



AI poised to transform healthcare, one fax at a time

By Gale Pryor | February 27, 2018

When IBM's Watson beat human contestants on Jeopardy!, the possible applications of artificial intelligence seemed unlimited. Could Watson also beat humans in curing cancer? The supercomputer's 2013 initiative with MD Anderson Cancer Center, the Oncology Expert Advisor, raised hopes that a cancer moonshot was ready for liftoff.

But healthcare isn't a trivia game, and by 2017, MD Anderson called the whole thing off. "Using this technology to benefit patients has not been determined at this time," cancer center officials told U.S. News and World Report last October. Among the barriers encountered was Watson's inability to deliver insights from massive segregated and unstructured data sets.

The setback in Texas hasn't completely quelled excitement that artificial intelligence (AI) and machine learning may still transform patient care. In the U.K.,

DeepMind, a subsidiary of Alphabet, has partnered with the National Health System (NHS) to develop AI-supported diagnostic and treatment tools, all trained on its single database of the nation's patients.

But without a national health system in the U.S., consistent, aggregated patient data sets needed to train AI algorithms are harder to come by. And, to guide clinical decision-making with any validity, AI algorithms must also account for social, behavioral, and environmental drivers of health – input based on data sets that do not exist.

Healthcare's biggest challenge: inefficiency

If AI is not yet ready to cure cancer, it's arriving just in time to improve healthcare.

So says Girish Venkatachaliah, former vice president of Watson Machine Learning at IBM, now vice president of data strategy, analytics and machine learning at athenahealth. After all, what ails healthcare is not a lack of clinical expertise, he says. The relentless challenge in the day-to-day practice of medicine is inefficiency.

"It's data collection and the time that requires of staff and doctors. It is all the inefficiencies that divert time and focus away clinical care," Venkatachaliah says. "In the future, AI will benefit patients. But today it can help doctors."

AI is already erasing inefficiencies in other industries. In consumer and finance spheres, the convergence of cost-effective cloud computing, infinite volumes of data, and open-source algorithms have enabled machine learning to automate mundane tasks that humans not only dislike, but aren't very good at, from data entry to answering emails.

With the digitization of patient records, says Venkatachaliah, there's an equally transformative opportunity to automate operational tasks in healthcare.

"Community hospitals, for example, deal with inefficiencies day in and day out – the number of faxes and paper documents they read, the number of reconciliations they have to do from Point A to Point B, and the number of times they have to collect the same information from the same patient, and the errors made as they do.

"AI can reduce human error and human effort, and ultimately drive down costs," he says.

The business case for AI

Take faxes. Medical practices receive millions of faxes each year. And, according to athenahealth research, two minutes and 36 seconds is spent reviewing each fax for essential information, and then inserting that information into patients' records.

That's an estimated 200 hours annually of administrative data entry per provider. And data entry errors are made

in the process, corrupting data sets derived from those records. Overall, that manual labor represents an annual \$190 billion in administrative waste for healthcare, according to athenahealth's researchers.

Currently on the athenahealth network, it takes one minute, 11 seconds to convert a fax from analog to digital and deliver it to a provider's inbox. By 2019, AI-assisted fax processing will reduce that time to 30 seconds, says Venkatachaliah.

AI can also speed the gathering of clinical information. "For example, we can use machine learning to discern whether a patient is a smoker or a non-smoker. The correct box is checked by the algorithm, and the person is asked verify rather than checking; they just scan and say yes," Venkatachaliah says. "Imagine the difference in conditions like diabetes and hypertension when many boxes must be checked. A process that takes three minutes can be reduced to three seconds."

Reducing waste – and burnout

Fifty-four percent of physicians report symptoms of burnout – and most blame technology, particularly quality and coding tasks that take their focus away from patients. Yet research by athenahealth indicates that it's not technology itself driving burnout rates, but the loss of autonomy physicians feel when technology enters the exam room.

If, instead of adding tasks, AI-supported technology can relieve clinicians and staff and restore autonomy – or "capability," the measure of clinicians' perception of having the resources they need to care for patients – burnout rates could drop, along with administrative costs and errors.

Already bristling under the erosion of autonomy in patient care, clinicians may not look forward to the day when clinical guidance comes from a machine. Yet, as AI earns their trust in operations by relieving staff of repetitive tasks and reducing human error, it may earn acceptance in the exam room as a clinical partner guiding decision-making and improving outcomes.

Its first job, however, is to do the jobs that humans shouldn't, Venkatachaliah says. "That's where AI can help healthcare right now: Free up staff for higher value tasks and doctors for patient care."

Gale Pryor is senior editor of athenaInsight.

athena**insight**

A daily news hub reporting from the heart of the healthcare internet, with access to a comprehensive data set of healthcare transactions from athenahealth's nationwide network. We equip leaders with actionable insight and inspiration for making healthcare work as it should.

Stay in the know

Sign up for weekly data and news:
insight.athenahealth.com/newsletter