



## Paging Dr. Robot: AI Doctors Slated To Be The New Normal

Evidence-based medicine's next step is to allow the AI to be the principal's virtual assistant and then to replace the medical professional altogether. If you refuse to do what the AI says, you will be branded as a rebel. □ TN Editor

The next time you get sick, your care may involve a form of the technology people use to navigate road trips or pick the right vacuum cleaner online.

Artificial intelligence is spreading into health care, often as software or a computer program capable of learning from large amounts of data and making predictions to guide care or help patients.

It already detects an eye disease tied to diabetes and does other behind-the-scenes work like helping doctors interpret MRI scans and other imaging tests for some forms of cancer.

Now, parts of the health system are starting to use it directly with

patients. During some clinic and telemedicine appointments, AI-powered software asks patients initial questions about their symptoms that physicians or nurses normally pose.

And an AI program featuring a talking image of the Greek philosopher Aristotle is starting to help University of Southern California students cope with stress.

Researchers say this push into medicine is at an early stage, but they expect the technology to grow by helping people stay healthy, assisting doctors with tasks and doing more behind-the-scenes work. They also think patients will get used to AI in their care just like they've gotten accustomed to using the technology when they travel or shop.

But they say there are limits. Even the most advanced software has yet to master important parts of care like a doctor's ability to feel compassion or use common sense.

"Our mission isn't to replace human beings where only human beings can do the job," said University of Southern California research professor Albert Rizzo.

Rizzo and his team have been working on a program that uses AI and a virtual reality character named "Ellie" that was originally designed to determine whether veterans returning from a deployment might need therapy.

Ellie appears on computer monitors and leads a person through initial questions. Ellie makes eye contact, nods and uses hand gestures like a human therapist. It even pauses if the person gives a short answer, to push them to say more.

"After the first or second question, you kind of forget that it's a robot," said Cheyenne Quilter, a West Point cadet helping to test the program.

Ellie does not diagnose or treat. Instead, human therapists used recordings of its sessions to help determine what the patient might need.

"This is not AI trying to be your therapist," said another researcher, Gale Lucas. "This is AI trying to predict who is most likely to be suffering."

The team that developed Ellie also has put together a newer AI-based program to help students manage stress and stay healthy.

Ask Ari is making its debut at USC this semester to give students easy access to advice on dealing with loneliness, getting better sleep or handling other complications that crop up in college life.

Ari does not replace a therapist, but its designers say it will connect students through their phones or laptops to reliable help whenever they need it

USC senior Jason Lewis didn't think the program would have much for him when he helped test it because he wasn't seeking counseling. But he found that Ari covered many topics he could relate to, including information on how social media affects people.

"Everybody thinks they are alone in their thoughts and problems," he said. "Ari definitely counters that isolation."

Aside from addressing mental health needs, artificial intelligence also is at work in more common forms of medicine.

The tech company AdviNOW Medical and 98point6, which provides treatment through secure text messaging, both use artificial intelligence to question patients at the beginning of an appointment.

AdviNOW CEO James Bates said their AI program decides what questions to ask and what information it needs. It passes that information and a suggested diagnosis to a physician who then treats the patient remotely through telemedicine.

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