

The path forward for making electronic health records more usable

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Over the past decade both clinicians and researchers have increasingly discovered that electronic health records are not always user friendly and may result in unintended consequences that compromise patient safety. In a recently published paper in the *Journal of the American Medical Association*, researchers from Baylor College of Medicine and their

collaborators suggest a five-point action plan to improve the usability and safety of health information technology moving forward.

"People expected information technology in healthcare to work similar wonders as elsewhere, such as on our phones, so expectations were naturally high when [electronic health records](#) were implemented nationally. But healthcare is much more complex, and usability and safety challenges have emerged," said senior author Dr. Hardeep Singh, chief of the Health Policy, Quality and Informatics Program at Houston VA's Center for Innovations in Quality, Effectiveness and Safety (IQuEst) and professor of medicine at Baylor.

Based on lessons from a decade of initiatives to attempt to solve usability challenges, researchers describe a five-point action plan for progress.

1. Create a national database of usability and [safety issues](#): To monitor and improve healthcare information technology usability and safety, a national reporting system should be established. Clinicians or patients should be able to easily report issues in the database. Not only will this promote transparency, but report analysis could reveal common unsafe conditions at a national level and inform actionable recommendations to mitigate risks.
2. Establish basic design standards: Similar to other industries such as transportation and aviation, there should be some design standards for how information is displayed within [electronic health records](#). Previous work by Singh and his colleagues found lack of any standards to display graphs of diagnostic test results in several electronic health records.
3. Unintended harms must be addressed: Usability issues could arise from several different sources, such as vendor design and development, vendor and healthcare organization implementation, and customization by the healthcare organization. Thus, multiple parties need to collaborate to fix

issues through shared responsibility. For example, vendors may include a clause in their contracts that shields them from liability from software design problems. Policymakers should examine these clauses to determine whether they prevent accountability and remove them.

4. Simplify mandated documentation requirements that affect usability: Some federal documentation requirements can have the [unintended consequences](#) of increasing workload of clinicians during patient care; some requirements may not even be clinically relevant. Documentation requirements should first be simplified because of their adverse effect on usability, following which electronic health record display and workflow should be modified to let clinicians focus on patient care.
5. Develop standard usability and [safety measures](#) so progress can be tracked, and the market can react: Because there are no standard measures of usability, electronic health records cannot be compared directly on their usability. Researchers suggest that such measures should be developed and test case scenarios should be used to determine how an electronic health record would work in the real world and not just in the lab where it was developed and designed. They propose that these test case scenarios should become part of the Office of the National Coordinator for Health Information Technology's certification program.

"Our recommendations are based on strong scientific foundation and could advance the dialogue on how to improve usability and [safety](#) of electronic health records over the next decade," Singh said. He has previously co-chaired the National Quality Forum's report on health [information technology](#) and [patient safety](#) and co-developed the ONC Safer Guides that provide national guidance on safe use of electronic health records.

More information: Raj M. Ratwani et al. A Decade of Health Information Technology Usability Challenges and the Path Forward, *JAMA* (2019). [DOI: 10.1001/jama.2019.0161](https://doi.org/10.1001/jama.2019.0161)

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