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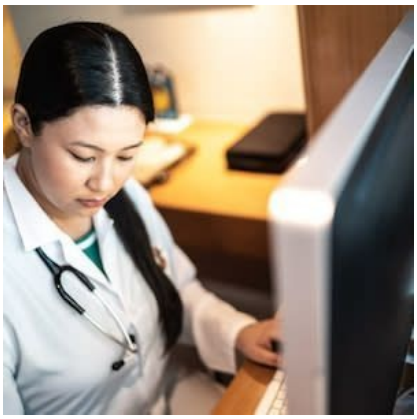
How to Make EHRs Smarter and Safer



Computer-based patient records were declared an essential technology for healthcare in 1991 by the National Academies. It was believed that patient records would support patient care, improve quality of care, enhance the productivity of healthcare professionals, reduce administrative costs, support clinical research and accommodate future developments in healthcare technology. However, Electronic Health Record (EHR) implementation in healthcare has not met these expectations.

According to a report by the academies in 2009, efforts to deploy healthcare IT are insufficient to achieve the vision of 21st-century healthcare. The report highlighted the need for greater emphasis on providing cognitive support for healthcare providers, patients and caregivers. Theoretically speaking, digital technology has great potential to support cognitive processes such as gathering data, integrating data, iterative Bayesian thinking, choosing a communication format, and facilitating early diagnosis. However, EHR systems have proven to be more of a distraction than support in clinical practice.

There are several reasons for this. First, EHRs are not designed to simply capture and present a patient's record. It is a complex infrastructure for automating clinical and administrative workflows within a healthcare system. Its benefits can be derived more effectively if EHRs are connected to other health system technology. Second, EHR has many stakeholders, including physicians, health system executives, educators, regulators, and patients. However, requirements for reimbursement, regulatory compliance, and administrative workflow automation have taken precedence over clinical efficiency and effectiveness. This has resulted in repetitive documentation, alert fatigue, increased workarounds, and decreased data quality.

There is a need to make EHRs smarter and safer. This would include prioritising cognitive support and for humans, processes and technology to all work together.

An important first step would be using the Safety Assurance Factors for EHR Resilience (SAFER) Guides to monitor and improve technology safety and usability in clinical practice. There is a need to stimulate shared responsibility between EHR vendors and health systems to add features to EHRs, such as readability and consistency of labelling similar functions. This will decrease the cognitive load

to relatively uncomplicated tasks performed by clinicians. Similar guidelines should be used to monitor, protect, and improve the cognitive support provided to the clinical team and patients through the appropriate use of EHR technology.

Healthcare leaders and EHR vendors need to work together to protect the cognitive attention of clinicians. First, there is a need to debunk myths about what clinicians must document. There is also a need to avoid steps or interruptions in clinical workflows unless they are time-critical. Finally, there is a need to align decision support to role and task.

Residual cognitive load must be reduced, and cognitive support must increase. A SMARTER Guide needs to be considered that should include the following dimensions:

- Synthesising information and supporting goal-oriented search
- Monitoring care decisions, taking patient data and care setting into account, and suggesting better alternatives
- Automating routine tasks
- Recognising trends toward or away from idealised patient models
- Translating important user actions into documentation;
- Exposing contextually relevant data
- Reliably and consistently performing these functions

Source: JAMA

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