Medical Xpress

Physicians urge hospitals to become 'artificial intelligence ready'

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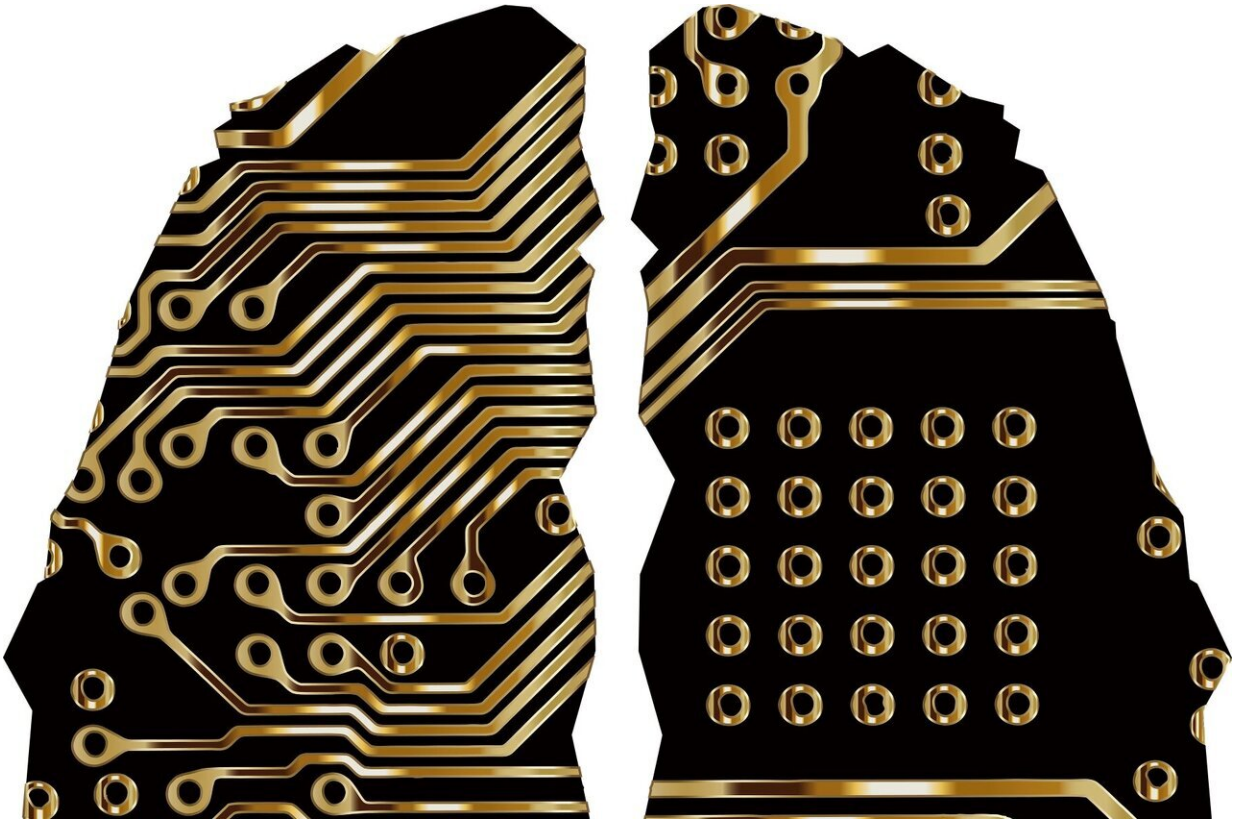

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A group of doctors and data scientists is calling on hospitals to create clinical departments devoted to artificial intelligence to harness the power of the technology to transform patient care.

While there have been many predictions of AI's potential to benefit health care delivery—from helping doctors perform surgery to catching cancer earlier—the technology's benefits so far have been blunted by inconsistent implementation, the researchers say. They outline a plan to make hospitals "AI ready," in a way they say would enhance both patient care and medical research.

AI in Health Care

UVA Health's Dr. David J. Stone and colleagues from several other major medical centers outlined their plan in a new article in the scientific journal BMJ Health & Care Informatics that was highlighted in the July 22 issue of the STAT health news site's Healthtech newsletter. They begin by offering a frank assessment of the current integration of AI in health care: "The reality of the available evidence increasingly leaves little room for optimism," they write. "There is a stark contrast between the lack of concrete penetration of AI in medical practice and the expectations set by the presence of AI in our daily life."

The authors are particularly concerned that the implementation of artificial intelligence into health care not be burdened by problems that have accompanied the use of electronic health records. Many clinicians have complained that electronic health records were poorly designed to fit into their workflows and have added greatly to their documentation burden while distracting them from their patients. (Dr. Atul Gawande, a surgeon, has opined, "We've reached a point where people in the medical profession actively, viscerally, volubly hate their computers.")

The disorganization that is holding back AI's potential in health care must be addressed systematically, the authors say. They cite many issues involved in the application of AI, including the quality of the data and algorithms employed.

AI applications must be specifically designed to fit seamlessly into clinical workflows to solve clinicians' problems, rather than add to them, the authors argue. Associated issues include potential overdependence on AI, loss of clinical skills, developing proper transitions between humans and machines and designing AI with better situational awareness than current applications possess.

Creating clinical departments dedicated to implementing AI, the authors argue, would offer far greater and faster benefits than piecemeal organization driven by short-term needs.

These departments would serve to bring together the diverse expertise required, cut through red tape and receive appropriate institutional support, and address important educational, financial and regulatory issues. They also would help drive research efforts and focus AI implementations in the directions most useful to each hospital's patient population. In addition, the departments would map out and monitor performance and safety metrics, the authors envision.

Learning from the EHR experience, it is critical for front-line clinicians to be involved in all aspects of AI, including its development, use and interpretation of results, the authors say. Clinicians should also provide robust feedback on workflows and outcomes.

"These initiatives should lead to the development of models that will directly benefit the health of our patients, pioneer research that advances the field of clinical AI, focus on its integration into clinical workflows and foster educational programs and fellowships to ensure we are training current practitioners as well as the next generation of leaders in this field," the authors write.

Better Patient Care

The time to act is now, the authors argue. The longer hospitals wait, they say, the more haphazard AI implementation becomes. Stone notes that today's clinicians may view the need for clinical AI departments as unnecessary ("or, frankly, crazy"), but he says it is very likely that AI will become an intrinsic element of clinical processes in the future. "This is an opportunity to do it right from very near to the beginning of clinical AI's use, rather than having to repair and replace a flawed system in the future," he said.

"Twenty years now into the 21st century, there is little question that AI will be a defining technology for the foreseeable future," the authors write. "We need visionary clinicians working with expert technical collaborators to establish the organizational structures requisite to translate technological progress into meaningful clinical outcomes."

More information: Christopher V. Cosgriff et al. The clinical artificial intelligence department: a prerequisite for success, *BMJ Health & Care Informatics* (2020). DOI: 10.1136/bmjhci-2020-100183

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