Navigating AI Strategy and Adoption

A Guide for Health Systems

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Introduction

The U.S. health care system is at a tipping point. In a recent study that compared health system performance across ten high-income countries based on access to care, care delivery process, administrative efficiency, equity and health outcomes, the U.S. ranked last.[1] Despite incredible advances in science and medicine, life expectancy across the U.S. has been stagnant or declining while health care costs continue to increase unabated. Despite year-over-year increases in national health expenditure, most health systems continue to operate on low single-digit operating margins and face significant financial pressures from rising labor costs, stagnant reimbursement, and rate pressures, as well as new market entrants.

Health systems view artificial intelligence (AI) as a potential technological breakthrough to crack the iron triangle of access, quality and cost. Ambient documentation appears to be health AI's first gamechanging app—delivering a magical experience for physicians while reducing pajama time and risk of burnout.[2] According to a recent survey of physicians conducted by the American Medical Association, 65% of physicians see advantages to using AI, especially for reducing administrative burdens with documentation and prior authorization.[3] While AI innovation is advancing quickly—as of August 2024, the FDA has approved over 950 AI/ML devices[4]—relatively little is known about which AI tools can reliably deliver clinical and financial value.

To support health systems in addressing these challenges, Manatt is launching a content series on AI strategy and adoption. This series aims to guide health system leaders in understanding the AI solution landscape, assessing their organization's readiness for AI, and making informed decisions about investing resources to pilot, implement and scale AI initiatives within their system. This first issue will provide an overview of how health AI can advance health system goals, define emerging use cases and propose an AI adoption maturity model for health systems.

A follow-on Manatt on Health newsletter series will offer deep dives into specific topic areas, including:

Access to specialty care
Leveraging AI to reduce wait times and get care to patients faster

AI in the safety net
Approaches for safety net hospitals with a particular focus on equity, sustainability and mitigating bias that addresses the unique challenges of their patients and workforce

Implementing AI using a persona-driven approach
Taking a human-centered design approach to meet the unique needs of AI end users

AI in the academic research environment
Challenges and opportunities for research organizations preparing and developing AI programs to disrupt the traditional academic medical center research model

When developing an AI adoption strategy, health systems must first gain a clear understanding of potential AI use cases and how they can address that system's specific clinical and operational priorities. The next section explores how health AI use cases align with the three core pillars of a health system's mission—clinical care, education and research.

Aligning AI Capabilities With Health System Goals

Emerging health AI can do five things well:

Summarization	**Identification**	**Prediction**	**Suggestion**	**Generation**
Condensing large volumes of complex information into concise summaries	Detecting patterns, anomalies or specific features within data	Analyzing historical data to predict future events and needs	Offering tailored recommendations or suggestions to patients, clinicians or staff	Creating new content or hypotheses

Based on discussions and work completed with dozens of health systems, the figure below details emerging health AI use cases across each of these capabilities (columns) corresponding with core health system mission areas (rows). These use cases describe the current state for how AI may address core health system challenges and demonstrate the broad potential of AI to transform key functions across clinical care, research, and education within health systems.

Health AI Use Cases for Health Systems

Specific Objectives Achieved by Artificial Intelligence		AI Capabilities				
		Summarization	**Identification**	**Prediction**	**Suggestion**	**Generation**
Objectives — **Care**	**Enhance clinical operations**	• Summarize relevant clinical research for providers	• Identify ambulatory and OR scheduling optimization opportunities	• Patient no-show prediction • Patient length of stay, census, and volume predictions	• Optimize patient scheduling • Patient triage • Hospital staffing demand management and supplies • Referral management • Message triage and routing	• Real-time language translation • 'Cognitive' translation—from 'medical speak' to patient-friendly language • IT and other internal support desk agents
	Support care delivery	• Medical imaging analysis • Ambient clinical documentation • Patient chart and visit note summarization • Quality metrics and population health reporting and analysis	• Chart screening to ID quality gaps • Case management and care management prioritization • Medical imaging anomaly detection • RPM data analysis	• Patient risk prediction models (e.g., patient deterioration, readmission risk) • Predict supply needs and support inventory management	• Develop personalized treatment plans • Automated alerts for treatment plan and/or medication adherence • Assistive diagnostics • Clinical decision support • Social supports service coordination • Patient triage to the appropriate clinician	• First drafts of portal messages and eConsults • Draft patient education materials • Care navigation and care follow-up support • Informational chatbots • Create draft discharge instructions • Website/app personalized experiences for patients
	Strengthen revenue cycle and financial performance		• Supporting coding and billing claims	• Patient risk scoring and adjustment • VBC contract management • Claims processing and denial prevention • Predict patient likelihood to pay and payer coverage		• Drafting prior auth and denial appeals letters • Automated contact center operations • Supporting patient financial assistance
Research	**Improve clinical trial enrollment**		• Screening patient data to identify trial candidates			• Drafting patient outreach for clinical trials
	Support clinical trial design	• Streamline the literature review process	• Analyze prior trial data to optimize inclusion criteria	• Simulate trial design scenarios to evaluate cost-effectiveness and outcomes • Predict risks from protocol deviations, adverse events, and patient dropout rates	• Select appropriate trial outcome measures	
	Accelerate data analysis and insights generation	• Analyze unstructured data and text to summarize and aggregate data	• Analyze prior trial data to compare trends across trials			• Provide real-time guidance to researchers based on clinical trial data
Education	**Support personalized staff education/ training**		• Identify possible learning needs and/or recommend learning resources			• Scenario generation for provider training modules • Informational chatbots for staff questions
	Next generation surgical simulation and training		• Identify simulations for trainees based on student learning objectives and performance data		• Suggest individually tailored surgical training programs	• Provide automated haptic feedback during robotic training
	Address information overload while keeping pace with the latest science and innovation	• Clinical studies and newsworthy research summarization			• Personalized content recommendations based on student learning objectives	• Create active learning experiences by presenting case studies, clinical scenarios, and problem-solving exercises

Each of these use cases are at very different stages of development. For instance, every health system that we work with has already implemented or is in the process of implementing an ambient scribe tool for clinical documentation. Most health systems use AI to support imaging-based specialty care (e.g., radiology, pathology, dermatology). The leading health systems are developing their own AI-based risk-prediction models for readmission, sepsis, deterioration and other clinical events. It is important to note that as AI technology advances and the needs of health systems evolve, these use cases will continue to develop.

Establishing priority use cases is an essential step in assessing AI readiness and aligning adoption strategies with organizational goals. In the next section, we introduce a maturity model that enables health systems to benchmark their progress and strategically plan for AI adoption based on a set of key criteria.

Health System AI Maturity Model

Health systems are exploring AI to improve patient care, streamline operations and drive innovation, but many lack a structured decision-making framework. Maturity models can help organizations assess their current capabilities and guide them through stages of development. In this AI maturity model, health systems are categorized into three stages of AI adoption (early, intermediate, advanced) in the columns with outlined characteristics of health systems at each maturity stage in the rows.

Health System AI Maturity Model

	Early Stage	Intermediate	Advanced
Adoption The extent of AI integration and use across health system departments, from initial exploration to full deployment and optimization.	• Limited pilots or enterprise integration of AI • Resistance/skepticism from clinicians towards AI • Limited collaboration with external partners • Limited sharing of data or insights • Focus on administrative use cases	• Pilot integration limited to specific departments • Clinician involvement in AI tool design • AI training programs and change management support for staff • Nascent partnerships with academia, industry and tech companies • Focus on administrative and clinical use cases	• System-wide deployment of key AI initiatives • AI increasingly embedded into clinical decision-making and operational processes • Conducts research to evaluate and publish on AI adoption and impact • Joint development of AI solutions with industry and academia • Significant clinical AI activity

	Early Stage	Intermediate	Advanced
Use Cases Specific applications or scenarios where AI technologies are deployed.	• 1–3 use cases deployed • Mostly experimenting with AI tools made available through existing large vendor partners: EHR, ERP, CRM • Few pilots or proofs of concept • Implementation of department-specific AI tools	• 3–10 use cases deployed • Deploying AI capabilities offered through large vendor partners and those offered by emerging companies • Experimentation with AI in select areas • Scaling successful AI projects	• 10+ use cases deployed across multiple domains with system-wide applications • Co-developing novel AI capabilities with vendor partners and/or systemled development • Deploying continuous improvement and innovation to existing AI use cases • Pursuing innovative AI use cases in non-clinical areas of the health system (e.g., supply chain, legal, human resources)
Investment Level of financial investment allocated to AI initiatives, including funding for technology acquisition, infrastructure development, talent acquisition and ongoing maintenance and support.	• <1% of IT budget allocated for AI investments • Limited access to AI talent and resources	• 1–5% of IT budget allocated for AI investments • Small number of dedicated AI experts	• 5+% of IT budget allocated for AI investments • Larger number of dedicated AI experts—strong linkage to academic department of biomedical informatics

	Early Stage	Intermediate	Advanced
Technology Technical infrastructure, tools and resources necessary to support AI implementation and operation in the health system while ensuring effective data governance, quality and security.	• Limited educational resources on AI capabilities and AI usage policy • Health system data not optimized for generating AI training data sets or for AI tool use cases • IT reactive to business needs, and there is limited investment in AI technologies	• IT partners with business leaders to identify offthe-shelf AI capabilities • AI applications in operation are coordinated and infrastructure is developing to support multiple applications and architecture (e.g., federated learning models, Retrieval Augmented Generation (RAG)) • IT has established relationships with key vendors to enable consistent use of tools and adhere to AI policies • AI application development is coordinated with data governance to seek high quality sources of data	• Investing directly in GPUs, developing own AI models, and codeveloping solutions with partners • Strategic focus on AI transformation and new opportunities • Consistent AI vendor oversight and contract review to assure monitoring of bias and other issues in both internal and vendor systems • Governance of AI and data management is unified, with AI driving new data management initiatives to support high quality data for training and inference
Governance Policies, processes, and decision-making frameworks governing AI adoption and usage within the health system.	• Have not yet developed an enterprise-wide AI strategy and leadership council • Minimal involvement of clinicians in decisionmaking	• Formation of AI task force or committee • Engagement of clinicians in AI strategy development • Centralized intake and review of AI use case and solution applications	• Mature AI governance board or institutional review board with established governance processes • Ongoing real-time AI performance monitoring • Clinicians actively leading AI initiatives • Established set of criteria for AI application review and process for regular monitoring and re-review
Ethics Principles, guidelines, and safeguards related to AI usage in health care, including issues such as patient privacy, bias mitigation, transparency, accountability, and equity.	• Reactive approach to ethical issues • No established AI code of ethics	• Establishment of ethics review board • Proactive assessment of AI bias and fairness • Vendor contracting includes clause(s) for active monitoring of AI use and ethics compliance	• Ethical guidelines integrated into AI development process • Ongoing monitoring of AI systems for ethical compliance

There are several important considerations for health system leaders to keep in mind when assessing their AI adoption readiness through the maturity model:

- The maturity model is a flexible roadmap. Not all organizations have the same strengths and areas for improvement. The maturity model can be used to prioritize initiatives, allocate resources and tailor a path for AI adoption in the short and long term.

- Progress through the maturity stages is iterative and requires ongoing evaluation and investment in people, processes and technology. The maturity model should align with your organization's goals and culture to drive informed decision-making, innovation and transformative change designed to scale.

- A successful implementation is dependent on an AI adoption strategy that is tailored to the specific needs of your providers and patients. Understanding the unique challenges and preferences of different user groups ensures the technology is effectively integrated into workflows and care delivery.

How to Get Started

With a clear understanding of health AI use cases and the framework provided by the maturity model, health system leaders are now positioned to take practical steps toward AI adoption. For organizations in the early stages of AI implementation that are looking to build a solid foundation for future AI adoption, the following steps provide a strong starting point:

1 **Form an AI governance group**
Charge a team with identifying priorities and establishing guardrails for your organization's AI strategy

2 **Identify high-impact AI use cases**: Identify 3–5 AI use cases that can deliver value now and begin to deploy them

3 **Collaborate with vendor partners**
Meet with your key vendor partners to understand their current AI offerings, explore their future development plans and align this with your own AI roadmap

4 **Establish an institutional AI policy**
Develop clear policies that define when AI can and cannot be used, ensuring data privacy and security are prioritized while leveraging AI's potential

5 **Train your workforce on AI**
Provide education to key employees on how to safely and effectively use AI in their roles, considering many are likely already using publicly available AI tools

In the coming weeks, a follow-on Manatt on Health newsletter series will offer deep dives into specific health AI topic areas. These newsletters will be available on Manatt's AI landing page.

1. https://www.commonwealthfund.org/publications/fund-reports/2024/sep/mirror-mirror-2024.

2. https://catalyst.nejm.org/doi/full/10.1056/CAT.23.0404#tab-contributors.

3. https://www.ama-assn.org/system/files/physician-ai-sentiment-report.pdf.

4. https://www.fda.gov/medical-devices/software-medical-device-samd/artificial-intelligence-and-machine-learning-aiml-enabled-medical-devices.