

How to harness artificial intelligence for human care

From shopping sites that list “Recommended for You” to social media networks suggesting “People You May Know,” artificial intelligence (AI) is built into much of what we encounter in everyday life. AI works to anticipate our needs even before we know we need them.

Now, AI is working in the health and human services space as well.

It’s not a robot takeover

For many, that prospect may conjure images of robots providing the expertise once given by providers or caseworkers. AI, when done well, doesn’t replace human caregivers. It works in the background, helping humans deliver better care.

“AI can be about delivering and coordinating care and providing recommendations of services, through the right channel, to drive engagement with your desired clients,” says Don Johnson, Optum chief technology officer and vice president of product. “That’s super impactful.”

To make AI work for you, you need to plan and understand where you could encounter pitfalls. You can follow these steps to get the most out of AI:

- Choose a problem AI can solve
- Start with existing data sources
- Insulate your AI system
- Watch for bias
- Actively measure and adjust

Choose a problem AI can solve

A key first step is to understand how to best apply AI.

AI is an especially impactful tool when it solves what Johnson describes as “a Goldilocks type of problem.” These are issues that are not so small that they’re not worth the time and money necessary for building an AI system. But they’re not so large that they exceed AI’s capabilities.

“You’re looking for opportunities to streamline processes that are replicable and need to be tackled consistently,” explains Johnson. “It’s about providing contextualization, especially for large sets of data.”

Prior authorization to pay for a medication or treatment is a good example. Typically a human operator navigates a vast number of policies and procedures before arriving at a decision. AI can help by aggregating that data. That enables the operator to deliver faster and more accurate authorizations.

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–Andrew Cone,
Senior Vice President
State Government Solutions

Chat logs and other freeform client interactions can be another AI opportunity, specifically natural language processing.

Legacy systems may be trained to understand precise clinical or program terms. But clients will often use more descriptive language, like “antibiotics” or “my diabetes medication” or “income verification.” AI can be trained to associate client terminology with more official terms.

Start with existing data sources

The most efficient way to get an organization’s AI efforts off the ground is to uncover opportunities in existing data. A great place to start is to seek out currently disconnected troves of data that, when combined, may provide insight.

“When you think about health care or social services, there are tremendous amounts of data that flow in very unique streams,” explains Andrew Cone, senior vice president of state government solutions at Optum.

“When brought together by AI, that data can be used to deliver customized health care and human services resources,” Cone says. And they can be delivered in ways that are familiar to clients through their dealings with online retailers, search engines and other interactive tools.

“In health and human services and the Medicaid market specifically, it’s the coordination of services, of care, of assets and capabilities that are more personal to an individual’s situation,” Cone adds.

Without AI, there’s no way for an organization to fully track the experience of any single client or member who requires multiple services. Individually, those client interactions generate data useful to that individual process. When combined, those disparate data sets can tell a more complete systemic story. This creates a wealth of knowledge much greater than the sum of their parts. AI makes the connection.

“All of those things end up being the contexts to train models and be able to get predictive recommendations,” explains Johnson. “You need to engage those data points that can categorize and size risk, identify gaps in care and prioritize clients.”

Insulate your AI system

Being aware of the limitations of your legacy systems is also crucial to AI success. While the AI tools can pull data from those systems, Johnson says, the AI processes need to be separate, insulated from them.

“If you build it just within your legacy environment, it’s actually going to be very fragile and constrained by the transactional nature of that system,” he says. “It’s going to have a bias to drive insight through that existing process.” Bias is that unintended behavior in which AI produces results that are systemically biased due to the bias inherent in the data used to train AI.

That would be counterproductive. So instead, once insulated from the legacy system, frame the problem in terms of your clients, not the transactional system they have interacted with. With the customer needs as the guiding principal, the new AI-driven process will be more durable and will live beyond a legacy system that may be decommissioned.

Watch for bias

It's also critical to watch for bias. Despite what many critics will tell you, AI systems don't themselves create bias. They can, however, concentrate, amplify and accelerate biases that already exist.

If AI is trained with the same policies and procedures that already lead to bias in an organization's existing systems, those biases will also exist in the AI. And because it's automated, it will be employed more uniformly and efficiently.

"What you need to do is constantly monitor who you're talking to," explains Johnson. "Ask where's the data coming from, where's the data not coming from, who participates, who doesn't." Vigilant monitoring can lead to the discovery of biases within AI, and, potentially, previously unknown biases within an organization's legacy systems.

Actively measure and adjust

Just as AI is designed to help people deliver better care and services, people are needed to help AI evolve. Successful AI isn't a one-and-done. It needs to be built in a way that allows human operators to recognize opportunities for improvement.

For example, if clients at a particular point in an automated process are frequently asking for help, alerting a human operator can lead to mapping a more intuitive path. Exception paths to alert that human operator are critical.

While AI is technology, Johnson recommends treating it like you would a human workforce, updating processes and training over time. That will empower it to fulfill changing needs, engage new client groups and interact using evolving styles of engagement.

"What we're really describing is the personalization of information specifically around an individual's social environment and ability to consume appropriate resources," explains Cone.

"When you think about health and human services, we want to be able to answer questions like 'How do we apply the right services at the best fit when it will make the best impact?' Seeing this begin in health and social services delivery today gets us very excited about what AI can accomplish."

Don Johnson

Chief Technology Officer and Vice President of Product for State Government, Optum

Don has over 20 years' experience in engineering, architecture and innovation. Most recently, he was senior distinguished engineer for the Optum Advanced Technology Collaborative. In that role, he focused on artificial intelligence, blockchain, and other advanced technologies to drive change to the health care system.

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Andrew has over 30 years of innovative and creative leadership experience in the health care industry, with exceptional results.. His highly diverse experience includes health care information technology and service solutions and analytics for payers, providers and governmental agencies.

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