PART ONE

NURSING RESEARCH
Effective nursing practice requires information, judgment, skills, and art. This book is about the information component—more specifically, about information used to make decisions about the nursing care patients should receive. An important part of the information used in making decisions about nursing care is produced by research. Ideally, all key decisions about how patients are cared for should be based to some extent on research evidence. Although this is not a completely attainable goal, large bodies of health care research provide considerable guidance for the design of nursing care. The goal of this book is to help you learn how to read research articles and, along with other nurses, use the findings to plan nursing care for patients.

Research to Practice

The research findings of a study are “raw materials,” like petroleum and iron ore that must undergo transformations to become everyday products such as gasoline and steel. Similarly, research findings undergo several transformations before they become the basis for clinical protocols that guide clinicians’ decisions and actions. Consider the following sequence of events that leads up to development of a clinical protocol.

1. First, a study examining the issue must have been conducted; however, the findings of a single study rarely provide certain and complete guidance for how to provide care for patients.
Chapter 1 The Research—Practice Connection

2. Thus, clinicians often wait for several (or many) studies to be conducted on the issue.
3. Eventually, a summary of all the research findings pertaining to the issue is performed.
4. Then, using the dependable findings from the summary, a group of experts formulates research-based clinical recommendations in the form of a clinical practice guideline.
5. The staff of a health care agency decides how the research-based guideline should be implemented in their setting; that is to say, they adapt the guideline in the process of developing a clinical protocol specific to their agency.
6. And finally, the clinical staff provides care according to the protocol, making research-based practice a reality.

These transformations must be carefully performed, and when they are, they provide a scientific basis for clinical practice.

Research-Based Clinical Protocols

Clinical protocols are standards of care in that they define care that should be given to patients who are part of a defined population. (A population is a group of patients who have the same health condition, problem, or treatment. A population can be defined broadly, for example, persons having surgery, or narrowly as elderly persons having hip replacement surgery.) Some clinical protocols set forth a comprehensive plan of care for the specified population, for example, perioperative and postoperative care of elderly persons having hip surgery, whereas others address just one aspect of care such as body temperature maintenance in the elderly having hip surgery. Still others are even narrower and could be called a clinical procedure, for example, blood salvage and transfusion during hip surgery.

Generally, multidisciplinary groups produce protocols that address many aspects of care, whereas nursing staffs produce protocols that address clinical issues that nurses manage. Clinical protocols can be set forth in various formats: plans of care, standard order sets, clinical pathways, care algorithms, decision trees, bundles of recommended care actions, and procedures—all are guides for clinicians regarding specific actions that should be taken on behalf of patients in the specified population. An appropriate committee or authority in the hospital, nursing department, or care-providing agency endorses each clinical protocol.
In short, clinical protocols are tools for achieving consistent, high-level care; they set forth clear standards of care for a defined patient population by specifying the care actions that should be performed. Some protocols specify how and when the action should be done as well as who can perform it. Others set forth guidance for the decisions that nurses may encounter while giving care.

Research as the Base

There is wide agreement among health care providers that clinical protocols should be based on research findings whenever possible (Institute of Medicine, 2001). When research findings are used to develop a protocol and the protocol is followed in daily practice, everyone involved (patients, health care professionals, third-party payers, and licensing agencies) can be confident that patients in that population are receiving nursing care that is based on the best available scientific evidence. The protocol approach to care design and delivery is in contrast to each nurse deciding what care she or he will give to patients—an approach to care giving that often results in considerable variability in care because of omissions and differing opinions regarding what is the best way to do something. Research-based protocols are increasingly being used as standards of care and being integrated into computerized clinical information systems.

Using Clinical Protocols

In any care agency, there is not a care protocol for every patient population and every care situation. Agencies develop protocols to reduce the variability in care of their “high-volume” and “high-risk” patient groups. If a protocol exists, it should be followed unless there is a good reason for not following it. Generally, following scientifically based protocols is in the best interest of patients because doing so increases the likelihood that patients will achieve good outcomes. This is the case because the recommended actions have been scientifically studied, and people with expertise in the field have considered their application.

Protocols Are Not Recipes

Protocols should be adhered to when they exist, but they should not be blindly followed. Nurses are patient advocates, and as such look out for patients’ welfare; this requires that nurses be constantly aware of patients’ responses to protocols. If a nurse observes
that a protocol is not producing good results with a patient, she should discuss this with a nurse leader and decide if a different approach to care should be used. A protocol may be research-based and it may work well for most patients, but it may not be right for every patient.

Consider this scenario: You are providing care to a postoperative patient and recognize that he does not seem as comfortable as he should be even though the pain protocol is being followed. That recognition should cause you to ask yourself questions such as, “Why isn’t he getting good pain relief? Should we be doing something different?” It could be that the care protocol is not effective for this patient and needs to be adjusted. If, however, you notice the same problem with two or three similar patients, you would have cause to wonder if the protocol is sound. You would then look into when the protocol was written and on what information it was based. If further investigation reveals that the recent research literature indicates that a different positioning approach is helpful or a different medication dosing schedule is more effective for this population, you should bring all of this to the attention of your nurse manager or the quality improvement council for your unit.

Even when a protocol is being carried out and is effective for the patient, there are still many aspects of care that nurses do at their discretion. Some of these discretionary acts are nursing art, that is, personal style, whereas others are actions taken to fulfill a protocol’s recommendations. For instance, a protocol regarding the use of physical restraints may say “to choose the least restrictive restraint.” This guiding statement does not dictate how to decide which type of restraint would be best for an elderly patient who has mild postoperative disorientation. Perhaps research evidence exists that sheds light on a particular type of restraint that is effective under these circumstances, and the nurse could base her decision regarding restraint type on those findings. Thus, the gap in the protocol’s recommendation could be filled by a research-informed decision made by the individual nurse. The take-away message is that care protocols are not detailed recipes for care, rather they are guides to care that should be followed in conjunction with specific patient information, attentive nursing observation, nursing judgment, and supplementary research information.

As a Student  At this point in your career, as a student nurse with placements in several hospitals, clinics, and agencies, you will find that some clinical settings have care protocols that clearly are based on research evidence, whereas others have care protocols but their rationale isn’t clear.
You might wonder: Do the required actions represent the opinions of nurses on a practice committee? Were they based on an article someone read in a professional journal? Did the chief doctor on that service stipulate how things should be done? Did the salesperson for a piece of medical equipment recommend the care actions?

To illustrate this dilemma, suppose a nursing home facility has a protocol addressing care of incontinent patients that includes the standard, “For patients who do not recognize when their bladder is full, assist the patient to a commode or toilet every four hours.” However, the rationale of the standard is not stated in the protocol document. You might wonder, “Who decided that every four hours is the best interval; why not every three hours or every six hours?” As the person who will enact the protocol, you have a right to information about its basis, and for that reason clinical protocols are more frequently being written in ways that incorporate some kind of annotation specifying the evidence sources on which recommendations are based.

Staff Nurses and Protocol Development

After you start to work as a professional nurse, you may be asked to participate in a staff project to develop or update a care protocol or procedure. Often, your agency will be adapting a general research-based guideline that was issued by a professional association, leading health care system, or government organization. Other times, a research-based guideline will not be available but a research summary relative to the clinical issue has been published, and its conclusions will be used in developing the protocol. The professional standard is that as many new and revised protocols as possible should be based on scientific evidence. To contribute to a protocol project, you will need to know how to read and understand research articles published in professional nursing journals and on trustworthy health care Internet sites.

**Guideline:** A set of recommendations for care of a patient population that is issued by a professional association, leading health care center, or government organization. Guidelines are not agency-specific.

**Protocol:** A set of specific care actions for a patient population that has been endorsed by the hospital, agency, clinic, or health care facility. Protocols are agency-specific.
Let's assume that you are working in a well-baby clinic, and are asked to be a member of a work group developing a protocol for preventing and managing diaper dermatitis in infants. You may be asked to read, appraise, and report to the group about a research-based clinical guideline produced by a nursing specialty association. To do this assignment, you should be able to formulate a reasonably informed opinion as to the extent to which the guideline recommendations are research-based and were produced in a sound manner. If the recommendations are deemed credible, then the work group will use them as a basis for the actions that comprise the protocol.

Another scenario could be that you read in the specialty journal for your area of practice a research report about an effective way of maintaining placement of gastric tubes in young children. Thinking about it, you realize that quite a few children on the pediatric unit where you work have pulled out their tubes. This should cause you to reflect on the effectiveness and safety of the way gastric tubes are being secured. You decide to look online and find a research summary article about the issue that brings together the findings from four studies. It offers the conclusion that the tubes should be secured and protected in a certain way—and that way is different from the standard of care on the unit on which you are working. You and your colleagues now have an opportunity to improve the care you give to these children by designing care that is based on nursing research.

Regardless of whether you come to question the effectiveness of the care being provided through clinical observation, by reading a research article in your professional journal, or by learning of a possibly better way at a conference, the next step is to act on your insight. Talk with your nurse manager, advanced practice nurse, or a member of the unit's quality council. From this discussion you will learn how the protocol came to be as it is and stimulate dialogue regarding if it still represents best practice.

Short History of Evidence-Based Nursing Practice

The nursing profession, discipline if you prefer the more academic term, has been conducting scientific research since the 1920s when case studies were first published in the American Journal of Nursing. Now nursing research is being conducted in countries around the world and reports of clinical research studies are published in research journals and clinical journals in
many languages. In many countries, nursing research is funded by the government, and a handful of countries have doctoral programs educating nurse researchers. The growing cadre of doctorally educated nurses has jettisoned both the quantity and quality of clinical nursing research being conducted. In the United States, the National Institute of Nursing Research (www.ninr.nih.gov), a component of the National Institutes of Health, is a major source of funding for nursing research.

In the mid-1970s, visionary nurse leaders in the United States realized that even though clinical research was producing new knowledge indicating which nursing methods were effective and which were not, practicing nurses were not aware of the research. As a result, several projects were started to increase the utilization of research-supported actions by practicing nurses. These projects gathered together the research that had been conducted on issues such as preoperative teaching, constipation in nursing home residents, management of urinary drainage systems, and preventing decubitus ulcers. Studies were critiqued, research-based guidelines were developed, and considerable attention was paid to how the guidelines were introduced into nursing departments (Horsley, Crane, & Bingle, 1978; Krueger, Nelson, & Wolanin, 1978). These projects stimulated interest in the use of nursing research in practice throughout the United States; at the same time nurses in other countries were also coming to the same recognition. By the 1980s and 1990s, many research utilization projects using diverse approaches to making nurses aware of research findings were under way (Kirchhoff, 2004).

During this time, interest in using research findings in practice was also proceeding in medicine. In the United Kingdom, the Cochrane Collaboration at Oxford was formed in 1992 to conduct rigorous research summaries with the goal of making it easier for clinicians to learn what various studies found regarding the effectiveness of particular health care interventions. At the McMaster Medical School in Montreal, Canada, a faculty group started the evidence-based practice movement. This movement brought to the forefront the responsibility of the individual clinicians to seek out the best evidence available when making clinical decisions in everyday practice. The evidence-based practice (EBP) movement in medicine flowed over into nursing and re-energized the use of research by nurses. Three other things were happening in the late 1990s and early 2000 years:

- Considerably more clinical nursing research was being conducted.
- The EBP movement was proceeding in a somewhat multidisciplinary way.
National governments in the United States, United Kingdom, Canada, and other countries funded efforts to promote the translation of research into practice.

Today, high-quality research-based clinical practice guidelines and research summaries are being produced by health care organizations around the world, and nursing staffs are increasingly developing agency clinical protocols based on those guidelines and summaries. Also, individual clinicians are increasingly seeking out the best available evidence to use as a guide for the care they provide to patients.

Your Path to Evidence-Based Practice

Clearly, there is a lot for you to learn. As you read this book, you will learn how to do the following:

- Recognize when the nursing care being given is not as effective as it might be
- Locate research-based guidelines and research summaries
- Get comfortable reading research articles
- Develop basic skills in judging if a clinical practice guideline or research summary was soundly produced
- Decide if the research evidence available is strong enough to use as a basis for a nursing care
- Participate in the development of protocols in the agency or unit in which you work

This book and your classroom experiences should help you acquire a solid base of research knowledge to launch you into becoming a 21st-century professional nurse. I would emphasize that the point of this book and of the course you are taking is not to make you into a nurse researcher, rather to help you be an informed consumer of nursing research.

Part 1

Your learning path to the ultimate goal of being a nurse who contributes to scientifically based care in your work setting begins with learning about how scientific nursing studies are conducted. Thus, the main goal of the first part of the book is to help you understand the key features of five different types of research—that is, research with five different purposes.
and methods. For each of the five types of research, you will first read an introduction about how that type of research is done. Then, you will read an actual study report of that type of research, followed by a commentary calling attention to important features of the study. The commentary will help you to delve deeply into the five studies. In this part of the book, you will also examine a research summary and a research-based clinical practice guideline.

Most of the research articles you will be reading were published in clinical journals, not research journals. They were written for clinicians, thus they emphasize the clinical implications of the findings, not the fine points of research methodology. In Part 1 of the book, your goal in reading the reports is to grasp how the study was done and what was found. Then, in Part 2, you will revisit these same studies, learn to critically appraise their soundness, and consider their applicability to a particular setting.

Because the book is a primer, only the most widely used and important types of research are presented. Also, the information provided is basic and selective. I want to help you acquire essential information, but I don’t want to overwhelm you—and I appreciate that your time is valuable, so I have attempted to make the presentation of content as crisp as possible. The basic and selective nature of the content in this part of the book means that it is not a comprehensive reference source regarding research methodology. It does not delve deeply into methodological issues; it does not explain all research designs, methods, and statistics. However, it does provide an introduction to methodological issues that must be appreciated to understand most nursing research reports.

**Part 2**

In the second part of the book, you will learn about using research evidence in practice. Research findings are major sources of information, although not the only ones, used when developing evidence-based clinical protocols and refining systems of care. You will also learn about how to use research evidence in your own individual clinical practice. I call this individual use of research evidence research-informed practice. Most often, individual practice is informed by research, not based on it. This differentiation is based on the reality that, as an individual, you cannot be as thorough or rigorous as a project team can be in incorporating research into practice, still, you can use research findings to make the care you give more effective and helpful to patients.
When developing nursing protocols, project teams use several different sources of evidence including:

- research findings
- patient record data
- agency quality monitoring data
- data from national databases
- expert opinion

The fact that this book focuses on research evidence is not meant to de-value the other forms of evidence; rather, a focus on research evidence allows a close consideration of this very important source of information for clinical practice. The use of the other sources of evidence is explained in considerable detail in Chapter 16.

Assumptions about the Reader

The exploration of evidence-based practice in this book assumes that you (1) have had an introduction to statistics; (2) have some experience in clinical settings; and (3) are committed to excellence in your professional practice. Becoming a nurse who contributes to evidence-based quality improvement on your unit or in your agency requires that you be an active learner by developing the following professional habits:

- Questioning what you see in practice
- Seeking additional knowledge when care protocols seem less than effective
- Reading research articles in clinical journals
- Thinking about the application of new knowledge to your practice
- Participating in evidence-based quality improvement projects on your unit or in your agency
- Adopting evidence-based protocols when they are introduced into your work setting
Use of Other Learning Resources

In reading this book, and indeed in your later reading of research articles, you will undoubtedly want to have a statistics book handy to look up statistical terms and tests you have forgotten or never learned. You may also want to have handy as a reference source a traditional, basic research text that is organized around the steps in the research process. Such a text, with its focus on research designs and methods, will be useful later when you read research reports about studies that were conducted using designs and methods other than those you will learn about in this book. Reference texts can also provide greater depth of information about issues that are just introduced in this book.

Your reference research text and statistics text need not be new. Slightly outdated editions of these texts are often available very inexpensively—and research design and statistics do not change much from edition to edition. Do make sure you use a basic book, not an advanced one written for researchers. If in doubt, ask your instructor for a suggestion. And don't sell them when you are finished with this course! Later in your educational program or in your first position as a staff nurse, when you read a research article and the author states that a factorial design was used, you will recognize right off that this design was not covered in this book. Then, you can go to your research reference text and read the section about this design—it will take about five minutes. This “small-bite approach” to learning about research methods can over time help you become a more sophisticated consumer of research.

References


