Balancing technology with healthcare's human narrative: A Q&A with Dr. Abha Agrawal

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The digitization of healthcare presents a new balancing act for providers: How do you harness technological tools with the innate humanness of healthcare? This, along with related implications for patient safety, is an underlying question in the latest book from Abha Agrawal, MD, chief clinical operations officer of IKS Health, a healthcare technology solutions provider.

Prior to joining IKS Health in January, Dr. Agrawal was CMO and COO of Norwegian American Hospital in Chicago, a position she held since November 2012. Before that, she served KingsCountyHospitalCenter in Brooklyn, N.Y., in a number of leadership positions, including CMIO and CMO.

Dr. Agrawal also completed her residency training at Kings County Hospital, where she remembers "just making the long walk from the patient care floors to the pathology lab to collect lab reports or writing inpatient consult requests and walking from floor to floor inserting consultation requests into various specialty departments, only hoping that this paper won't somehow get lost and the patient care won't be delayed," she told Becker's in emailed comments.

Fast forward to current day, and EHRs and other clinical systems have largely replaced these papers Dr. Agrawal and her colleagues feared losing. While these systems automate workflows in some regard, they certainly are not without their own shortcomings.

In her recently released book "Safety of Health IT: Clinical Case Studies," Dr. Agrawal discusses some of these challenges, as well as offers ways to address them. Here, she shared her insight on the challenges of health IT as it relates to patient safety and bringing the human interaction back to healthcare.

Editor's note: Interview has been edited for length and clarity.

Question: Your new book discusses balancing the opposite worlds of technology and humanity in healthcare as IT adoption and use takes off. Where is the balancing point here?

Dr. Abha Agrawal: There is a very intense and indispensable human dimension to healthcare which sometimes is at odds with the rigid format imposed by technology. A patient-physician encounter is inherently a narrative — a story shared between two human beings with the aim of healing and relief of suffering. The point-and-click universe of EHRs tries to reshape this narrative into structured data fields and checkboxes, which is counterintuitive to the spirit of the patient-physician interaction. While EHRs attempt to ensure that all elements of a complaint like chest pain are documented, some systems provide no place to write that the patient is experiencing unusual stressors in personal or family life.

There are other subtleties that get lost in the world of technology. For example, the thickness of the paper chart used to tell me the length and complexity of a patient's illness even before I ever got to see the patient. This visual nuance is lost in the world of EHRs. The linearity of information in the paper chart is more aligned to human cognition, as opposed to fragmentation of information in various folders and tabs in the EHR.

I believe and hope that over a period of time the technology will evolve to become better aligned to human patterns of thinking instead of imposing a rigid and fragmented structure to viewing and organizing clinical information.

Q: What human factors does the current health technology landscape ignore?
AA: Alert fatigue is an urgent and significant concern related to technology with serious implications for patient safety. Ironically, alerts and reminders that caution a physician of potential safety hazards such as a drug-drug interaction are one of the most touted features of health IT to improve patient safety. While some of these alerts can be life-saving, the problem is that current EHRs fire too many alerts that are clinically inconsequential. This over-alerting causes physicians to suffer from alert fatigue.

Poorly designed, nonintuitive user screens with too much information, or too many checkboxes are another significant hazard of technology. For example, a poorly designed screen may facilitate inadvertent selection of clonidine (an antihypertensive drug) as opposed to clonazepam (an anti-anxiety drug) from a drop-down menu, leading to an adverse event.

Q: Is there an underlying theme in all the clinical cases studies you discuss in the book? What is one key takeaway leaders can draw from these cases?

AA: If I look at the many case studies in the book and from my experience in the field, poor design and usability of technology is a common causative factor in many safety events related to technology. A poorly designed, nonintuitive system can easily confuse a busy physician, nurse or pharmacist, leading inadvertently to an undesirable clinical action.

The book is a call to action for technology developers to create more usable and more clinician-friendly software, and for technology users to ensure that implementations are done rigorously with proper training and oversight. Clinicians must not relegate good clinical judgment and human touch to technology. I also believe there is an urgent need for policymakers and regulators to address unresolved issues, such as national reporting of technology-related adverse events and "hold harmless" clauses in technology contracts.

Editor's note: "Hold harmless" clauses are statements in which a party agrees not to hold another party responsible for injuries or damages that may arise under the agreement. It's essentially a liability waiver.

Q: You have previously said that many potential safety risks and challenges are due to "rapid and often poorly managed EHR implementations." So are many of these issues technologically based or are they workflow issues?

AA: We are learning that the technology-related risks are multifactorial and a "socio-technical" model of understanding these risks has emerged. The model proposes that health IT errors can be understood in interdependent and interrelated domains: hardware and software, clinical content, human-computer interface, workflow and communication, internal organizational feature such as policies and procedures, external organizational features such as regulation, and finally measurement and monitoring.

What this means is that technology alone can neither improve safety nor cause harm. It operates in a complex socio-technical milieu and the various components of the entire system must be optimized in order to improve safety and quality of care.

Q: As such, where do efforts to mitigate these issues need to focus? If it's not the way technology is developed, is it how hospitals and health systems are using the technology?

AA: The risk mitigation must focus on the entire continuum of technology life-cycle, including design, development, implementation, use and evaluation. For example, the best designed software will not lead to good outcomes if implemented without proper training of clinicians or without the support of organizational policies. At the same time, technology developed without considering clinical workflow and clinical users' needs will ultimately fail to improve patient care.

The good news is that we are making significant progress on focusing on usability of EHRs. The ONC has developed SAFER guides to help healthcare organizations conduct self-assessments to optimize safety and safe use of health IT. [Health IT research firm] KLAS publishes EHR ratings for usability of various modules (e.g. documentation, order entry) as well. One big caveat is that most of the testing and rating evaluations are done
"in the lab," which may not be a true reflection of how the technology will behave when put in users' hands in a live environment.

Q: Who is your target audience for the book? What leaders would most benefit from it?

AA: While the book focuses on the unintended consequences of technology leading to patient safety risks, one thing is clear: We cannot practice modern medicine without information technology tools such as EHRs. The book is written in the form of clinical case studies so that any reader, with a clinical background or otherwise, can understand the safety aspects of various technologies. In addition to highlighting clinical risks, chapters on organizational considerations are included, such as medical liability risks of EHRs and managing health IT contract process for patient safety, so that a CIO or a healthcare attorney can be better informed about health IT. The target audience for the book, therefore, is quite wide. Front-line clinicians, healthcare leaders, technology vendors and leaders, policymakers and academic institutions are the primary audience for the book. As technology becomes deeply integrated into every aspect of healthcare, a wider audience should find the book to be of interest.

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