Medical Xpress

Electronic Health Records failing primary care

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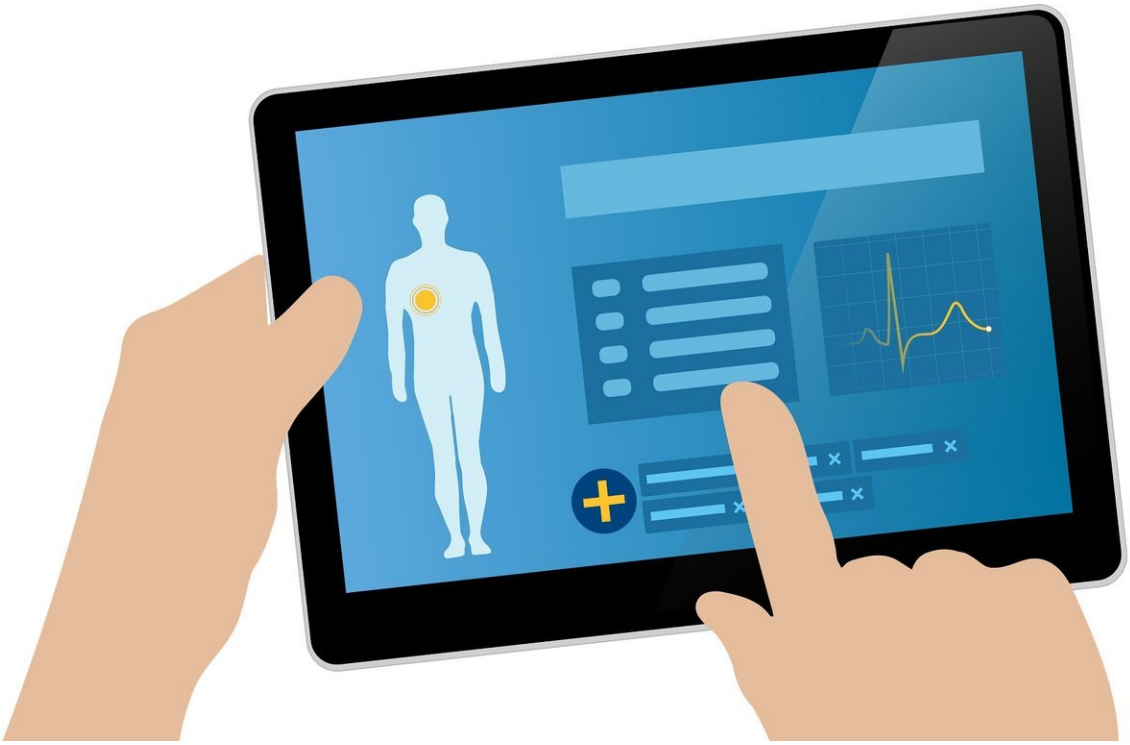

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Much needs to be accomplished during the short time a primary care physician sees a patient. A new study from U.S. Department of Veterans Affairs, Regenstrief Institute and IUPUI researchers reports that electronic health records (EHRs) are not rising to the challenges faced by primary care physicians because EHRs have not been designed or

tailored to their specific needs. The study, a review and analysis of research on the topic conducted from 2012 to 2020, recommends implementing a human factor approach for the design or redesign of EHR user interfaces.

"The human mind can do many things well. Digesting vast amounts of patient information while multitasking in time-constrained situations exposes a limitation. EHR technology should be able to complement or enhance physicians' abilities in these scenarios," said Regenstrief Institute Research Scientist April Savoy, Ph.D., who led the new study. "But current EHRs are overloading primary care physicians with information in disparate files and folders rather than presenting comprehensive, actionable data in a context that gives meaning.

"Technology needs to adapt to humans' needs, abilities, and limitations in healthcare delivery as it has in other domains. You can get the most advanced technology available—the fastest car, the smartest cell phone—but if it is not useful or if usability fails, users should not be forced to change their approach or work. The technology should be redesigned. Similarly, EHRs should be redesigned to improve situation awareness for busy primary care physicians and support their tasks including reviewing patient information, care coordination, and shared decision-making."

Dr. Savoy is a health services researcher and human factors engineer. She notes that it can be easier for consumers to search online and order a pair of shoes in a desired size, color and style, than for primary care clinicians to order a specialty consult or medication refill. When interacting with EHRs, primary care physicians are typically faced with numerous impediments. For example, they are forced to navigate through multiple systems and tabs to find information, increasing redundancy and decreasing efficiency. EHRs' lack of desired features ranges from advanced features such as interoperability to simple features

such as auto-save, which are often default capabilities or added conveniences for online shopping.

She adds that EHRs have been tailored for specialists, operating rooms and hospitals but there has been a lack of attention, tailoring and design to fit the specific needs of the primary care physician whose effective decision-making is grounded in perception and comprehension of a patient's dynamic situation. For example, a primary care physician's decision to deprescribe (or stop) a medication could be informed by one measure or trends of patient's blood pressure or cholesterol levels and other medications taken over a month. This type of information has implications for the patient's future health trajectory.

"Electronic health records' support for primary care physicians' situation awareness: Metanarrative review" is published online ahead of print in *Human Factors*, the Journal of the Human Factors and Ergonomics Society. Authors, in addition to Dr. Savoy, are Himalaya Patel, Ph.D.; Daniel R. Murphy, M.D., MBA; Ashley N.D. Meyer, Ph.D.; Jennifer Herout, Ph.D.; Hardeep Singh, M.D., MPH, all with the VA. The study was funded by the Human Factors Engineering Directorate in the Office of Health Informatics, U.S. Department of Veterans Affairs (VA).

To understand the extent to which EHRs support primary care physicians, the authors reviewed and analyzed studies describing EHR workflow misalignments, usability issues and communication challenges. Significant difficulties were reported related to obtaining clinical information from EHRs. Lab results and care plans were often incomplete, untimely or irrelevant. The study also included review of common clinical decisions and tasks related to care management of adult patients that are typically not supported by clinical decision support tools such as whether to start palliative care, predicting quality of life and recovery time, and tracking progress toward patients' stated goals.

The authors conducted a metanarrative analysis which is more inclusive and open ended than a metanalysis. They found that primary care physicians' experiences using EHRs often included redundant interaction and information overload, which they note could be remediated by incorporating user-centered design principles into future EHR design, development and evaluation.

More information: April Savoy et al, Electronic Health Records' Support for Primary Care Physicians' Situation Awareness: A Metanarrative Review, *Human Factors: The Journal of the Human Factors and Ergonomics Society* (2021). DOI: 10.1177/00187208211014300

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