

## 4 ways health care AI could help physicians' work

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Physicians who hear the term artificial intelligence or augmented intelligence (AI) may conjure images of robots or computer algorithms replacing some of the care they provide to patients.

But—just as the AMA is advocating in this emerging field—technologists and clinicians designing AI in the health care setting who gathered for a panel discussion said they are aiming to enhance physician intelligence, not replace it. They also stressed that physicians' input is crucial during the design process to create AI that clinicians will adopt to build trust and a robust evidence base for these tools.

At an AMA moderated discussion at the Institute of Electrical and Electronics Engineers Engineering in Medicine and Biology Society (IEEE EMBS) conference on health care innovation and point-of-care technologies, four academic and industry leaders in health care AI shared some of the successes they've had, as well as what they hope to accomplish in the future.

Watch the 80-minute discussion, "Healthcare AI for the Clinical Environment: Design, validation and implementation of technologies that can augment rather than replace clinicians," which was held prior to the onset of the COVID-19 pandemic.

The AMA is committed to helping physicians harness AI in ways that safely and effectively improve patient care.

Christopher Khoury, the AMA's vice president for environmental intelligence and strategic analytics and H. Timothy Hsiao, PhD, then-program director for the division of clinical innovation at the National Center for Advancing Translational Sciences at the National Institutes of Health (NIH), helped lead the discussion.

In talking about AI's future, panelists discussed, among other things, its potential to help reduce diagnostic errors, cut inefficiencies and aid physicians in accessing massive amounts of information that the brain could never retain. Here are four ways AI can enhance care.

## Reducing misdiagnoses

Embedding knowledge in ubiquitous technologies, such as smartphones, will allow health care to address quality and access, said Paul Varghese, MD, MMSc, a cardiologist and clinical informatician who heads health informatics for Verily (Google Life Sciences). With between 12 million to 20 million people a year misdiagnosed, AI can help alleviate that real problem, he said.

“The single biggest cause of variation in health care is the action of the human being,” Dr. Varghese said. “So, can we help that human being reduce the variation in his or her ability to recognize what is going on and then make the next right decision?”

## Generating patient-record summaries

AI has been helping clinicians at NewYork-Presbyterian Hospital quickly make sense of a patient’s health journey, presenting clinicians with the most salient points of a patient’s history.

The project has had 10,000 users monthly over the past four years, said Noémie Elhadad, PhD, an associate professor of biomedical informatics, and affiliated with the Computer Science and the Data Science Institute at Columbia University. Emergency department physicians have been big champions of the program, and she noted that “the tool will be most useful in these time-restricted scenarios.”

## Increasing physician supply

As a practicing internist, Johnathan H. Chen, MD, PhD, had a young woman with hyperthyroidism who couldn’t get into an endocrinologist for three months.

“I’m a licensed physician. I can order 10,000 medications and 10,000 tests. There is just no way I can keep track of knowing how to use all of them. But I can order the basic things she needs if I just knew what to do,” said Dr. Chen, an assistant professor of medicine (biomedical informatics) at the Stanford University Medical Center. Before practicing medicine, he gained professional software-development experience and knows that AI can be a credible solution to help physicians access the information they need to help these patients more quickly.

## Monitoring disease progression

AI helped engineers develop a phone app for physicians to better monitor Parkinson’s disease

patients, said Suchi Saria, PhD, associate professor of computer science at the Johns Hopkins Whiting School of Engineering and of statistics and health policy at the Bloomberg School of Public Health.

Patients take a two-and-a-half-minute test several times a day that involves walking, tapping and saying a few words. It tells physicians how symptoms fluctuate over the course of a day and gives them months of real-time data so they can plot the disease progression, she said.