Intelligent Automation in Healthcare

How Providers Can Use Emerging Tech to Save Costs and Improve Patient Experiences

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The powerful combination of cognitive technologies known as intelligent automation (IA) has the potential to revolutionize the healthcare industry. In our previous article on IA, we explored how payers could adopt IA tools to save costs and drive better patient outcomes. This second installment focuses on the benefits IA offers to providers, delving deep into how doctors, caregivers, and administrative teams can leverage the predictive, analytical, and autonomous capabilities of IA to streamline operations, reduce costs, and ultimately, enhance the patient experience.

Predicting Health Risks

Poor health outcomes don't often come out of the blue. Although they may appear sudden, they're typically the result of underlying factors like genetics, family history, lifestyle choices, and a wealth of other data points that paint a picture of our health risks.

Without the assistance of cognitive technologies, many valuable insights may go undetected, as providers must manually document and study data to find predictable patterns and connect the dots. IA can unleash new insights by rapidly identifying patterns and correlations at scale. With its unparalleled ability to analyze large volumes of patient data, IA can predict potential health risks or complications swiftly and accurately. Providers can then use these insights to proactively intervene and personalize treatment plans.

Recognizing the potential of these technologies, many healthcare providers are already integrating IA solutions, such as innovative treatments for stroke patients. According to the American Heart Association, artificial intelligence (AI) and machine learning (ML) applications can automatically detect early blood flow issues in the brain, without the need for radiology. Using IA tools, they can even accurately predict how well a patient's brain function would recover during transport for reperfusion therapies.[i]

Improving Interoperability and Reducing IT Capital

Despite its impressive predictive powers, IA's effectiveness hinges on readily available data. However, healthcare data is often siloed and unstructured, hindering its potential. To unlock the full benefits of IA, providers must ensure their data is accessible, organized, and actionable.

> **Migrating systems to the cloud unlocks the potential of AI and ML technologies to break down the barriers to healthcare interoperability.**

Working in tandem, these technologies can significantly enhance data integration and information exchange across different systems and healthcare organizations. Smoothing the flow of relevant patient information across systems empowers providers with immediate access and fosters better-informed decision making. This structured and standardized patient data also becomes a rich resource for AI and prediction algorithms to anticipate potential health risks.

One provider who is actively embracing the marriage of IA and the cloud is New York's Mount Sinai hospital system. Weighed down by fragmented infrastructure and 13 on-premises data centers, Mount Sinai foresaw significant future costs linked to their evolving business needs. To future-proof their organization, they decided

to move a portion of their workloads, including their entire Electronic Health Records (EHR), to the cloud.

This transformative initiative enabled the hospital system to exchange information more efficiently and accurately. With the cloud as the foundation and IA as the engine, doctors and caregivers could access secure, real-time insights, empowering them to make data-driven decisions, collaborate more productively, and address risks and issues quicker. [ii]

Enhancing Clinical Decision-Making Accuracy

When Nebraska Medicine wanted the capability to more accurately detect diabetes retinopathy in patients, they adopted an AI system called EyeArt. Using the technology, physicians can capture retinal images and upload them to the system's cloud-based platform, which searches for signs of the disease and generates a report within 60 seconds. [iii]

This is just one example of how IA-powered tools can integrate patient data, medical literature, and best practices to assist healthcare professionals in making real-time diagnoses and treatment decisions. In fact, IA tools are already outperforming traditional tools like the Modified Early Warning Score (MEWS), which hospitals use to calculate the risk for clinical deterioration. [iv]

Stryker's AI-powered Triton system is another example of IA's diagnostic power in action. By capturing images of sponges, towels, and fluid canisters held up to an iPhone camera, Triton can visually measure a patient's blood loss during surgery, childbirth, and cesarean sections, and warn caregivers of hemorrhaging risks. [v]

> **CapTech has helped several healthcare providers enhance their decision-making by developing sophisticated analytics directly integrated into their technology systems that aid in real-time clinical decision support.**
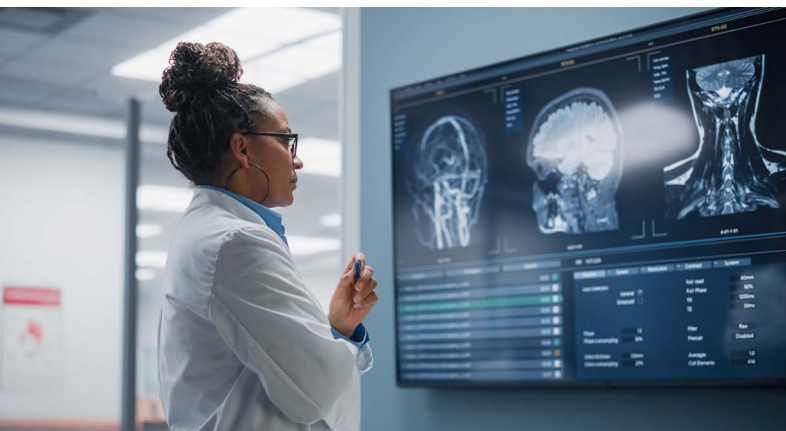
Leveraging EMR data, we've created solutions that predict the risk of diabetes readmission and identify women with an elevated chance of a high-risk pregnancy. These types of tools integrate a multitude of data points to flag potential risks early, ensuring vigilant monitoring and tailored interventions that can improve patient outcomes.

Easing Administrative Burdens

Burdened by an overstretched system and bloated administrative tasks, healthcare providers face rising costs, declining efficiency, and increased burnout. IA offers a powerful solution to streamline administrative processes and revitalize healthcare delivery.

> **By automating tedious, time-consuming tasks like documentation and resource allocation, IA can give providers significant time back, allowing them to increase their focus on patient care.**

Along with improved patient satisfaction, these optimizations can catapult efficiency, minimize errors, and lower burnout and attrition.

Penn Highlands Healthcare in Pennsylvania was one of many healthcare systems carrying these burdens. With limited resources and outdated technologies, staff had

to sift through an overwhelming amount of clinical data and documentation just to form a basic understanding of a patient's health. This not only drained staff energy, but also increased the likelihood of overlooking crucial information or making diagnostic errors.

To streamline their diagnostic process, Penn Highlands adopted AI-powered software from the clinical automation company Regard. Designed to help clinicians analyze patient data and enhance decision-making, the software integrates with the organization's EHR to scan the entire database for clinically relevant information, and uses it to either upgrade or recommend diagnoses. By automating this formerly laborious task, Penn Highlands was able to decrease the amount of time spent documenting care by about two hours per provider each day, and increased revenue by $9 million in 12 months.

↑ **$9M > 12 Months**

Providers like Penn Highlands, who have implemented Regard software, have also seen an average 14 percent increase in capturing both comorbidities and major comorbidities. Such advancements offer a more complete picture of a patient's health, empowering busy teams to proactively identify potential risks and safety issues.[vi]

Unlocking a New Era of Healthcare

While IA is still in the early stages of adoption across the healthcare industry, many providers seeking to lower costs, reduce burnout, and improve patient outcomes are already harnessing its power to implement successful solutions.

By processing and generating insights from massive amounts of data, IA helps providers deliver more holistic, data-driven care, and drives major improvements in efficiency, accuracy, and decision-making. These better outcomes fuel a stronger healthcare system, paving the way for unprecedented advancements and innovations.

[i] Doctors can predict strokes and recovery," Cardiovascular Business, March 7, 2024, https://cardiovascularbusiness.com/topics/artificial-intelligence/ai-helps-cardiologists-deliver-personalized-healthcare

[ii] Mount Sinai leveraged IA and the cloud to transform operations," Healthcare IT News, November 10, 2023, https://www.healthcareitnews.com/news/mount-sinai-slashes-10-year-it-capital-costs-moving-cloud

[iii] EyeArt can automatically detect retinopathy in diabetes patients," AHA, https://www.aha.org/aha-center-health-innovation-market-scan/2024-03-12-nebraska-medicine-targets-earlier-diabetic-retinopathy-detection-ai

[iv] IA is outperforming MEWS," AHA, https://www.aha.org/aha-center-health-innovation-market-scan/2023-05-09-how-ai-improving-diagnostics-decision-making-and-care

[v] IA Triton system can detect hemorrhaging with an iPhone," Fierce Biotech, September 8, 20221, https://www.fiercebiotech.com/medtech/stryker-buys-gauss-surgical-for-its-ai-tech-aimed-at-blood-loss-childbirth

[vi] Regard software saves hospital system time and increases revenue, Healthcare IT News, January 26,2024, https://www.healthcareitnews.com/news/ehr-integrated-ai-assistant-boosts-revenue-7m-penn-highlands

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