the Best Evidence

Models of EBP describe the evidence-based process in five steps (Melnyk & Fineout-Overholt, 2011; Titler, 2010):

1. **Develop an answerable question**
2. **Locate the best evidence**
3. **Critically appraise the evidence**
4. **Integrate the evidence into practice using clinical expertise with attention to patient's values and perspectives**
5. **Evaluate the outcome(s)**

Although the evidence-based process encompasses these five steps, for the purposes of this volume of protocols and their development, this chapter focuses on the first three steps in more detail.

### Step 1: Develop an Answerable Question

Developing an answerable question is critical before one can choose relevant sources to search. The information needed may be in the form of a specific “foreground” question (one that is focused on a particular clinical issue) or it may be a broad question (one that asks for overview information about a disease, condition, or aspect of health care) (Melnyk & Fineout-Overholt, 2011; Straus, Glasziou, Richardson, & Haynes, 2010) to gain some background of the practice problem and interventions, and gain insight into its significance. Background information includes both internal data from a specific agency and external data to place the health condition or problem in a broader societal context. Internal data usually include quality metrics from the health care agency in conjunction with health care providers’ observations. External data might require a search for local and/or national benchmarking data and prevalence statistics as well as general literature describing the local problem as one that goes beyond a specific health care setting, population, or intervention.

An example of a background query might be one that seeks data: What is the prevalence of falls in elderly residents in a long-term care facility? Should these data demonstrate an unacceptable fall rate compared to national benchmark and safety target statistics, then the local problem can be shown to have significance beyond the specific clinical agency. A broad research query (an example of an overarching background question) related to a larger category of disease or health problem and encompassing multiple interventions might be: What is the best evidence for fall prevention in hospitalized older adults? A first place to search for evidence would be the National Guideline Clearinghouse (http://guidelines.gov) as described in Table 1.2).

A related question—What is the best evidence for falls prevention for the elderly in hospitals and long-term care facilities?—is addressed in a systematic review from the Cochrane Library, cited in Table 1.2. The Cochrane Library of Systematic Reviews contains rigorous and comprehensive narrative and statistical (meta-analyses) reviews that synthesize multiple studies of interventions (Cameron et al., 2012). The information contained in this review synthesizes multifactorial interventions and may help to further focus the inquiry into a question about the effectiveness of a specific intervention.

A similar example in Table 1.2 cites a Joanna Briggs Institute evidence summary, which answers a general background or overview question: What is the evidence regarding specific interventions to prevent falls in older adults? (Slade, 2013).

Once the overall evidence regarding a background question is uncovered, the question can be narrowed into a specific “PICO” format to specify the intervention or

### Table 1.1

<table>
<thead>
<tr>
<th>Sample Domain and Items From the AGREE II Instrument for Critical Appraisal of Clinical Practice Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Domain 3: Rigor of Development</strong></td>
</tr>
<tr>
<td>7. Systematic methods were used to search for evidence.</td>
</tr>
<tr>
<td>8. The criteria for selecting the evidence are clearly described.</td>
</tr>
<tr>
<td>9. The strengths and limitations of the body of evidence are clearly described.</td>
</tr>
<tr>
<td>10. The methods for formulating the recommendations are clearly described.</td>
</tr>
<tr>
<td>11. The health benefits, side effects, and risks have been considered in formulating the recommendations.</td>
</tr>
<tr>
<td>12. There is an explicit link between the recommendations and the supporting evidence.</td>
</tr>
<tr>
<td>13. The guideline has been externally reviewed by experts prior to its publication.</td>
</tr>
<tr>
<td>14. A procedure for updating the guideline is provided.</td>
</tr>
</tbody>
</table>

### TABLE 1.2

**Selected Databases, Examples of Types of Questions, Sample Citations, and Level of Evidence of Citation**

<table>
<thead>
<tr>
<th>Database/Description/Access</th>
<th>Overview Question</th>
<th>PICO or Focused Clinical Question</th>
<th>Sample Citation</th>
<th>Level of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PubMed/MEDLINE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premier biomedical database produced by the U.S. National Library of Medicine containing more than 25 million citations for biomedical literature from MEDLINE, life science journals, and online books. <a href="http://pubmed.gov">http://pubmed.gov</a></td>
<td>In hospitalized elders, does the STRATIFY falls risk assessment tool predict falls in hospital and after discharge?</td>
<td>Smith et al. (2006)</td>
<td>Level IV</td>
<td></td>
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<tr>
<td><strong>CINAHL</strong></td>
<td></td>
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<tr>
<td>Cumulative Index to Nursing and Allied Health Literature (authoritative index for more than 5,000 nursing and allied health journals) <a href="http://health.ebsco.com/products/the-cinahl-database/allied-health-nursing">http://health.ebsco.com/products/the-cinahl-database/allied-health-nursing</a></td>
<td>Does the introduction of an educational video recording for staff decrease the rate of falls for hospitalized patients?</td>
<td>Cangany et al. (2015)</td>
<td>Level V</td>
<td></td>
</tr>
<tr>
<td><strong>PsycINFO</strong></td>
<td></td>
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<tr>
<td><strong>Joanna Briggs Institute EBP Database</strong></td>
<td></td>
<td>What is the evidence regarding specific interventions to prevent falls in older adults?</td>
<td>Slade (2013)</td>
<td>Level VI</td>
</tr>
<tr>
<td>Evidence summaries (short abstracts that summarize existing international evidence on common health care interventions and activities based on structured searches of the literature and selected evidence-based health care databases). <a href="http://connect.jbiconnectplus.org">http://connect.jbiconnectplus.org</a></td>
<td></td>
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<tr>
<td><strong>Cochrane Database of Systematic Reviews</strong></td>
<td></td>
<td>What is the best evidence for falls prevention for the older adult in hospitals and long-term care facilities?</td>
<td>Cameron et al. (2012)</td>
<td>Level I</td>
</tr>
<tr>
<td>Produced by the Cochrane Library, one of the six databases that contain different types of high-quality, independent evidence to inform health care decision making. <a href="http://www.cochranelibrary.com">http://www.cochranelibrary.com</a></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ClinicalTrials.gov</strong></td>
<td></td>
<td>Are high-intensity exercise programs an effective intervention for patients with Parkinson’s disease, compared with the usual care (low-intensity group therapy)?</td>
<td>ClinicalTrials.gov (2014)</td>
<td>NA</td>
</tr>
<tr>
<td>A service of the U.S. National Institutes of Health, an international registry of publicly and privately supported clinical studies of human participants. <a href="https://clinicaltrials.gov">https://clinicaltrials.gov</a></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>National Guideline Clearinghouse</strong></td>
<td></td>
<td>What is the best evidence for fall prevention in hospitalized older adults?</td>
<td>National Guideline Clearinghouse (NGC, 2013)</td>
<td>Level I</td>
</tr>
</tbody>
</table>

AHRQ, Agency for Healthcare Research and Quality; EBP, evidence-based practice; PICO, population, intervention, comparison group or standard practice, outcomes.
assessments tool being examined (Straus et al., 2010, p. 15). PICO stands for:

- **P** = Population or patient problem
- **I** = Intervention
- **C** = Comparison group or standard practice
- **O** = Outcomes

The focused clinical or PICO question now specifies a patient problem or population and focuses on a specific intervention, for example, Does the introduction of an educational video recording for staff decrease the rate of falls for hospitalized patients?

A case study, located in the Cumulative Index to Nursing and Allied Health Literature (CINAHL) article database, provides an example of evidence in a specialized hospital setting (Cangany et al., 2015). Foreground questions are best answered by individual primary studies or syntheses of multiple studies, such as systematic reviews or meta-analyses. PICO templates work best to gather the evidence for focused clinical questions. In the question mentioned earlier, the **problem** was identified as a hospital unit with a fall rate higher than the National Database for Nursing Quality Indicators (NDNQI) benchmark, for a population of patients with heart disease in a progressive care unit. The **intervention** was the implementation of an educational video for staff, along with improved signage, improved documentation of a bed alarm, a risk assessment, and a “patient/family fall teaching contract.” The **comparison** implied was the usual care, and the **outcome** measures were both a reduction in the fall rate and the costs associated with falls.

**Step 2: Locate the Best Evidence**

Step 2, locate the evidence, requires an evidence search based on the elements identified in the clinical question. Gathering the evidence for the protocols in this book presented the challenge of conducting literature reviews encompassing both the breadth of overview information as well as the depth of specificity represented in high-level systematic reviews and clinical trials to answer specific clinical questions.

Not every nurse, whether he or she is a clinical practitioner, educator, or administrator, has developed proficient database search skills to conduct a literature review to locate evidence. Beyond a basic knowledge of Boolean logic, truncation, and applying categorical limits to filter results, competency in “information literacy” requires experience with the idiosyncrasies of databases, selection of terms, and ease with controlled vocabularies and database functionality (Association of College & Research Libraries, 2013). Many nurses report that limited access to resources, gaps in information literacy skills, and, most of all, a lack of time are barriers to “readiness” for evidence-based practice (Pravikoff, Tanner, & Pierce, 2005).

The digital age presents both consumers of research evidence and researchers with an array of tools for searching, managing, and citing both the published literature and the unpublished literature. The ever-changing electronic environment provides an array of search engines, “apps,” and specialized discovery tools. Such an environment can be daunting and often overwhelming to novice and experienced users alike. Research portals promoting “one-box” search tools purport comprehensiveness, yet search results are often vast and unfiltered. The apparent ease of keyword searching invites cherry picking from the first few pages of results, and can unwittingly introduce “search bias” (Wentz, 2002) into the quest for evidence, thus negating the sophisticated methodologies that were employed in primary studies to decrease experimenter bias and increase quality of evidence.

Health sciences librarians as intermediaries have been called “an essential part of the health care team by allowing knowledge consumers to focus on the wise interpretation and use of knowledge for critical decision making, rather than spending unproductive time on its access and retrieval” (Homan, 2010, p. 51). The Cochrane Handbook points out the complexity of conducting a systematic literature review, and highly recommends enlisting the help of a health care librarian when searching for evidence (Higgins & Green, 2011a).

**Search Strategies**

General or overview/background questions may be answered in textbooks, review articles, and “point of care” tools that aggregate overviews of best evidence, for example, online encyclopedias, systematic reviews, and synthesis tools. Locating systematic or narrative review articles or clinical guidelines based on systematic reviews (as pointed out earlier) may be helpful in the initial steps of gathering external evidence to support the significance of a problem before developing a narrower PICO question and investing a great deal of time in a question for which there might be limited evidence.

A search for individual studies in the published literature begins with database selection and translation of search terms into the controlled vocabulary of the database, if possible. In addition to the published literature, unpublished “grey” literature, should be considered. Unpublished evidence, though it may not be peer reviewed or evaluated, is nonetheless a part of a comprehensive gathering of evidence as a source for CPGs and protocols. One example in Table 1.2, clinical trials.gov,
lists a study that proposes an exercise program for patients who have Parkinson’s disease, with the status “recruiting participants” as of 2014 (ClinicalTrials.gov, 2014). Trial registries and open access repositories of clinical trials provide study criteria, outcome measures, and historical revisions to studies. They may be specialized for a particular kind of publication, for example, the Cochrane Library and the PROSPERO database, both examples of systematic review protocol repositories (Cochrane Library, 2015; University of York Centre for Reviews and Dissemination, 2015). Another of many sources of ongoing trials for nursing research is the Sigma Theta Tau International Honor Society of Nursing, 2015. The major article databases for finding the best primary evidence for most clinical nursing questions are the CINAHL database (www.ebscohost.com/academic/the-cinahl-database) and MEDLINE, the U.S. National Library of Medicine’s premier biomedical article database (www.ncbi.nlm.nih.gov/pubmed). The PubMed interface to MEDLINE includes newly added citations to provide access to the most recently published literature. Another of many sources of ongoing trials for nursing research is the Virginia Henderson Global Nursing e-Repository (Sigma Theta Tau International Honor Society of Nursing, 2015). The Cochrane Library (which includes the Database of Systematic Reviews) and the Joanna Briggs publications (including evidence summaries, practice sheets, and systematic reviews) are examples of synthesized, appraised sources of evidence for broad topic areas (Cochrane Library, 2015; JBI CONNeCT+ (Clinical Online Network of Evidence for Care and Therapeutics), n.d.)

The AGREE II instrument was used as a standard against which we could evaluate the process for evidence searching and use in chapter and protocol development (AGREE Next Steps Consortium, 2013). Domain 3, rigor of development, Item 7, states: “Systematic methods were used to search for evidence.” And the user’s manual directs: “The search strategy should be as comprehensive as possible and executed in a manner free from potential biases and sufficiently detailed to be replicated” (AGREE Next Steps Consortium, 2013, p. 23). Taking a tip from the Cochrane Handbook, a literature search should capture both the subject terms and the methodological aspects of studies when gathering relevant records (Higgins & Green, 2011b). The following guidelines reflect the process used to gather evidence for this book’s protocols and are recommended guidelines for conducting a literature search.

- Specify categorical limits or methodological filters used (e.g., the article type: “meta-analysis” or the “systematic review subset” in PubMed; the “methodology” limit in PsycINFO for meta-analysis or clinical trial; the “research” limit in CINAHL).

Aggregate and organize evidence in a bibliographic management tool (e.g., Endnote [www.endnote.com], Refworks [www.refworks.com], or Zotero [www.zotero.org]). Gathering evidence to support broader topics, such as the protocols in this book, presents the searcher with a greater challenge. Limiting searches by methodology can unwittingly eliminate the best evidence for study designs that do not lend themselves to these methods. For example, a cross-sectional retrospective design may provide the highest level of evidence for a study that examines “nurses’ perception” of the practice environment (Boltz et al., 2008).

A challenge to a searcher is the need to balance the comprehensiveness of recall (or “sensitivity”) with precision (“specificity”) to retrieve a manageable number of references. The Cochrane Handbook states: “Searches should seek high sensitivity, which may result in relatively low precision” (Higgins & Green, 2011a, section 6.1). Thus, retrieving a large set of articles may include many irrelevant hits. Conversely, putting too many restrictions on a database search may exclude relevant studies. The goal of retrieving the relevant studies for broad topic areas requires “sacrificing precision” and manually filtering false or irrelevant hits. Pitfalls of computerized retrieval are justification for the review by the searcher to weed false hits from the retrieved list of articles.

Repeatable search strategies were supplied to protocol developers enabling authors to revisit and rerun a database search for this fifth edition. The iterative nature of any literature search means that an initial set of relevant references for both broad or specific questions serves to point protocol authors toward best evidence as an adjunct to their own knowledge and their own pursuit of “chains of citation” (McLellan, 2001), related records, and their clinical expertise. For example, a core list of references on the topic of physical restraints might lead to exploring citations related to wandering, psychogeriatric care, or elder abuse.

**Step 3: Critically Appraise the Evidence**

Step 3, critically appraise the evidence, begins with identifying the methodology used in a study (often evident from reviewing the article abstract) followed by a critical reading and evaluation of the research methodology and results. The coding scheme described subsequently provides the first step in filtering retrieved studies based on research methods.
Levels of evidence (LOE) offer a schema that, once known, helps the reader to follow an efficient path for evidence searching as well as understand the relative value of the information presented to the clinical topic or question under review. There are many extant schemas used to identify the LOE of sources. Although multiple schemas exist, there are commonalities in their hierarchical structure, often represented by a pyramid or “publishing wedge” (DiCenso, 2009). The highest level of evidence is seen at the top of a pyramid, usually systematic reviews (meta-analyses) and CPGs based on high-level evidence. The schema used by the authors in previous editions of this book for rating the level of evidence came from the work of Stetler et al. (1998) and Melnyk and Fineout-Overholt (2011). As knowledge and thinking evolve, so do models or schemas for guiding the search for evidence. The LOE for the current edition can be seen in Figure 1.1 (Levin, 2011). Two major differences exist between the former and current pyramids that are recommended for guiding your evidence search. The first is that quantitative and qualitative research ask very different questions and thus cannot be included in the same hierarchy-of-evidence scheme. The second is that both the previously used and current LOE pyramids list individual randomized controlled trials (RCTs) as Level II. The former pyramid did not include multicenter clinical trials; thus, Levin addressed this issue and added multicenter clinical trials as Level I evidence in a quantitative pyramid (Figure 1.1).

A Level I evidence rating is given to evidence from synthesized sources: systematic reviews, which can either be meta-analyses or structured integrative reviews of evidence, and CPGs based on Level I evidence as well as multicenter clinical trials. Evidence that is judged to be at Level II comes from a single RCT. A quasi experimental study, such as a nonrandomized controlled single group pretest/posttest, time series or matched case-controlled study, is considered Level III evidence. Level IV evidence comes from a nonexperimental study, such as correlational descriptive research or case-control studies. A narrative literature review, a case report systematically obtained and of verifiable quality, or program evaluation data are rated as Level V. Level VI evidence is identified as
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the opinion of respected authorities (e.g., nationally known) based on their clinical experience or the opinions of an expert committee, including their interpretation of nonresearch-based information. This level also includes regulatory or legal opinions. Level I evidence is considered the strongest.

The critical appraisal of extant CPGs and research studies uses specialized tools designed to evaluate the quality of each type of evidence. Examples are the AGREE II instrument (which this volume of protocols conforms to), the Critical Appraisal Skills Programme (CASP), and the PRISMA checklist (a 27-item list of criteria for evaluation) for reporting systematic reviews and meta-analyses, among others (CASP, 2013; PRISMA, 2009).

An additional feature implemented in the third edition of this book was the inclusion of the level and type of evidence for references in chapter citations, which leads to a recommendation for practice. Using this type of standard approach ensures that this book contains protocols and recommendations for use with geriatric patients and their families that are based on the best available evidence and a similar standard of evaluation.

SUMMARY

The protocols contained in this edition, therefore, have been refined, revised, and/or developed by the authors using the best available research evidence as a foundation, with the ultimate goal of improving patient safety and outcomes. The systematic process used for finding, retrieving, and disseminating the best evidence for the fifth edition of Evidence-Based Geriatric Nursing Protocols for Best Practice provides a model for the use of research evidence in nursing education and in clinical practice. Translating nursing research into practice requires competency in information literacy, knowledge of the evidence-based process, and the ability to discern the context of a research study as ranked hierarchically. The following chapters and protocols present both overview (background) and foreground information in readiness for taking the next steps in the EBP process: Step 4: Integrate the evidence into practice using clinical expertise with attention to patient’s values and perspectives, and Step 5: Evaluate the outcome(s).

REFERENCES


1: Developing and Evaluating Clinical Practice Guidelines


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