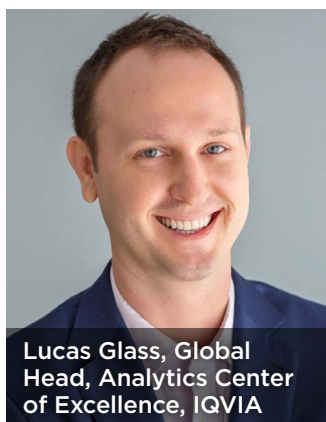


AI With a Healthcare IQ

A Conversation with Lucas Glass and Andrew Ploszay



Lucas Glass, Global Head, Analytics Center of Excellence, IQVIA



Andrew Ploszay, VP, Digital Strategy, IQVIA

Since the term was first coined in 1955, “artificial intelligence” (AI) has led to significant advances across industries. From robotics to automobiles, to digital personal assistants, and even online shopping. In healthcare, AI has enabled many successes, but a few noteworthy failures have made some companies question how they should apply AI to their clinical or commercial solutions.

Whether we’re ready or not, AI is already here. According to some reports, more than 50% of executives expect broad scale AI adoption by 2025. A report from Global Market Insights forecasts that the U.S. healthcare AI market alone will exceed \$10 billion by 2024. The global AI market has been growing rapidly as major pharmaceutical and medical technology companies begin investing heavily in internal AI efforts and external partnerships with data and technology companies.

Alongside this emerging technology, IQVIA recognizes its customers are facing an increasing need to compete and do everything from get drugs to market faster, predict outcomes with greater precision, turn unstructured data into insights, and scale to solve increasingly complex problems. Meanwhile, customers are finding that legacy approaches don’t consistently meet these growing needs, but some are still hesitant to fully embrace AI.

To help, IQVIA dynamically integrates data, technology, advanced analytics, and the right expertise with AI capabilities to ensure that its application to any healthcare problem not only starts with the right ingredients but is

also guided by the right experts. This dynamic integration happens thanks to the IQVIA CORE, which powers the company’s AI and enables healthcare-grade solutions for customers.

Recommending a product that someone might want to buy in an online store is one thing — the cost of getting that wrong is likely minimal to the customer. When predicting the most likely diagnosis or

treatment for a patient — getting it right is vital. IQVIA believes the key to success in healthcare is to apply “AI with a healthcare IQ,” which means AI and machine learning capabilities developed, guided, and interpreted by not only data science experts, but healthcare experts as well.

Benefits to Clinical and Commercial Applications

Two such experts at IQVIA are Lucas Glass, Global Head, Analytics Center of Excellence, and Andrew “AJ” Ploszay, VP, Digital Strategy. On the clinical side, Lucas’s team supports strategic decisions across clinical development for trial design, planning and execution. On the commercial side, AJ’s team leverages technology to help pharma companies identify and reach healthcare providers (HCPs), and ultimately the patients that their therapies are designed to treat. Together, they have a broad and deep perspective on AI, and how it can help healthcare companies that embrace the technology today.

“There is a wide range of applications for AI capabilities across the clinical to commercial journey — it can get very complex — so it’s important to start by articulating the benefits of AI in a very simple way,” AJ says. “No matter where or how we apply AI to healthcare, the goal is to increase the probability that we get more precise answers, enhance speed, and be as agile or scalable as possible in a competitive landscape.”

According to Lucas, “the stakes for clinical and commercial are very different, but accuracy, moving quickly, and being able to adapt to change is critical to both,” he says. “In clinical, for example, we might be working to shorten the drug development cycle from 12 to 9 years. On the commercial side, we may be trying to optimize ROI or support compliance. In either case, the outcomes not only have the potential to benefit customers, but they’ll also have an impact on patients as well.”

AI in Clinical Development

Currently, AJ says there is considerably more AI activity on the clinical side compared with commercial applications, in part because clinically relevant data is more readily or publicly available. “As access to data from publications, patents for drug discovery, FDA submissions for competitive intelligence, and electronic health record (EHR) data becomes more readily available, AI can be used to curate information to drive better outcomes for commercial applications,” he says.

According to Lucas, AI is instrumental in helping to drive clinical development forward. One primary example has been in the area of site selection. “Recommending sites for a clinical trial is a very data-driven aspect of clinical trials,” he says. “Traditional approaches to site selection are based on existing partnerships or relationships. This doesn’t consistently lead to the best performing sites. AI is changing that. More broadly speaking, some other valuable areas of application so far have been reduced administrative burden, increased predictability of portfolios, and enhanced trial recruitment.” In working with customers, for example, IQVIA has seen up to 46% faster site identification average when leveraging AI capabilities compared with legacy approaches.

Despite these benefits, there is still hesitation in some areas to fully adopt AI capabilities. According to Lucas, one of the primary areas of concern in terms of adoption is a disconnect between the data scientists and the decision makers in the field. “To over-

come this obstacle, we are making massive investments in market-facing technology in collaboration with our subject matter experts (SMEs)," he says. "We have a decision intelligence team that focuses on the barriers to trust and adoption of AI such as psychology, UX, and decision theory. We have integrated the technology and operations teams so that they are deeply engaged in the agile process of development. We are building a network of hospitals and vendors that can make the necessary data available, in private, secure ways to deploy technology into the health systems more seamlessly."

By adopting these strategies, Lucas hopes that his team can further reduce some of the other barriers of adoption, such as the complexities around the federated universe of Persona Health Information (PHI) clinical data; the high level of expertise needed to run a clinical trial, which leads to adoption challenges; the highly specific processes across the industry that lead to a challenging landscape for tech investment; and less mature level of clinical technology versus other industries, such as financial technology and marketing — all of which lead to difficulty with deployment of AI that is required to achieve value.

"If the algorithms that recommend clinical trial strategies can account for market dynamics, organizations can make more informed decisions," he says. "For example, the recommended strategy for a trial that is racing against a competitor should be different than one in a less competitive environment. It may be worthwhile to create a much more aggressive albeit expensive trial strategy."

Lucas says key factors for sponsors, sites, and clinical teams to consider when looking to integrate AI into their processes is to focus on the end use and the user experience; ensure that the applications leveraging AI are advanced enough for the technology; and engage SMEs early and often with the AI that you are intending to build — and share your solutions to their problems regularly.

Even with all these applications to clinical development, Lucas believes we're only just beginning to scratch the surface. "The integration with clinical research as a care option is the most profound value that AI can provide," he says. "Imagine a world where physicians can personalize medicine to such an extent that the treatment they prescribe can be either a marketed product or one in development. The clinical development landscape is too dynamic for physicians to bridge that clinical and commercial gap on their own. With the support of AI, that becomes possible."

AI in Commercialization

The use of AI in commercial applications can, as Lucas explains, be used to build a connection between clinical and commercial operations, as well as transform the sales and marketing capabilities of pharma organizations by identifying patient pathways, improving disease detection, enhancing multi-channel marketing, heightening smart targeting, pinpointing next best actions, optimizing field force activities, and improving forecasting.

"Commercial models have radically changed in the last 10 years," AJ says. "Pharma companies have had to reinvent the way they engage with HCPs. One-on-one meetings, team-to-team engagement, and opportunities to gain access to HCPs are dwindling."

One of the primary reasons legacy approaches to HCP engagement aren't achieving results is because physicians are inundated with information and promotions across so many channels, which becomes noise that's easily ignored. It's difficult for them to discern what's relevant or not, and it's even harder for pharma companies to make these once valuable connections.

"AI is essential in helping to optimize multi-channel engagements by supporting the delivery of the right message on the right channel to the right customer," AJ says. "This requires the orchestration of different types of engagements with HCPs, so that marketing and sales operations plan and execute well-coordinated personal and digital interactions that take into account each HCP's preferences. Ultimately, AI then brings together all this engagement data for fast-paced, informed decision-making. When used well, AI leads to a more relevant and impactful customer experience." In one example, IQVIA helped a customer achieve 85% accuracy in HCP targeting, while another achieved a 33% greater speed to insight by optimizing a multi-channel marketing approach with AI.

"Another way it can be used effectively in commercial problem-solving is in the form of augmented intelligence," AJ continues. "Traditionally, when we think of artificial intelligence, we might think of how our phone can learn our daily routine and make recommendations about the fastest route to commute to work. From the user perspective, this all happens behind the scenes and feels very automatic."

With augmented intelligence, AI is used as an aid to human judgment to generate decision-ready data to assist human intelligence and decision-making.

"With this approach, we're starting to see companies use AI to make more informed decisions around areas such as resource allocation, whether that's financial or human," AJ says. "For example, AI can leverage real-time HCP data to provide recommendations to sales teams for how best to prioritize weekly customer activity. It then informs the optimal sequence of engagements, digital or personal, to engage in the following months. It also provides recommendations for future budget allocations across channels based on calculated ROI data of past investments."

While we're already seeing promising examples like these in practice, AJ says the application of AI for the commercial space is still in its infancy and facing two major barriers: establishing causation in an "influence-oriented" situation, and the scarcity of available performance data in some countries. In this regard, a better connection between clinical and commercial operations will be a game changer, helping to boost the next phase of AI development in pharma companies.

AJ says the companies that are using AI with success, including IQVIA, are carefully experimenting on a grand scale. "It's a phenomenally exciting time to be in healthcare and the life sciences," he says. "At the same time, incorporating AI and machine learning into various processes is like trying to play chess on multiple boards that are all moving at different times. It's important that we explore new areas, but we also have to get it right. That's where the 'healthcare IQ' comes into play. We're applying AI to help our customers, but we never lose sight of the fact that, ultimately, everything we do for customers is for the benefit of patients."

Lucas and AJ both agree that the potential benefits of AI to the healthcare and life-sciences industries — from drug innovation through to commercialization — are undeniable. Even though it's widely applied across industries, AI can still feel like an emerging technology.

"AI is already becoming a prerequisite to success," AJ says. "I believe that pharma and other healthcare companies that adopt and internalize it, with the right approach and expertise, will be best positioned to develop treatments or even cures faster, drive greater efficiencies, and stay ahead of the competition. And when we talk about achievements like early diagnosis, or recommending the right treatments, that means AI can be life-changing for patients, too." ■

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