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Editor:

Robert Folzenlogen MD

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Hospitalist Update

Taking the Myth and Mystery out of Diagnostic Decision Making

William Steinmann MD

Several recent books have addressed “How Doctors Think,” with emphasis on diagnostic decision making and the sources of diagnostic error. National venues now target the problem of diagnostic error and new studies highlight the high levels of costly and unnecessary test ordering, much of which is related to ineffective diagnostic processes. And, finally, teaching clinical reasoning is still considered a difficult curriculum to master. Why do physicians have difficulty in making a diagnosis?

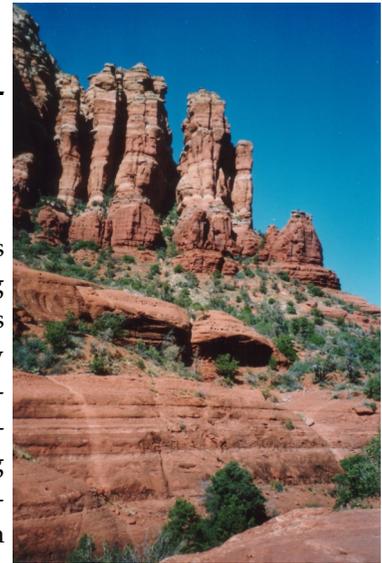
Is making a diagnosis unique to medical decision making?

Given the fact that every day we use “diagnostic decision making” to solve problems at work, at home or at play, why is clinical reasoning and diagnostic decision making in the clinical setting so difficult to learn and master? And why is diagnostic decision making any different than the reasoning we use to solve problems in our daily lives? Doesn’t finding your car keys require diagnostic decision making? Clearly, any adult is faced with problems that require solutions on a daily basis and is it not reasonable to use the term “diagnostic decision making” to explain these processes? Is there something uniquely different or difficult when we solve problems in the practice of medicine? Are physicians any different from auto mechanics who use reasoning and diagnostic tools to identify problems under the hood? I don’t think so.

In summary, as human beings, we have the capacity to reason and have been constantly solving problems since childhood; clearly, some of us are better diagnosticians than others. However, there is absolutely no rationale that the modus operandi for clinical reasoning and decision making in medicine is unique or different from that used in daily life.

So what is the nature of the problem?

I believe there are three fundamental steps in effective decision making that, if unmet, result in an ineffective diagnostic process and potential diagnostic error. First is command of knowledge about the subject; if you don’t know what something (continued)



(cont) looks like, you are not going to recognize it. In clinical diagnosis, knowledge of the clinical and epidemiologic characteristics that define a condition or diagnosis and knowledge about the patient that address these characteristics are fundamental. Second is the practice of hypothetical deductive probability-based reasoning that focuses on ruling-in a single, most likely diagnosis. And third, is awareness and consideration of the obstacles or distractions that bias reasoning and contribute to cognitive errors in the diagnostic process.

Regarding the first, clinicians are more likely to diagnose a condition that they have studied or seen; this is why specialists are able to diagnose unusual or rare disorders that generalists might miss. Successful diagnostic decision making requires knowledge of clinical and epidemiologic characteristics of each of the possible candidate conditions and consideration of these characteristics in evaluating the patient's risks and clinical presentation. Do you know what the condition that you are seeking looks like? Have you systematically considered all necessary related pertinent positive and negative clinical and historical findings that relate to the single best diagnosis. My experience today is that many clinicians do not know and systemically consider the characteristics that define each and every specific diagnosis under consideration.

Second, efforts must be directed to the process of deductive reasoning and ruling-in the single best diagnosis. Too much effort seems to be spent ruling-out unlikely and less probable conditions rather than basing the process on the increasing weight of evidence. While consideration of possible serious and life-threatening albeit rare conditions is warranted, identification of the key characteristics of the single best, most likely, diagnosis should rule-out unlikely conditions early in the workup. The key here is increasing certainty (confidence) in a single, most likely diagnosis. Even late in the diagnostic process, clinicians can relate unlikely conditions (the rule-out mentality) but still specify three or four conditions under consideration; they have not yet focused on acquiring the information that will yield a single best diagnosis. In this regard, epidemiologic characteristics, if not unknown, are often not considered by many clinicians. Yet, assessing risk characteristics greatly increases the precision of probability estimates.

The third issue arises from the many distractions that disrupt the reasoning process. Kassier and Koppleman offer a good description of the errors that occur in cognition; most are manifested by biases in clinical reasoning. For example, we tend to consider diagnoses that we recently missed or encountered, no matter how unlikely they may be. Rather, focusing on gathering data to rule-in the single, most likely diagnosis is the key to successful and effective decision making.

There are several other considerations that deserve attention. A diagnosis consists of a pathological or functional process, e.g. metabolic, infectious, neoplastic, and an involved organ or system, e.g. lung, vascular system, etc. I am often struck by the number of discharge diagnoses that do not indicate the nature of the problem; non-specific chest pain or unspecified abdominal pain are not diagnoses but symptoms that require the application of a diagnostic pathway to identify a specific process and organ system. Failure to identify the cause of non-specific chest pain is a major reason that myocardial ischemia is a leading cause of malpractice litigation. Another consideration is our variable capacity to deal with the uncertainties of diagnostic decision making. The key to dealing with such discomfort is to embrace the above practices in order maximize the likelihood that you will focus on the single best diagnosis. As hospitalists, we often know little about our patients prior to admission and must recognize our limitations. In an attempt to garner the information that is necessary to rule-in a diagnosis, we often rely on modern references which, unlike textbooks, provide only cursory descriptions of clinical characteristics associated with specific disorders; taking the time to review the detailed information in textbooks will improve our diagnostic skills. It is also important to know the prevalence of diseases in the population that you serve; combined with data from your history, physical and lab testing, this should help to direct you toward the most likely, best-fit diagnosis.

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