

The Next Frontier: Building a More Holistic AI-Integrated Healthcare Ecosystem



From Efficiency to New Capabilities and Transformation

Healthcare leaders are moving beyond AI tools that provide basic automation and efficiency gains (Wave 1) and into the next era where AI unlocks new capabilities (Wave 2) and powers vertically integrated, AI-enabled technology stacks, with potential to transform the entire \$6 trillion healthcare industry (Wave 3). The first two articles in this series focused on Wave 1 tools: solutions that improve provider and patient satisfaction by streamlining workflows. This third

piece explores Waves 2 and 3. In particular, we highlight breakthroughs in digital pathology and the ambitious AI platform strategies of Epic and Optum — two healthcare behemoths positioned to reshape how care is delivered, coordinated, and paid for.

Digital Pathology: Turning Tissue into Data

Digital pathology and tissue diagnostics are at the forefront of Wave 2, using AI not just to



Waves of AI Transformation

Wave 3
Full Industry Transformation

Wave 2
New Capabilities

Wave 1
Automation & Efficiency Gains



speed up existing tasks, but to generate entirely new applications. Deep learning models such as Enable Medicine’s ROSIE can infer the spatial



expression of dozens of proteins from a single Hematoxylin and Eosin (H&E) slide, generating in-silico multiplex immunofluorescence without running high-plex assays and expanding access to advanced tissue analytics.

Leica Biosystems is a leading enabler of AI-powered digital pathology and tissue diagnostics by integrating scanners (Aperio GT 450), image management



(Aperio eSlide Manager), and image analysis (Aperio Image Analysis research-use-only

algorithms) in end-to-end workflows. These platforms turn tissue into quantitative, analysis-ready data that can be used in clinical applications and research for companion diagnostics, smarter trial enrichment, and more personalized treatment pathways.

Epic: Building the AI-Native Clinical Operating System

If digital pathology exemplifies Wave 2 by unlocking new capabilities, Epic illustrates Wave 3 by embedding AI across the full clinical workflow at transformative scale. As the leading U.S. electronic health record (EHR) vendor, Epic is pursuing a long-term, integrated AI strategy rather than building a collection of disparate point solutions. The company’s vision is to turn the EHR into a continuously learning workflow engine that streamlines care delivery, reduces administrative burdens, and supports the financial stability of health systems.

Epic launched AI Charting in partnership with Microsoft in February 2026, adding to the growing list of generative documentation tools available to clinicians. However, its roadmap goes much further: Epic is integrating AI Charting with a patient assistant tool (Emmie), a clinician assistant tool (Art), and revenue cycle management tool (Penny). Beneath these front-end tools, Cosmos AI functions as a longitudinal intelligence layer trained on Epic’s vast data assets. By tightly coupling ambient and generative AI at the point of care with this deep data backbone, Epic is positioning itself as the integrated, central operating system spanning patient engagement, clinical workflows, and financial operation within any Epic-based health system.



Optum: Creating an End-to-End AI Flywheel

While Epic’s AI strategy centers on EHR data, Optum’s strategy leverages the “Optum triad” of Optum Health, Optum Insight, and Optum Rx to integrate payer, provider, and pharmacy functions into a single, data-driven stack. Unlike Epic, Optum’s AI approach is more open and partnership-driven. The Optum AI Marketplace and partnerships with hyperscalers such as Google, Microsoft, and AWS reflect a deliberate platform strategy: aggregate internal and third-party models, expose them to providers and payers, and use shared data and deployment channels to both improve Optum’s performance and create a national infrastructure layer for AI-enabled healthcare.

On the performance side, Optum’s AI models can be developed and refined within Optum Insight, then deployed into Optum Health workflows for risk stratification, chronic care management, and



population health, as well as into payer operations for claims automation, prior authorization, and fraud detection. Optum reports that early deployments have increased some claims efficiency use cases more than 20%.

On the infrastructure side, Optum is turning itself into an autonomous innovation hub whose technologies can be sold back to external providers and competitors. By commercializing its

Optum

AI and analytics stack, Optum can turn its infrastructure into a de

facto standard, expand access to diverse datasets, and reinforce a flywheel of model performance and market reach. For health systems and payers, the Optum triad offers a compelling value proposition: a single partner that can connect benefit design, clinical workflows, and pharmacy management through a unified AI layer.

What This Means for the Future of AI in Healthcare

Leica, Enable Medicine, Epic, and Optum demonstrate that AI strategies are rapidly evolving beyond narrow, efficiency-focused point solutions. Capability-expanding tools like digital pathology and pathomics will increasingly influence clinical differentiation and research partnerships. As Epic and Optum continue building out their AI platforms, they have the potential to reshape the healthcare ecosystem by improving coordination and efficiency across patients, providers, operators, and payers. If thoughtfully governed, these next waves of AI could hold significant promise to expand access to lower-cost, higher-quality care.

The BroadBranch Advisors Impact

BroadBranch Advisors has deep expertise helping customers lead in the health ecosystem, providing go-to-market strategy recommendations, competitive benchmarking, and voice-of-customer analyses. If you are interested in better understanding changing market dynamics or seek strategic guidance to help you make better decisions, reach out to learn more. You can also read other market perspectives written by our team [here](#).



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