



Spotlight Series

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

The Power of AI/ML to Transform Healthcare

- Responsible innovation, thoughtful oversight
- Increased accountability
- Clear-cut value to healthcare organizations
- Q&A with our sponsor Hyland Healthcare

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The High Stakes of Artificial Intelligence and Machine Learning Development in Healthcare

For nearly a decade, experts have heralded the promise of artificial intelligence (AI) and machine learning (ML) solutions to help improve the entirety of the healthcare enterprise, from patient care to revenue cycle management. With the recent release – and fast-paced adoption – of generative AI-driven technologies like OpenAI’s ChatGPT across other industries, healthcare stands at a precipice. Healthcare can no longer simply discuss the potential of AI/ML in theory but must determine how these emerging solutions can and should be used in practice to solve healthcare’s greatest problems.

AI/ML solutions held the spotlight at the 2023 HIMSS Global Health Conference and Exhibition in Chicago, Illinois. During his opening keynote speech, Hal Wolf, CEO at HIMSS, stated that AI/ML can “open up new horizons if – *if* – we use them appropriately.” He also shared with the audience that he had asked the ChatGPT solution how to solve global healthcare challenges. Within seconds, the chatbot offered suggestions such as improved healthcare access, increased investments in preventive care and a need for even more technological innovation.¹

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HAL WOLF
CEO
HIMSS

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Responsible innovation, thoughtful oversight

Holly Maloney, Managing Director of General Catalyst, a venture capital firm that invests in early-stage technology companies, however, cautioned that AI, while incredibly promising, is not a panacea. In the HIMSS23 Venture Connect session, she advocated for responsible innovation.²

“Technology has the ability to drive incredible change, but with that ability you have great responsibility, especially as we get into the role of AI and automation,” she said. “The promise of AI has existed for over ten years ... but it’s been incredibly slow to adopt.”

Maloney cited a lack of trust as one reason why AI adoption has been lagging compared to other industries – and maintained that healthcare organizations and technology companies need to build systems that are “fair and inclusive, that are robust and reliable, that are private and secure and that are transparent and knowledgeable.”

With other industry verticals already integrating ChatGPT and other AI/ML algorithms into common solutions and day-to-day workflows, it's clear that the stakes are higher in healthcare – thanks to a growing aging population, widespread clinical staffing shortages, increased claim denials and supply-chain disruptions. AI/ML has the power to address all of them, if applied thoughtfully. That's why the time is now right to find ways to successfully use AI/ML for targeted improvements across the entire healthcare enterprise.

A pitch for value and accountability

While the healthcare community understands the promise of AI/ML to address pressing issues ranging from improved diagnostic capabilities to staffing shortages, healthcare organizations are still grappling with determining where such solutions will add the most value without compromising network security or patient safety. HIMSS23 news coverage demonstrates that healthcare leaders remain optimistic about the power of AI, provided that the industry can put the proper guardrails in place to oversee its continued application and growth.

- Royal Philips Healthcare released the Philips Future Health Index 2023 global report at HIMSS23, per *Healthcare Finance News*. The eighth of its kind, this research study, which surveyed nearly 3,000 healthcare professionals across 14 countries, found that providers intend to significantly invest in AI over the next three years – particularly in areas like clinical decision support and “right-sizing” ongoing staffing issues. Thirty-seven percent of healthcare leaders also reported an intention to invest in AI solutions to make operations more efficient, using such tools to automate documentation, streamline scheduling and support other routine tasks.³
- As reported by *Healthcare IT News*, this year's Machine Learning & AI for Healthcare Forum at HIMSS23 focused on both the promise and potential perils of widespread AI use in healthcare. Panelists highlighted the many ways in which AI/ML solutions can help improve care. But the panelists also cautioned that these algorithms are not foolproof and have been shown to inadvertently introduce racial bias. That's why, they argue, healthcare as a community needs to work on developing ethical guidelines for AI use. Without the right rules and regulations in place, these solutions will not be able to evolve in a way that will allow them to fulfill their true promise.⁴

- The United States is in the midst of a mental health epidemic – and far too many patients who need care lack access to the psychologists and psychiatrists that might help them. As noted recently in *Healthcare Finance News*, experts at HIMSS23 argued that both remote care options and AI can help improve access to these underserved populations in a Views from the Top session entitled, “Can Technology and Innovation Advance Behavioral Healthcare?”⁵
- Sonya Makhni, AI Medical Director at Mayo Clinic Platform, explained why AI is not yet in widespread use to help improve disease detection and diagnosis, as well as to assist with population health initiatives, clinical decision support and patient engagement, during the Machine Learning & AI for Healthcare Forum. Per *Healthcare IT News*, Makhni highlighted the ongoing challenges that healthcare organizations face when trying to develop and deploy AI/ML solutions, including a lack of data standardization, machine learning drift and the need to have clear accountability guidelines in place for clinical practice. She recommended that healthcare organizations that move forward with AI do so with transparency – as well as “collaborate and co-create” with stakeholders to find greater success with such initiatives.⁶
- In a *Healthcare IT News* interview, Tim O'Connell, Founder and CEO of emtelligent, discussed the ways that AI can help make healthcare, as a whole, more sustainable. By saving providers time, improving the revenue cycle and developing better actuarial models, he argued, AI has the power to save organizations millions of dollars. But, like others, he cautioned that strong oversight is necessary and advocated for a new IT leadership role, Chief AI Officer.⁷

Even HIMSS23 panels and sessions that were not specifically focused on AI/ML often mentioned them as opportunities for healthcare organizations to improve both care delivery and their bottom lines. Nirav Shah, a HIMSS23 attendee and Medical Director of Quality Innovation and Clinical Practice Analytics at NorthShore – Edward-Elmhurst Health, said he hopes to start implementing tools at his organization that will not only increase workforce efficiency but will also “bring back the joy in clinical care” while “[lessening] clinical burden.”⁸ It's a must, he said, to address ongoing staffing shortages as well as issues with clinician burnout.

“A key element is how [AI] tools are integrated into workflows and solve the last-mile challenge,” he said. “A highly accurate tool is only as good as its ability to integrate into provider workflow and augment care processes.”

And while the rest of the world remains captivated by generative AI applications like ChatGPT, others at the conference advised caution.

And while the rest of the world remains captivated by generative AI applications like ChatGPT, Shah, like others at the conference, advised caution.

“The abilities of these models are astounding, and while the potential is vast, they will bring challenges to health IT leaders,” he pointed out. “How do you manage a life cycle where these models are becoming exponentially more powerful within months? What are the security implications of using these tools? How should these be integrated into workflows? How do you deal with the black-box nature of these models, and how do you safely deploy these tools in patient-facing applications?”

Forging the path forward

These questions – and more – must be answered before healthcare can fully embrace AI/ML. Indeed, Andrew Moore, Founder and CEO of Lovelace AI, told HIMSS23 attendees

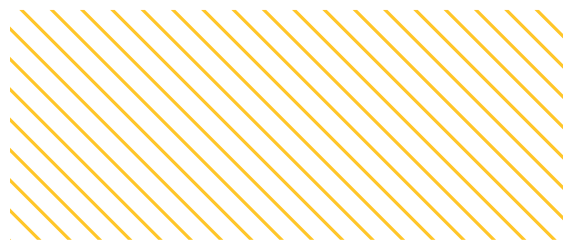
that the time to start addressing such questions is now. “Don’t wait to see what happens with the next iteration,” he said in the session, “Responsible AI: Prioritizing Patient Safety, Privacy and Ethical Considerations.” “Start right now so you’ll be ready.”

His fellow panel member, Peter Lee, Vice President of Research and Incubation at Microsoft, added that it’s up to the greater healthcare community to determine “whether, where and how these AI technologies are used in the future.”

“There are tremendous opportunities,” Lee emphasized, “but also risks, some of which we may not yet know about. The healthcare community needs to assertively own how the development and deployment of these tools evolve – with a keen eye on safety, efficacy and equity ... Get hands-on. Try to get immersed and understand [the issues]. And then work with the rest of the community toward some common ground.”

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QA

Bringing AI/ML Into the Healthcare Mainstream

The potential of artificial intelligence (AI) and machine learning (ML) solutions to transform healthcare from the bedside to the back office has been discussed for nearly a decade. But today's healthcare organizations must overcome several challenges before these much-hyped solutions can provide the promised enhancements to clinical workflows and business processes.

What trends are you seeing with AI in healthcare?

For the last few years, the subject of AI/ML tools have been front and center in our customer conversation. It is safe to say we are past the point where only innovators and early adopters are looking at these technologies. Most organizations we work with have at least one AI/ML tool in production, or they are in the evaluation and piloting stages with an AI vendor.

Our customers have moved beyond the point of proving the technologies are valid to being able to clearly define and document the value of the AI tools (improved patient care, cost reductions, improved efficiency, etc.), so that they can offset the costs associated with acquiring and deploying.

From a vendor perspective, the industry is squarely focused on trying to integrate itself into existing clinical workflows, versus the ad hoc approach seen a few years ago. We are seeing a greater number of requests for partnering activity amongst vendors.

Are there any challenges that your health systems are having in deploying AI tools?

Beyond the return on investment (ROI) exercises I mentioned earlier, the biggest challenges we see with health systems is getting the data ready to support the AI tools. In the U.S. especially, the high volume of merger and acquisition activities, vendor changes and changes in governance policies have put health systems in a situation where the data they require to drive these new tools and workflows is often logically or physically siloed within their organization. Siloed datasets can lead to delays in deployment as organizations seek to wrangle their data.



Lyle McMillin

Principal Product Manager and General Manager, Enterprise Medical Imaging, Hyland Healthcare

Lyle McMillin is responsible for the overall health of Hyland Healthcare's Enterprise Medical Imaging business, managing some of the largest data stores in the industry to directly support critical clinical imaging workflows.

Specific to medical imaging, where are areas that you see immediate use for AI/ML tools?

As the archive provider for many of the largest imaging datasets in the world, we are often brought in to consult during AI deployments. Since reimbursements for AI tools are trailing the availability of the tools, we are seeing health systems focusing on how they can improve each radiologist's efficiency, since this can lead to concrete ROI if done correctly. Efficiencies derived from improvements in reporting and greater efficiency with the radiologist's worklist seem to be among the top priorities.

Although near-term efficiencies are associated with the reports and the worklist, we are seeing interest in tools that drive higher levels of patient care through the identification of incidental findings, but those solutions do not appear to be as widespread.

'Generative' AI was a hot topic at HIMSS23. What are your thoughts on this emerging industry segment?

This was the hottest topic during conversations with both customers and analysts alike. I think the consensus amongst those we spoke to was that the technology is very intriguing, but its documented issues with accuracy are going to inhibit entry into the clinical space. I think, in the near term, it is safe to say that most of the use cases will be in support of non-clinical workflows like chatbots – and I expect many vendors to adopt this for content generation.

Many vendors were starting to highlight ChatGPT-driven workflows as part of their booth advertising at HIMSS, so, like the AI/ML applications that preceded it, the validation phase should move quickly once vendors and providers alike seek to expand its use into their environments.

To explore connected care technology, see www.hyland.com/en/healthcare.



About Hyland Healthcare

Hyland Healthcare provides connected healthcare solutions that harness unstructured content and medical imaging at all corners of the enterprise and link it to core clinical and business applications such as electronic health records (EHR) and enterprise resource planning (ERP) systems. Hyland Healthcare offers a full suite of content services and enterprise imaging solutions, bringing clinical documents, medical images and other clinically rich data to healthcare stakeholders that need it most. This comprehensive view of patient information accelerates business processes, streamlines clinical workflows and improves clinical decision making.