

How to Navigate the AI Maze in Healthcare

The global healthcare AI market is growing fast, with an expected increase from \$4.9 billion in 2020 to \$45.2 billion by 2026.¹ There are new solutions introduced every day that address all areas: from clinical care and diagnosis, to remote patient monitoring to EHR support, and beyond.

However, AI is still a relatively new presence in the healthcare industry, and understanding its application is critical to determining which solutions can actually make a difference in care delivery and business operations.

91%

of healthcare respondents believe AI technology will improve the patient experience.²

53%

of respondents say the healthcare industry is ahead of others in AI adoption, but they nevertheless believe it needs to happen much faster.³

67%

of healthcare insiders say their employees support AI adoption, the lowest ranking of any industry.⁴

3 Must-Haves for Successful AI in Healthcare

1

AI Must Be Set Up to Solve a Problem

Data » AI

AI is only as good as the data it's fed. The system needs to be designed upfront to solve a specific problem, using the right data.

Humans » Technology

In healthcare, unlike other fields like robotics or gaming, AI doesn't have the chance to start over because it's applied in a real-world setting of real people with real health concerns.

Problem » Design

Behavioral science expertise can be used to identify the problem that needs to be solved and inform the AI design.

2

AI Must Account for Bias

Bias in any intelligent system is unavoidable because system design requires choices about what data to include, and how to gather and represent it. Every choice in a study or system is a bias.

However, good machine learning design requires that you build in the right bias in order to exclude irrelevant noise in an infinitely complex world. Building in the right bias eliminates the problematic hidden biases in healthcare that have historically hurt the system.

Health systems need solutions in which the biases are designed consciously and ethically, and effective AI solutions require putting clear forethought into what biases are built into the system. In other words, understanding the bias is part of good AI design.

This requires that AI designers:

- Immerse themselves in the context of the problem they're solving
- Design solutions to avoid biases that disenfranchise or reduce the effectiveness of the population they're solving for
- Make sure the population they train their model on is a match for the population the model will serve

3

AI Must Continuously Learn

AI systems must get smarter over time so they can help health systems improve long-term patient outcomes at scale. As AI takes in new data, it should gain new insights that inform its output.

In order to learn effectively, AI systems need to know what success looks like.

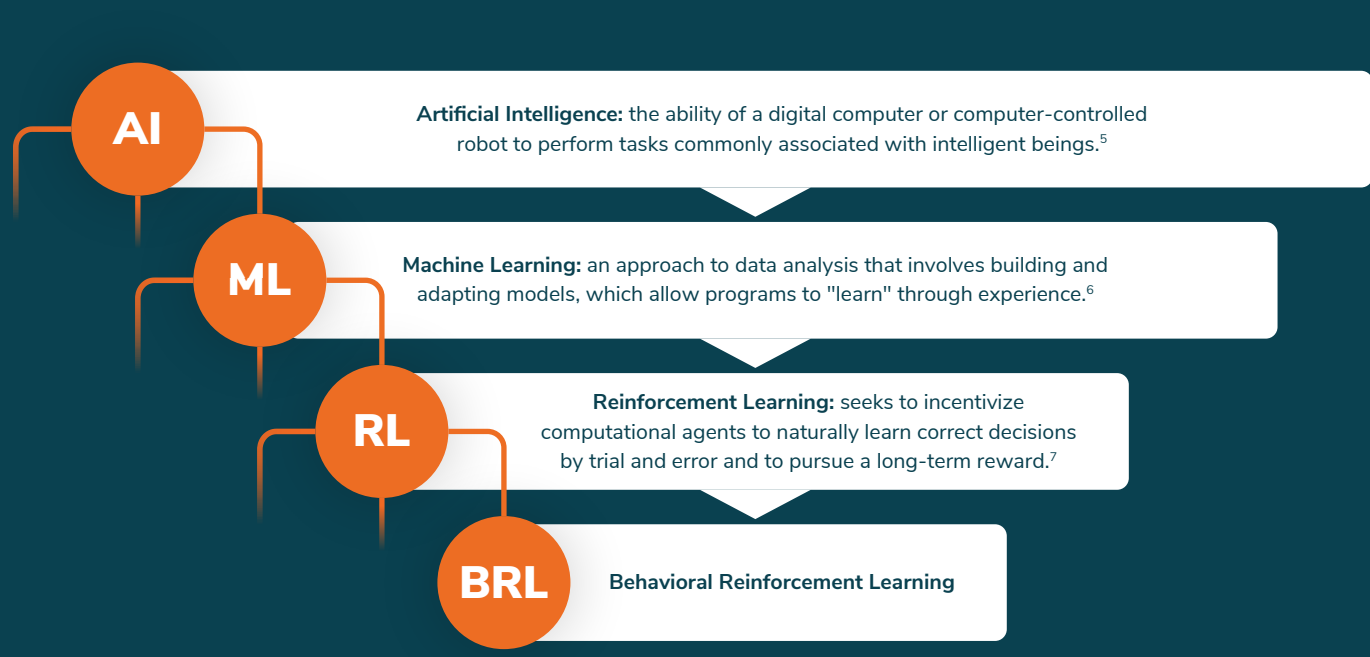
This is possible when:

- The AI design calls out the environment in which the solution operates
- A reward is built into the system's algorithm
- The system can respond to changes in the environment or recognize patterns and changes before a person could

Using AI to Drive Behavior Change

When AI is set up to solve a problem, accounts for bias, and continuously learns, it can be used to deploy behavioral interventions that move people to take the right actions for better health.

This can be done with **behavioral reinforcement learning**, through which machine learning models learn a person's unique behavioral profile and optimize communications to move them toward the desired behavior.



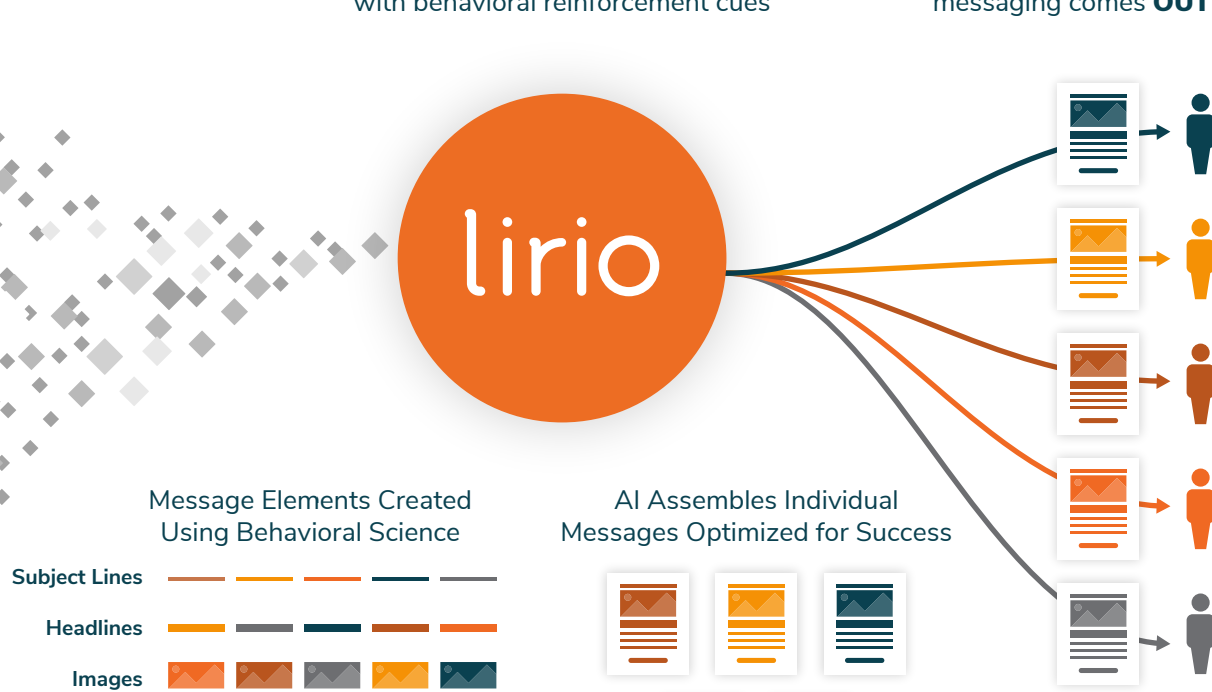
Lirio Helps You Drive Behavior Change and Improve Population Health

Lirio's behavior change AI platform uses **Precision Nudging™** to move people toward better health.

lirio

The platform's **behavioral reinforcement learning agent** learns what behavioral science solutions will overcome specific barriers to action for specific people, and develops hyper-personalized messages that are deployed at scale and optimized over time. This results in more people adhering to treatment plans and making better health decisions overall.

Consumer data goes **IN** → AI cross-references millions of data points with behavioral reinforcement cues → Hyper-personalized messaging comes **OUT**



lirio Can Help You:



Increase appointment scheduling (and minimize no-shows) for specific visits, such as women's wellness exams or cancer screenings



Orchestrate a holistic, integrated patient engagement ecosystem



Drive utilization of employee well-being resources, such as EAP programs



Improve digital engagement through patient portal sign-ups and telehealth adoption



Reach hard-to-engage and chronic care populations with appropriate calls-to-action based on their risk profiles

Schedule a consultation to see how the Lirio behavior change AI platform can help your health system.

www.lirio.com | 877.819.2188

¹<https://www.marketsandmarkets.com/PressReleases/artificial-intelligence-healthcare.asp>

²<https://advisory.kpmg.us/content/dam/advisory/en/pdfs/2020/healthcare-living-in-an-ai-world.pdf>

³<https://advisory.kpmg.us/content/dam/advisory/en/pdfs/2020/healthcare-living-in-an-ai-world.pdf>

⁴ibid.

⁵<https://www.britannica.com/technology/artificial-intelligence>

⁶<https://deeplai.org/machine-learning-glossary-and-terms/machine-learning>

⁷<https://deeplai.org/machine-learning-glossary-and-terms/machine-learning>

Other Resources:

Why Your AI Isn't Solving Your Problem

What's Precision Nudging™ All About?

Lirio Research: Introducing a New Form of Machine Learning Optimization