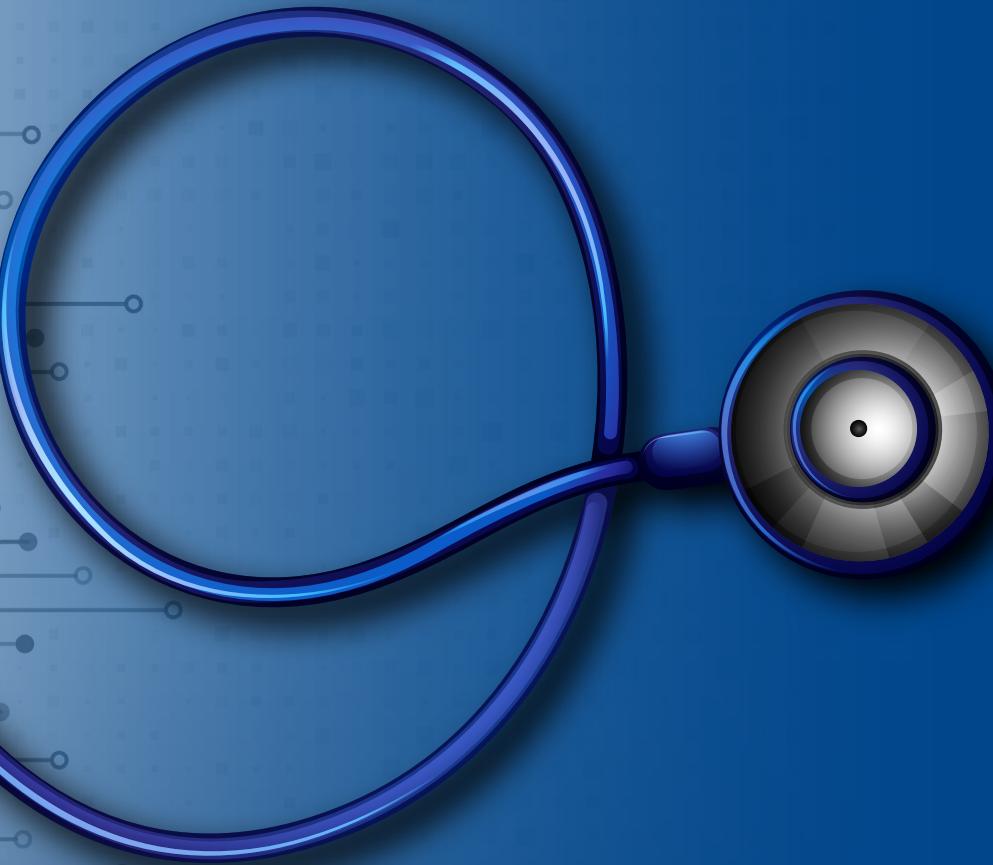


Building and Implementing an Artificial Intelligence Action Plan for Health Care

Staring at unlimited AI use cases,
hospitals and health systems need effective
action plans for future health care delivery.



Inside this Report

3 INTRODUCTION | Experts agree that artificial intelligence has the potential to transform each and every aspect of health care.

4 FOUNDATIONAL BUILDING BLOCKS | We organized this report around three pillars: people, process and technology. The report identifies nine foundational building blocks within those pillars.

- PEOPLE** | Getting the people right is the hardest part of an effective AI action plan. Changing the nature of work changes the culture of an organization.

- PROCESS** | With the right leaders and team in place, the health care AI action plan must have a system that determines how ideas for AI pilots and projects flow to the leaders and teams vetting them.

- TECHNOLOGY** | Organizations must have strong data stewardship, governance and IT infrastructure.

10 AI ADMINISTRATIVE SOLUTIONS | This table identifies areas in which health care workflows that could benefit from AI-powered software.

12 AI CLINICAL APPLICATIONS | This table shows areas in which AI can provide opportunities to improve patient outcomes, patient experience, operational efficiency and reduce workforce burnout and turnover.

15 AI CASE STUDIES | Seven prominent hospitals and health systems share how they are incorporating AI, as well as lessons they have learned.

ABOUT THIS REPORT | The AHA Center for Health Innovation produced this Market Insights report for executives of hospitals and health systems to guide them as they journey into the use of artificial intelligence and AI-powered technologies to transform their organizations' operations. This report is based on information and insights from interviews with 12 health care AI experts and leaders who are recognized on Page 24. The report also is based on published health care articles, presentations, reports, research and surveys on health care AI. A list of source materials also appears on Page 7 and links to the source materials are cited in the body of the report. The AHA Center for Health Innovation thanks everyone for their contributions. ■



Building and Implementing an Artificial Intelligence Action Plan for Health Care

Introduction

Experts agree that artificial intelligence (AI) has the potential to transform each and every aspect of health care delivery from the simplest administrative task to the most complex clinical procedures and improved organizational and patient care outcomes at lower costs.

Looking at unlimited possibilities with limited budgets, most hospital and health system executives are asking where and how to better invest in the health of their communities. The challenge? There's no road map. There's no playbook. Strategically, hospital and health system executives are learning where and how to use AI technology for value creation, and their AI budgets are prioritizing patient access, revenue cycle management and operational throughput use cases that yield a tangible return on investment (see charts on Pages 10 and 11). Integrating AI into clinical care can enhance patient outcomes across health care settings and produce significant savings and improvements in health (see charts on Pages 12-14); however, challenges related to data privacy, bias and the need for human expertise must be addressed to implement AI responsibly and effectively.

Gain insights from seven prominent health system leaders navigating the opportunity and the challenge of AI and the many lessons learned along the way.

This new Market Insights report from the American Hospital Association's Center for Health Innovation picks up where three Market Insights reports on health care AI published in 2019 left off:



- [Surveying the AI Health Care Landscape](#).
- [AI and Care Delivery](#).
- [AI and the Health Care Workforce](#).

These three reports proved to be prescient and continue to offer useful insights. But as hospital and health system leaders have come to realize, health care AI is experiencing an influx of new technologies, algorithms and applications, leading to a very dynamic landscape.

We organized this report around three pillars: **people, process and technology**. The report identifies nine foundational building blocks within those areas for creating an effective AI action plan. And, we profile seven leading health systems that moved those pillars into place to build their AI programs. ●

DATA POINT



85%

of surveyed health system leaders cited AI as the "most exciting emerging technology for health care" in 2024.

Source: Center for Connected Medicine, KLAS Research



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Health Care AI is a Team Sport Led by the CEO Who Builds the Roster and Sets the Agenda

Transformation endeavors require an action plan, and transforming health care delivery with AI is no different. Like all action plans, the first element of consideration is people. Without people, process and technology mean little. There are three essential people-related building blocks:

BUILDING BLOCK 1 | LEADERSHIP

The role of the CEO is critical. The CEO sets the vision and leads an executive team that connects proposed AI pilots and projects with the overall strategic objectives of the organization. Overcoming challenges with patient care, patient access and provider burnout continue to be top of mind for C-level executives. The CEO prioritizes the order and investment in AI pilots and projects. AI doesn't just change work. AI changes the nature of work. Execution of pilots and projects should be the responsibility of someone with the word "chief" in their title who is conversant in AI — like a chief innovation officer, chief digital officer, chief strategy officer, chief transformation officer or chief AI officer. That signals that the journey is transformational, not transactional.

BUILDING BLOCK 2 | CHANGE MANAGEMENT

Given that AI deployed in any area or use case changes the nature of work, hospital and health system AI action plans must have a robust change management component. Changing the nature of work changes the culture of an organization. Involving workers in deploy-

ing AI means actively engaging employees throughout the process of implementing AI systems to ensure a smooth transition and adoption. The organization only will realize the benefits of AI if employees become AI literate and are equipped to use the technology effectively. As AI-powered technology reduces the time that clinical and administrative staff spend on repetitive, labor-intensive tasks, staff will be able to use their expertise and focus on higher-level, nuanced tasks that require human judgment and empathy, which AI cannot fully replicate, such as enhanced patient interactions, clinical quality improvement, team collaboration and acquiring new skills. That adjustment can be difficult, and it's up

DATA POINT

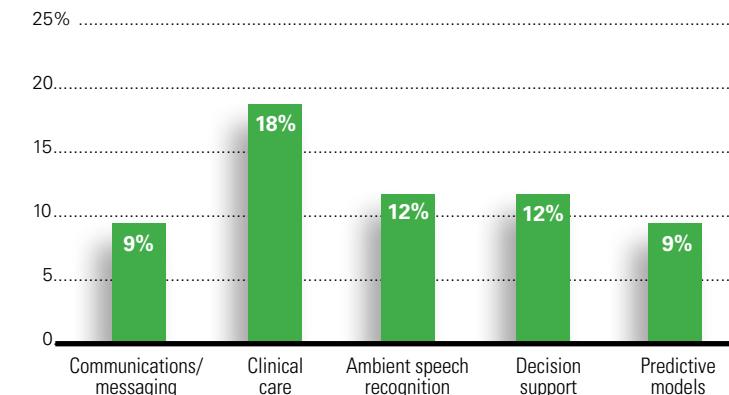


68% of surveyed health system executives cited "workforce not ready to implement new technology" as one of their top three challenges to executing AI transformation in the next two years.

Source: McKinsey & Co.

AI use cases that could transform health

Percentage of surveyed U.S. health system executives who mentioned specific areas related to the use of AI technology



Source: Center for Connected Medicine, KLAS Research



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PEOPLE



"The first question the C-suite often asks when technology like generative AI falls from the sky is, 'What does it do?' The question they should ask is, 'What should it do?' You can't answer the second question by starting with technology. You answer it by starting with the business problem you're trying to solve."

— Kaveh Safavi, M.D., senior managing director of health, Global Healthcare Practice, Accenture

to the organization to provide training programs to equip staff with the necessary skills for new responsibilities and encourage managers to support staff actively as they adapt to new workflows.

BUILDING BLOCK 3 | TEAM

The deployment of AI technology whether extensive or limited is a team sport. It requires participation by all relevant parties early in the pilot or project ideation and vetting process. The CEO, other C-level executive responsible for AI projects and executive team

are prerequisites. Finance, human resources, IT, operations, clinical and administrative leaders must have seats at the table as the ripple effects of how AI will change how people work and the nature of their work can be far-reaching and often unknown. A nonnegotiable player on the team is someone who knows technology and how it works.

According to the health care AI experts interviewed for this report, getting the people right is the hardest part of an effective AI action plan. ●

Know Your Acronyms: Common AI terms and what they mean



AI

ARTIFICIAL INTELLIGENCE

Technology that mimics the human thought process.



ML

MACHINE LEARNING

A type of AI that learns and improves as it processes more data.



NLP

NATURAL LANGUAGE PROCESSING

A type of machine learning technology that can understand language as it's spoken or written.



genAI

GENERATIVE AI

A type of AI that generates new data in requested formats based on existing data and data patterns.



LLMs

LARGE LANGUAGE MODELS

A type of generative AI that exclusively uses language.



LMMs

LARGE MULTIMODAL MODELS

A type of generative AI that uses data or information in any format to generate new data in any requested format.



RPA

ROBOTIC PROCESS AUTOMATION

Software that automates high-volume, repeatable tasks.



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PROCESS

Intentionality Should Be the Word that Best Describes an Organization's AI Action Plan

With the right leaders and team in place, the next pillar of an effective health care AI action plan is process. In short, what's the plan? How will the organization do what it says it wants to do? Again, there are three process-related building blocks:

BUILDING BLOCK 4 | IDEA FLOW

Health care AI action plans must have a system that determines how ideas for AI pilots and projects flow to the leaders and teams vetting them. Absent a systematic approach, AI deployment can be a fragmented landscape of amazing technologies looking for problems to solve. Ideas can flow top-down from leaders and teams to the people who execute them. Ideas can flow bottom-up from people most in need of help to do their jobs or from administrative, clinical, financial or operational department leaders who have innovative ideas to do what they do better or more efficiently. The organization needs to systematically collect and organize ideas from various sources to improve processes.



"To put an AI agenda in place, you need to try, adopt and scale. Trial is relatively easy, but adoption and scalability are much harder, requiring greater emphasis."

— Adam Siskind
Principal, ZS

BUILDING BLOCK 5 | VETTING IDEAS

Organizations must have a systematic approach to vetting ideas for AI pilots and projects. It must be intentional and use consistent criteria to review each idea. Criteria may include strength of connection to a strategic objective, availability of data to execute the idea, expense, scalability across the enterprise, seriousness of the job to be done, urgency of the job to be done, risk tolerance, potential regulatory issues, etc. The criteria must be transparent to internal

stakeholders and there must be a system to track the progress of approved pilots and projects.

BUILDING BLOCK 6 | CENTRALIZATION OF CAPABILITIES

In the early days of an organization's AI journey, the people, process and technology capabilities required for an AI pilot or project probably will be decentralized. Administrative, clinical, financial and operational leaders are trying out new things. Ultimately, though, the organization must centralize system capabilities, not ideation, as they identify the best people, processes, technologies and practices to do the jobs well and at scale. By centralizing capabilities, the organization learns from every pilot and project and can apply those lessons learned to the next use case. Capabilities mature along with experience and expertise; and rollouts become faster and more cost-efficient.

AI Resources

Although there is no AI adoption road map or playbook for hospitals and health systems to follow, there are health care AI rule books put out by a number of credible organizations. They lay out AI adoption do's and don'ts. Many call them guardrails to keep health care AI pilots and projects from running off the road or veering into dangerous or unintended consequences.



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PROCESS

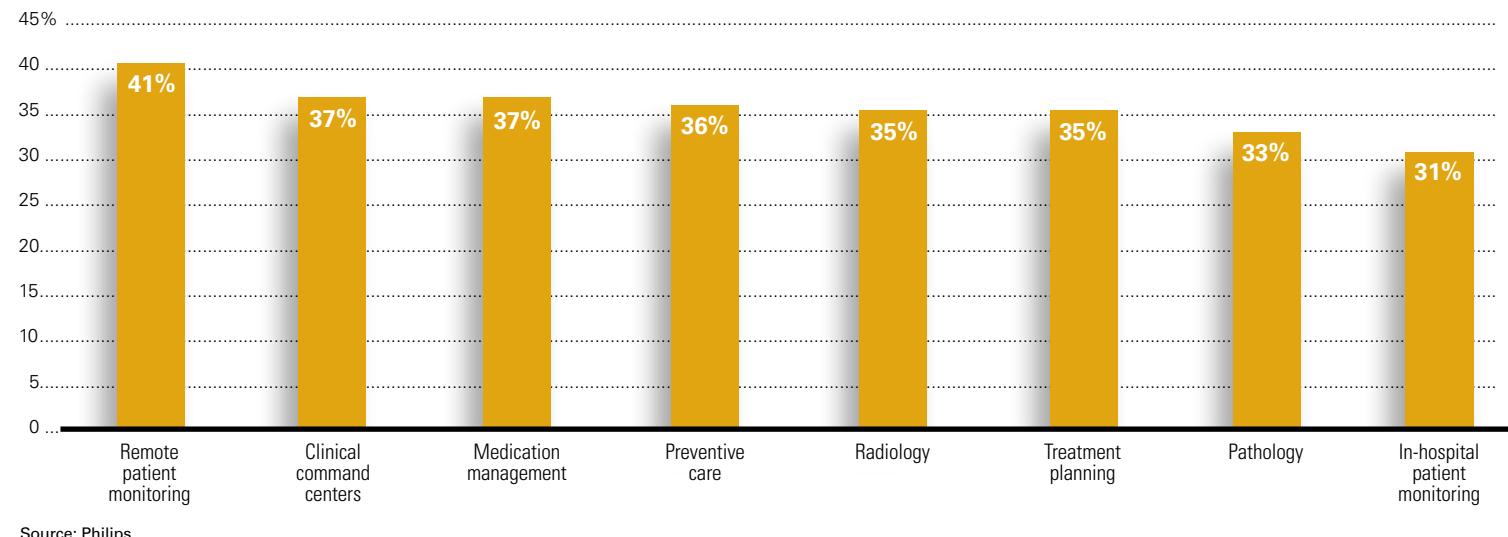
Here's a partial list of AI resources from key industry groups available to hospital and health system leaders:

- [Artificial Intelligence in the Provision of Health Care](#) (American College of Physicians)
- [Assurance Standards Guide and Reporting Checklist](#) (Coalition for Health AI)
- [AVIA's Generative AI Strategic Collaborative](#) (AVIA)
- [Unveiling the Future of Healthcare with CHIME's AI Principles](#) (College of Healthcare Information Management Executives)

- [Ethics and governance of artificial intelligence for health: Guidance on large multi-modal models](#) (World Health Organization)
- [Navigating the Responsible and Ethical Incorporation of Artificial Intelligence into Clinical Practice](#) (Federation of State Medical Boards)
- [Pathways to Governing AI Technologies in Healthcare](#) (Stanford Institute for Human-Centered AI)
- [Patient Safety and Artificial Intelligence: Opportunities and Challenges for Care Delivery](#) (Institute for Healthcare Improvement)
- [New consortium of healthcare leaders announces formation of Trustworthy & Responsible AI Network \(TRAIN\), making safe and fair AI accessible to every healthcare organization](#) (Microsoft). ●

AI clinical use cases planned

Percentage of surveyed health leaders in 14 countries who said they plan to implement AI within the next three years for clinical support



TECHNOLOGY

AI Capabilities Require Strong IT Infrastructure, Data Stewardship and Governance

The third pillar is technology. Without a robust IT infrastructure, the benefits of AI in health care cannot be fully realized. In many ways, AI and AI-powered technology may be the most complicated to manage. Like nuclear power, AI is amoral. It is neither inherently good nor evil despite what sci-fi movies portray. The people who use it are responsible for its beneficial or detrimental purposes and outcomes. Hospitals and health systems are drawn to it for its potential to do good and to benefit their patients and communities. Given the strong attraction, the technology pillar of AI action plans must have the following features:

DATA



\$11.1 BILLION

Projected 2024
U.S. venture capital investment in health care companies leveraging AI, up 54% from \$7.2 billion in 2023.

Source: Silicon Valley Bank

BUILDING BLOCK 7 | STRONG DATA STEWARDSHIP

Data stewardship refers to how a health care organization uses data responsibly to power its AI pilots and projects. It's often referred to as "responsible AI," and protected health information (PHI) or patient health data are used appropriately; for instance, using PHI or patient health data to obtain the best possible outcomes while minimizing potential harm to patients. AI must be set up to de-identify PHI to protect a patient's privacy and eliminate bias in data sets used for AI-based algorithms to generate actionable insights. To ensure that AI is working properly requires extensive quality control. Data stewardship must be a criterion in an organization's AI pilot and project vetting process.

BUILDING BLOCK 8 | STRONG DATA GOVERNANCE

Strong data stewardship requires strong data governance. Data governance is knowing and controlling what data are being used in AI pilots and projects, the source of the data and who's using it. Before data

Investments in AI health care use cases

Venture capital investments in three use case categories 2021 through Q1 2024

\$12.9 BILLION



Therapeutics and research
(therapeutics and drug discovery, clinical trial enablement, research and development tools)

\$12.3 BILLION



Clinical
(patient stratification, patient diagnostics/analytics and tests, patient diagnostics/imaging, remote patient monitoring)

\$6.6 BILLION



Administrative
(virtual assistants, notetaking and EHR documentation, revenue cycle operations, data structure/Analytics/interoperability)

Source: Silicon Valley Bank

are used in AI pilots and projects, it must be "cleaned," "scrubbed" or "standardized" and the privacy and security of the data must be protected. GenAI has elevated the importance of unstructured data and presents new opportunities in unstructured data management. Who has access to the data? Who has privileges to use the data? Are pilots and projects using open-source data or sharing data with open sources? AI pilots and projects must meet an organization's data governance standards.

BUILDING BLOCK 9 | STRONG IT INFRASTRUCTURE

Hospitals and health systems shouldn't build a separate IT infrastructure



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TECHNOLOGY

for AI. AI solutions require a strong data aggregation and analytics base. This involves addressing siloed data that are not easily available in digestible formats. The current IT infrastructure will need significant computational power to process data using AI and should be enough to handle AI pilots and projects. That's assuming the existing IT infrastructure is interoperable, can accept data from outside sources in the case of open-source AI technology and adhere to existing data stewardship

and governance policies under the strain of AI technology. That should hold true whether an organization is a "maker," i.e., builds its own AI solution, or a "taker," i.e., buys a solution off the shelf, or a combination of the two.

AI and genAI technology in particular are high-risk, high-reward propositions. The technology pillar of an effective AI action plan must be strong enough to handle the pressure. ●

When it comes to cybersecurity, AI and generative AI are a blessing and a curse

Let's start with the curse. The use of AI and genAI can expand a hospital or health system's threat landscape significantly. As data come in from disparate internal and external sources and in myriad formats, hospitals and health systems have more electronic turf to protect.

They're also a curse because threat actors can use AI and genAI to up their game against unprepared hospitals and health systems. A recent report from the FDA Office of Information Security and the HHS Health Sector Cybersecurity Coordination Center said cybercriminals are using AI and genAI specifically in eight areas:

- 1 | The development of phishing emails.**
- 2 | Audio and video impersonation attacks — "deep fakes."**
- 3 | The rapid exploitation of vulnerabilities.**
- 4 | The development of complex malware codes.**
- 5 | Deeper-target reconnaissance.**
- 6 | The automation of attacks.**
- 7 | Overwhelming human defenses.**
- 8 | Wider and more evasive ransomware attacks.**

The blessing is that hospitals and health systems can use such sophisticated technologies to counter those attacks. The report said health care organizations can use AI and genAI to enhance

their defense against cyberattacks via penetration testing, automated threat detection, continuous monitoring, cyberthreat analysis and incident handling and training for cybersecurity personnel.

According to the latest Cost of a Data Breach Report from IBM and the Ponemon Institute, that annual report, based on data from 604 organizations in 17 industries in 16 countries, said health care suffered the highest average cost of a data breach of any field in 2024 at \$9.8 million.

The average cost of a data breach for all industries was \$4.9 million, but using AI made a big difference in whether an organization fell above or below that number. The average data breach cost at organizations that did not use AI to protect themselves was \$5.7 million compared with \$3.8 million for those that did. AI users also identified and contained data breaches faster — an average of 158 days vs. 228 days.

The organizations that used AI extensively in their cybersecurity programs used it equally in four areas: prevention, detection, investigation and response, according to the report. ●



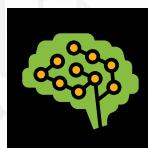
"Health care is, and will always be, a uniquely human experience. That's why it's no surprise that some of AI's most transformative — and likely most tightly regulated — capabilities exist at the point of care: the human-to-human interface."

— Chris DeRienzo, M.D., chief physician executive, American Hospital Association



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AI-powered Solutions Drive ROI and Use Cases



Health care organizations must identify areas within their workflow that could benefit from AI-powered software. Many hospitals and health systems look to improve financial stability and boost productivity by reducing staff time spent on administrative tasks with a return on investment (ROI) within one year.

Many start by working with their electronic health record (EHR) ven-

dor and third-party applications and interfaces to integrate AI and automated workflows in administrative and revenue cycle areas. Operational areas today already are using AI to bolster their effectiveness.

In deploying solutions, hospitals and health systems should include the administrative, IT, clinical and support services resources invested in the identification, evaluation and deployment of the AI solution in their ROI calculations. ●

AI Administrative Solutions in Use Today

PATIENT ACCESS	Technology readiness as productivity enhancer	Expertise required for deployment	ROI impact
Appointment scheduling	High	Competent	1 year or less Multichannel 24/7 access patient scheduling, confirmations and reminders.
Patient check-in	High	Competent	1 year or less Use a self-check-in, simplify front-desk processes and inform caregivers patient is on-site.
Registration	High	Competent	1 year or less Automate patient data capture and accuracy, as well as patient intake forms processing.
Admission procedures	Medium	Proficient	1 year or more Seamless form completion, reduce patient and staff burden.
Discharge plan	Medium	Proficient	1 year or more Generate discharge summaries in EHR, translate medical information into a patient-friendly format, predict length of stay and identify readmission risks.

KEYS:

High/Competent: Technology commercially available and skill set required for technology deployment.

Medium/Proficient: Technology may require more development and testing specific to the organization and process improvement by multiple stakeholders as insights are gained.

(continued on Page 11)

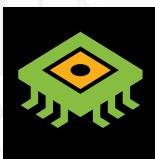


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AI Administrative Solutions in Use Today

REVENUE CYCLE MANAGEMENT	Technology readiness as productivity enhancer	Expertise required for deployment	ROI impact
Accounts receivable and posting revenue	High	Competent	1 year or less Improve efficiency and accuracy, reduce manual errors and free up staff for strategic activities.
Eligibility and benefits	High	Competent	1 year or less Automatically verify a patient's insurance eligibility, coverage and co-pays.
Patient payment estimation	High	Competent	1 year or less Determines out-of-pocket costs, allows for transparent communication and promotes trust and satisfaction.
Denial prevention	Medium	Proficient	1 year or more Predict which claims likely will be denied based on diagnosis, treatment and insurance plan. Identify inconsistencies, missing codes and duplicate entries.
Medical coding	Medium	Proficient	1 year or more Identify appropriate billing and service codes based on medical notes.
Prior authorization	Medium	Proficient	1 year or more Automate the process of initiating, tracking and managing prior authorizations.
OPERATIONAL	Technology readiness as productivity enhancer	Expertise required for deployment	ROI impact
Facilities management	High	Competent	1 year or less Reduce operational costs with predictive maintenance; use asset risk scores to optimize capital expenditures; decrease energy costs, predict failures and manage network for medical devices.
Security	High	Competent	1 year or less Capture, manage and report on incident data to increase workplace and patient safety.
Supply chain	High	Competent	1 year or less Capture true case costs; provide accurate cost variance analysis as well as procedure and inventory-demand intelligence; identify expensive supplies that have been recalled or expired.
Cybersecurity	Medium	Proficient	1 year or more Accelerate threat detection and mitigation, expedite responses, and protect user identity and data sets.
Information management	Medium	Proficient	1 year or more Make faster and more accurate decisions, maintain data quality and handle large data sets.
Pharmacy	Medium	Proficient	1 year or more Detect and prevent medication errors, such as incorrect dosages or potential drug interactions, thereby minimizing adverse events and hospital readmissions.

Top AI Clinical Applications



As health systems gain experience with AI initiatives, investments move beyond financial metrics and embrace a broader value proposition that AI offers in improving patient outcomes, patient experience, operational efficiency and reducing workforce burnout and turnover. The table below shows the many AI use cases, the technology readiness level, the expertise required for deployment and the ROI impact. ●

AI Clinical Applications in Use Today

USE CASES	Technology readiness	Expertise required for deployment	ROI impact
Capacity planning and management	High Dashboards and real-time data analytics and metrics for key operational services.	Competent EHR and commercial applications prompt staff from operational areas for communication and coordination.	1 year or less Improve patient flow, reduce length of stay, increase bed/room capacity.
Diagnostic decisions in radiology and pathology	High AI augments diagnostic procedures, optimizes image fidelity and fosters sophisticated image reconstruction across modalities.	Competent Commercial applications optimize staff time and streamline analyses and interpretation of results.	1 year or less Optimize procedure selection and efficiency, reduce patient wait times, faster results reporting and spotting of urgent cases, improve quality.
Optimizing operating room (OR) and procedure time	High AI-driven algorithms for scheduling, predicting case duration, streamlining resource allocation and in perioperative medicine, redefining OR efficiency and patient care.	Competent AI-powered OR management solutions improve resource allocation, operational efficiency, patient outcomes and staff satisfaction.	1 year or less OR management efficiency includes: predicting surgical case duration and cancellation, optimizing post-anesthesia care unit resources, improving patient outcomes.
Patient and population risk assessment	High Population health tools to identify risk-adjustment opportunities.	Competent Partner with community organizations to identify patients who have gaps in care and better prioritize the outreach and intervention of high-risk populations.	1 year or less Identify care gaps, spot social determinants of health (SDOH) that get in the way of better health, meet quality measures to optimize health care spend.

KEYS:

Technology readiness: **High** — productivity enhancer; **Medium** — insights generators; **Low** — investigational, support decision-making to reengineer processes.

Expertise required for deployment: **Competent**, **Proficient**, **Expert**.

(continued on Page 13)



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AI Clinical Applications in Use Today (continued)

USE CASES	Technology readiness	Expertise required for deployment	ROI impact
Patient engagement and relationship management	High High AI-powered intelligent virtual assistants (chatbots) to automate responses to patients' simple inquiries and requests.	Competent Hybrid model supported by technology to deliver quality services to the patient, improve the turnaround time of issue triaging and improve efficiency of provider operations. When a virtual conversation requires escalation, patients are seamlessly directed to the most appropriate channel and form of care.	1 year or less Developed and deployed with a minimal turnaround time to establish long-term patient-provider relationship and help relieve pressure on overworked health care workers.
Pre-visit planning	High Appointment reminders and pre-visit questionnaires to pre-visit order sets and care gap closures.	Competent EHR interoperability and workflow integration are essential.	1 year or less Improved communication with clinicians; patients feel engaged in their care and talk about what's important to them. Clinicians and staff better prepared for visit and less time is spent on documentation, reducing burnout.
Clinical documentation and coding	Medium Intelligent coding assistant, clinical documentation improvement queries, streamline documentation for prior authorizations and denials, generate first drafts for appeal letters.	Proficient Integrate workflows, automate work, prioritize cases with the most opportunity.	1 year or more Reduce documentation gaps and improve CDI efficiency and accuracy for timely reimbursement, reducing denials.
Medical scribe	Medium Systems use Natural Language Processing to record the physician-patient interaction and enter that information into the EHR.	Proficient Drafts encounter note in the EHR which reflects the interaction, the examination, as well as the assessment and care plan, and complies with coding and billing regulation. Once the note is complete, the clinician reviews it, makes any adjustments and signs off.	1 year or more Reduce clinician burnout and increase the amount of face-to-face time available for clinical care.
Personalizing care and treatment plans	Low Precise early diagnosis and prevention of diseases; rapid symptom checking and risk stratification to personalize health screening.	Expert "Augmented intelligence" and "actionable insights" support health professionals to make more informed decisions and customize care plans.	Long term Early detection of disease and designing personalized treatments.

KEYS:

Technology readiness: **High** — productivity enhancer; **Medium** — insights generators; **Low** — investigational, support decision-making to reengineer processes.

Expertise required for deployment: **Competent**, **Proficient**, **Expert**.

(continued on Page 14)



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AI Clinical Applications in Use Today (continued)

USE CASES	Technology readiness	Expertise required for deployment	ROI impact
Data extraction and data sharing across continuum, providers and community partners	Low AI models and algorithms with health information exchanges for data extraction, clinical decision assistance and prognosis prediction.	Expert Enhanced capabilities in managing health-related big data sets and constructing comprehensive data infrastructures that encompass patient treatment histories, outcomes and physiological parameters.	Long term Potential to forecast multiple health-related results, such as cancer, sepsis, heart failure, in-hospital cardiac arrest and impact of outbreaks.
Reducing medical errors	Low AI and clinical reports to extract safety-related information such as fall risks, Pyxis discrepancies, patient misidentification, patient severity and postoperative surgical complications.	Expert Develop a standard framework that can guide clinicians in interpreting the clinical meaning of AI's evaluation metrics before integrating them into the clinical workflow.	Long term Impact on patient safety (long and short term), reliability, domain-specific risks and uncertainty.

KEYS:

Technology readiness: **High** — productivity enhancer; **Medium** — insights generators; **Low** — investigational, support decision-making to reengineer processes.

Expertise required for deployment: **Competent**, **Proficient**, **Expert**.



"Everyone is in the AI water. No one is standing on the shore. The question is whether you're swimming, floating or sinking."

— Stephen Hughes,
director, health care IT policy,
American Hospital Association



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CASE STUDIES

Seven prominent hospitals and health systems have embarked on their own journeys into AI. They share how they are doing it, the benefits of incorporating AI, as well as lessons they have learned.



16



17



18



19

■ ATRIUM HEALTH

■ CLEVELAND CLINIC

■ COREWELL HEALTH

■ HCA HEALTHCARE



20



21



22

■ MAYO CLINIC

■ PROVIDENCE

■ SUTTER HEALTH



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How Atrium Health Does AI



"An AI application can't just be for one location. Because then what's the benefit for our communities at large? What's the benefit for our work-force at large?"

— **Asha Rodriguez**,
facility executive,
Atrium Health Cabarrus,
Atrium Health



“For all” is the unofficial motto of the AI action plan at Atrium Health, based in Charlotte, N.C. Formerly the Carolina HealthCare System, Atrium is now part of Advocate Health. Advocate Health, in turn, was the result of the merger between the Advocate Health Care and Aurora Health Care systems.

“All” in “for all” now means 69 hospitals and more than 1,000 outpatient care sites in six states.

“For all” is the final, make-or-break test that determines whether Atrium pilot tests an AI solution. The solution must be applicable to a common problem or job to be done at all Advocate Health care sites, according to Asha Rodriguez, facility executive of Atrium Health Cabarrus, at Atrium Health.

Even getting to that final, make-or-break test is a challenge for most proposed AI solutions as Atrium has adopted an extremely rigorous AI adoption governance process.

A multidisciplinary AI steering committee, comprising more than a dozen leaders, oversees that process. The committee reports to Atrium’s chief medical information officer who reports to the CIO. A clinical informatics team sits below the committee. The team is responsible for bringing AI solution ideas to the committee, which approves AI ideas for testing, and then the “fun” begins.

The committee gives the clinical informatics team a set of guidelines to test the proposed AI solution and sets up bidirectional feedback loops between the committee and the team. Formal feedback loops help prevent scope creep and keep the team focused on the problem the AI solution is supposed to solve.

Testing begins, and the clinical informatics team aggressively tries to break or trick the AI solution into making a mistake. Two deal-breakers are if the solution displays systemic bias or if it produces AI hallucinations, which are false or misleading information, Rodriguez says.

If the proposed AI solution survives testing by the clinical informatics team, the solution goes back to the steering committee to review the findings and then approve further testing by what Atrium calls a “pilot user.” If it works for the designated pilot user, Atrium then will pilot the solution at a handful of hospitals before rolling it out systemwide.

A solution that survived Atrium’s testing process is Microsoft’s ambient listening tool to assist physicians with their clinical documentation. Atrium also is testing a similar tool for nurses. ●



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How Cleveland Clinic Does AI



DATA POINT

**3X**

An AI-powered tool that predicts the onset of sepsis is able to identify 3x as many cases of sepsis onset, and quickly enough so that treatment can be administered in a timely manner.

Source: Cleveland Clinic

Cleveland Clinic is an integrated, multispecialty academic health system with 23 hospitals and 276 outpatient sites in four countries. Historically, Cleveland Clinic has encouraged innovation in care delivery with breakthroughs at individual hospitals and sites bubbling up and then shared and replicated across the enterprise.

Leaders are working to organize and implement AI technologies across the large health system, according to Rohit Chandra, chief digital officer. So much so, in late July, the health system hired its first chief AI officer, Ben Shahshahani. Shahshahani came to the system from SiriusXM and Pandora, two subscription-based streaming radio and content services, where he was senior vice president of science, machine learning and product analytics. He reports to Chandra.

"We want to be center-led in terms of AI adoption, but we don't want to be centralized," Chandra says. "With a center-led approach, we will have a common baseline of data. We will have a common baseline of infrastructure. And we will have a common, shared baseline of exper-

tise. That is our ambition."

However, Chandra said it would be impractical for a centralized team to come up with the actual use cases for AI technologies. The responsibility for identifying jobs to be done for AI should rest with the domain and subject matter experts because "problems live where they happen." The centralized data, technology and expertise apparatus would then vet and execute the use cases.

A dedicated team of cross-disciplinary leaders would review ideas based on a number of set criteria, including potential impact, technology readiness and business case to be made.

Chandra said centralizing the vetting and execution of AI pilots and projects comes with its own risks. It could introduce dependency or become a bottleneck that slows progress. As a result, the centralized set of functions must be managed aggressively. ●



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How Corewell Health Does AI

DATA POINT



95%

Accuracy rate of an AI-powered ambient listening tool that listens, records and converts patient office visits with physicians into notes and orders for the physician to review

Source: Corewell Health



Corewell Health, based in Grand Rapids, Michigan, operates 21 hospitals and more than 300 outpatient care sites in southwest, southeast and western Michigan. Recognizing early that AI pilots and projects had the potential to spread haphazardly, Corewell opened its Artificial Intelligence Center of Excellence (AI COE). This centralized team of multidisciplinary leaders serves to guide the effective and responsible adoption of AI throughout the organization.

Team members include the chief compliance and risk officer, physician leaders, nurse leaders, a physician informaticist and the director of data

science and AI, who is the center's coordinator. The director of data science and AI reports through to the chief digital and information officer, Jason Joseph.

"The difference between an OK organization and an exceptional one isn't necessarily that your strategy is that much different or better. It's how well you execute. How well you execute is directly proportional to how well you can make decisions, how well you can organize your teams, how well you can get people rowing in the same direction, and how well you can focus those efforts on making the right things happen," says Joseph.

The center holds proposed AI pilots and projects and their technologies up to Corewell's data stewardship, data governance and IT infrastructure criteria to see if they align while not putting either protected health information or patients themselves at risk.

The center doesn't ideate AI pilots or projects or put business cases together for proposed pilots and projects. The responsibility to identify potential jobs to be done or problems to be solved by AI falls to four work groups that focus on: Corewell's health plan; care delivery operations; value-based and population health initiatives; and corporate, technology, governance and back-office functions.

Each of the four work groups has subgroups with their own set of teams who look at potential use cases. Joseph says Corewell has about 30 submitting potential AI use cases for review by the AI COE.

"The AI COE takes on the role of championing AI, leading it, organizing it. But we're not the benevolent dictator of the whole thing. We're the convener, if you will," Joseph says. ●



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How HCA Healthcare Does AI

HCA Healthcare, based in Nashville, Tennessee, is one of the nation's leading providers of health care services with more than 180 hospitals and 2,400 care sites in 20 states and the United Kingdom. Ideating AI use cases and vetting and executing them with a bottom-up approach would be, in a word, "challenging," according to Michael Schlosser, M.D., HCA Healthcare's senior vice president of care transformation and innovation.

Instead, HCA Healthcare takes a top-down approach to deploying AI technologies in its AI action plan. That approach starts with a few fundamental questions:

- Does the pilot or project idea pass the four-part threshold of whether it can be digitized, automated, whether AI can advance it and whether it will be impactful?
- And perhaps most importantly, does the pilot or project support one of HCA Healthcare's strategic goals as a company?

"That is the lens we use to think about where we're going to apply AI," Schlosser says.

HCA has a five-person digital transformation committee that decides whether an AI idea or proposed use case passes those tests. They are the CEO, chief financial officer, chief information officer, chief operations officer and the newest member of the committee, the senior vice president of care transformation and innovation.

The committee then transmits that strategic initiative to administrative, clinical, financial and operational leaders on the front lines through various communication channels. That opens the door and attracts potential use cases from end users that may pass muster.

DATA POINT



98%

Percentage of time the AI-powered staffing and scheduling platform meets the schedule preferences of nurse users. The platform is currently in use at 47 hospitals.

Source: HCA Healthcare



There also is a more subjective side to how HCA Healthcare vets a proposed AI pilot or project — the human side. AI augments the work being done by a person rather than replacing the person. People are still invaluable, but they must adjust their behaviors. That can have emotional and social implications. Proposed AI pilots and projects don't just have to demonstrate how a task or function will be done with AI but how changing that task or function with AI affects the user from an emotional or social standpoint. ●



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How Mayo Clinic Does AI



Mayo Clinic's "Bold. Forward 2030" strategic plan focuses on the need to cure (the traditional core mission), connect (to develop tools to simplify care and eliminate fragmentation) and transform (to use a digital data platform that can deliver knowledge and insights globally). AI technology is a major component. Mayo Clinic operates 16 hospitals and 53 multispecialty clinics in three states and the United Kingdom, and employs more than 84,000 people.

Mayo Clinic empowers each employee to work on AI pilots and projects individually. That directive comes from on high.

"Our CEO, Gianrico Farrugia, M.D., and I agree there will be no single governance for AI across the organization. You have to get innovation that comes from individuals and individual departments. You must have centers of excellence distributed throughout the organization," says John Halamka, M.D., Dwight and Dian Dierck president, Mayo Clinic Platform.

To the extent that Mayo Clinic oversees AI, Mayo Clinic Platform is where it happens. Mayo Clinic launched the business unit in 2019 to partner with outside organizations and leverage emerging technologies to enable solution developers to create new tools for clinicians to

improve patient care.

The unit in 2020 de-identified all the structured and unstructured data from 10 million patients treated by Mayo Clinic since its founding in 1864. It put all the de-identified data in a secure database and gave each of its employees along with health-tech startups tools to access the data to see if they could build novel and useful algorithms run by AI technology.

The tools include a 10-step road map for users to follow — and adhere to — to bring their ideas to fruition.

The result is 250 finished algorithms and 40 tech-driven startups that the unit is accelerating, according to Halamka. Most startup solutions target clinical use cases, particularly in cardiology and oncology. Seven of the startup solutions target administrative use cases.

Through partnerships with other health systems and even other countries, the unit is de-identifying data from patients treated outside of Mayo Clinic. The number of patients in the database is now at 35 million and counting, generating new fuel for more AI pilots and projects. ●



"Unless you take a year to build a strong foundation of technology and policy and process, you're not going to be able to accelerate in the way that we accelerated the number of solutions you produce."

— John Halamka,
president,
Mayo Clinic Platform



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How Providence Does AI

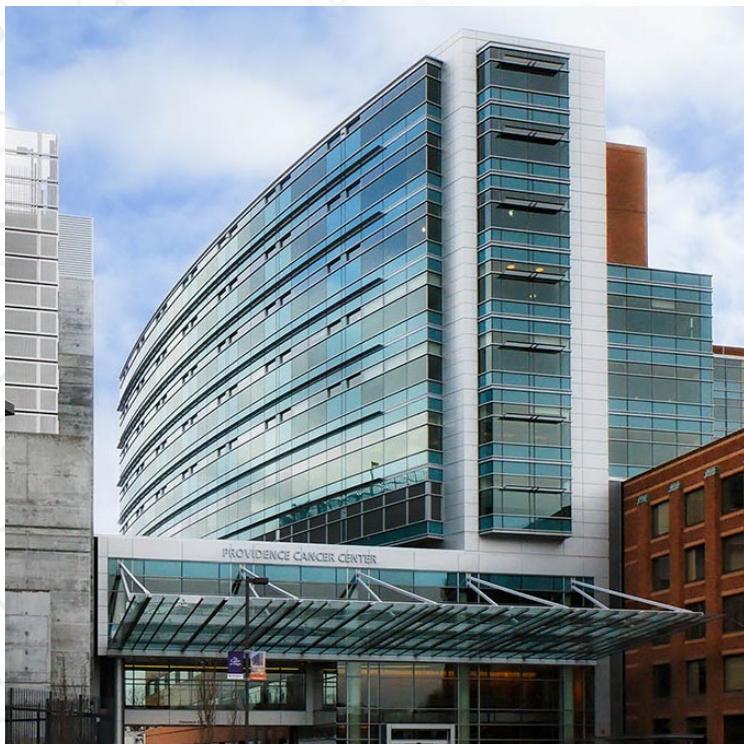
DATA POINT



28%

reduction of inbound patient portal administrative messages now automatically responded to by AI-powered chatbot.

Source: Providence



Providence, based in Renton, Washington, operates 51 hospitals and more than 1,000 clinics in seven states. Sara Vaezy, executive vice president and chief strategy and digital officer, is responsible for system strategy, digital and innovation across the enterprise. Then OpenAI launched ChatGPT on Nov. 30, 2022, and the system believed in responding quickly to the coming wave of AI-supported transformation.

The result was a systemwide AI strategy supported by a new governance structure and a set of shared priorities across the system popu-

lated by multidisciplinary teams and work groups.

"We think that AI is going to be a feature built into most of the work we do, so it shouldn't be owned by a single person," Vaezy says.

Three expanded legacy committees and one new committee sit underneath the AI strategy. Providence expanded its standing data ethics council to include AI and data used in AI. It expanded its standing information protection committee to include AI as it works to protect the privacy and security of IT systems and data and to guard against cyberattacks. Providence expanded its standing technology review board to ensure that any AI technology bought or built meets the system's tech standards.

The new committee is dubbed the "guardrail group." The guardrail group has a process subgroup that determines how an AI-related pilot or project works its way through the organization, and the gates and milestones it has to hit based on the requirements at each gate or milestone. The guardrail group also has a technical subgroup to ensure that Providence has the technical infrastructure and tooling to deploy the solution safely and responsibly.

Active work groups in four domains surface ideas for AI pilots and projects and have launched several bodies of work including in-basket management, documentation support and self-service navigation for patients. The four domains are: patient and consumer, clinical, workforce and back office. The work groups report to a system executive leadership committee that ensures that the work being pursued is safe, responsible, ethical, equitable and aligned with Providence's strategic and operational priorities. ●



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How Sutter Health Does AI



"Don't assume everyone knows why you're doing what you're doing. Transparency and communication are essential. Not everyone sees the same job to be done with the same AI project."

— **Laura Wilt**,
senior vice president
and chief digital officer,
Sutter Health



Sutter Health, based in Sacramento, California, is a not-for-profit, integrated health care system serving more than 3.5 million patients across the state. Sutter is focused on aligning its AI pilots and projects with a cohesive and strategic approach.

This effort is being led by Laura Wilt, Sutter's senior vice president and chief digital officer. Wilt joined Sutter in March 2023 from Ochsner Health, where she was system vice president and chief information officer.

Wilt notes that a number of Sutter's AI-driven initiatives already are underway across a handful of big use-case buckets, such as administrative, clinical, financial and workplace. Sutter's AI committee carefully reviewed the initiatives to ensure adherence with the organization's data stewardship, governance and IT infrastructure standards. As Sutter continues to build its AI strategy, there is a growing recognition of the importance of establishing a more integrated approach to implementation.

As part of its evolving strategy, Sutter is considering how its AI committee works in partnership with the other governance teams. This aligned governance will help ensure that AI is being leveraged effectively and that important use cases aren't being overlooked, according to Wilt.

"We have done a lot of work on the outpatient side, which has already brought benefits to our clinicians and staff," Wilt says. "Now we're expanding our focus to ensure that we're also making equal progress on the inpatient side in our hospitals."

A key part of Wilt's strategy is building the foundational infrastructure needed for success. That includes modernizing its IT systems and migrating data to the cloud — initiatives that already are underway.

At the same time, the AI cat is out of the bag at Sutter with some great results. For example, AI tools are assisting radiologists in analyzing lung images — originally taken for other clinical reasons, such as suspected broken ribs — by identifying markings that may need further investigation. These types of AI advancements highlight the potential to enhance patient care and operational efficiency across health care. ●



Conclusion

Artificial intelligence does have the potential to transform each and every aspect of health care delivery and finance from the simplest administrative task to the most complex clinical procedure for less cost and improved patient care and business outcomes. The question for many hospital and health system leaders is how and where to start given the many other priorities competing for limited dollars.

As this Market Insights report from the AHA Center for Health Innovation demonstrates, available AI solutions offer financial and productivity efficiencies in a number of functional areas with a tangible ROI. Seven forward-looking health systems across the country provided insights into their AI action plans. Each approached its AI action plan differently. But each started by putting the foundational building blocks of people, process and technology in place and then overlaying that foundation with a structured, systematic approach to identifying, vetting and executing AI pilots and projects. Those pilots and projects span all categories of potential AI use cases from administrative and clinical to financial and operational.

Some are pursuing use cases one at a time. Others are pursuing multiple use cases simultaneously. What works for one hospital or health system may not work for another. But the important lesson is to start, and the time to start is now. ●



Expert Panel

The AHA Center for Health Innovation thanks the following people and organizations for their time and insights in this Market Insights report.



Rohit Chandra
Chief digital officer
Cleveland Clinic
Los Altos, Calif.



Chris DeRienzo, M.D.
Senior vice president and
chief physician executive,
American Hospital As-
sociation and president,
Health Research and
Educational Trust
Chicago



John Halamka, M.D.
President
Mayo Clinical Platform
Rochester, Minn.



Stephen Hughes
Director, health
care IT policy
American Hospital
Association
Washington, D.C.



Jason Joseph
Chief digital and
information officer
Corewell Health
Grand Rapids, Mich.



Jen McKay, M.D.
Senior clinical specialist
Google Health
Sioux Falls, S.D.



Asha Rodriguez
Facility executive
Atrium Health Cabarrus
Atrium Health
Charlotte, N.C.



Kaveh Safavi, M.D.
Senior managing
director, head of global
healthcare practice
Accenture
Chicago



Michael Schlosser, M.D.
Senior vice president,
care transformation
and innovation
HCA Healthcare
Nashville, Tenn.



Adam Siskind
Principal
ZS
Toronto



Sara Vaezy
Executive vice
president and chief
strategy and digital
officer
Providence
Seattle



Laura Wilt
Chief digital officer
Sutter Health
Sacramento, Calif.



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Contact Lindsey Dunn Burgstahler | 312-893-6836 | ldunn@aha.org