Tell us about your background as a physician in emergency medicine.

I have practiced emergency medicine for thirty years. Most of this time at Banner University of Arizona Medical Center in Tucson, which is a busy level-1 trauma center. We actively train residents in emergency medicine and pediatric-emergency medicine as well as subspecialty fellows, nurses, clinical pharmacists and paramedics.

What is evidence-based medicine (EBM)? What problem does EBM solve? And, what is the evidence pyramid?

EBM is the mindful use of modern technology to acquire the best relevant medical information to the bedside to support clinical decision making. A clinical provider that utilizes EBM greatly benefits their patients because they are able to apply the best and latest proven scientific advances! The Explorit! EBM Pyramid is our translation of well-described scientifically-proven levels of strength by which different types of information can be “graded.” Answers to clinical questions are not created equal! A clinician should strive to apply the STRONGEST evidence available for every patient. This frequently does not occur because the clinician doesn’t have a tool, like this one, to find the STRONGEST evidence available. Clinicians and patients no longer need to be frustrated by not having access to information about the best therapies and evidence.

What is behind your passion for EBM?

My passion is for optimizing patient care and lifelong learning simultaneously through 21st Century technology solutions. Patient care currently suffers because new advancements, even some that are many years old, have not been “found” by today’s clinicians. This must become unacceptable to providers, health systems and patients! The best and latest medical information must be delivered to busy clinicians without undue hardship. Explorit! EBM is the tool that does this.

You’ve dedicated thirty years of research and teaching focused on EBM. And, you’ve co-authored several journal articles about EBM and technology. What are the major takeaways from those articles and from your experience?

The major takeaways are that 1) delivering patient care informed by the best evidence is not only better for patients but nourishes the clinician’s need for continuous lifelong learning, 2) continued research into improving search and delivery technology is critical, and 3) an effective collaboration between clinicians, software engineers, and library scientists is essential in creating tools, like Explorit! EBM.

Can you expand on your previous answer and tell us how you teach medical students to become better EBM searchers?

We have an innovative medical school curriculum at The University of Arizona College of Medicine that requires medical students to become inquisitive evidence explorers. A superb clinician must first be expert in asking relevant questions. Such as what is the most likely cause of this condition? What is the most likely high-risk alternative? What is the most effective therapy? What is the best estimate of prognosis? What are the potential harmful outcomes of the standard and alternative therapies? What does this all cost? Our medical students have been learning to use federated search for over a decade to drive their information searching for classroom and bedside clinical problems. It works extremely well for both answering the question at hand as well as driving home the differences between truth and fiction. All evidence is not created equal!
Leading edge medical search saves lives
Interview with Dr Sam Keim

What do you say to the busy medical practitioner who doesn’t see a need for new technology. To them, DynaMed Plus or UpToDate are good enough. And, when you’re not looking, they might go to Google or Wikipedia.

Electronic textbooks are better than nothing. They’re a small step better than the old-school physicians that are still out there “winging it” with decades-old knowledge. But busy clinicians need to experience choices that are as convenient as the common electronic textbooks. Explorit! EBM gives them those convenient choices.

Best quality evidence and efficiency are two critical goals for EBM researchers. How does Explorit! EBM leverage federated search technology to meet these goals?

Explorit! EBM marries state-of-the-art federated search technology with quality filters to deliver a “buffet table” of choices ranging from highest quality to lower quality. Because not all clinical questions have been rigorously answered by leading systematic review organizations, the clinician might need to use other sources. Explorit! EBM allows this decision to be made after ONE single search execution. All of the results are there, teed up, without a need to execute another search. This delivers the best quality at a convenience not equaled by any other system.

How is Explorit! EBM an evolution beyond prior technologies?

It is a profound leap forward because only the highest quality sources are included in the federation. The user, therefore, does not waste time reading and sorting through low impact information and misinformation. With Explorit! EBM you are ONLY delivered the gold!


The best users are all clinicians and anyone who needs the best quality medical information and clinical research delivered and understood now. Not an hour or two from now, but now. In a few short minutes of searching and reading. This includes all of my physician, nursing, pharmacy and veterinarian colleagues. Medical students and residents will find that Explorit! EBM brings their performance up to top level. Best evidence always trumps “years of experience” so this is a tool that will allow young clinicians to practice medicine at the state-of-the-art!

Tell us about the collaboration between your University of Arizona Health Sciences Center and Deep Web Technologies. What roles are each party playing?

Deep Web Technologies is the engineering partner that we need for Explorit! EBM to deliver on the dream – best evidence, anywhere, in seconds. The University of Arizona brings EBM and library sciences expertise. All three domains have complexity and are exploding in rapid growth. The dream team requires expertise in all of these domains. We have it right!

What is your vision of the perfect EBM system?

The perfect EBM system supports clinical decision making by bringing the best evidence to answer clinical questions, from novice to expert, instantaneously at the point of patient care. It will have advanced analytics and artificial intelligence to continuously learn and further support decision making. Finally, because patient care does occur everywhere, including on streets, sidewalks, jungles and extreme environments, the perfect system must be wireless, mobile and easy to use. I have no doubt that our team will be there soon.

You can read more about the evidence-based pyramid and our laser-focused search technology at ebm-search.com. Try our demo of EBM search at demo.ebm-search.com.