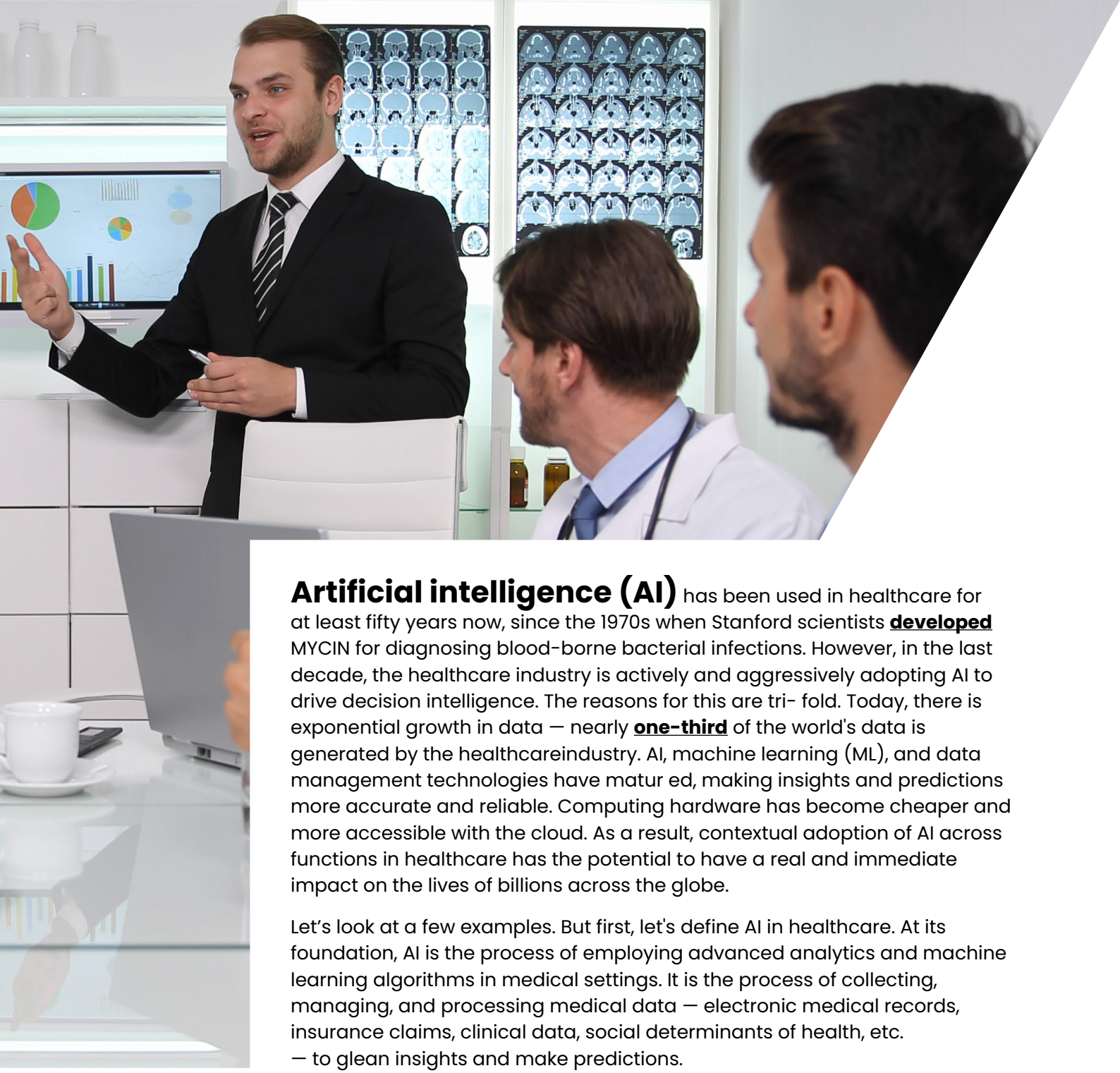
HealthEM.AI

POINT OF VIEW

AI is reshaping healthcare. Are we ready to embrace it?



Artificial intelligence (AI) has been used in healthcare for at least fifty years now, since the 1970s when Stanford scientists **developed** MYCIN for diagnosing blood-borne bacterial infections. However, in the last decade, the healthcare industry is actively and aggressively adopting AI to drive decision intelligence. The reasons for this are tri- fold. Today, there is exponential growth in data — nearly **one-third** of the world's data is generated by the healthcareindustry. AI, machine learning (ML), and data management technologies have matur ed, making insights and predictions more accurate and reliable. Computing hardware has become cheaper and more accessible with the cloud. As a result, contextual adoption of AI across functions in healthcare has the potential to have a real and immediate impact on the lives of billions across the globe.

Let's look at a few examples. But first, let's define AI in healthcare. At its foundation, AI is the process of employing advanced analytics and machine learning algorithms in medical settings. It is the process of collecting, managing, and processing medical data — electronic medical records, insurance claims, clinical data, social determinants of health, etc. — to glean insights and make predictions.

Simple as it sounds, the adoption of AI in healthcare is sophisticated and wide-ranging.

1 Early detection

2 Diagnosis

3 Disease management

4 Value-based care

5 Eldercare

6 Optimizing performance

1

Early detection:

AI is used in disease detection across the globe, especially in cancer care. Algorithms are shown to diagnose **cancer risk** 30x faster than a doctor with 99% accuracy. Wearables are also helping diagnose heart conditions sooner.

2

Diagnosis:

AI supports clinicians in diagnosing patients by processing patient data, identifying connections, and making recommendations more accurately and speedily.

3

Disease management:

Chronically ill patients needing regular care are often left out for lack of medical resources. AI is solving that problem by identifying patients at risk of adverse episodes, structuring care plans, monitoring progress, and alerting needs for intervention.

4

Value-based care:

Providers across the US are moving from the fee-for-service model to the value-based care model. Successful transition to value-based care demands a better view of population - and patient-level data to identify at-risk patients, reach out to them proactively and design effective interventions to prevent hospital/ER admissions. AI is the only imaginable way today to make this possible.

5

Eldercare:

A recent study found that by 2050, 25% of Europe and North American population will be over the age of 65. Delivery care for this cohort "requires systems to shift from an episodic care-based philosophy to one that is much more proactive and focused on long-term care management," finds **McKinsey.** For this shift to happen at scale, the industry needs contextual adoption of AI.

6

Optimizing performance:

AI is famously solving the visibility problem. With robust data ingestion, processing, storage, analytics and model management, providers and specialty lines of business are gaining granular visibility and prescriptive insights into the performance of their clinics and hospitals. Leaders in healthcare leverage these insights to optimize performance, reallocate resources and make better strategic investments.

For instance, one of US's largest home health agencies **learned that** "employer-driven inconsistency in workers' schedules in hospitals increases workers' likelihood of quitting." AI can not only minimize these inconsistencies but also deftly account for complex factors like pairwise familiarity — essentially, people who have worked well together in the past — while making schedules.

As more and more healthcare organizations adopt AI, the use cases are expanding — automating image analysis in radiology, virtual agents, bots, research assistants, symptom checkers, self-care apps, etc. The benefits are also **getting clearer**. AI-based preliminary diagnosis has the potential to deliver $5 billion in annual savings, AI-driven fraud detection in Medicare claims $17 billion, AI-powered nurse assistants a good $20 billion by saving 20% of their time.

Beyond cost savings, AI also delivers operational efficiencies by freeing up time for care managers, better quality of care by prioritizing those at higher risk, better customer experience by reducing errors and delays in care, and even better physician experience and minimizing burnout. For example, **ambient clinical intelligence** (ACI), a set of AI-enabled capabilities that record doctor-patient interactions and prepare summaries, is seen to minimize physician time spent in data entry, freeing them up for patient care.

While the possibilities of AI in healthcare are endless, so are the risks and challenges. The biggest challenge is that the industry that generates large volumes of data doesn't have a common standard for organizing, storing, and processing it. Even within a hospital, data from electronic medical records, pharmacy records, lab reports, etc., are collected and stored in silos. To say nothing of data interoperability outside the ecosystem. Consolidating all this data in a way that facilitates meaningful insights is the industry's insurmountable task.

Even when data is consolidated and managed, models hasn't been the most effective.
For instance, the first generation of AI risk scoring solutions used national-level data to make predictions, which were vastly ineffective for most local populations. This also made healthcare leaders and clinicians skeptical of AI in general.

Like most AI solutions, there is the problem of data ownership and privacy. Except, it's more pronounced in healthcare, given that the data is about each citizen's most personal and vulnerable aspects. Laws like the General Data Protection Regulation (GDPR) in Europe and Health Insurance Portability and Accountability Act (HIPAA) offer some guard rails, but a lot is still left to be explored.

Within the healthcare AI community, these challenges are deeply understood, and solutions are well underway. Healthcare practitioners, technologists and data scientists are coming together to build better data management solutions to convert data from disparate sources into a meaningful whole. They are building localized models for better accuracy and reliability. Debates around data ownership and privacy are constantly informing product design and model development. As a rapidly evolving field, AI is adapting continuously, addressing challenges in real-time.

It is this adaptability and agility that makes the future of AI in healthcare positive. Especially among vulnerable populations, be it across age/health-risk factors/socioeconomic positions or in the developing world, AI has immense potential to combat healthcare-related uncertainties, improve outcomes and optimize the cost of care for both healthcare providers and patients.

The only question is:

How ready are we to embrace it to its fullest potential?

About the author

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Brendan has over 22 years of experience as a healthcare executive, growing & scaling start-ups to mature healthcare companies, transforming healthcare delivery, improving the healthcare consumer experience, and decreasing the total cost of care.

He has proven executive experience in leading company strategy, operations, driving & sustaining material revenue growth via alignment of corporate strategy, M&A, sales, account management, marketing, partners, product development, operational excellence, leading and developing teams, and creating & taking to market large analytic technology, digital health, and healthcare delivery solutions.

He has successfully driven top-line revenue and bottom-line earnings growth for Bare International, NACDS, America's Health Insurance Plans, Wellness Corporate Solutions, HealthMine, MultiPlan, Amwell & mPulse Mobile. He is passionate about the link between value-based care delivery, analytics, and artificial intelligence. Further, Brendan has led the IPOs of two companies, Amwell and MultiPlan.

He earned his MBA from the University of Wyoming and attended Northwestern University for Masters in Public Policy and Administration.