omthing is not working well in your emergency department. Perhaps you are having trouble with a specific protocol, such as that relating to sepsis or myocardial infarction. You may be having difficulty with a process, such as transfers from the emergency department to the ICU or reducing contamination rates related to blood culture collection. A practice change is necessary, and you know you have to look at what the research says on the topic, but you don’t know where to start.

Research is a formal, rigorous, and systematic process of inquiry used to generate and test theories.1 The type of research evidence that you look for and can use to support practice changes is important. In this age of almost unlimited access to information, sifting through evidence to decide what is and is not valid and valuable can be challenging. This article will review the basic techniques for framing a practice question, searching for evidence, and evaluating the evidence for incorporation into practice.

Let’s start with the example of a community hospital emergency department that is finding deficits in the management of elderly patients; specifically, they are missing signs of sepsis in these patients. This deficiency is discovered only in a chart review. How should the staff nurse, educator, or manager begin to identify the changes necessary to improve patient care?

Identifying the problem is actually a very important step. If the problem can be clearly delineated, the process of searching for appropriate evidence is clearer. In this case, the problem appears to be a knowledge deficit regarding the early signs of sepsis and/or regarding the recognition of the presentation of sepsis in older adults, rather than a process problem.

Searching the Literature

Appropriate literature can be found in several places. In terms of practice issues, a database that includes clinical nursing and medical articles is the most useful. CINAHL, PubMed, and Journals@OVID are all good sources. Another appropriate place to search is at the Centers for Disease Control and Prevention Web site, which often has up-to-date information, epidemiological data, and practice guidelines.

The search terms you choose are important, because they will help you find articles on your topic of interest. For the example of sepsis in elderly patients, searching for the terms “sepsis,” “older adult,” “elderly,” “sepsis presentation,” “sepsis recognition,” and “sepsis guidelines” all may be useful. When you find an appropriate article, look at both the search terms for further ideas about how the information you are looking for is categorized.
Evaluating a Research Article

Reports of research can be presented as journal articles, book chapters, doctoral dissertations, or abstracts from proceedings of research conferences. A complete report generally contains 5 parts; the abstract, introduction to the research question or problem, methods used to answer the question or problem, results of the study, and a discussion of the results. Each of these sections is usually divided into subsections.

ABSTRACT

The abstract is usually a “snapshot” of about 100 to 300 words describing the research study. It includes the introduction to the research problem, possibly a short description of background information, the methods, the results, and usually conclusions and implications. The abstract may help you to identify articles worth reviewing or decide that a study is not relevant to your problem. However, you cannot decide whether evidence is valuable based on the abstract!

INTRODUCTION

The introduction is an overview of the research problem, the significance and need for the study, and possibly some explanation of the gap the study seeks to fill. The introduction should tell you about the purpose of the study, which is important to match up against the rest of the sections. Other parts of the introduction include the background and the review of literature. You will want to think about how the description of the need for the study fits in with the work that has already been done.

For example, if we return to the issue of recognition of sepsis in older adults, you first would want to look at the research problem addressed by the study. Does the study problem relate to your problem? In this case, you will want studies that address issues of assessment. Although studies that examine process may be useful, you will need to make sure that the study clearly lays out how patients were identified. If the study used specific triage criteria to include patients in the study, that information may be useful. If patients become part of the study after they are identified with sepsis, then an important piece you are looking for is missing. This information would be more clearly identified in the “methods” or “procedures” section.

The background should discuss incidence, prevalence, and impact. In other words, you should have a sense of the size and scope of the problem being addressed and the impact, either in morbidity and mortality, disability, cost of treatment, or extended hospital stays, for example. If it is not a real problem, then it is probably not worth studying.

In the case of sepsis, we know that it has a high mortality rate and a high cost to treat.

The review of the literature should address other studies that have examined the phenomenon of adequately identifying patients with sepsis. Other age groups can be studied, but what is important is that the review of the literature discusses the initial identification of the patient, which may include critical cues, predictive laboratory tests, or presentation, for example. An important part of the literature review is that the study author spends some time not just summarizing the studies but also discussing their strengths and weaknesses. This discussion can suggest that the study is based on previous evidence (or lack of substantial evidence) and seeks to close a gap in knowledge about the problem. The end of the literature review should explain what is known about the problem, where the gaps are, and how this particular study seeks to answer an as-yet-unanswered piece of the problem, which usually is identified as the purpose of the study; it should reflect the gap in the literature.

PROCEDURES/METHODS

The procedures section provides a description of how the research question was answered. It should state that Institutional Review Board approval was granted, indicating that the study procedures were checked for compliance with Protection of Human Subjects guidelines. The procedures section should then detail the methods (quantitative or qualitative), the sample, how participants were recruited and enrolled into the study, and how the data were collected (eg, interviews, instruments, surveys, observation, and chart review). If surveys or research instruments were used to collect data, you will want to look at whether those instruments were “validated” or how the researchers knew that those were appropriate instruments for both the research question and the participants.

Having a sense of how the research questions and methods “line up” is also important. For example, a study that wants to compare two groups of patients might use either quantitative data (numbers) or qualitative data (words, descriptions, and lived experience) to answer the question. It is important that the way the research question is phrased matches the way the data are collected. The research question “How accurately do emergency nurses identify sepsis in triage?” should use chart review data or possibly observational data that give factual information (quantitative). The question “How do nurses identify sepsis patients in triage?” ideally should use interview data or survey data that describe a process (qualitative data).
RESULTS/FINDINGS

The results or findings section should be structured according to the research question(s). Initially, a description of the results of data analysis should be presented. If the question is qualitative, when using the aforementioned example (“How do nurses identify sepsis patients in triage?”) emerging themes (commonalities in the experience) may be described, such as “eyeballing the patient,” “feeling that something isn’t right,” or “pressing for detail,” which describe a process. The research question, “How accurately do emergency nurses identify sepsis in triage?” is best answered using quantitative data, and results should reflect that by reporting comparative statistical data (eg, t tests, Pearson’s r, χ², regression analysis, or analysis of variance).

DISCUSSION

The discussion usually helps both to explain the findings and put the results or findings of the study in the context of other literature and practice recommendations. It should answer questions about whether the gap in knowledge identified through the review of literature has been filled, what further research is required or suggested, and implications for practice, research, and education.

How to Incorporate Findings Into Practice

Once you have located a number of research reports that seem to suggest the same thing and are the result of well-planned, well-performed studies, you can draw some conclusions about changing practice. One should not take a single study and use the results to implement change, unless the study is so large and so well done that professional practice organizations are suggesting changes. An example of this situation occurred in 2004 when information about the use of estrogen in postmenopausal women and an increased incidence of heart disease changed the practice of physicians nationwide virtually overnight. Generally, a series of smaller, related, well-structured and rigorous studies is critical to building an argument for practice or process change. Understanding the evidence you are gathering is crucial to safe, efficient patient care.

REFERENCES