

Will AI Replace Cardiologists and Turn Them Into Managers?

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Summary

- **AI and cardiology:** The document discusses how artificial intelligence (AI) is changing the field and the role of cardiologists, and whether AI will replace them or not
 - **AI as an asset:** The document presents some examples of how AI can be beneficial for both patients and physicians, such as medical chatbots, automated laboratory orders, and literature selection
 - **AI as a threat:** The document also addresses some challenges and risks posed by AI, such as ethical issues, data privacy, and job displacement
 - **AI's future impact:** The document concludes that AI will not make cardiologists superfluous, but will require them to adapt to new technologies and skills
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Complete Article

AMSTERDAM — At the Radical Health Festival Helsinki (RHFH) this past June, Gerhard Hindricks, MD, PhD, was challenged by a young man when he dared to look into the crystal ball. "In the middle of my presentation, a maybe 25-year-old man stood up and said, 'Dr. Hindricks, in 10 years, we will no longer need you!' " reported Hindricks at the great debate event "Will Artificial Intelligence Replace Cardiologists?" at the European Society of Cardiology (ESC) Congress in Amsterdam. He subsequently had an interesting discussion with the man. In his opinion, the future role of the physician is "an unavoidable discussion for cardiovascular medicine."

Hindricks, from the University of Leipzig in Germany, considered artificial intelligence in cardiology to be "potentially the most important topic of the congress" and suggested that "we have to be more open to introducing new technologies into our practice. I sometimes have the impression that we are neither quick nor open enough to introducing new technologies, to leaving the old and to letting the new, better technology be effective in our patients."



Asset or Threat?

AI is dramatically changing the field and the role of the physician — but it is not making cardiologists superfluous. In this respect, Hindricks; Folkert Asselbergs, MD, PhD, professor of cardiology at the Amsterdam Heart Centre; and Harriette Van Spall, MD, associate professor of medicine at McMaster University in Hamilton, Canada, were unanimous: They agreed, although they assess the opportunities and risks posed by AI differently.

Asselbergs saw AI as less of a threat and more of an asset. In his opinion, a cardiology-specific speech model could be used to the advantage of both patient and physician. A medical chatbot could offer patients information and suggested readings, and it could create the patient's self-reported medical history and medical summaries for laypersons.

For physicians, a medical chatbot could be beneficial in the creation of patient reports, the selection of relevant literature, the creation of automated laboratory orders, the review of clinical discharge reports, for consultations, and for processing the consultations, as well as for complying with guidelines.

Asselbergs considered AI's primary advantage to be the time that it saves, which can then be used "for complex interventions, palliative care, and acute treatment."

The advantages of AI, he said, include the following:

- Efficiency and scale of AI in data analysis
- Automation
- AI does not get tired and is not biased
- Proactive healthcare provision and early intervention
- Reduction in healthcare costs
- Remains up to date with the latest knowledge

He sees the following disadvantages:

- Lack of human contact, empathy, and the physician–patient relationship
- Ethical implications and challenges
- The potential for AI to make incorrect diagnoses or to be influenced by bias in the training data

Medical Supervision Needed

For Van Spall, AI is primarily a tool. A generative AI could create useful materials such as images, videos, text, sound, 3D models, virtual environments, notes for clinical visits, medical summaries, and answers to clinical queries. But "the use of AI can lead to misinformation and expose the patient to risk, and there are no laws regulating liability."

Van Spall stressed that AI could greatly increase efficiency. For example, in echocardiography, chamber volumes and function can be quantified automatically. ECGs

can be interpreted automatically. "Even the workload associated with reading off of screens can be reduced, compared with unsupported reading." However, she maintained that the use of AI requires medical supervision. "AI cannot function without cardiologists," since it has "enormous limitations." Van Spall does not see "any way to close the gaps that cardiologists may leave in terms of knowledge, service, and communication."

According to the American College of Cardiology, 26% of the 32,000 cardiologists in the United States are older than age 61 years. "That is a net loss of 546 cardiologists per year. We must use AI to support cardiologists, not to replace them," said Van Spall.

Cardiologists Becoming Supervisors?

Asselbergs saw AI as a means of creating more equality. "Nearly everyone now has a smartphone. Let's take ultrasound via AI as an example. There are rural areas that have no access to healthcare. **If nurses or dietitians there create an ultrasound based on AI and send pictures for medical analysis, it will really help people.**"

Hindricks hypothesized that machine learning and AI will make a huge difference in the field of rare diseases. **Rare diseases are massively underdiagnosed simply because they are so rare and it requires a lot of experience to recognize them.** "Digital elements can significantly support this," said Hindricks.

For Van Spall, **AI could make care and treatment safer.** There will be more digital tools and virtual models available during training too. "I believe that the cardiologist will continue to occupy an important role, in terms of communication and processes. I do not see this role disappearing," she said. Efficiency and precision are so important. "To make good decisions, we also want to get in touch with the person we trust."

For Asselbergs, **the role of cardiologists will change to one of a supervisor.** "More joint decision-making, more discussion with our patients: I think this is the direction we're heading in."
