Balancing Art and Science in the Diagnostic Process

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At the Core of What Physicians Do

“Introduction to Clinical Diagnosis” is usually medical students’ first introduction to what will become the very essence of what they will do during the rest of their professional lives. From the first time that we as medical students doffed our short white coats and sat across from and started asking our first unsuspecting patients a highly scripted series of questions, we had begun a long process of professional discovery, not just of our patients, but of ourselves.

As physicians to be, we were all taught to listen to patients (and their family members). We were admonished to discover as much as possible from the history of present illness (as well as the past and family history) before even beginning any kind of physical exam, much less to form any initial impressions about the pathology which could explain current symptoms and complaints. Whether we had ever learned to do it effectively before that time in any type of person to person interaction, we needed to be taught to communicate in a way which was both professional, yet sufficiently personal to get patients to reveal information they otherwise might not, which could be critical to arriving at an accurate diagnosis.

Many medical student classmates of mine became inpatient during this “Introduction to Clinical Diagnosis” course. They wanted to move on as quickly as possible to the process of ordering tests and procedures to make diagnoses and prescribe treatments. However, the best clinician teachers fought their own tendencies to enable this kind of behavior in their students. The more the ability to undertake thoughtful (and often time consuming) consideration of patient information obtained through detailed, logical questioning of patients is ingrained at the earliest stages in professional training, the more likely this skill will not be abandoned in later professional practice.

What Happens Later in How Doctors Think

As most physicians (and patients) know, in actual practice, physicians, on average, interrupt patients less than 18 seconds after they have begun relating their history of present illness. In the so-called “real world” of medical practice, something called “pattern recognition” supplants the need to systematically communicate with patients to elicit key information critical to effective diagnostic decision making. As Dr. Jerome Groopman, Professor of Medicine at Harvard, calls it in his landmark best selling book “How Doctors Think”; Houghton Mifflin (2007): “The doctor instantly and semiconsciously assimilates the relevant data, compares it with past cases and comes to a decision. The mind acts like a magnet, pulling in the cues from all directions.”

This thought process leads to faulty decision making leading to the 15 to 20% of patients who are ultimately misdiagnosed with harmful, often deadly, consequences: According to Dr. Groopman, along the way subtle
influences skew decisions. In emergency rooms which take in a large number of alcoholics, a patient “fitting that pattern” (who is actually in insulin shock) is often lumped in as just another “one of them”.

This type of thinking illustrates common logical fallacies such as “availability” and “confirmation bias”. Availability is the tendency to reach for the plausible explanation nearest at hand and to ignore competing theories. Confirmation bias occurs when physicians selectively highlight evidence that supports what they expect to find. All this leads to “premature closure”, i.e. arriving at a diagnosis which fits the most available patterns and confirms pre-existing biases.

Also, as Dr. Groopman notes, there is commission bias. This is the urge to act rather than to do nothing which would be preferable. In other words: “Don’t just do something, stand there!”

So What About Evidence Based Medicine?

Over the past 10 years or so, both in this country and in Europe, so-called evidence based medicine has evolved as an attempt to inculcate more scientific method into the process of diagnostic and therapeutic decision making. The rise of evidence based medicine has occurred in response to the wide variations noted in both the diagnostic and therapeutic decision making among physicians across various regions of this country. Studies which chronicle these wide variations in both clinical processes and results have become the basis for evidence based medicine proponents’ advocating the use of more scientific methods, including statistical and probabilistic analysis, in diagnosing and treating patients.

However, important it might be to make clinical diagnosis and treatment more of a scientific process, like anything, it runs the risk of going too far. Then there is the equally great risk that the merits of this approach will be ignored. As fellow Harvard trained physician and medical suspense writer, Michael Crichton, M.D. points out in an April 1, 2007 “New York Times” review of Dr. Groopman’s book “How Doctors Think”: “Today’s physicians are increasingly encouraged to behave as if they were computers, and to reason from flowcharts and algorithms. This is intended to produce better diagnoses and fewer errors; it is also embraced by insurance companies, who use it to decide which tests and treatments to approve.” Proponents of the evidence based approach to practicing medicine all the way back to its presumptive “father”, Dr. David Eddy, never intended it to supplant the art of communicating with patients, much less to be used by insurance companies to deny reimbursement.

Is there a Happy Medium?

Both Drs. Groopman and Crichton likely would not advocate a return to the “See one, do one, teach one” methods of their medical training. However, they do see the real risks of the pendulum’s swinging too far away toward the science and away from the art of clinical decision making. The introduction of the latest information systems to provide real time decision support at the point of care cannot substitute for the skillful eliciting of information from patients and their family members, without which even the most advanced information technologies are useless.

The best physicians will be those who recognize the need for this balance, avoiding the various biases and faulty reasoning processes identified by Dr. Groopman, while taking advantage of the latest technologies to fill knowledge gaps and further thoughtful diagnostic probing. As we all should have learned during our earliest days of interviewing patients:

“Patients really don’t care how much you know, until they know how much you care.”

Future Issues of “Risk Review”

Our next issues will begin to explore some of the new electronic information technologies which may be useful in diagnosing and treating patients. To further develop the important themes of this and the previous issue of “Risk Review”, we will discuss how these technologies need to be used to enhance—not disrupt—the all important communication channels established between physicians and their patients.