THE KNOTTY PROBLEM OF COGNITIVE ERRORS

“But frankly, when I discuss these topics with trainees, I can see their eyes glaze over and their attention wander back to the pressing patient care issues of the day. These concepts are simply too abstract to resonate with most physicians.” –Allan S. Detsky, MD, PhD, “Snakes on a Dock,” JAMA, September 13, 2016

But nonetheless, cognitive errors remain a pressing problem. While no remedy will ever be completely effective, doctors can use their intelligence and common sense, combined with some simple protocols, to maximize diagnostic accuracy.

Here’s an example of the way doctors commonly think. They see a patient, a middle-aged gentleman, who looks ill. He reports fever, muscle aches, and cough for the last few days. Many of his colleagues are sick too, and it’s right in the middle of flu season. So what does he have? I think most doctors would in a snap say, “He’s got influenza.” It seems very unlikely that it would be anything else. This

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is typically how diagnosis is accomplished, which is that physicians quickly recognize what’s going on. This process takes place immediately. It’s highly successful, and it’s very widely used.

It’s the current paradigm for how doctors think, and how we all think. It starts off with a recognition standard: Do we recognize this problem? And most often, we do. This means that we revert to system one, the intuitive pathway. This is the pathway that experts use. And because we recognize what’s going on, we immediately know what to do. So in the case of most diseases, we know the diagnosis, and we’re done, and we’re moving on to the next patient.

But if the doctor doesn’t recognize what’s going on, he has to stop and think. He reverts to the rational pathway, system two, which is deliberate and involves conscious thought. It takes time, so doctors don’t like to go that route if they can avoid it. They use both pathways, but in too many cases, it’s just the intuitive pathway, in other words, the mental shortcuts. The technical term for this is “heuristics.”

So to diagnose influenza in the patient referenced above, doctors use what we call “the availability heuristic,” or “the recognition heuristic.” And it’s extremely beneficial: it’s fast and it’s effortless. It’s very often correct, and the reason why is that it approximates the base rate of disease in the population of patients that healthcare professionals see.

But it’s not perfect, because doctors may fail to construct a differential diagnosis when it’s actually needed. In one study on misdiagnosis, in 80% of the instances, there was no differential diagnosis. Or maybe the physician’s experience with certain conditions is limited.

MPL/HPL Insurers: Robust Programs to Educate Healthcare Professionals

Recently, PIAA presented a panel discussion on what medical and healthcare professional liability (MPL/HPL) insurers do to address diagnostic errors in medicine.

The focus of the session was on the panoply of PIAA insurers’ efforts in developing programs that serve as hands on and didactic training for healthcare professionals in improving diagnosis. The discussion was spearheaded in response to the sixth recommendation of the 2015 Institute of Medicine report, “Improving Diagnosis in Healthcare,” which stated that MPL/HPL insurers should collaborate with healthcare professionals to devise programs that address the problem of diagnostic error.

In addition to addressing the IOM Report, the purpose of the session was to enlighten healthcare community academicians and stakeholders who are focused on diagnostic errors about the robust programs offered by PIAA members and collaborators.

The session began with a presentation on the diagnostic errors that have been identified, nationwide, as the second highest chief medical factor in MPL claims. PIAA members The Doctors Company, COPIC Insurance Company, and the Cooperative of American Physicians detailed statistics linked with these claims, and explained the methods that risk managers and chief medical officers use to address system-wide and cognitive-related issues—and thereby decrease the frequency of diagnostic errors.

The session then provided perspectives from FOJP Service Corporation/Hospitals Insurance Company, Inc. and PIAA members the Canadian Medical Protective Association and Sumit Stanford. This segment focused on what can be done to remediate system errors in health systems, how simulation programs are employed to educate healthcare teams, and what has been accomplished in developing programs that alleviate physician stress and burnout.

Each of these factors has been identified as a contributing element in diagnostic errors.
Also, bear in mind that just because the doctor thinks it’s right doesn’t mean that it is.

Here is an example of a heuristic in operation. Which is more common, “R” as the first letter of a word, or as the third letter of a word? When many people first see this, they say “R” as the first letter. It is so easy to think of words that start with the letter “R.” And that’s how the availability heuristic works. But it’s the wrong answer. As it turns out, “R” as the third letter is three to four times more common than “R” as the first letter. But it’s harder for us to think of these words; we would have to stop and think.

So intuition isn’t totally trustworthy. Consider the last multiple-choice test you took. What advice were you given: to trust your intuition, or to go back at the end of the test and reconsider the questions you were not sure about? Many of us were told to trust our intuition. But there have been multiple studies of thousands of doctors taking their internal medicine board exams. They were told to keep track of whether they went back to look at their answers and reexamine them. In fact, the test takers were twice as likely to change a wrong answer to a right answer as vice versa.

Going back and reconsidering their intuition-based responses led to better scores. Intuition can be improved upon if we just stop and think.

Physicians are instead quite often making diagnoses using intuition, which is seated in a part of the brain that we don’t really understand at all and can’t really study. It works well most of the time, but it is error-prone.

In medicine, the optimal pathway would be to construct a full, formal differential diagnosis and then give serious thought to the items on that list. But frequently, physicians don’t do that. They tend to settle on the first diagnosis that fits the data they have.

Resolving problems with diagnosis
What can healthcare professionals do to counter the current issues with diagnosis?

First, they can work in teams. Up to this point, diagnosis has largely been a one-on-one affair: the clinician is alone with the patient, and the diagnosis is pursued in that setting. But if we could make these parties—the nurse, patient, the pathologist, the patient, and perhaps the radiologist—more meaningful partners in that process, diagnosis would be safer.

Second, doctors should empower patients to get back to us if their symptoms aren’t resolving or in fact get worse—or aren’t responding to treatment. Then, we’d have an opportunity to catch diagnostic errors before they lead to harm.

Third, remember that nurses know a lot about our patients, and they are in a perfect position to see whether the diagnoses we have assigned look like they’re the correct ones. They can also assess whether communication was effective. Healthcare professionals should take advantage of all the ways the nursing staff can help.

Fourth, pay attention to the work environment; reduce stress. Provide more time for diagnosis; make it easier somehow. Provide adequate support, including a good electronic medical record system, access to decision support systems, and easy access to expertise.

And of course, focusing on improving communication would go a long way toward resolving problems with diagnosis.

So there are the issues that have been identified, e.g., faulty context, premature closure, and the heuristics that don’t work. But fortunately, the solutions noted here to these issues would apply to any one of them. And just the simple process, “Just stop and think,” would be helpful. Ask, “What else could it be besides (for example) gastroenteritis?” Be comprehensive; making a differential diagnosis is a very effective way to increase diagnostic accuracy.

A set of symptom-specific checklists can be downloaded from www.improvediagnosis.org. If a patient comes in with (for example) chills, you can find out which illnesses include this symptom. Sepsis is one possibility on the list for chills.

One example of a Web-based diagnostic tool, Isabel, improved diagnostic accuracy rates, in one study, from 90% to 92%. The Isabel Differential Diagnosis (DDx) Generator is used by clinicians to help them broaden their differential.

And we do need more pathways for feedback. A good way to start is to follow up with patients just seen in the emergency room. Call them up the next day, or in a week and a month later. Was the ER diagnosis correct?

As a general rule, physicians need to ponder diagnostic errors, to be reflective and think rigorously about why they happened.