

AI Engines and Chatbots: Telehealth Extends the Frontiers of Possibility

With Smartphones in seemingly every palm these days, it wouldn't strain credulity to posit that telemedicine will be a major presence in the future of healthcare. But that future might be even more tech-driven — and even closer — than you think. And if you think there's no place for artificial intelligence or chatbots in ongoing, mainstream healthcare, think again.

The healthcare reimbursement trend has been for a greater number of telemedicine services covered by health plans than the year prior. This pattern of expanding coverage motivates developers and inventors to turn their talents to enriching the healthcare field with technological tools that can improve care.

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Roeen Roashan is senior analyst of digital health at the consulting firm HIS. He told Bill Siwicki at Healthcare IT News that virtual healthcare includes the problem of scalability, and this central issue is one that automation of services, as well as machine learning, are designed to address.

“Virtual health technology is not scalable by nature, and this has in fact been a major limitation for more than two decades,” Roashan said. “In remote patient monitoring, you still need a rather significant workforce to support the value chain. Machine learning is making its way to remote patient monitoring. Companies like PhysIQ and Sention offer solutions that make better use of clinical workforce when monitoring patients remotely by automatically tracking whether a baseline for the individual patient is improving or not. This improves scalability by a factor of 7x or 8x.”

He believes that giving the patients the reins within some aspects of telehealth can bring about that scalability, which means automation should be embraced, not feared, in certain situations. For instance, patient-directed platforms like chatbots.

45% decrease in depression, 10X greater prescription med compliance . . . thank you, bot

Roashan cited a study of mental resiliency among young people where a chatbot “delivered stunning results,” arguably even better results than human mental health professionals (especially when one assesses those results in terms of relative value). In the study, telehealth users who chatted with the bot experienced a 45% decrease in depression. At the same time, prescription medication compliance increased tenfold.

Roashan isn't suggesting replacing mental health professionals with chatbots. Rather, he is pointing to the data as underscoring the benefit of thoughtful automation. The participants in the study often logged in for sessions overnight or in the wee hours of the morning, often shared highly sensitive or personal topics, and indicated that their preference was to speak with a bot.

“Chatbots can deliver value, but only in some parts of the healthcare value chain,” Roashan told Healthcare IT News. “The next big step for these automated services is to include voice, and there are plenty of companies working with Alexa to do exactly this.”

AI is barred from diagnosing patients . . . but it can assist human diagnosticians

Although the U.S. Food and Drug Administration (FDA) prohibits a device to hand down a diagnosis to a patient without the involvement of an actual doctor (no matter how intelligent the artificial intelligence may be), telemedicine experts predict that AI will dramatically alter the healthcare landscape in the near future.

Joel Barthelemy is the founder and CEO of GlobalMed, a telemedicine tech vendor. “AI will transform primary care via telemedicine,” he told Healthcare IT News. “The rise of machine learning will enable ‘AI engines’ to take over much of the care now provided by primary care doctors. Represented by a human-like avatar, an AI engine will remotely lead patients through a sequence of questions similar to – but more comprehensive than – the ones that primary care physicians and nurses now ask about symptoms and health histories in office visits.”

He described the AI engine’s efficiency in that it would not waste time asking questions other providers have already asked, assuming those answers are available in the patient’s electronic record. And therefore it can adjust its questioning to the particular patient at hand, not only based on what’s come before, but based on answers to the questions the engine poses in the moment — much like the way a human brain works.

AI engines plugged in to video conferencing

“The AI engine will also take advantage of video conferencing to inspect patients’ skin and observe their general health condition,” Barthelemy added. “It also will consider the results of home and mobile vital signs monitoring on inexpensive devices and wearable sensors. A ‘lab on a chip’ might even be used for instant blood tests, the results of which could be transmitted to the AI engine.”

Despite how savvy and sophisticated they are becoming, AI engines aren’t in line to supplant doctors, but rather, can assist them in improving patient care and outcomes.

“An AI engine also is not allowed to prescribe drugs, and that is unlikely to change in the foreseeable future,” Barthelemy said. “But, based on the experience of many thousands of similar patients with the same symptoms and signs, the AI engine could advise the doctor on which medication to prescribe or which treatment to try. As these learning machines become more and more accurate, doctors will agree with them most of the time unless they know something unique about a patient.”

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