

EBM and the Physician-Patient Relationship

Learning how to find evidence and apply it is a good starting point, but the important element comes into play when physicians interact with patients.

Fast Facts

- ▲ *Evidence shows that having a medical home—a provider or practice that knows the patient’s medical and personal history—increases the quality of care. As that type of ongoing relationship with one provider or practice becomes rarer, electronic medical records can help reconstruct the medical home. Page 88*
- ▲ *Evidence not only helps physicians make informed decisions—it helps patients make choices as well. The right facts from the right source can even help patients stick with a recommended treatment plan. Page 97*
- ▲ *In the current system, physicians are expected to keep an enormous amount of information in their brains, ready to pull out the appropriate diagnosis or prognosis at just the right time. This isn’t realistic. By putting evidence-based tools at the point of care, physicians can reduce their “knowledge burden.” Page 102*

When we look at why physicians need to incorporate EBM into their practices, “one of the reasons is that it is the right thing to do for patients,” says Steve Singer, Ph.D., director educational services at PeerPoint Medical Education Institute, LLC, in Evanston, Ill. “Physicians have a sort of encyclopedic, anecdotal wisdom that is informed both by their for-

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mal training and also [by] what their experience has been, what they have seen.” But that is not enough, he says. Experience must be supplemented by evidence, and evidence must be incorporated into decision-making.

Of course, Dr. Singer adds, “There are different levels of evidence” to be weighed. Although the randomized, double-blind, controlled trial is generally considered to be the gold standard in evidence, “anecdotal reports do have their place.” For example, he says if somebody is bitten by a rare snake in Guatemala, and that happens very infrequently, it is not possible to do a randomized, double-blind, controlled study; but it can be useful to publish in a journal an anecdotal report of how that patient presented, how he was treated, and what the outcome was, because another physician might encounter a patient who was bitten by a similar snake and learn from what happened with the other patient.

“That’s the beauty and the challenge of Evidence-based Medicine,” says Dr. Singer. “There is no one simple rule for everybody. Every physician in every different practice, whether it is a private clinic or an academic medical center, has to find the appropriate use for Evidence-based Medicine in his or her practice. The only thing that is consistent across the board,” he adds, is that the evidence “has to be more than just your perspective, and that there is a benefit from looking at a collection of data and research that informs best practice.

EBM Can Build a “Medical Home”

As the tools of EBM are integrated with the latest computer technologies and high-speed wireless communications, physicians will be able to offer more comprehensive care than they could in the past, perhaps solving some of the problems of the current healthcare system.

“So many people in managed care and in the new systems of medicine today really don’t have a medical home” with a physician and team of practitioners who know the patient, says Risa Lavizzo-Mourey, M.D., M.B.A., President and CEO of the Robert Wood Johnson Foundation. “The evidence does show that having a medical home, having a place that knows the info, knows you, understands your preferences, and can be that source

of synthesis is actually the way to deliver the best quality care.” Electronic medical records can facilitate that medical home, especially if the patient sees more than one provider.

When physicians and other care providers in a practice can easily access patient information by tapping into the patient’s electronic health record via a portable, wireless, Internet-connected laptop, handheld computer, or office terminal, and the patient’s record also can be accessed and updated by other care providers, all parties will benefit from the pooling of information.

For physicians and other providers, this integration of electronic health records access will save precious time and reduce workload.

For patients, electronic health records minimize paperwork, delays, and information gaps caused by paper records. Instead of being asked to complete pages of patient information forms each time they visit a new provider, patients can simply grant those providers access to their records. Access to that history is a large part of the importance of a medical home.

For patients, electronic health records minimize paperwork, delays, and information gaps caused by paper records. Instead of being asked to complete pages of patient information forms each time they visit a new physician, therapist, hospital, or other provider, patients can simply grant those providers access to their records. Then the new provider has the complete history—and access to that history is a large part of the importance of a medical home.

Helping Patients Understand Risks

Patients have an easier time understanding recommendations when they are explained in the context of relative risk reduction rather than absolute risk reduction, says Scott Luria, M.D., associate professor at the University of Vermont College of Medicine in Burlington. Evidence can help frame those risks so that patients can more easily understand them.

Thanks to the Framingham Heart study, an ongoing 40-year study of more than 40,000 people in Framingham, Mass., Dr. Luria says, we have good evidence on that population, “what all their cholesterols and blood pressures and smoking status and

ages and HDL levels are. And we also know, over 40 years, how many of them went on to have heart attacks and strokes.” He puts that evidence to work in his practice every day.

“I can see a patient and know his gender and his cholesterol and HDL measurements, whether he smokes or has diabetes, and use that to give him a statistical risk of heart attack or stroke in the next 10 years based on that study,” Dr. Luria says. “The population is a typical working class town, so it is applicable” to a broad swath of the multiethnic working class population he deals with in practice.

According to Dr. Luria, “It is easy for [physicians] just to say, ‘Yes, you should treat your cholesterol.’” But the physician also needs to give the patient the real pros and cons of doing so, based on the evidence that is available, and to inform patients of both the absolute risks and relative risks, to equip them to apply that information to their own values and their own philosophy about their care, he adds.

“What I will do is figure out where he is right now in terms of 10-year risk. Let’s say he comes out to have a moderate cholesterol [test result], but his blood pressure is good and he doesn’t smoke,” Dr. Luria says. In a case like that, he says, this tool might show that doing nothing would give the patient a 10-percent risk of having a heart attack or stroke in the next 10 years. On the

other hand, “If we do intervene, either with lifestyle change or medications to the max, and we get things to the ideal level, that risk can recalculate to something like three percent.” He presents both sets of numbers to the patient and says, “Here is the risk of doing nothing, and here is the risk of doing everything. And here is what we get if we get somewhere in between.”

This same information can be spun in a number of ways, Dr. Luria says. “You can say, ‘Wow, you are cutting your risk by more than a third from 10 percent to three percent,’ and that’s true. Your relative risk reduction, as we call it, is greater than 60 or 70 percent. The absolute risk reduction, where you simply subtract the risk of one from the other, is only seven percent, however.” That means there’s only a one-in-14 chance of that treatment will prevent a heart attack or stroke in the next 10 years. To put it another way, the physician would have to treat 14 people just like this patient for 10 years to prevent one heart

attack or one stroke. These statements give the patient greater context and different perspectives on his or her condition, Dr. Luria says.

The relative risk sounds more dramatic, but it is important for the patient to understand both relative and absolute risks. “It is easy for us just to say, ‘Yes, you should treat your cholesterol; yes, you should get it down to ideal.’” But the physician also needs to give the patient the real pros and cons of doing so, based on the evidence that is available, and to inform patients of both the absolute risks and relative risks, to equip them to apply that information to their own values and their own philosophy about their care, he adds. That allows the patient to apply the evidence to his or her own set of health philosophies. “There are people who are very much nihilists. They don’t want to do anything. They say, ‘Well, if the good Lord takes me, he is going to take me; and I am going to have fun in the meantime.’ There are others who want absolutely everything done to minimize their risk of having a heart attack or stroke,” Dr. Luria says.

He gives another example: a young female patient who is otherwise healthy but whose cholesterol is “up in the 300s.” When he puts that patient’s information through the Framingham Heart Study Risk Assessment Tool, her risk of a heart attack or stroke over the next 10 years turns out to be only two percent. “Her risk factor could be zero percent if it was modified,” Dr. Luria adds, “but here we are talking about only an absolute risk reduction of two percent,” which he explains means “you’d have to treat 50 healthy young women with high cholesterol to prevent one heart attack or stroke in the next 10 years.”

The result of using evidence to assess risk is not always what the patient—or the physician—expects. “Sometimes it is a real surprise to them and to me, frankly,” Dr. Luria says, “because the knee-jerk reaction is, ‘Go on medications right away; your cholesterol is sky high!’” But the key question, he notes, is, even though the patient’s cholesterol is alarmingly high, what does the evidence tell her about how much her risk would be reduced if she went on medications? That’s the information the physician needs to give the patient.

For science, the data alone may be sufficient reason to practice EBM; but for the physician, outcomes matter most. The

physician looks at the literature from well-designed studies, not just to see the results of research on a new diagnostic test or a therapeutic intervention, Dr. Luria says, but also to see “that there is evidence that it improves outcomes.” Regardless of the topic of the research, he says the physician and patient’s concern is not what the study found about the number of people who improved on the tested therapy, or whether that therapy prevented a particular disease in a very narrow population. In (EBM) outcome-based medicine, the key is “what actually happens to real patients in the real world,” Dr. Luria says.

EBM and Patient-centered Care

EBM doesn’t provide all the answers to patient questions, but Dr. Lavizzo-Mourey says EBM is especially important now as patients have to assume a greater financial burden for their medical care. “They want to make sure that what they’re spending their money on has the best chance of making their condition better,” she says. On their part, she says, physicians have to help their patients appreciate the dangers of *not* practicing EBM, such as the risk of prescribing a medication that may be ineffective or potentially harmful.

At the same time, Dr. Lavizzo-Mourey adds, it is important to remember that EBM is not “the full answer to providing the highest quality care that we know how to provide. There are lots of parts of the healthcare system that have to complement using the best possible evidence in order for us to give high-quality care.” For example, she explains, care must be patient centered, which means based on the patient’s culture, values, and desired outcomes. It must also be coordinated with other parts of the healthcare system so the care can be delivered “in the least restricted environment” and in “the most patient-centered way.” It must be efficient from the systems perspective and, more importantly, from the patient’s perspective.

“The patients are investing a lot of time in getting good health care; and if their time and their resources are not being used efficiently, then we’re not delivering high-quality care in the best possible way,” says Dr. Lavizzo-Mourey. “I think a danger of Evidence-based Medicine is that people start to view it as a panacea when actually it is one part—but one critical part—of

delivering extremely high-quality care. The best science is the starting point.”

But, she adds, if the patient does not want that treatment for whatever reason, the physician must take that into consideration in order to do the best for the patient. “Similarly,” she adds, “if a patient is demanding or desiring a treatment that is ineffective and we take the position that it’s probably not going to hurt, again, we are not doing the best for the patient.” Many of the things patients want are unlikely to work, according to the evidence, she notes. “A good example is an antibiotic for a viral sore throat. It’s not going to help. In fact, it might hurt, and it’s going to cost money” and may lead to worse problems, such as more resistant organisms.

Her point is that there are times and reasons to use EBM to support or oppose a treatment course. “I think the more transparency that doctors have with their patients, the more trust is likely to develop,” Dr. Lavizzo-Mourey says. “My sense is that patients understand that doctors don’t know everything; but what they’re really wanting is someone who’s got a fundamental, knowledge-based judgment and the ability to seek out information and interpret that information, using their experience and their judgment in a way that is going to help the patient’s outcome.

“I think when you frame it that way with patients,” Dr. Lavizzo-Mourey adds, “they come to appreciate that it is a good idea to have a physician who is going to look things up and interpret [the patient’s] condition in light of the best knowledge that they can get at any moment.” Patients are already—and increasingly—using the Internet and other sources to look up information themselves, she adds, and they often are frustrated in trying to interpret what they find. “They look to the physician to help them interpret it, and the best way to do that is to be transparent about seeking the information.”

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Of course, this should be done within the context of the patient's preferences. "People are different and have different appetites for information and for making judgments about that information," Dr. Lavizzo-Mourey notes. Practicing patient-centered care means understanding what works for that patient, how much information he wants, and how involved he wants to be in decision-making. The physician should accommodate his or her style and practice to the needs of that patient, she adds. "In my practice, I've certainly had patients who wanted to know all the details and wanted to work through the decisions on all of the details with me." Others wanted her to make decisions for them based on what she knew, without engaging the patient in a detailed approach "because that made their anxiety level [rise] and their recovery harder."

Evidence Improves Communication

EBM gives physicians a better framework for explaining medical information to patients, says Lynne Kirk, M.D, President of the American College of Physicians. For example, if a woman gets a mammogram to screen for breast cancer and the result is normal, most people would like to think this means there is zero chance that she has breast cancer. "Well, that's not true," Dr. Kirk says. "There is no test that's perfect." If the test is normal, patients want to know "what is the greatest chance" that they might have breast cancer, such as an early, hard-to-discover cancer. "That is what is, in statistical terms, called the negative predictive value," she explains. "So if I have a negative test, how many people who have negative tests actually end up having cancer? That sort of language, I think, is much more helpful to patients than saying 'This test is 99.99 percent sensitive.' You can use the same numbers and actually calculate the negative predictive value." Similarly, the written card the patient typically receives from the radiologist about her mammogram results does not assure the patient she is cancer free if her test did not detect cancer, Dr. Kirk explains. It only says her risk is very low.

"I think Evidence-based Medicine does give us ways to talk about the literature better," Dr. Kirk says, in ways that are "easier for people to understand" so "they can use that information to make their own health decisions." It is easier for patients to

understand if the physician says eight women out of 10,000 within a certain age range who took hormone replacement therapy for a specific length of time developed a complication than it is to say their risk of developing that complication is .08 percent, she explains. Patient-friendly context puts the evidence into perspective for the patient so she can incorporate it into what she believes is best for her, Dr. Kirk adds. She might say, “These hot flashes are driving me crazy, and I’m not getting any sleep, and I really need estrogen,” and opt to accept the risk of HRT. With EBM and the physician’s help, the patient can be in charge as much as he or she wants to be.

It works in the reverse as well: polishing communication skills can help physicians communicate EBM more effectively. As Gwyn Barley, Ph.D., Director for the Center for Advancing Professional Excellence (CAEP) at the University of Colorado School of Medicine, says, “It’s one thing to collect all this evidence; it’s another thing to be able to describe it in terms that patients can understand.” That’s why a big part of the curriculum at CAEP is devoted to teaching medical students those skills so they can effectively explain things to patients, help patients understand their thinking, and discuss questions patients may have.

Now that more patients are on the Internet, Dr. Barley says, “They are not as passive as they were historically. They really want a partner, and they want to understand where you’re getting your knowledge,” she says. “You’re now interacting with patients who’ve probably been doing some looking [online] themselves and have some evidence—maybe not good evidence, but they have some evidence.”

Many of the patients Dr. Barley talks to have “significant illnesses.” She says one of the topics they bring up is how hard it is to make sense of the medical literature and figure out what it means. “They can get into the medical literature just as we can,” but they lack the training to understand the literature, she says. That’s another EBM communication interaction through which physicians provide an important service. “I think partnering with patients and seeing yourself as working together to do what’s best for that person is the way we should be going,” she says. It’s time to let go of past practices and notions of the paternalistic

physician as “holder of all knowledge,” she adds. “That’s a real big change for the profession, and I think that’s good.”

What if the physician doesn’t know the answer to a patient’s question? Say so, says Dr. Barley. The admission won’t be fatal. It may even have a positive effect.

One of the lessons CAEP practices with standardized patients (actors or persons from the community who are trained to portray a “patient role,” such as acting the part of a diabetic patient) is being open about not knowing all the answers. Instead of being taught never to show they don’t know, the students learn to say, “That’s a really great question, and I want to find out more about that.” In the CAEP setting, Dr. Barley says, “I find patients really appreciate that, because they don’t feel like they’re being lied to or something is being hidden from them, but that they’re having a very authentic conversation.”

Talking to a patient who has done some research on his own may be a bit challenging for some physicians. In Dr. Barley’s group, one of the standardized patients presents as a man with pain in his foot that he is absolutely convinced is gout. The “patient” has looked up his symptoms on the Internet and decided—incorrectly—that gout is the diagnosis. Physicians are trained to “acknowledge that the patient has done some work and is interested in the care and wants to get treated well, but also to help make the right diagnosis,” she explains. Toward that end, physicians learn to respond with comments such as, “Wow, it is really great that you did all this research, and I really appreciate that; but I’m wondering if you saw this diagnosis in your searching.” That way, they deliver the news—that the correct diagnosis is not gout—in a way that respects the patient’s investment of time and research and helps him understand how that research was not as perfect a match as the patient thought. With that approach, the patient is more open to understanding and accepting the physician’s diagnosis.

“What you’re trying to do really is offer the patient more choices,” says Charles Young, M.R.C.P., a practicing emergency physician in London, England, and editor of the journal *BMJ Clinical Evidence* (www.clinicalevidence.com). “It is easier to do that if you know, relatively speaking, how good the choices are and what the relative pros and cons are. If you know there are

three possible treatments to the patient's cancer, and you've got it clearly laid out how well they work, what the side effects are, and what the likely outcomes are, it is much easier to discuss that with your patient," and "you can have a much more informed conversation with the patient." The patient is usually more cooperative when approached that way, but if he or she chooses not to follow the course the physician recommends, at least he or she is making an informed choice.

"I think that's a really good concept to bear in mind," says Dr. Young. "What you're trying to do is offer the choice and let people decide whether they want it or not." This less paternalistic approach to more cooperative medicine offers benefits to both sides. "It is much easier for the patients," Dr. Young says, but he notes "it is much easier for doctors when they get used to it," too. Why? "If you're taking the paternalistic approach, really all the pressure is on the doctor to make the decision." When the decision is shared, the responsibility is also shared.

As with most things, "sometimes there are exceptions," Dr. Young notes. In his practice in emergency medicine, patients with an acute or stressful problem often say, "You decide, you're the doctor." That's fine if that's their choice, "but at least you've offered them the opportunity to have a say if they want to," he adds. Likewise, if a patient is unwell or in pain, sometimes it's easier to let the physician make decisions for the patient. "I think there should still be the option for the patient to say to the doctor, 'Well, you're the expert. You tell me what I should do,' and that's absolutely the right thing to do" in that circumstance.

EBM and "Non-compliance"

Physicians also apply EBM when they help patients make—and stick to—their own decisions. EBM can help the physician prepare to give the patient the information he or she needs to make critical decisions and to answer questions or offer guidance if requested. "People have to make their own decisions about how they are going to interact with their illness," Dr. Dacso says, pointing out that this is especially true with chronic illnesses. "They have to [make those decisions] based on information. That information has to be presented in an intellectually and culturally appropriate way so that people understand it.

Once that is done, it is my firm belief that people will act in their own best interests,” Dr. Dacso says.

Dr. Dacso explains that EBM can help solve the “problem” of non-compliance—a concept that he admits makes him uncomfortable: “I write a prescription and I give it to you, and it’s for some pills, and you don’t take them; so you are noncompliant. I’m a good person because I did the right thing, but you are a bad person because you didn’t do what I told you to do.” But, he notes, “Adults don’t like being told what to do.”

He believes the physician’s job is not to make the patient “compliant” but to help the patient “understand why you should take those pills, with the full understanding that if you still decide not to take those pills, you are a grown-up and you get to choose.” The key is that the patient must have all the information presented in a way the patient understands before deciding whether to take that pill. “You have to appeal to people’s innate sense of self-interest,” Dr. Dacso says.

He uses this example of applying EBM to physician-patient interaction. “Suppose you have a type 2 diabetic,” Dr. Dacso suggests, and this patient “is trying to make a decision about his own lifestyle intervention, and he is told to lose weight and stop smoking, both good things. And then there is a series of medications that are recommended; and as an autonomous and free-thinking human being, he is trying to decide which of these recommendations of his physician he is going to accept.”

The patient wants to know what the physician recommends, and he wants the physician to interpret the evidence for him. Patients often ask Dr. Dacso what he bases his recommendations on. If the patient was not in the clinical trial that is being used as evidence, he or she has no idea how much that evidence applies to him or her. Dr. Dacso and his colleagues are researching how “to find a way to extend that evidence so it informs individual decision-making and allows people to decide how much they expect to get from a particular intervention.”

His research program is focused on trying to understand how people make decisions in their own self-interest and how they use medical information to inform that judgment. For example, the anthropologist in Dr. Dacso’s group hopes to answer these important questions: How do people interact with technology,

and what does technology mean to them? And whom do they trust to get information about health care?

Dr. Dacso argues that systems are needed to get the information to the patient in a way he or she can and will use. And the physician may not be the best person to accomplish that goal. “You need to have a doctor design a therapy for a diabetic or a hypertensive or somebody with heart failure,” Dr. Dacso explains. But there are some tasks a physician can’t—and shouldn’t—be expected to perform.

“I can’t live in my diabetic’s refrigerator,” Dr. Dacso says. “I have to make sure that my diabetics are completely informed as to diet and exercise and everything else.” But to ensure that the patient follows the advice would take “hours and hours a day” of time physicians don’t have. “I am a diagnostician and prescribe therapy,” Dr. Dacso says, adding that there are others who may be more effective at getting certain messages across to patients.

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For example, if the goal is to get health information to certain women, Dr. Dacso thinks an effective route might even be through other members of the community, maybe even their hairdressers. (Indeed, hospitals often put literature about upcoming health events in the waiting areas of beauty salons.) Some women see their hairdressers every week or two, he points out. On the other hand, they see their physicians once or twice a year for 10 or 15 minutes. When they do see the physician, he says, “He or she walks in wearing a big white coat, and she is sitting there in a paper gown and she’s cold and anxious and she doesn’t know this guy from a hole in a ground, and he says, ‘Trust me, take these pills.’”

Because of time constraints and difficulties building a trusting relationship, it may not be practical for physicians to be able to get a patient to understand how to deal with her condition on a day-to-day basis. This can become a time-management as well as a busi-

ness issue: “I want doctors to only be doing high-value work that is commensurate with their training and skills,” states Dr. Dacso.

Using Evidence Correctly Reduces Error

Consulting the evidence can also help reduce medical errors, says D. Robert Dufour, M.D., Emeritus Professor of Pathology at George Washington University and the Veterans Administration Medical Center in Washington, D.C., and a member of the editorial board for Lab Tests Online (www.labtestsonline.org). According to Dr. Dufour, Lab Tests Online (LTO), which provides information on the purpose and other details of a wide range of medical tests, has received a lot of feedback from patients saying the site provides them with information they have not been able to get readily from their physicians. In some cases, information they were given by physicians was misleading or even wrong.

“In general, doctors don’t get very much training in laboratory tests,” Dr. Dufour says.

He says a study by one of the laboratory organizations looked at how well physicians followed up on abnormal calcium levels on patients’ lab tests. They found that about 40 percent of the time, physicians didn’t recognize that they were there—or that they were abnormal—and didn’t do anything about them.

In fact, Dr. Dufour himself was a victim of the failure to understand the significance of a lab test result: “I’d had a high calcium level for four years, and it wasn’t noticed by any of my doctors and didn’t really come to attention until I developed a kidney stone as a complication of having high calcium levels. [It turned out] I had a disease called hyperparathyroidism, caused by a benign tumor that makes too much of a hormone called parathyroid hormone, which makes your blood calcium levels high.”

He says physicians need to be more aware of what the tests mean, but also laboratories need to improve the way they present the information to physicians, with the goal of helping them recognize abnormal values and know how to act on them.

Although the primary goal of LTO was not to educate health-care providers, Dr. Dufour says it’s obvious that healthcare providers need this information and are consulting LTO to get it. The company has heard from many providers, doctors, and nurses,

saying they were looking for additional information. As a result, LTO has “tried to expand the material we cover,” Dr. Dufour says. “We’ve actually had a number of physicians who have used the site and have told us it was helpful to them in improving their understanding of the uses and limitations of tests.”

The site has been online since 2001 and is open to anyone. There is now a version of LTO in the United Kingdom (labtestson-lineuk.org), and a German and Italian site will be up and running by mid-2007. Future growth will include an Australian site as well as sites in Polish, Hungarian, and Spanish, Dr. Dufour says. The number and types of tests will also be expanded. “When we first went online, we had about 50 tests. We now are well over 200.”

When physicians have evidence-based resources readily at hand, it reduces the physician’s “burden of knowledge,” says Reston, Virginia, pediatric intensivist Joseph Britto, M.D., Co-Founder and CEO of Isabel Healthcare Inc., USA (www.isabel-healthcare.com). As a result, EBM can help physicians interact more effectively with patients, even leading to faster and more accurate diagnoses.

“Biomedical knowledge is increasing exponentially” and at the same time, the half-life of knowledge is becoming shorter and shorter, so “something that is relevant today may not be relevant two years down the line. It’s like the myth of Sisyphus,” Dr. Britto says, referring to the mythological character who was condemned to an eternity of pushing a boulder up a hill, over and over, only to have it roll down again. “We shouldn’t have that burden of the boulder of knowledge that we’re trying to push up this mountain.”

To address this situation and to help physicians arrive at accurate diagnoses sooner, Isabel Healthcare has developed a clinical decision-support software package.

The goal of Isabel is to reduce that burden by simplifying the process of sifting through diagnostic options. “What we are trying to do is,” he says, “if a doctor sees a patient who has clinical features A, B, C, D, and E, and if he is likely to think of only one or two diagnoses, like L and M, we [the Isabel System] will prompt him. We will search through the textbooks and journals and say, ‘My friend, you have thought of only L and M. Let me remind you, you might want to consider X, Y, and Z.’”

If such a system had been in place in 1999, a child named Isabel Maude would not have suffered a near-fatal diagnosis, Dr. Britto says. “Isabel is the name of a little girl who in 1999 was three years old. She had chickenpox. All of us who have had chickenpox know that it is a relatively benign, innocuous, albeit

Putting Evidence at the Point of Care

“Making a diagnosis is at the heart of a patient’s journey,” says Reston, Va., pediatric intensivist Joseph Britto, M.D., Co-founder and CEO of Isabel Healthcare Inc., USA (www.isabelhealthcare.com). “Unless you make the right diagnosis or unless you round up in your mind the list of likely suspects, you’re not going to order the right tests or deliver the right treatment.”

He explains that the initial hypothesis of the Isabel system was, “Given the list of clinical features—a patient’s symptoms, signs, and results of investigations—can we remind doctors, nurses, nurse practitioners, physician assistants of a list of likely suspects for them to consider?” The second hypothesis was, “Can we deliver knowledge usefully into the clinicians’ workplace, where they make their decisions?”

The lead clinician at the hospital where Isabel Maude was seen before being sent home with undiagnosed necrotizing fasciitis “had actually placed in their protocol folder a paper from a prestigious medical journal highlighting the fact that chickenpox can be complicated by a secondary, life-threatening bacterial infection like the flesh-eating bug. Sadly, that knowledge was in a doctor’s office 15 meters down the corridor from where the child, Isabel, was being seen,” Dr. Britto says.

This is where the physicians’ “burden of knowledge” comes in. Physicians are simply expected to carry too much information around in their heads.

“As knowledge workers, we’re sadly unique in that we read the textbooks, we read our journals, and we’re expected to remember it six weeks, six months, or a year after we’ve read something. There are 11,000 diagnoses in our textbooks,” Dr. Britto notes. “When we see a patient and see a pattern of clinical features in a patient, we’re expected to remember what the likely suspects are, and—not surprisingly—even the most conscientious of us, even the most caring of us, as human beings, cannot remember everything every time that we need to.” He believes “there is too much emphasis on carrying data in the mind” and thinks physician knowledge workers have too little diagnosis decision support, especially compared with workers in

troublesome childhood infection.” However, a small but significant subset of children with chickenpox develops complications. In Isabel’s case, the complication was necrotizing fasciitis, the so-called flesh-eating bacteria; but it was not recognized by the family physician or the emergency physician who reassured the

law and finance, who have a longer and much more robust culture of mobilizing knowledge into their workflow than physicians.

For example, if a patient presents with fever, headache, vomiting, and neck stiffness, what should be considered? Bacterial meningitis? Viral encephalitis? An intracranial tumor? “The best of us are likely to forget something,” Dr. Britto says. “We might get away with a lapse because in many cases, patients get better, not because of us but despite us.” If that one mistake causes the quality of care to suffer, “patients’ lives are put at risk.”

That’s why the second goal of Isabel is “to mobilize knowledge from the textbooks and journals into your workplace at the point of care related to how you treat this patient: what other features you should be looking for, what blood tests or imaging you should be asking for,” Dr. Britto says. His favorite part of Isabel is borrowed from aviation. When a plane crashes, lessons are disseminated so other pilots and other airlines don’t make the same mistakes. Similarly, Isabel’s clinical team goes through the journals and sifts out reports of mistakes so physicians also know the pitfalls to avoid and the new advances that are being developed.

“In the United States, with the digitalization of health care, there is increasing emphasis on diagnostic error,” says Dr. Britto. “Initially, as a system, we focused on prescription error – prescribing the right dose, the right drug, making sure that there’s no drug interaction – but now we are beginning to measure [diagnostic errors]; therefore systems that can help mitigate diagnostic errors are coming into play.” That knowledge is also giving physicians a clearer picture of the magnitude and burden of diagnosis error, he adds.

Using a system like Isabel is as easy as accessing the popular search engine, Google, Dr. Britto says. “It is a very efficient way of delivering Evidence-based Medicine, guidelines, protocols, treatments, journal abstracts, knowledge from journals into the workflow,” Dr. Britto says. “What Isabel is trying to do is take the library and deliver it to the patient through you, through your hands and your mind, through you at the bedside.”

parents, told them not to worry, and sent the child home. Thirty-six hours later, the child was in multi-system failure and was readmitted to the same local hospital through the same emergency department. “Every system in her body was failing. She was stabilized and then transferred to the pediatric intensive care unit where I was an attending physician,” Dr. Britto says. That’s when the complication was finally recognized. “We made the diagnosis, and she spent the next seven weeks with us. It was extremely precarious.”

It was that experience with Isabel Maude that spurred Dr. Britto to establish the Isabel Medical Charity in partnership with the child’s parents. He notes that while most parents in such a situation would be understandably angry, Isabel’s parents looked for a positive solution. Right from the start, the parents said, “We’re not going to sue, but we want to work with you guys” to prevent future mistakes by building a system that would remind healthcare providers of likely diagnoses.

Resistance to EBM

Even after evidence shows a better way, not everyone is in favor of adopting an evidence-supported change, says Diana Mason, R.N., Ph.D., editor-in-chief of the *American Journal of Nursing*. When people remain resistant to making evidence-based change, they often argue that while there may be some evidence, they don’t have enough of it, she says.

A case in point, Dr. Mason points out, is the issue of family presence—the practice of allowing family members to be present during codes and invasive procedures. “There is a large body of evidence that suggests that about two-thirds of the families want to go in the room during the arrest,” Dr. Mason says. If that group is prepared and the staff knows what to do, “they should be allowed to go in. Patients find it helpful. Family members find it helpful. Family members believe it is their right.” Of those family members who have been present for an arrest, most would do it again if they had the opportunity. The one-third of family members who do not want to be present should not be made to go in, she adds.

The resistance to family presence has come mostly from hospital staff. “Non-trauma surgeons embrace it, but trauma sur-

geons are adamantly against it,” says Dr. Mason. These doctors think the families should not be exposed to the patient’s blood and injuries; but when asked what evidence they have to support their belief that keeping families out is better than allowing them in, “they don’t have it. There is no evidence that [barring family presence] is a sound practice. It is only something that makes the trauma surgeon more comfortable,” she states. In fairness, she adds, some suggest that if family presence makes the trauma surgeon uncomfortable, that fact alone may be reason enough not to change. They ask, “Do you really want an uncomfortable trauma surgeon in the room dealing with an arrest?”

However, Dr. Mason explains when family presence has been allowed and the family members and providers—nurses and physicians—have been studied, family presence makes the staff “more mindful that this is not just a body, but a person in the bed.” Family members can be helpful by providing information; and, she says, “by and large, they do not get in the way. They are not a problem in the room.” Their presence should not cause anxiety for the staff because family members do not know what is supposed to happen during a code, so they will not be critiquing what they see. On the plus side, having family in the room when a patient codes may provide a reason for staff to be more respectful, and “in many cases, family members want to call the code earlier than the team might. They see that everything that could be done has been done,” Dr. Mason adds.

In this issue, as in many others, why do we not follow the evidence? And when is the evidence sufficient to change practice? “I believe we have to look at what evidence we have for what we are currently doing,” Dr. Mason says. “If you have a growing body of evidence saying you should change practice, maybe you ought to change practice and look at the outcome.”

“Nobody likes change,” says hospitalist Mary Jo Gorman, M.D., M.B.A., CEO of Advanced ICU Care in St. Louis, Mo. “A lot of people are not early adopters and never will be, and anything that [these] people feel could possibly threaten their livelihood or their authority is going to make them less likely” to adopt change. They’re the ones who dismiss EBM as “cookbook medicine,” she says. But they’re ignoring a key point. Certain things are always true in cooking, she notes. “If you make cook-

ies, you are going to use a lot more sugar than salt. That doesn't mean you can't make variations in a cookie recipe, but it does mean you can't reverse the amounts of sugar and salt."

Creativity, individuality, and innovation are not stifled by the foundation truths on which cookie recipes are based; rather, they grow from that foundation. Similarly, Dr. Gorman says, "there are basic things that are not really up for debate in health care." When new protocols and procedures are developed, they should be adopted, she says, "and all of us should agree that everyone who has X needs Y. But let's get it done." Physicians should be spending time making

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individual calls and caring for patients, not bucking the basics.

"We have a lot of great people in health care working very hard to do great things, but you need systems in place to get this right," Dr. Gorman says. She notes that using EBM actually is a safety and time-saving tool for physicians just as a pre-flight checklist is a safety and time-saving device for airline crews. "It's not that the pilot and copilot and flight attendant don't want the plane to fly, but nobody would expect that they hop in the plane without a checklist or [without] verifying certain things. So the more mechanisms you can put in place to do what everybody agrees on anyway, like the gas tank needs to be filled, the less likely you are to have problems, and the better chance you have of delivering great care and service or flight—whatever you are trying to do," Dr. Gorman says.

"We all have so much to remember about patient care and so much to keep track of," Dr. Gorman says. "Why not just get the check-box done of the stuff we know needs to be done; then we can move on to the stuff that needs deeper thinking. Or, if we have an extra five minutes, we can actually talk to the patients and hold their hands."