

The computer will see you now: Artificial Intelligence usage grows at Central Florida hospitals

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Credit: AI-generated image

Central Florida's two major health systems, Orlando Health and AdventHealth Central Florida, are widely using Artificial Intelligence for administrative work and, increasingly, to sound early alarms about potential illnesses, including deadly pancreatic cancer and sepsis.

Eventually, some experts think AI could even be used to diagnose patients and make treatment decisions.

On one hand, a growing body of research suggests this could make patients safer because the computer software that generates AI doesn't get tired or make mistakes like overworked [medical staff](#).

But a lot of people are alarmed by the prospect. A 2023 Pew Research poll found 60% of Americans are uncomfortable with AI being used in their health care. The U.S. Department of Health and Human Services has warned AI can still be prone to human bias.

For those concerned, [health-care](#) leaders emphasize that doctors are still making care decisions, every step of the way.

"We are not trying to replace people's thinking. We're just trying to enhance it," said Dr. Victor Herrera, who in September was appointed the chief clinical officer for AdventHealth's Central Florida Division—South Region. "There is always a physician, a nurse, a licensed professional that is qualified ultimately making the decision."

Nearly 700 applications so far

The U.S. Food and Drug Administration has approved 692 artificial intelligence and machine-learning enabled medical devices as of December.

AdventHealth Central Florida uses AI in more than 40 ways. An AI Advisory Board meets monthly to vet potential new technology.

Most AI-assisted tasks involve administrative work, like recording and transcribing appointments, then generating clinical notes and summaries. This saves much-needed time for providers amid Florida's chronic

staffing shortage.

It's also used in limited scope to solve specific problems and provide a safety net. For instance, AdventHealth integrated AI into its imaging department in 2020 to flag early signs of potential strokes. The system has X-rays with AI that screen for osteoporosis.

AI also monitors patient vitals and alerts providers for signs of sepsis, a potentially deadly immune response and a leading cause of U.S. hospital deaths.

"Most of the things that we have incorporated here at AdventHealth are on the early recognition side of things, not yet [treatment or diagnosis], but I think that's the future," Herrera said.

At Orlando Health, AI helps identify candidates for its hospital-at-home program. It's for people who need hospital-level care but are independent and stable enough to live at home with daily visits and remote monitoring.

AI also helps remotely monitor these patients' vitals and alerts nurses—who watch these patients 24/7 at a patient care hub—when a patient may be in trouble.

"Could you do [hospital at home] without AI? Probably could, but I think you might not quite get the same scope and traction," said Dr. Siddharaj Shah, senior medical director for Orlando Health's hospital care at home program.

At both AdventHealth and Orlando Health, alerts are ultimately reviewed by medical professionals who can choose to agree or disagree with the AI's conclusion.

"I think [replacement of human decision makers] is probably well in the future, if ever," Shah said.

Safeguards are needed

Mary Mayhew, president and CEO of the Florida Hospital Association, said AI is reducing burnout by shrinking administrative busy work. She hopes for a future where AI can do even more. But, she added, appropriate safeguards need to remain in place.

"AI is only as good as the information and data it has," Mayhew said. "We have to be aware of potential bias in how that data is being developed and analyzed through AI. That's where human beings and judgment and critical decision making has to remain at the forefront."

These AI technologies still make mistakes. A 2023 study of more than 11,000 patients found that AI sepsis technology was associated with a 44% reduction in sepsis deaths. But a February study from the University of Michigan analyzed the same AI sepsis technology used on more than 77,000 patients and found it only predicted sepsis in half the patients who eventually contracted it and couldn't be reliably counted on to diagnose sepsis faster than medical professionals.

A 2023 study by Stanford researchers tested whether doctors could rely on plugging in patient clinical scenarios to Chat GPT-4 and asking the technology to give advice. The researchers found that the software answered correctly only 41% of the time. About 6% of the time, the answer included a fake citation, a phenomenon dubbed "hallucinating" that creators haven't yet been able to fix.

Orlando connections

AI is not only being used in Central Florida, it's being invented here.

Dr. Shyam Varadarajulu, Orlando Health's Digestive Health Institute president, is working on a prototype of AI tech to help doctors diagnosis pancreatic cancer. It is projected to kill more than 50,000 Americans this year and is set to become America's second-deadliest by 2030, according to the American Cancer Society.

The biggest issue is timely diagnosis: Only about 20% of people are diagnosed when the cancer is still operable. Most people don't have symptoms and don't get tested until it's too late. For those who are lucky enough to receive early testing, pancreatic tumors are tiny and easy to miss in their early stages, particularly for less experienced doctors.

Varadarajulu, in collaboration with experts from across the globe, has built AI-guided endoscopic ultrasound technology. It's a computer program that will analyze images from endoscopic ultrasounds and highlight potentially abnormal areas of the pancreas for doctors to look closely at.

His technology is still in its early stages and will need to be trained on millions of images, but eventually, Varadarajulu hopes to test it in a clinical trial and submit it for FDA approval.

"Our job is to pioneer artificial intelligence so that the person doing this procedure in any part of the United States will have an outcome comparable to us," he said.

For [patients](#) scared off by the prospect of AI, Varadarajulu also has reassurances.

"The AI component does not control anything during the procedure, nothing," he said. "All the technology will do, eventually, is to point out

certain areas that can be missed by a less experienced endoscopist."

Even more ambitious efforts are taking place at the University of Central Florida.

Roger Azevedo, a professor in the School of Modeling Simulation and Training at UCF with a Ph.D. in educational psychology, is working to create a human digital twin—a digital replica of a person—that potentially could be used in patient care or clinician training.

UCF has received millions of dollars in federal funding toward this effort.

He's also collaborating with other researchers to use AI to monitor and improve clinician performance using eye-tracking and other sensors. He sees a future where such technology is employed to monitor team dynamics in an operating room.

"AI ...could indicate 'Hey, you're not looking at the right anatomical region, or you're not looking at the right team member who can actually support you, given what you're doing right now,'" Azevedo said.

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