Much of nursing practice is (and always has been) based on information generated through inquiry. Finding the best answers quickly and effectively for the questions that arise in the clinical setting facilitates care, increases nursing efficiency, and improves patient outcome and satisfaction. Posing clinical questions also can help nurses identify and fill in gaps in knowledge, keep up with advances in clinical practice, and strengthen interactions with their peers, team members, and patients and their families. Formulating clinical questions that lead to sound, evidence-based answers to resolve clinical problems or direct patient-care decisions takes time and practice. The information in this article will assist nurses to develop the skill of framing clinical questions efficiently and effectively. (KEYWORDS: evidence-based practice, clinical questions, information seeking, nursing)

Much of healthcare provision involves asking and finding the answers to the myriad of questions that arise from clinical practice. Nurses and other healthcare professionals spend considerable time asking questions of patients and families to assess their conditions and concerns, and to determine required interventions. In turn, patients and families often ask clinicians questions about what caused a certain condition, how to prevent it, or how to keep it from progressing or recurring. Moreover, with increased access to information provided by the Internet, clinicians are faced with healthcare consumers who are more (or less, depending on the quality of the information) informed about their options for treatment and palliation than they once were. The development of new approaches to care, new technologies for diagnosing and treating various conditions, and new insight into the behaviors that influence these conditions mean that more viable options are now available. Funding and time pressures often dictate how nurses evaluate, explain, and make choices about diagnostic, care, and treatment options. Other pressures within and outside the profession are causing nurses to carefully examine their responses to the information needs they identify through patient encounters, and to seek more effective means for meeting these needs. The push
for advance degrees, the increased use of care paths and practice guidelines, and the paradigm shift to evidence-based nursing has led to a greater reliance on current research literature to guide nursing care.

In an article about some of the legal issues currently impacting nursing practice, Kehoe\(^1\) stresses that nurses are now, more than ever, being held legally accountable for their practice. At the same time, the Joint Commission on Accreditation of Healthcare Organizations has mandated that clinical practice be grounded in current scientific nursing research.\(^2\) As greater information needs surface in practice, nurses feel increasing pressure to provide evidence-based answers to the many questions arising from the complex clinical situations that have become commonplace in today’s practice environment.

The first step required is learning how to ask, or frame, clinical questions to find the best possible answers for a given clinical situation. Framing the question is done by determining the important concepts that comprise the question and how these concepts are related. Such framing is important for two reasons. First, formulating a well-framed clinical question often will clarify the important features of the clinical situation or problem that generated the question. Second, a well-designed question can facilitate searching strategies and help identify appropriate resources to be searched, thus increasing the likelihood that high-quality answers will be found quickly and efficiently. More detailed information about search strategies is covered elsewhere in this issue (see Morrisey and DeBourgh, and Fonteyn). This article will focus on information about framing clinical questions.

Studies examining clinical questions that arise during physician encounters with patients provide important insight for nursing practice. Studies suggest that physicians pose as many as six questions for every patient they see.\(^5\)^\(^6\) Unfortunately, no similar studies have been conducted examining the extent to which nurses pose questions in their practice, although some research has identified nurses’ information-seeking behaviors.\(^7\)^\(^8\) It seems reasonable to assume that physicians’ and nurses’ questioning behaviors are similar. Both groups have multiple information needs, some but not all of their questions are answered, many resources are used to supply these answers, and these resources often are the ones that are the most readily available (predominately from colleagues and textbooks). A recent search of the Cumulative Index to Nursing and Allied Health Literature (CINAHL)\(^9\) database reveals that the terms “question” or “questions” appear in the title or abstract of 10,608 citations (1492 citations in 1999 alone), indicating the degree to which questions are important to practicing nurses.

□ Reasons to Develop Good Questions

Providing appropriate, timely, evidence-based answers to questions that arise in patient care can provide nurses with many benefits. Table 1 displays a partial list of these benefits.

Answering questions well is often a time-consuming task. A study by Haynes et al\(^10\) examining physicians’ and nurses’ use of MEDLINE to answer clinical questions revealed that the mean time from start to end of a MEDLINE search was approximately 30 minutes. Indeed, the time required to formulate clinical questions and search for answers can be quite substantial, despite recent advances in online and Web-based search strategies. To make the most effective use of the time spent seeking answers, clinical questions need to be consistently formulated in a manner that depicts the information needed to supply high-quality answers. Richardson\(^11\) proposed that well-thought-out questions have at least seven benefits for clinicians. These benefits are summarized in Table 2.

□ Background Questions

Clinical questions come in two basic formats: background and foreground questions. Background questions usually are generalized and frequently are posed by someone who is unfamiliar with an area. For example, a student nurse who is learning about the care of a ventilated patient in the intensive care unit (ICU) might ask: “What is nosocomial pneumonia?” “How does it differ from
community-acquired pneumonia?” “What role do ventilators play in the development of pneumonia?” and “When should antibiotics be used to prevent or treat an nosocomial pneumonia?” Answers to these questions provide information that contributes to a basic foundation of understanding about healthcare practice rather than providing specific information (or evidence) to use to make clinical decisions about a specific patient or patient population.

Framing a background question is relatively easy. The question is usually in the form of one or more of “the seven Ws”: who, what, for whom, why, where, when, and how well? Finding information to answer background questions also is relatively easy. Sources of information likely to provide answers to these questions include medical-surgical or specialty textbooks, drug guides or other reference books, and narrative review articles—summaries of an area or topic written by an expert in the field. Both the CINAHL® and MEDLINE® databases index such articles and provide easy and reliable access to them. For example, a review by Tasota et al13 surveyed the literature about the risks for nosocomial infection for ICU patients. Based on their findings, the investigators stress that the incidence of nosocomial infection diminishes considerably when ICU nurses consistently follow infection control measures when providing care to their patients. This survey article, indexed in CINAHL®, includes an abstract and a list of the 79 articles that comprised the review. A similar review article is indexed in the MEDLINE database. This review is authored by Mayhall,14 who is known for his expertise on hospital infections.15 In his review, Mayhall reiterates that nurses play a key role in the prevention of nosocomial infections in mechanically ventilated patients.

**Foreground Questions**

Foreground questions are those posed by clinicians who have a precise need for information about a specific clinical situation. In this instance, the clinician does not ask a general broad-based question (eg, “What is syncope?”) but rather poses a narrowly focused, specific question (eg, “Could this episode of syncope be related to my patient’s nitrate-induced hypotension?”). An example of a foreground question about an intervention is, “In patients who are intubated and mechanically ventilated, is a semirecumbent body position more effective than a supine body position for reducing the incidence of nosocomial pneumonia?” An example of a question about causation is, “In geriatric patients who are hospitalized, does inadequate caloric intake increase their risk for death?” An example of a question that is qualitative in nature is, “What are young peoples’ experiences of hospital care when they have been dependent on a ventilator?”

Foreground questions are more specific and often more complex than background questions, and they offer more options for information sources to supply the answers. Framing a foreground question necessitates specific descriptors for four key elements: the patient or problem (P), the intervention (I) or treatment, the comparison (C) intervention or treatment, and the outcome (O)
of interest. These components can be repre-
sented by the mnemonic PICO. The
mnemonic was developed by those clini-
cians involved in the early teaching of evi-
dence-based medicine. Many educators now
frequently use PICO in their teaching ses-
tions to remind students that focused clinical
questions should contain a descriptor for
each of the four key elements. Librarians
also have found using PICO helpful in set-
ting up search strategies to locate evidence
to answer clinical questions. A PICO-formu-
lated clinical question about how best to po-
sition a ventilated patient to prevent a noso-
comial infection would look like this: In
mechanically ventilated adult patients in an
ICU setting (P), is a semirecumbent position
(I) more effective than a supine position (C)
in decreasing the incidence of nosocomial
pneumonia (O)? Formulating clear and con-
cise questions using the PICO mnemonic not
only helps clarify the clinical question and
direct search strategy development, it helps
clinicians identify the study design best
suited to answer their questions (ie, the re-
search methodology that would provide the
most reliable and valid evidence). For exam-
ple, questions about the effectiveness of a
therapy usually are best addressed by evi-
dence from a randomized controlled trial
(RCT) design, whereas questions about pa-
tients’ feelings and perceptions about their
illness experiences are better addressed in
studies that use a qualitative design. Once
the clinician identifies the study design that
will best answer the question, he or she can
focus their search on locating the most rele-
vant and highest quality studies that use this
type of design. Thus, the mnemonic PICO
can be expanded to PICOM to include a fifth

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A MEDLINE search using these terms
identifies the RCT by Drakulovic et al. Their
research shows a reduction in the inci-
dence of nosocomial pneumonia with a
semirecumbent body position.

Clinical Example of a Foreground Question

Consider the following scenario. You are a
nurse in an ICU. You have noticed that some
of your patients seem to be ready for wean-
ing from their ventilator before their physi-
cians initiate orders to start the weaning
process. You decide to investigate the effi-
cacy of a nurse-led, protocol-directed wean-
ing (versus physician-directed weaning) for
reducing the duration of mechanical ventila-
tion. Your first step is to appropriately frame
your question. Using the PICOM method,
you frame your question as: In mechanically
ventilated adult patients in the ICU (P), is a
nurse-led protocol-directed weaning process
(I) [compared to weaning directed by indi-
vidual physicians’ orders (C)] more effective
in reducing the duration of mechanical ven-
tilation (O), as demonstrated from the find-
ings of well-designed RCTs (M)?

Using this well-formulated clinical ques-
tion, you now search MEDLINE for evidence
from RCTs to answer your clinical questions.
You locate two recent, relevant, high-quality
RCTs. After retrieving full-text copies of
the research reports of these two studies,
you review them and find that a nurse-led, protocol-directed weaning process reduced the duration of mechanical ventilation in a variety of intubated patients in several ICUs across the United States—with no increase in adverse events. This evidence provides strong support for your assertion that the nurses in your unit could effectively and safely initiate the weaning process of mechanically ventilated patients using a unit protocol. You can now confidently initiate the process to effect a change in your unit’s policy and practice for weaning patients from mechanical ventilators.

Summary

So much of healthcare provision is driven by questions that arise from clinical practice. Forces both inside and outside of nursing are compelling nurses to seek evidence-based, high-quality information to answer questions about the care practices and policies within their clinical settings. One of the most effective methods for answering these questions in a timely manner is to make an effort to formulate, or frame them, to include all of the essential elements (PICOM) required for an efficient and effective search for the best-evidence answers. By spending some thoughtful time creating well-formulated clinical questions, nurses will more easily find the type of sound evidence-based answers to ensure the provision of high-quality care for their patients and to support sound policies for their care settings.

References