

Expanding AI in Healthcare: Introducing the New Healthcare.AI™ by Health Catalyst

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Healthcare leaders face an unprecedented list of increasingly critical issues across revenue, cost, and quality. These leaders are turning to artificial intelligence as the key to better decision-making, believing it will deliver faster turnaround of insights with small margins for error. While these attempts may even incorporate augmented intelligence (AI), which goes beyond artificial intelligence by enabling human decision makers to make the best choices, they often fall short.

Leaders struggle to successfully integrate AI into their organizations' analytics processes, thus limiting the effective use and positive impact of a potentially powerful tool. Limitations of black-box software and an overly narrow focus on predictive models have severely hampered AI's effectiveness for healthcare organizations. Additionally, the over-reliance on self-service AI applications and the lack of expert guidance set these organizations up for failure.

[New Healthcare.AI™ by Health Catalyst](#) is an improved transformational suite of AI products and expert services that helps health systems overcome these common challenges by dramatically expanding the use and uses cases for effective AI within healthcare organizations.

Integrating Augmented Intelligence Is Challenging for Health Systems

In spite of AI's potential to enable better decisions, hurdles in its adoption have prevented health systems from expanding its use throughout the enterprise. Ideally, analysts want AI capabilities integrated into their existing workflows and business intelligence (BI) tools. However, most AI tools are standalone applications requiring analysts to learn and adopt yet another program, language, or integration point.

Effective AI integration requires data science expertise, and the leaders who attempt to fill this expertise gap find it challenging for myriad reasons. The first is that health systems simply cannot adequately fund data science resources. And even with in-house data science talent, scaling that expertise to the broader analytics teams is difficult. Teaching data science concepts and skills to existing teams is a slow, expensive, and unsustainable process.

In addition to data science challenges, effectively implementing AI also presents difficulties. When healthcare organizations have managed to implement predictive models, they struggle to demonstrate the impact and engender trust throughout the organization. For example, a [2020 BMJ article](#) looked at 232 prediction models regarding COVID-19 and could not recommend any of the models for use in current practice citing "This review indicated that proposed models are poorly reported, at high risk of bias, and their reported performance is probably optimistic." Despite the urgent need for AI-assisted decision making around COVID-19, the approach used with these models resulted in unreliable—and dangerous—medical guidance.

Finally, most traditional artificial intelligence solutions are "black boxes," which make it impossible to validate, modify, or optimize the analysis. Leaders are left wondering if these programs are working or how to improve them. Also, many of these solutions narrowly focus on predictive analytics limiting any potential impact. While predictive modeling is an important use case, the opportunities for AI support are enterprise wide, including for critical decisions.



Optimizing AI in Healthcare: Introducing the New Healthcare.AI™ by Health Catalyst

A transformative and improved product suite and set of expert services, the New Healthcare.AI by Health Catalyst, dramatically broadens effective AI use throughout healthcare organizations. The offering is optimized to address 5 levels of analytics AI use cases as laid out in the Healthcare.AI Framework (Figure 1):

Level 1: Analytics Integration

Level 2: Choosing/Building Predictive Models

Level 3: Optimizing Predictive Models

Level 4: Retrospective Comparisons

Level 5: Prescriptive Optimization

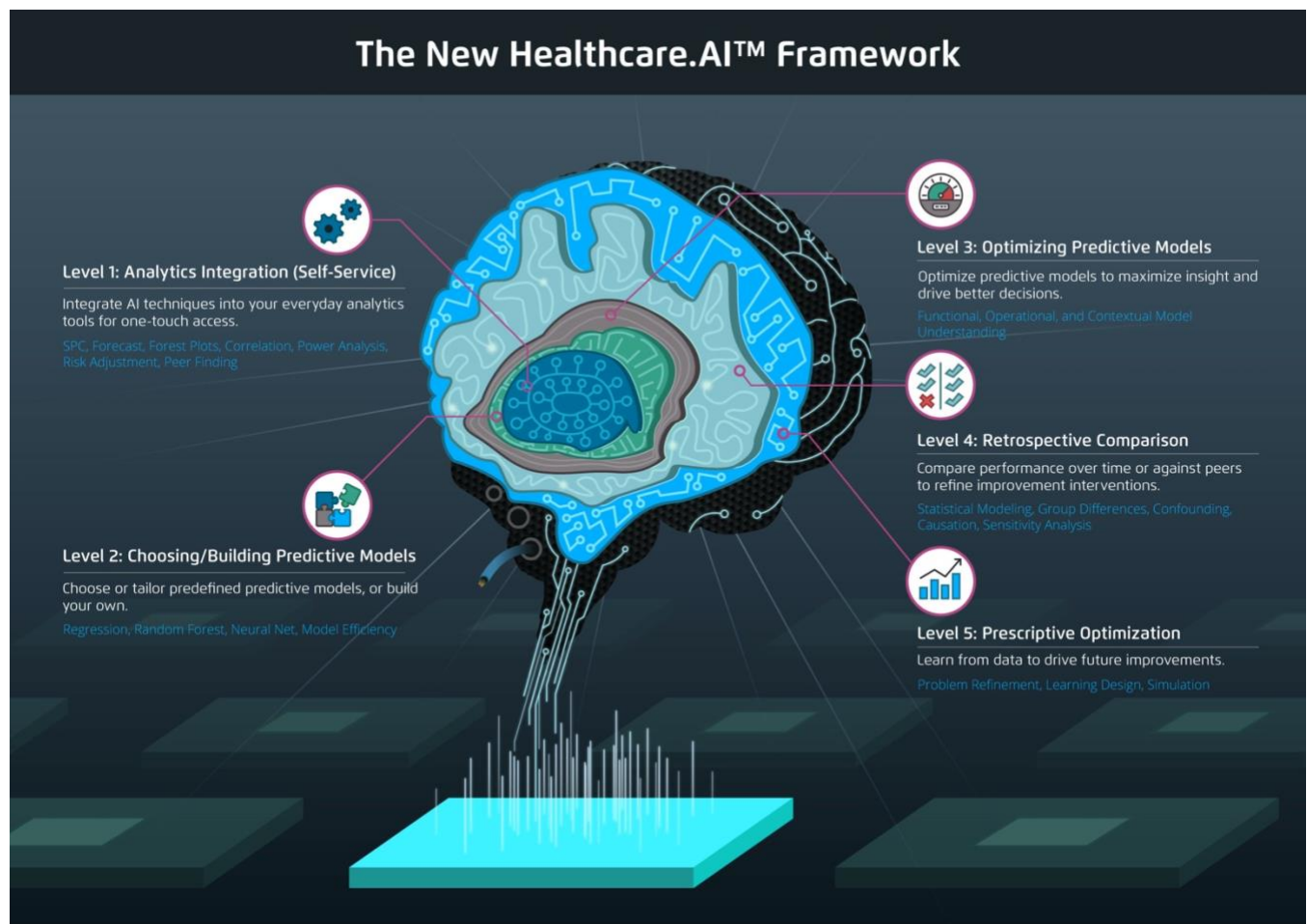


Figure 1: The New Healthcare.AI™ Framework

Too often AI solutions are misused or misapplied, leading to suboptimal or ineffective results. The Healthcare.AI offering provides the optimum mix of self-service products and expert services for each level.



Level One: Analytics Integration – The New Healthcare.AI™ Product Suite

The Healthcare.AI product suite expands self-service AI into mainstream analytics tools in minutes. With one click, Healthcare.AI easily provides AI access into existing BI tools (e.g., Qlik, Tableau, PowerBI, [Leading Wisely®](#)). The product suite can be integrated into more than 100 Health Catalyst analytics accelerators and within Health Catalyst software product lines (coming in 2021).

Healthcare.AI embeds a blend of well-established and cutting-edge statistical and machine learning techniques into every product suite module and builds on proven, successful statistical methods with the latest AI technology. This simplified approach to AI allows healthcare analysts of all experience levels to use AI in their most common use cases within existing BI workflows to rapidly produce high-quality insights.

In this way, Healthcare.AI's embedded rigor leads to more precise, accurate, and consistent analytics insights. Health systems reap the benefits of an AI boost—discovering analytic insights in minutes instead of weeks or months—without the time-consuming burden of training current healthcare analysts or hiring AI experts. The embedded approach also automates analytics tasks that require time in external tools and languages, identifying trends much faster than traditional approaches.

Levels Two Through Five: AI Expertise

Healthcare.AI expert services help organizations use the product suite to significantly improve the success rate for the most advanced AI use cases.

Levels Two and Three: Choosing, Building, and Optimizing Predictive Models

Transactional predictive analytics are the most common use of AI in healthcare. Self-service predictive model building engines abound. However, without expert guidance tailoring the models to the unique needs of a health system, these tools fail to see optimal deployment. Healthcare.AI expert services help organizations choose and tailor hundreds of pre-defined predictive models—or build new ones. Once the model is validated, experts optimize the impact throughout the organization. This approach ensures the best set of predictive models with the greatest likelihood of demonstrating results.

Levels Four and Five: Advanced AI Use Cases

Predictive models play a valuable role in AI. However, the healthcare industry often focuses too much on predictive analytics, losing important opportunities for advanced use cases and critical decision making.

Uses include retrospective comparisons for systemwide improvement optimization and prescriptive optimization to plan the most efficient and effective improvement projects.

Experienced healthcare data scientists are hard to find. Healthcare.AI expert services provide the right level of guidance, from lighter-touch projects to embedding a data scientist for longer-term efforts. Expert services can help guide and augment existing data science talent, integrating AI into the health system's broader analytics pursuits and improvement efforts, resulting in more effective systemwide AI use.

A New Age of AI in Healthcare: Open, Transparent, and Easy

Typical AI product solutions deliver results without giving leaders and users a clear understanding of how results are derived. These black box solutions are often challenging and mistrusted, rendering AI efforts either ineffective or complete failures. The lack of integration into current BI tools and workflows further limit AI's effectiveness.



The New Healthcare.AI approach is uniquely designed to counter these problems. As an open and transparent solution, Healthcare.AI builds trust and creates results by tailoring methods and models to specific organizational situations. The offering's ability to integrate into existing and trusted BI workflows means that downstream users have the trust and confidence that builds adoption. New Healthcare.AI is the fastest and easiest way to dramatically increase the effective use of AI throughout a healthcare organization.

Additional Reading

Would you like to learn more about this topic? Here are some articles we suggest:

- [The Key to Better Healthcare Decision Making](#)
- [Artificial Intelligence and Machine Learning in Healthcare: Four Real-World Improvements](#)
- [Safeguarding the Ethics of AI in Healthcare: Three Best Practices](#)
- [Three Keys to Improving Hospital Patient Flow with Machine Learning](#)
- [AI in Healthcare: Finding the Right Answers Faster](#)

