If you can keep your head . . .

Clinical Decision Making in the Age of Evidence-Based Medicine

David A. Rothenberger, M.D.

Division of Colon and Rectal Surgery, Department of Surgery, University of Minnesota, Minneapolis, Minnesota

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It is a privilege to give this year's memorial lecture honoring my colleague and friend, John G. Buls, M.D., who died prematurely and unexpectedly in 2001. I thank the Executive Council for the invitation and I am grateful that John's wife, Marlene, and Alexander, their youngest son, could be here today. I know their other children Emma and Mathew are here in spirit as well. I sense that John's presence is felt by those of us privileged to have known and worked with him. We truly miss him.

You may have wondered about the title of my lecture—let me explain. John Buls was a master surgeon possessing the cognitive abilities and technical skills achieved by only a few in our profession. But what really distinguished John was the third component of being a master surgeon—his superb clinical decision making. The ability to make sound clinical decisions is probably the greatest value we bring to our patients, and yet we rarely address the subject. I hope today's memorial lecture will begin to fill that void and stimulate further discussions and research into this important but neglected topic.

Over the past year as I prepared for this lecture, I have spent time trying to understand clinical decision making. What does the phrase mean? Why do some practitioners have the ability to routinely make sound judgments and some rarely do? Can we teach and measure decision making? Can we select trainees likely to acquire the ability to make appropriate decisions? How does evidence-based medicine affect clinical decision making?

Surprisingly, there is little known about medical decision making. As I pursued the answers to these questions, I found myself reading books and articles on learning theory, competency, evidence-based medicine, chaos theory, and chaordic organizations. I began to understand that clinical decision making is a complex, often lonely and ambiguous task with serious consequences. I found myself thinking back to one of John Buls' favorite poems, titled If . . ., by Rudyard Kipling, that I read at his memorial service. Let me read you the first verse. You will recognize that the first phrase is part of the title of my talk.

If you can keep your head when all about you
Are losing theirs and blaming it on you,
If you can trust yourself when all men doubt you,
But make allowance for their doubting too,
If you can wait and not be tired by waiting,
Or being lied about, don't deal in lies,
Or being hated, don't give way to hating,
And yet don't look too good, nor talk too wise.
This poem spoke to John Buls in a special way. I suspect its sage advice helped him through some of those lonely nights that each of us has when we lie awake worrying about our decisions and how they will affect our patients. So let me share with you what I have learned about clinical decision making.

It is my thesis that sound clinical decision making is dependent on four elements: (1) clinical experience and expertise, (2) a relevant knowledge base and access to up-to-date evidence, (3) communication skills, and (4) personality characteristics that collectively contribute to good clinical judgment. Some of these are concrete and easy to quantify whereas other elements are more nebulous and difficult to measure. I will briefly address each element.

**ELEMENT 1. CLINICAL EXPERIENCE AND EXPERTISE**

David Leach, M.D., the Executive Director of the Accreditation Council for Graduate Medical Education (ACGME), which regulates United States residency programs, suggested in a recent speech that the six stages of learning development described by Hubert Dreyfus, Professor of Philosophy at the University of California, Berkeley, can be applied to the medical world. Leach's description helped me to understand how we gradually acquire decision making responsibilities as we go through the stages of our medical careers. The six stages of learning described by Dreyfus and modified by Leach to fit the medical world follow:

**Stage 1. Novice**

This term describes a person who is learning the basic rules for a discipline. The medical student acquiring a fund of knowledge that will ultimately be helpful in making decisions is a novice.

**Stage 2. Advanced Beginner**

A person who is learning how to apply the basic rules is considered an advanced beginner. Most of our residents are advanced beginners.

**Stage 3. Competent Individual**

Ability to pick relevant areas of knowledge for application to a specific problem characterizes the competent individual. We hope our chief residents and fellows are competent in this sense.

**Stage 4. Proficient Individual**

*Proficient* describes a person who can make decisions efficiently. This equates to physicians who have acquired enough practice experience to recognize patterns of symptoms, disease, and the interventions appropriate for a specific situation.

**Stage 5. Expert**

The term *expert* describes one who can properly manage most complex problems. Though experience does not guarantee expertise, it is impossible to be an expert without considerable experience. Many of us here today are expert colorectal surgeons. We can efficiently and effectively diagnose and treat most colorectal problems and achieve excellent outcomes.

**Stage 6. Master**

A *master* is a person who not only knows when rules apply, recognizes patterns, and has the experience to know what to do but also knows when rules don't apply, when they must be altered to fit the specifics of an individual case, and when inaction is the best course of action. Every occasion is used to learn more, to gain perspective and nuance. At this level, knowledge is almost intuitive.

In surgery, this equates to the rare individual, like John Buls, who puts it all together, combining the cognitive abilities, the technical skills, and the individualized decision making needed to tailor care to a specific patient's illness, needs, and preferences despite incomplete and conflicting data. Master surgeons have an intuitive grasp of clinical situations and recognize potential difficulties before they become a major problem. They prioritize and focus on real problems. They possess insight and find creative ways to manage unusual and complex situations. They are realistic, self-critical, and humble. They understand their limitations and are willing to seek help without hesitation. They adjust their plans to fit the specifics of a situation. They worry about their decisions but are emotionally stable.

**ELEMENT 2. KNOWLEDGE BASE AND ACCESS TO EVIDENCE**

Clearly, decision making is also dependent on a relevant knowledge base and up-to-date information. We leave medical school and residency filled with the latest medical knowledge. It doesn't take long to realize that knowledge is not static; new understandings of disease and new treatments become available at an