BCG

Executive Perspectives

AI-First Providers Win the Future

Health Care

April 2026

Introduction

We meet often with CEOs and executives to discuss AI - a topic that is both captivating and rapidly evolving. Drawing on our work with over 2,000 clients for more than two years, we are sharing our latest insights in a new series designed to help executives navigate AI. With most sectors undergoing major shifts, the focus in 2026 is on **how to leverage AI to fully transform organizations and create new sources of competitive advantage.**

Health care providers are at an inflection point. Demand is growing faster than supply, labor costs are outpacing reimbursement, and health care spending is rising at nearly three times the rate of GDP. Incremental efficiency gains will not be sufficient; **providers must unlock step change productivity** to expand capacity without proportional labor growth. Agentic AI is a critical lever to enable this shift.

Against this backdrop, three questions matter most for executives:

- **Why are AI pilots failing to scale**, and what makes enterprise-wide transformation a strategic imperative now?
- **What does an AI-first provider look like**, and how does AI unlock value across access, cost, and experience throughout the patient and provider journeys?
- **What does it take to realize AI's full potential** to move beyond a "just tech" transformation and overcome data and organizational constraints?

This document is a **guide for health care provider executives** to cut through the hype around AI and understand what creates value now and in the future.

In this Executive Perspective, we articulate the vision and value of building an AI first health care provider organization

Executive summary | Rebuilding Health Care Around Intelligence

The promise of AI to transform provider operations, experience, and financials has not yet been realized. While pilots have been promising, most have failed to scale and are not yet delivering meaningful impact. But AI's promise is not a false one. The technology can help transform health care, but it cannot do so unless providers move from attempting to slot AI into existing structures to becoming AI-first providers.

The structural pressures facing health systems make this an imperative, not a choice:

- **Demand growth is outpacing supply** by about 14% through 2036 as populations age, setting up an impending access crisis
- **Unsustainable economic pressure** is being driven by labor-dominated cost structures that are split across clinical and administrative work; through 2033, hospital wage inflation is expected to grow by 44%, while reimbursement growth is expected to grow by 27%
- **Health care costs are expected to increase faster than GDP (5.8% vs 1.8%)** through 2033

These structural pressures are compounding and unlikely to abate over the next decade. Given the scale of labor shortages and wage inflation, incremental efficiency gains will not be sufficient. Providers need a step change in productivity to expand capacity without proportional labor growth, while making health care roles more sustainable and attractive. Providers should use AI to augment clinical expertise in ways that drive down the cost of health care, while also improving the quality of care, reducing the administrative burden, and enhancing both the employee and patient experience.

Realizing the value of AI requires a clear understanding of the **10-20-70 principle.** Ten percent of the impact of AI technology comes from better algorithms tailored to specific use cases, 20% comes from an AI-ready technology infrastructure, and 70% comes from operational and organizational redesign. Specifically:

- **Scalable and modernized technology and data stack,** where data silos are broken down and harmonized in a single place and accessible in real time; they must be supported by the right central controls (including cybersecurity, responsible AI, identity and access management, and model validation)
- **Operational and cultural redesign** that drives change management, creates an AI-first culture, reimagines workflows and operating models, and closes talent gaps
- **Roles redesigned** to coincide with reimagined workflows; roles must be reimagined and talent upskilled as needed to take advantage of this augmentation opportunity

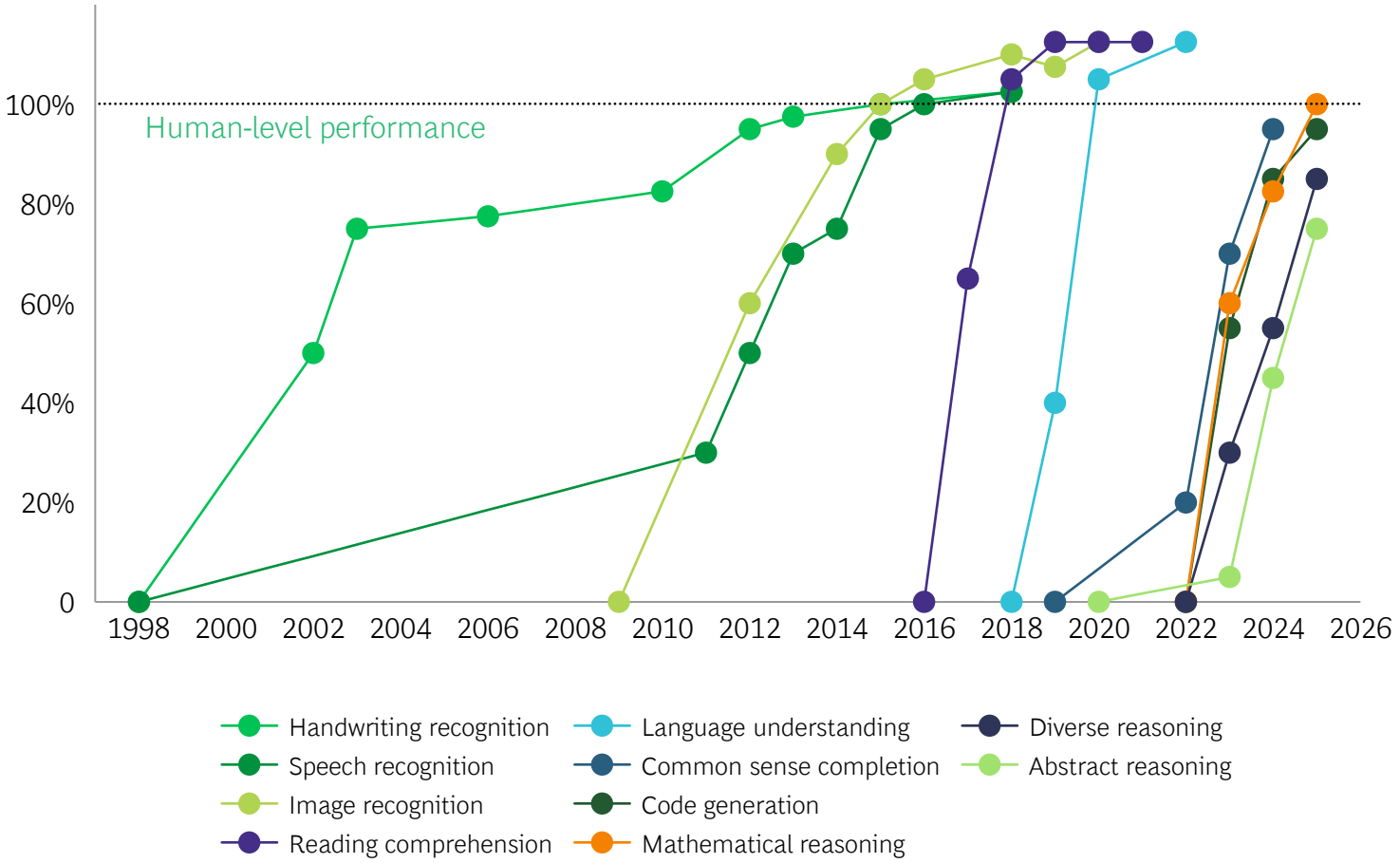
When the 10-20-70 principle is understood clearly, systems can begin to move from planning to action, defining use cases that can generate near-term value while building technical capabilities and prepping the necessary operational and organizational work to transform the health system piece by piece toward an AI-first system.

Waiting is not an option for health systems. The market opportunity means that while health systems grapple with complexity, leaner and more agile AI first provider organizations aimed squarely at the shrinking commercial pools will begin to peel off high margin patients and services if they do not move with urgency. Providers must focus on driving advantage on areas of distinction ahead of the market and building the organizational capabilities to rapidly deploy tools into new workflows being brought by key platform providers such as EHR vendors and cloud providers.

Note: EHR = electronic health record.

Recent advances in AI represent a structural inflection point, where AI can ingest complex data and orchestrate work in real time

State-of-the-art AI performance on benchmarks, relative to humans



Sources: Stanford AI Index Report and BCG Analysis.

Key takeaways for providers

- AI is no longer limited to narrow tasks; **it can ingest unstructured data and coordinate real workflows**
- AI has **surpassed human-level performance in** many tasks and is quickly advancing in others
- Realizing AI's potential will require **deliberate focus, capital allocation, and long-term capability development**

Despite a strong belief in AI's potential, providers struggle to scale impact within current operating models

There is broad recognition of the need to leverage AI to win...

> "AI gives health care something we've been chasing for decades: speed with precision. When deployed correctly, it becomes a force multiplier for clinical teams."
>
> – Provider at Children's Hospital of Pennsylvania

> "I'm excited because the technology is remarkable, and the health care system is so broken that this is our greatest hope for fixing what ails us."
>
> – Provider at UCSF

> "The real opportunity in 2026 isn't choosing between humans and machines, but in designing intelligent workflows that leverage both to their fullest potential."
>
> – Provider at Harvard Medical School

> "We need to reimagine how we deliver care if we truly want to solve some of the most pressing issues, including access, quality, and sustainability."
>
> – Provider at Sanford Health

Sources: Wall Street Journal; HealthTech-; Becker's Hospital Review; New England Journal of Medicine.

...but many health care providers are facing challenges to valuably scale AI

> "Most automation is not sophisticated enough to identify root causes, let alone craft solutions and communicate them."
>
> – OHSU Health

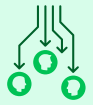
> "AI doesn't work if we keep implementing in broken systems. There is a large overhaul that must be done to scale AI in a hospital."
>
> – Duke Health

> "We need serious improvements in results if we are going to implement AI. Physicians have seen major errors and are hesitant."
>
> – Northwestern Medicine

Structural pressures make step-change productivity not an option

Demand growth is outpacing supply

- **Aging populations are driving sustained, noncyclical demand growth**
- **Providers have limited capacity to provide care for growing demand**, leading to longer wait times and access bottlenecks
- **Mismatched demand and supply increases acuity** as delayed care worsens conditions



Workforce challenges persist

- **Providers face persistent workforce shortages and high burnout** because of overwork without recovery time, increasing administrative burdens, and lack of autonomy
- **Productivity gains from traditional levers are expensive** and unsustainable

Economic pressures are unsustainable

- **Providers' cost bases remain labor dominated (50%–70% of cost)** across both clinical and administrative roles, while reimbursement growth lags wage inflation
- **Margin pressure is intensified by payer mix shifts and regulatory requirements,** with limited ability to pass through cost increases

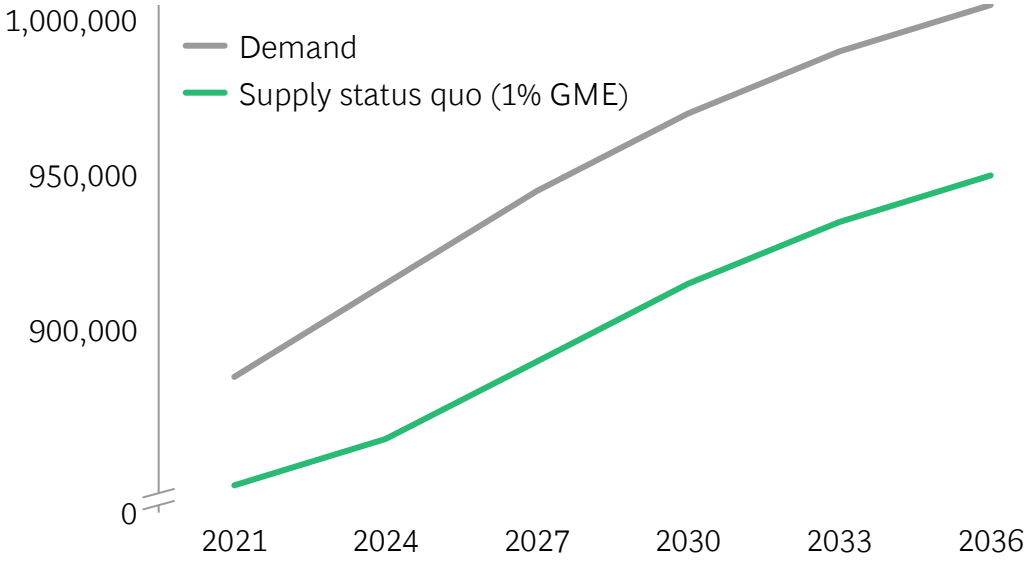
Source: BCG analysis.

The mismatch between growing demand and growing clinical-labor shortages make the current model unsustainable

Demand growth is outpacing supply

The gap between demand and supply is expected to continue to grow through 2036

Projected physician supply and demand by scenario, 2021–2036



Note: GME = Graduate Medical Education
Sources: HRSA Workforce Projections, 2022-2037, HRSA Data Warehouse; CMS.gov; American Medical Association; AMGA's Medical Group Operations and Finance Survey; BCG analysis.

Workforce challenges persist

The shortage of frontline health care workers is expected to increase in the next ten years

Shortage or surplus of US health workforce by occupation, 2027–2037 (%)

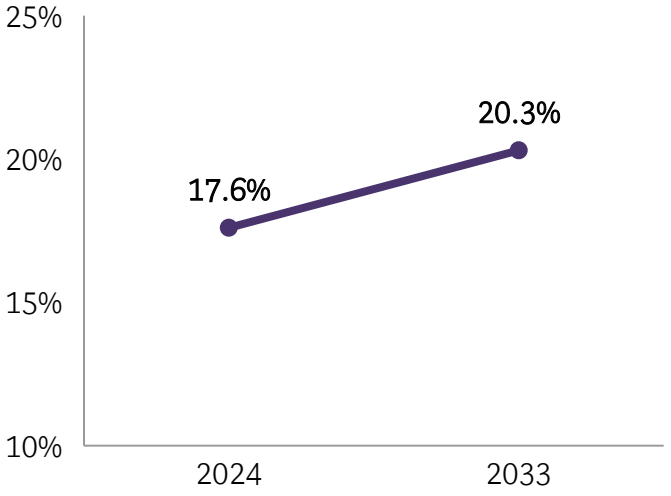
	2027	2032	2037
Physicians (overall)	-12%	-15%	-17%
Primary care physicians	-22%	-24%	-26%
Specialty physicians	-8%	-12%	-14%
Nurses	-10%	-8%	-6%

Health care costs are growing at about three times that of GDP, and providers' labor costs are growing at nearly twice that of reimbursements

Economic pressures are unsustainable

Health spending is growing significantly faster than the overall economy, creating an unsustainable trajectory

US health expenditure as a percentage of GDP, 2024–2033

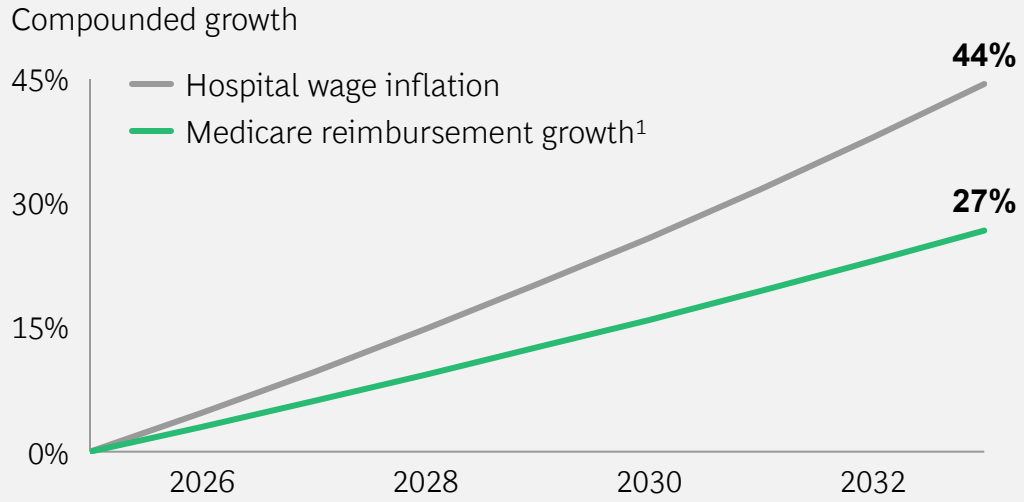


2024–2033 CAGR	
US health expenditures	5.8%
US GDP	1.8%

Wage inflation vs. Medicare reimbursement

Wages are expected to increase faster than Medicare reimbursement, creating a widening gap

Projected wage inflation vs. Medicare payment growth, 2025–2033



This graph shows the status quo scenario; **given the widening labor shortages, the actual gap is likely worse**

Structural cost inflation without pricing power makes labor productivity the primary lever available to providers

1. Using proxy from Inpatient Prospective Payment Systems update for 2020–2025 growth.
Sources: American Medical Association; CMS.gov; US Bureau of Labor Statistics, Employment Cost Index; BCG analysis.

AI augments clinical labor across the end-to-end patient journey to improve access, unit cost, and experience

	Symptoms and scheduling	Check in	Receive care	Payment	Follow-up
					
Patient Experience	*Describes symptoms once and is instantly matched, authorized, and booked with the right in-network provider at the right time*	*Completes an intelligent, adaptive digital check in that anticipates missing information and clears barriers before arrival*	*Experiences a hyper personalized visit where insights, diagnosis, and next steps feel immediate, precise, and tailored*	*Sees a transparent, real-time breakdown of coverage and costs and pays instantly through a seamless, digital-first experience*	*Receives proactive, intelligent follow-up that anticipates needs, coordinates next steps, and keeps patients connected to care*
	1	2	3	4	5
Clinician and operational Experience	• Triages patients to the most appropriate and efficient care modality and site • Optimizes the schedule and clinician mix to meet patient demand • Prebuilds a clinical preview, including risk flags and likely diagnostic pathways	• Validates eligibility, benefits, and prior authorization requirements • Dynamically adjusts intake questions on the basis of specialty, condition, and documentation gaps • Summarizes patient history, risk signals, and medication) for clinician review	• Converts documentation into compliant billing • Captures and structures documentation in real time using ambient AI tools • Prioritizes diagnostics and treatment operations using a decision-support tools	• Automatically generates claims on the basis of documentation • Aligns and monitors clinical, payer, and pharmacy workflows • Flags financial risk signals (e.g., likely denials and coverage gaps) upstream and proactively addresses	• Adjusts care on the basis of risk models before deterioration • Routes patients to in-network specialists with capacity alignment and tracking • Creates prioritized worklists driven by real-time patient risk stratification

Using AI to augment labor across the patient journey unlocks unit cost and capacity gains

Non Exhaustive

	Patient event	Patient experience	Value unlocked
1	Symptoms and scheduling	Describes symptoms once and is instantly matched, authorized, and booked with the right in-network provider at the right time	Fewer manual human hours are required to manage scheduling, collect necessary insurance information, and review symptoms to triage patients accordingly More patients are routed to the lowest appropriate level of care, ensuring physicians are operating at the top of their license, reducing unnecessary clinical labor cost Higher-acuity appointment slots are filled with clinically appropriate patients, increasing utilization and protecting higher-margin revenue Fewer appointments are missed, directly reducing lost revenue from unused provider time Patient experience is better on the front end, resulting in more patient capture
2	Check in	Completes an intelligent, adaptive digital check in that anticipates missing information and clears barriers before arrival	Reduced manual human hours required to manage eligibility verification, digital intake forms, etc. Shorter patient wait times enable more on-time visits per day, increasing daily-visit throughput More accurate and complete patient data is captured upfront, decreasing the number of downstream billing errors Less duplicate information is requested from patients, resulting in a better, more personalized experience
3	Receive care	Experiences a hyper personalized visit where insights, diagnosis, and next steps feel immediate, precise, and tailored	More patients are seen per provider per day because of AI-supported documentation and clinical decision-support, directly increasing billable visit volume Higher accuracy in clinical design making, removing unnecessary downstream utilization and costly complications Higher coding accuracy and documentation completeness is attained, increasing appropriate reimbursement Stronger patient retention is driven by personalized care plans and follow-up clarity
4	Payment	Sees a transparent, real-time breakdown of coverage and costs and pays instantly through a seamless, digital-first experience	Timeframe for prior authorizations is reduced and fewer manual hours are required for billing and collections labor Faster patient payment capture through transparent cost estimates and digital payment options improves cash flow Proactive patient connection to all financial assistance is available, resulting in better patient experiences
5	Follow-up	Receives proactive, intelligent follow-up that anticipates needs, coordinates next steps, and keeps patients connected to care	Fewer manual outreach hours are required to schedule follow-ups, send reminders, and coordinate referrals More in-system referrals are captured, protecting downstream procedural and specialty revenue Greater lifetime patient value is achieved through proactive longitudinal care management Less revenue is lost from missed follow-up visits through consistent outreach and predictive modeling

Administrative Augmentation | Clinical Productivity and Capacity Optimization | Revenue Integrity | Patient Capture, Retention and Longterm Value

AI has the potential to alleviate access, workforce, and economic pressures, reshaping the end-to-end patient and provider experiences

Non-Exhaustive Examples

Illustrative art of the possible

Clinical

Patient Facing

Providing patients with easy-to-access support resources to navigate care and seek medical guidance

"Doctor in your pocket"
Create superintelligent custom treatment and care plans, with 24-7 access for clinical decision support

Care-navigation support
Conversational AI can guide patients through the care journey with empathy

Automated patient support
education (e.g., symptom checker, automated clinician companion, and postoperative engagement)

Clinician facing

Equipping clinicians with best-in-class information and decision support to ensure best-care delivery

Better-than-human diagnoses
Specialized reasoning models and decision support tools can help clinicians better diagnose

Case study follows

Early risk detection
AI agents can identify disease markers and interventions using longitudinal patient data

Faster imaging and interpretation
Offsite, AI-enabled cockpit models can provide patients with results faster, while enabling employees (e.g., radiologic technologists) to oversee a larger number of machines and focus only on the cases requiring the greatest expertise

Case study follows

Non-clinical

Patient facing

Connecting patients to the appropriate care and ensuring efficient delivery

Outbound patient communications
GenAI agents can manage inquiries and proactively engage across channels (e.g., voice, text, and video), proactively supporting patients

Site-of-care optimization
GenAI and predictive AI can balance constraints to route patients to the safest low-acuity option

Always available inbound communications
Infinitely scalable agentic voice contact centers can provide immediate resolution to key access and navigation questions

Employee facing

Optimizing the availability of staff, assets, and resources to ensure a top-tier experience

Dynamic staffing optimization
AI agents can match condition urgency and patient preferences with best-fit and available providers for "never wait" care

Reduced administrative burden
Ambient AI listening devices can record visits and reduce time spent on administrative tasks for clinical staff

RCM
Process digitization (e.g., automated claims generation, appeals, and CDI)

Legal
Contract generation and compliance checklists

Procurement and supply chain
Vendor and inventory management

Note: GenAI = Generative AI; RCM = Revenue Cycle Management; CDI = Clinical Documentation Improvement.

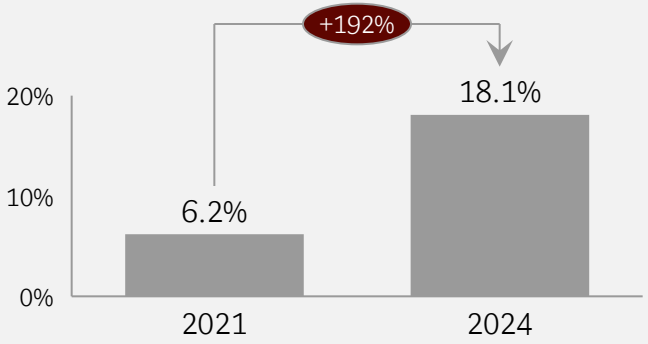
Case study | When workflows and human roles are designed from an AI-first mindset, step-change productivity improvements are possible

RadNet

The largest provider of fixed-site diagnostic imaging services in US (over 400 sites) **focused on using AI to advance quality, efficiency, and patient accuracy.**

Key challenge | Significant shortages of radiologic technologists limit patient access and quality of care

Rad tech position vacancy rate[1]



Example in practice | RadNet rearchitected workflows as hybrid AI-human systems to combat increases in rad tech vacancy rates[1]

Approach and investment

Roughly $800 million[2] invested to rearchitect radiology as an AI-human production system

Technology investment | Created a unified data lakehouse; implemented a cloud- native diagnostic operations system (DeepHealth OS)

Workflow optimization | Automated routine scans and preprocessing; embedded AI into acquisition, reading, scheduling, and quality assurance

Workforce redesign | Shifted rad tech skill focus toward oversight, exception handling, orchestration, and quality, improving skills and productivity

Results

AI redesign improved several areas

Productivity	**33%** Decrease in time for thyroid ultrasounds; over 90% of reads accepted without further review needed
Clinical quality	**+22%** Increase in breast cancer detection
Recruitment	Reduced the time to fill positions by modernizing the role and expanding remote-enabled staffing pools
Retention	Reduced burnout by shifting administrative tasks to AI and increasing human judgment

1. Three-time increase from 2021 through 2024 was driven by the rate of retirement, lower enrollment in rad tech programs, and burnout.
2. Includes $270 million acquisition of Gleamer.

Sources: American Society of Radiologic Technologists survey, October 2024; investor reports; executive interviews.

Case study | When human talent is helped by AI decision-support tools, quality and cost improvements are possible

ScreenPoint Medical

The landmark MASAI randomized trial in Sweden (over 105,000 women) compared two radiologists' mammogram reviews with those of one radiologist supported by an AI solution (Transpara). The results showed the human-AI pairing improved detection and reduced workload. Additional large trials are underway in Norway (AIMS with 140,000 women) and in the US (PRISM with 400,000 women).

Key challenges | Significant shortages of radiologists and an estimated 20% of breast cancers missed by mammograms[1]

Example in practice | AI-assisted mammography interpretation to improve detection, predict future risk, and assess heart disease

Approach

Technology | Study used the Transpara algorithm, developed by ScreenPoint Medical, for reviewing 2D mammography

Workflow optimization | Indicates that AI partitioning of low-risk scans on the basis of early successes could substantially reduce workload but delegation was not present in the study

Workforce redesign | Hybrid model of human-AI review instead of human-human review of scans

Results

AI support improved several areas

Clinical quality	**+29%** Increase in cancer detection, including 24% increase in invasive cancer detection
Productivity	**-44%** Reduction of radiologist's screen-reading workload
Risk stratification	Identification of high-risk women from normal scans, increasing early-detection capability Detection of heart disease markers during breast screening, enhancing current human capabilities and bending the cost curve

1. National Cancer Institute: Mammograms.

Note: MASAI = Mammography Screening with Artificial Intelligence; AIMS = Artificial Intelligence in Mammography Screening; PRISM = Pragmatic Randomized Trial of Artificial Intelligence for Screening Mammography.

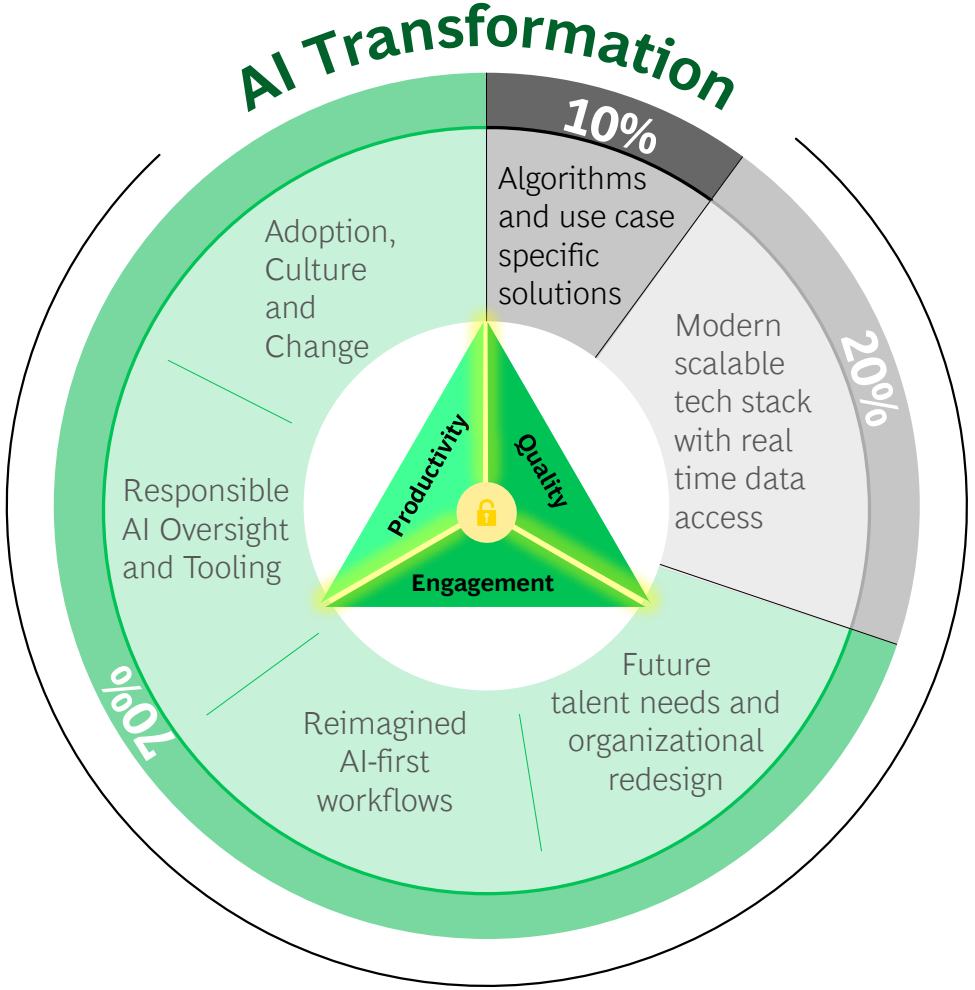
Sources: Substack, Ground Truths, "Why All Mammograms Should Incorporate A.I.," 2026; The Lancet, "Interval cancer, sensitivity, and specificity comparing AI-supported mammography screening with standard double reading without AI in the MASAI study."

Most AI transformations at providers have failed to scale because of a focus on “just the tech,” rather than an end-to-end change

10-20-70 model

Percentage of focus and effort to drive and ensure transformation success

Leading companies **see AI as a holistic transformation** that hinges on rewiring their organization, operating model, and processes, as well as upskilling their people and **driving adoption at scale**



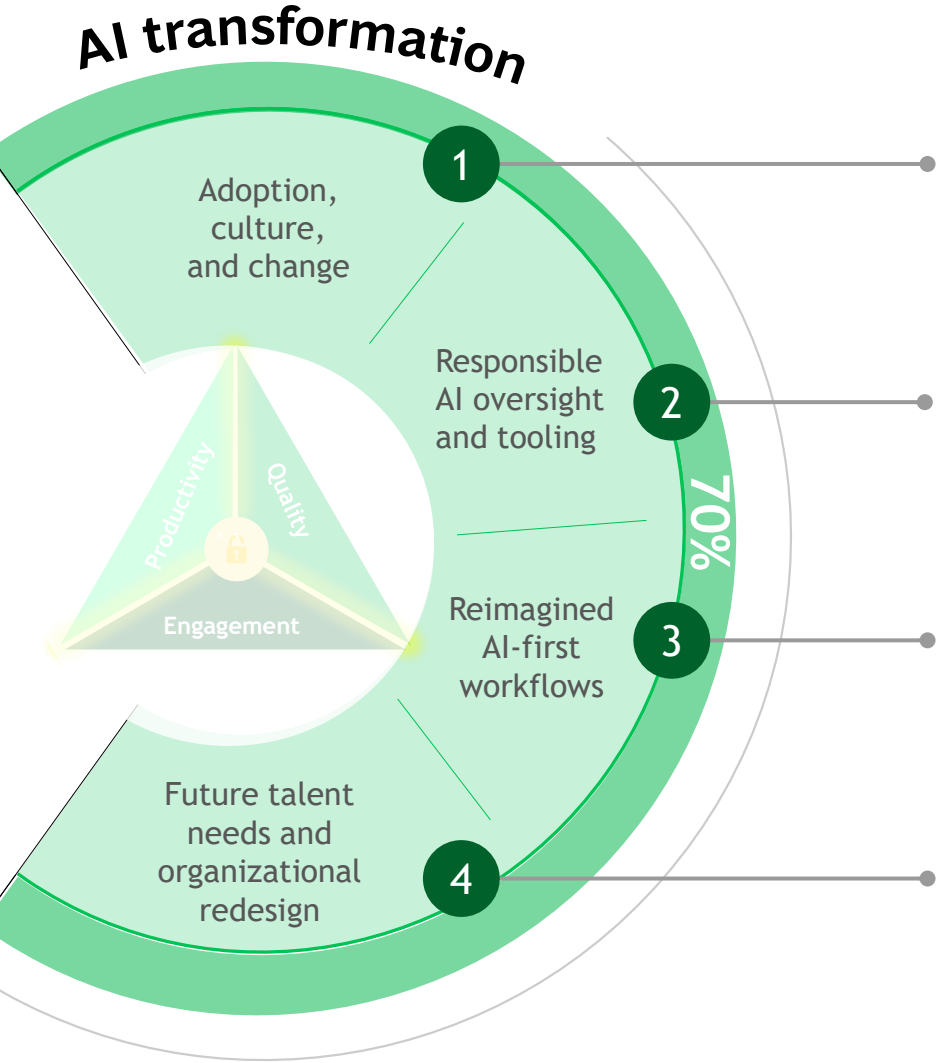
AI maturity is no longer the constraint -- organizational redesign is

78% of AI pilots have failed to scale due to a lack of focus on holistic redesign

Organizations that redesign workflows, authority, and incentives can capture disproportionate value

1. Source: Becker’s Healthcare.

Technical choices alone are insufficient and must be supported by a robust change effort around critical people components



Changes are not sequential but done in tandem

Change starts and is coordinated from the top to ensure value delivery against the business case

Institutionalize responsible AI through validation, access control, and continuous risk management

Redesign core functional end-to-end workflows with AI as a central component for efficiency and effectiveness, and then build the operating model to support those new requirements

Redesign roles to maximize value from AI; define the **future skills that are required to enable** the North Star vision and determine how to close any skills gap

Embedding the change will require paying rigorous attention across these four people components

Adoption, culture, and change

- **Define a small set of enterprise AI priorities** anchored in real workflow redesign and measurable value
- **Align incentives, KPIs, and capital allocation** to AI-driven economic and operational outcomes
- **Mobilize cross-functional teams (e.g., clinical, operations, and IT)** to execute against those priorities
- **Stand up a central execution function** to reinforce alignment and track delivery

Responsible AI oversight and tooling

- **Operationalize clinical model validation,** including bias testing and performance thresholds
- **Implement role-based access controls** and patient-level data segmentation across all workflows
- **Centralize vendor evaluation, model registry, and life cycle monitoring** across service lines

AI-first workflow redesign

- **Redesign end-to-end workflows to underpin the tech build**, cocreated and governed by senior leaders
- **Codify tacit knowledge** and embed it into the AI and GenAI prompts
- **Redefine roles and responsibilities alongside workflows,** leveraging all levers (e.g., centralize and automate)
- **Shift organizational structure to support centralized intelligence with federated execution**

Future talent needs

- **Redesign roles as hybrid AI-human** systems across clinical and nonclinical care
- **Create longitudinal AI and agentic support** and embed into daily work to assist, anticipate, and act
- **Build internal capability in AI oversight, workflow redesign, and data fluency**
- **Plan for a different labor mix**

Effective AI adoption and culture change require prioritizing initiatives at the executive level to overcome fragmentation and risk aversion

Set enterprise priorities

- **Define five to seven strategic AI-enabled use cases** tied to labor, access, or margin impact

Deep-dive to follow

- **Align capital allocation** and executive incentives to AI-driven outcomes
- **Establish clear hybrid decision rights** between AI systems and human leaders

Build and test cross-functionally

- Build out and execute initiatives with **cross-functional clinical, business, operations, and IT squads**
- Redesign end-to-end workflows before scaling AI tools
- **Define success metrics upfront:** capacity unlocked, costs reduced, and quality improved

Scale throughout operations

- **Transition validated use cases** into operational ownership with defined accountability
- Standardize **tooling and guardrails**
- **Track adoption and economic impact** alongside technical performance
- Sunset initiatives that fail to deliver sustained value

Deep dive | Identifying the most impactful use cases requires a holistic view of the scale of change – replacing point solutions with scalable transformation

Use five practices to choose strategic, high value use cases…

Anchor investments in material enterprise problems: Target use cases that materially expand capacity, reduce cost per episode, or address structural workforce constraints

Size the full investment upfront: Fund both technology and the central, operational redesign (e.g., tech stack) required to deliver durable impact

Fund use cases that build reusable enterprise capabilities: Each deployment must strengthen shared data, workflow redesign, and intelligence orchestration

Drive down marginal cost over time: Future use cases should deploy faster, cheaper, and with less change friction

Overinvest in the right early bets: Transformation becomes self-sustaining only when early initiatives create visible, repeatable value

…to move from discrete point solutions to scalable initiatives that realize enterprise ROI

Benefits

- ✓ Continuously builds toward the providers' North Star architecture
- ✓ Strengthens the centralized, operational capabilities (e.g., responsible AI and workflow redesign) required to scale pilots
- ✓ Builds reusable data, reasoning, and orchestration layers
- ✓ Decouples intelligence from individual vendors and point tools
- ✓ Compounds economic return across future use cases by building operational and technical capabilities
- ✓ Reduces the marginal cost of each additional deployment

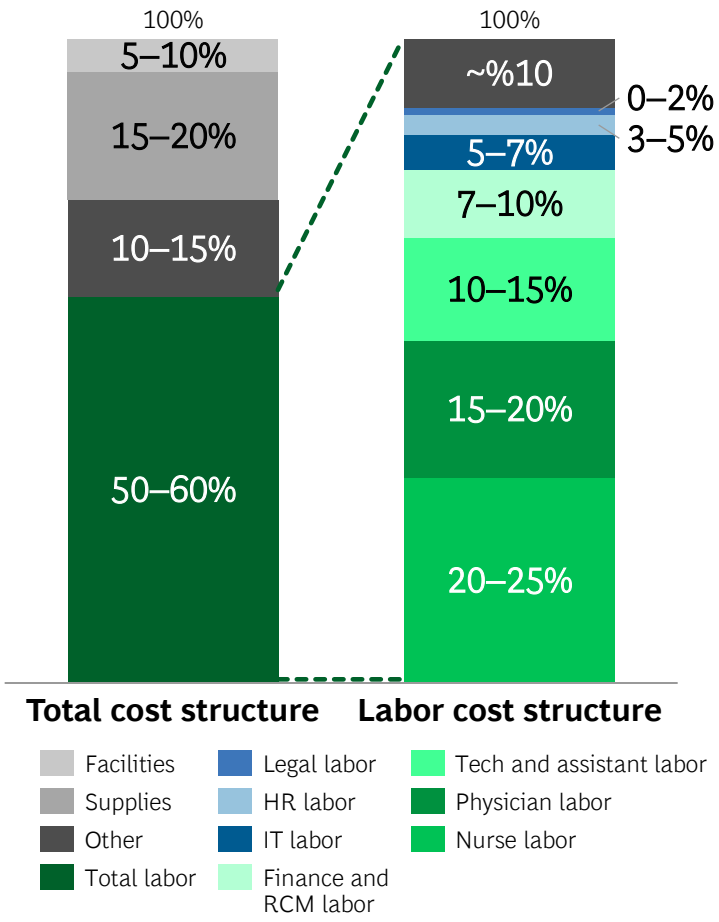
Tradeoffs

- ! Requires higher upfront investment
- ! Benefits are realized over the medium to long term

Leading providers prioritize initiatives that build reusable AI capabilities while selectively using key vendors for rapid value capture

Over time, providers can look to reduce the unit cost of care by augmenting their biggest cost driver—labor

Over 55% of providers' typical cost structure is driven by labor



Providers can draw on use cases that drive improved unit cost structure

Labor type	Use case	Examples reimagined
Legal	• **Contract generation** and compliance checklists	Rising compliance complexity: **AI manages contract life cycle; lawyers focus on negotiation and exceptions**
HR	• **Employee resources and roster management** (e.g., hiring, payroll and benefits, and credentialing)	**AI classifies incoming cases, resolves routine requests autonomously, and escalates exceptions** with full context
IT	• **Digital platform support** (e.g., troubleshooting, internal network support, and software coding)	Expanding digital footprint without proportional head count: **AI resolves routine support and automates change management**
Finance	• **Denials prediction** and automated appeals • **Claims reconciliation** • **Payment processing** automation	Manual claims workflows and denial risk: **Pre adjudication AI and automated appeals reduce human touch points**
Clinical	• **Ambient AI documentation** and chart summarization • **AI triage** and care routing • **Capacity optimization** • **Multimodal diagnostic** support	High-cost clinical time spent on routine tasks: **AI handles intake, documentation, and triage; clinicians concentrate on complex care**

Source: Providers' public financial statements; BCG experience.

All use cases will require a centralized Responsible AI in Healthcare infrastructure that includes policy, access control, and continuous oversight

Select points shown here that we believe are critical

Policy and ownership

Clinically accurate and reliable: Validate AI performance before deployment in clinical and operational workflows

Accountable and transparent: Assign named executive and clinical owners for every AI system

Fair and patient centered: Test for bias across populations and care settings

Safe and aligned to health care ethics: Require clinician review for high-risk decisions

Interpretable and auditable: Maintain traceable logs for quality and compliance review

Privacy enabled and data governed: Enforce HIPAA-aligned data use and consent policies

Enabling technology and controls

Established cybersecurity: Secure architecture with encryption, endpoint protection, and system hardening

Role-based access controls: Restrict patient record access by role, service line, and need-to-know basis

Data segmentation and logging: Monitor who accesses which records and flag inappropriate use

Vendor and partner governance: Require AI vendors to meet clinical, security, and data standards

Model validation and testing: Validate models against real-world data before production release

Continuous monitoring and risk evaluation: Track model drift, bias, and safety signals in real time

AI scale at most providers is constrained by a history of fragmented, locked, and disconnected data

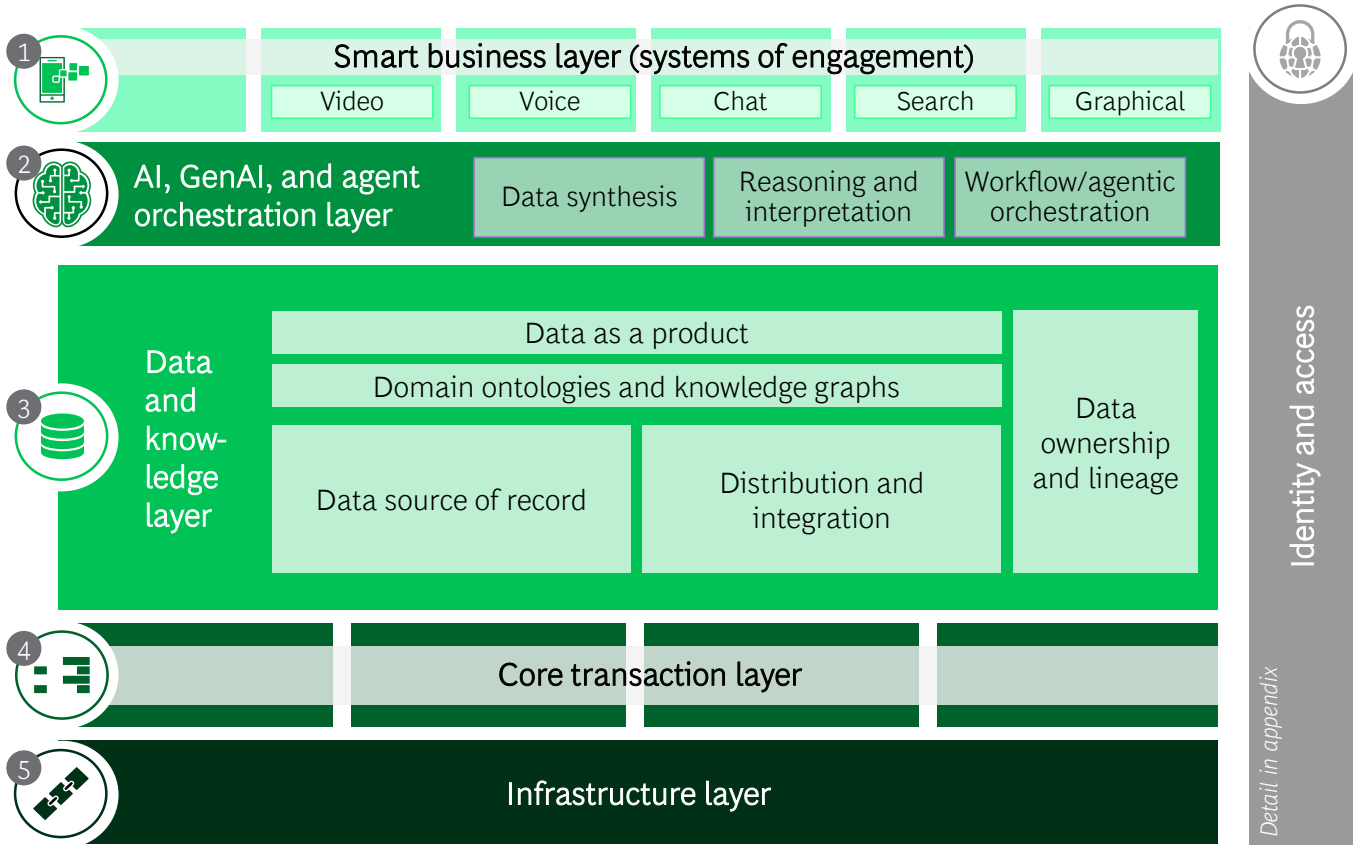
- Critical data, limiting real-time coordination
- Vendor rules and restricted access prevent cross-system integration
- Data moves in batches instead of in real time (event based), making action difficult
- Clinical, operational, and financial data sit in disconnected systems with inconsistent definitions
- Legacy platforms limit direct access to underlying data and constrain flexibility is trapped inside EHRs and separate operational systems
- Those closest to the problems are often not those closest to the data; ownership and accountability are unclear across the enterprise

To scale AI, providers must move beyond fragmented systems and create a connected enterprise data foundation

Note: EHR = electronic health record.

Providers must overcome legacy fragmentation to enable centrally owned intelligence and orchestration

North star reference architecture



What needs to change at most providers

Smart business layer (systems of engagement)
Democratize access through multimodal entry points, enabling greater access opportunities for all with AI-triggered actions across channels

AI and GenAI layer and agent orchestration

Create a centrally owned reasoning and orchestration layer that operates above the EHR and other core systems to manage agent performance, life cycle, routing, and degradation detection in real time

Data and knowledge layer

Create an enterprise data layer that unlocks EHR and operational data, standardizes definitions, and lets you query unstructured and multimodal data

Core transaction layer

Create a layer to call structured APIs, trigger events, and orchestrate workflows decided upon by GenAI layer across systems

Two imperatives for an AI strategy are leading where differentiation matters and building the capability to follow fast

1. Determine where to lead

Leading is essential where competitive advantage and margin defense matters most, but it entails greater risk

Why you would lead:

- Defend or extend a core differentiator including specialty depth, unique care models, brand positioning, or research assets to protect critical margin pools
- Unlock constrained access in competitive markets
- Reshape labor economics and set standards before vendors do

Be selective in choosing where to lead, accepting the investment necessary to achieve differentiated advantage

2. Prepare to follow fast

Following fast is table stakes and requires extensive capabilities to rapidly deploy solutions

Capabilities required:

- Enterprise operating model and change readiness
- Scalable technology architecture for rapid deployment
- Continuous market scanning and agile decision making

Building these capabilities requires significant investment but is foundational for long-term, organizational success

The real risk is being a laggard – an inevitable outcome of inaction

Health systems that act with focus and discipline have a compounding advantage, improving their cost structure, patient access, and care quality

Those that delay risk falling further behind as gaps in access, cost, and performance widen

AI is not a standalone strategy - it must be embedded dynamically across core enterprise priorities

Be nimble to the pace of change

Continuously scan the market and **capture AI value at the speed of its evolution;** annual or quarterly planning cycles must be driven in real time

Be bold where there is differentiation

Decide boldly and fast with empowered leaders and clear capital allocation

Be patient and employee centric

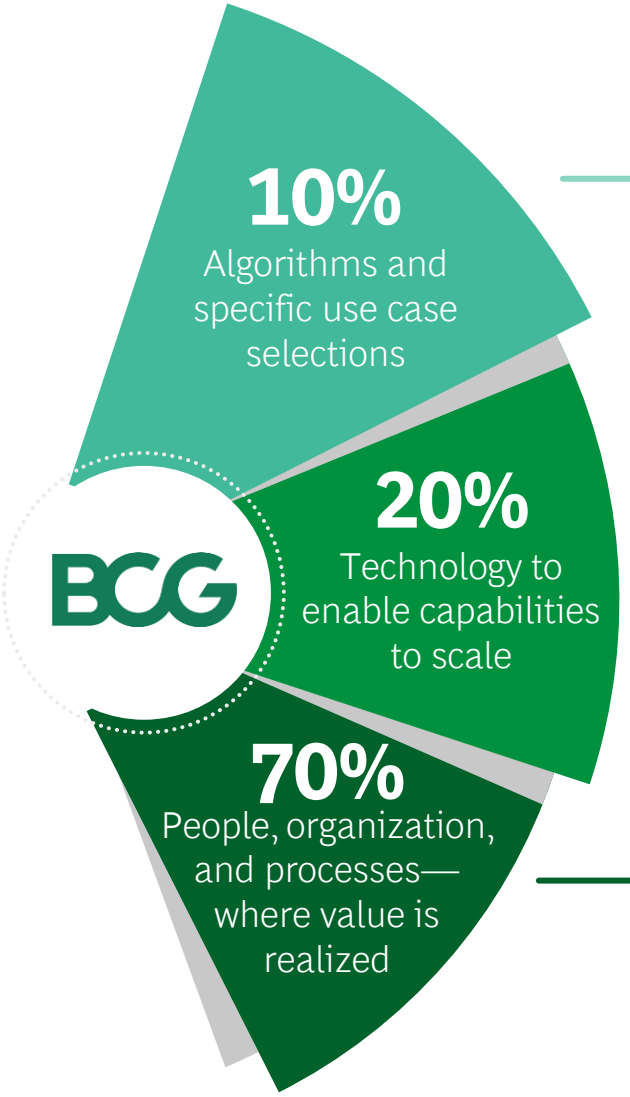
Adopt a patient and customer centric perspective that enables rapid innovation supported by a robust technical and operational change capability

Be encouraging of innovation

Ignite a **culture that champions change** and **amplifies early wins** to gain momentum

AI is an enterprise capability embedded in core strategic priorities

More information | Explore these and other deep-dive topics with BCG's AI transformation experts



- Defining value levers for a GenAI transformation, including clinical and administrative optimization
- Reimagining access in an agentic world across digital, in-person, and contact center channels
- Developing a rev cycle for the agentic world
- Diversifying revenue streams with new innovation structures

- Creating the right data infrastructure for agentic AI
- Defining a North Star architecture
- Enabling real-time cross-platform agent access
- Establishing intelligence and orchestration
- Creating a responsible approach to AI
- Evolving cybersecurity and access management

- Mobilizing for change with clear prioritization
- Redesigning clinical and administrative workflows
- Setting hybrid AI-human decision rights
- Upskilling workforce and manage change
- Creating governance accountability
- Embedding AI in service lines

BCG Experts | Our authors and topic experts on critical AI transformation topics for providers

Authors

Josh Kellar
Chicago
Kellar.Josh@bcg.com

Jason Holman
Denver
Holman.Jason@bcg.com

Our key contributors and topic experts

Johanna Benesty
Paris

Torben Danger
New York

Daniel Gorlin
Chicago

Josh Hilton
Chicago

Ben Horner
London

Matthew Huddle
New York

Etugo Nwokah
New York

Tom Retelewski
Chicago

Russell Schaefer
Washington DC

Monica Schwarm
Minneapolis

Paul Shorkey
Raleigh-Durham

Natasha Taylor
Denver

Nithya Vaduganathan
Boston

Scott Wilder
Dallas

Appendix

Additional detail on AI use cases across health systems and academic medical centers

Use cases across health systems' functions exist in four key areas

Most relevant for AMCs

Clinical operations

Patient care delivery (including ancillary services and clinical quality and safety) across all settings (ambulatory, inpatient, emergency department, and perioperative)

Administrative and back office

Nonclinical, shared infrastructure enabling core operations, including HR, IT, finance, revenue cycle, legal, risk, compliance, supply chain, and facilities

Research

Scientific discovery and innovation efforts, including basic science, translational research, and clinical trials

Education

Medical training and academic programs for students, residents, fellows, and ongoing clinical workforce development

Note: AMC = academic medical centers.

Clinical operations | AI solutions focus on optimizing provider capacity, raising the quality of care, and improving the patient experience

Outpatient

Ambient documentation: real-time capture and summarization of clinical interactions to reduce documentation burden, increase patient care capacity and improve provider experience (C, Ca, E)

AI clinical decision support & care planning: intelligent clinical decision support tools embedded in EHR suggest evidence-based & guideline-informed diagnoses, potential next steps, and management plans (Ca, Q, E)

Operating room optimization: Predictive staffing and scheduling to reduce bottlenecks/idle capacity, increase throughput & revenue (C, Ca, R, Q)

AI-augmented surgery: AI-enabled intraoperative visualization and guidance to support decision-making and reduce complications (Q, E)

AI-driven access, triage, navigation: automated triage based on patient symptoms and data, urgency, priority and guidance, routing and scheduling to optimize site of care and reduce access friction (C, Ca, R, E)

Inpatient

Patient complication & deterioration detection: Continuous monitoring to identify at-risk patients earlier, enabling faster intervention and throughput (Ca, Q, E)

Predictive discharge planning & care transitions: Predictive discharge barriers identification, services coordination & next-step planning to reduce LoS (Ca, C)

Bed management & Staffing AI: intelligent command centers forecast admissions and ED demand to adjust staffing and bed mgmt., prioritizing flow, staffing, bed availability (LWBS reduction) (Ca, Q, E)

Patient engagement & educational platform: Personalized education, instructions and reminders during hospitalization to improve discharge readiness (Ca, E)

Note: LWBS = left without being seen. AI solutions that are in use today are implemented beyond pilots (e.g., enterprise rollout, multiple sites, and routine operations). AI solutions that are in development are pilots, limited rollouts, or emerging solutions (not broadly in operation).

C Cost · Ca Capacity · R Revenue uplift · Q Quality and risk reduction · E Experience · In use today · In development

Clinical operations | Employee facing AI solutions

AI solution	Care setting		Value impact				
	Outpatient	Inpatient	Cost	Capacity	Revenue	Quality	Experience
Ambient AI scribe documentation	✓	✓	●	●	○		○
Chart summarization of patient information and history	✓	✓		●		○	
AI patient intake and HPI collection	✓	✓	●	●			
Automated patient paperwork completion (e.g., school forms, health clearance)	✓	✓	●				○
Customizable templates for documentation	✓	✓		●		○	
AI-supported treatment option rankings	✓	✓				●	
Data-driven lab testing and imaging	✓	✓		●		●	
Imaging interpretation with rapid clinician intervention	✓	✓	●	●		○	
Pathology processing for rapid and accurate diagnoses	✓	✓		○		●	
AI-enabled diagnostic prioritization and safety	✓	✓		○		●	
Care decision support and care planning	✓	✓	○	●		●	○
Predictive discharge planning and care transitions		✓		●		○	
Operating room optimization and augmented surgery (e.g., visualization tools)	✓	✓				●	●
Patient complication and deterioration detection	✓	✓	○	●		●	○
AI-driven access, triage, and navigation	✓		●	●		●	●
Remote monitoring and alerts on patient health status	✓			○		●	
Automated check-in	✓		●	●			○
AI-led coordination for social work needs	✓	✓				●	○
AI- and robotics-enabled pharmacy automation	✓	✓	●			○	
AI-powered robots (e.g., robots that can deliver supplies around the hospital)		✓	●	○			○

● **Primary value driver** (e.g., main rationale for adopting solution)
○ **Secondary benefits** (e.g., possible value-add alongside primary value driver)

Note: HPI = history of present illness.

Clinical operations | Patient-facing AI solutions

AI solution	Care setting		Value impact				
	Outpatient	Inpatient	Cost	Capacity	Revenue	Quality	Experience
Provider network lookup	✓						●
Smart triage recommendations, on-demand video consultations with specialists	✓			●			○
Form-completion assistance (e.g., health questionnaires)	✓	✓					●
Real-time patient flow prediction and appointment queue, wait time estimates	✓						●
Integrated transportation for visits	✓						●
Automatic scheduling for follow-ups	✓	✓		●			○
Medication reminders	✓	✓				●	○
AI agents for post care support and virtual coaching	✓		○	○			●
AI symptom checker	✓					●	
24-7 automated clinician companion	✓	✓					●
Virtual emergency response coordination	✓					●	○
Patient engagement and educational platforms (e.g., postoperative care)	✓	✓	○	○		●	●
Automated mental health check-ins	✓					●	○
Proactive outreach and intervention for early disease detection	✓			●		●	
AI virtual palliative care support	✓	✓				●	●
Post discharge dietary and lifestyle coaching	✓					●	●
Personalized remote rehab and exercise guidance	✓					●	○
Multilingual and accessible education	✓	✓				●	●

● **Primary value driver** (e.g., main rationale for adopting solution)

○ **Secondary benefits** (e.g., possible value-add alongside primary value driver)

Administrative and back office | AI solutions deliver clear ROI, with cost reduction via operational efficiency gains, coupled with capacity and revenue growth

People & workforce ops

Employee payroll & benefits admin automation: automation of routine processes & staff inquiries to reduce manual workload and improve employee experience — C Ca E

Shift scheduling & self-service swaps: leverage AI to forecast patient volume and optimize staff schedules — C Ca E

AI hiring tools: automate candidate screening and interview scheduling, draft role descriptions, surface best-fit applicants to reduce time-to-hire and recruiter workload — C Ca E

Finance & commercial ops

AI coding, billing, & prior authorization automation[1]: RCM teams deploy AI for coding and billing audits. AI assistants help clinical staff handle prior auth by auto-filling forms and checking payer rules — C Ca R E

AI procurement tools: automate intake and triage of purchase requests, recommend preferred vendors, flag contract / pricing anomalies to improve compliance & reduce spend leakage — C Ca

Transparent billing assistants & coverage coordination: AI chatbots help patients understand and manage their bills — Q E

Tech & enterprise services

IT service desk automation & copilot: chatbots for quick help with tech issues instead of calling help desks and copilot for navigating IT knowledge for self-service fixes — C Ca

Virtual assistants for admin: AI agents handle routine requests for non-clinical staff (e.g. voice bot for after hour calls; HR chat bot) — Ca E

IT operations & security: Proactive IT monitoring & incident prevention — C Q

AI software development: AI-augmented dev tools to shorten release cycles for internal apps — C Ca

Risk / legal / compliance

Policy & compliance monitoring: Employ AI to monitor clinical documentation and processes for compliance — Ca Q

Contract lifecycle management automation: leverage AI to review and manage contracts — Ca Q

Feedback and safety: AI-based feedback systems that detect dissatisfaction or safety concerns — E

1. Combines automated coding and charge capture support; insurance eligibility and benefits verification (front-end RCM); and prior authorization and payer rules validation. Note: Solutions in use today are implemented beyond pilots (e.g., enterprise rollout, multiple sites, and routine operations). AI solutions that are in development are pilots, limited rollouts, or emerging solutions (not broadly in operation).

C Cost · Ca Capacity · R Revenue uplift · Q Quality and risk reduction · E Experience · In use today · In development

Administrative and back office | AI solutions (I/III)

AI solution	Administrative subcategories				Value impact				
	People and workforce operations	Finance and commercial operations	Tech and enterprise services	Risk, legal, and compliance	Cost	Capacity	Revenue	Quality	Experience
Provider credentialing & privileging self-service	✓				●	●			
Role-based HR self-service copilot[1]	✓				●			○	○
Provider scheduling and admin coordination	✓				○	●			○
Mandatory training and attestation assistant	✓				○			●	○
Expense and reimbursement automation[1]		✓			●				○
Payer policy coverage interpretation for clinicians		✓			○		●	◐	○
Provider productivity and compensation transparency analytics		✓				●			●
IT service desk automation and copilot[1]			✓		●	○			○
Enterprise policy and knowledge retrieval copilot[1]			✓		○	●			○
Administrative productivity copilot			✓		◐	●			○
Policy and compliance copilot				✓	◐			●	○
Contract review support for clinician				✓	○			●	○
Care quality and safety surveillance				✓		◐		●	○
Shift scheduling and self-service swaps	✓				○	●			○
Onboarding and offboarding workflow automation	✓				●	○			○
Training and competency tracking assistant	✓				◐			●	○
Time and attendance anomaly detection	✓				●			○	
Point-of-use supply replenishment suggestions		✓			●	◐		○	○
Policy and compliance monitoring				✓	○			●	
Safety event reporting copilot				✓		○		●	○

● **Primary value driver** (e.g., main rationale for adopting solution) ○ **Secondary benefits** (e.g., possible value-add alongside primary value driver)

1. Applies to all staff.

Administrative and back office | AI solutions (II/III)

AI solution	Administrative subcategories				Value impact				
	People and workforce operations	Finance and commercial operations	Tech and enterprise services	Risk, legal, and compliance	Cost	Capacity	Revenue	Quality	Experience
Recruiting and interview workflow automation	✓				●	○			
Credential operations automation	✓				●	●			
Workforce planning analytics	✓				●	●		○	
Retention and engagement analytics	✓				○				○
Employee payroll and benefits admin automation	✓				●	○			○
Performance management copilot	✓				○	●			○
Automated coding and charge capture support		✓			○		●	●	
Insurance eligibility and benefits verification (front-end RCM)		✓			●		○		○
Prior authorization and payer rules validation		✓			○		●		○
Denials prediction, work queue prioritization, and appeals drafting		✓			○		●	○	
Underpayment detection and contract compliance analytics		✓			○		●	○	
Revenue reporting and root-cause analytics		✓			○	●	○		
Price estimation and patient financial responsibility calculation		✓			○		○		●
Finance and accounting automation		✓			●	○		○	
Procurement and supply chain AI		✓			●	○		○	
Internal software development & analytics copilots			✓		○	●		○	
IT operations and security			✓		●	○		○	
Omnichannel contact center AI			✓		●	○			○

● **Primary value driver** (e.g., main rationale for adopting solution)

○ **Secondary benefits** (e.g., possible value-add alongside primary value driver)

Administrative and back office | AI solutions (III/III)

AI solution	Administrative subcategories				Value impact				
	People and workforce operations	Finance and commercial operations	Tech and enterprise services	Risk, legal, and compliance	Cost	Capacity	Revenue	Quality	Experience
Cybersecurity monitoring and SOC copilots			✓		●	●		●	
Facilities / biomed predictive maintenance			✓		●	●		●	
Administrative virtual assistants[1]			✓		●	●		●	●
Document intake and routing automation			✓		●	●		●	
Contract life cycle management automation				✓	●	●		●	
Regulatory change monitoring & policy drafting				✓	●	●		●	
Compliance checklists and audit automation				✓	●	●		●	
Internal investigation support				✓	●	●		●	
Enterprise risk analytics				✓	●	●		●	
Vendor and third-party risk analytics				✓	●	●		●	
Fraud, waste, and abuse analytics and detection				✓	●		●	●	
AI self-service scheduling, cancellations, and rescheduling		✓			●	●	●		●
24-7 service bots			✓		●	●		●	●
Price estimates, benefit explanation, and coverage coordination		✓			●		●		●
AI billing explanation, payment plan support, and reminders		✓			●	●	●		●
Financial aid and alternative coverage mapping		✓			●		●		●
Feedback and safety				✓	●	●		●	●

● **Primary value driver** (e.g., main rationale for adopting solution) ● **Secondary benefits** (e.g., possible value-add alongside primary value driver)

1. Applies to all staff, 2. Note: SOC = security operations center.

Research | AI is accelerating every phase of research through rapid insight generation, optimized trial design, and streamlined operations from grant inception to publication

Discovery and translational

AI-accelerated simulation and target discovery:[1] Deep-learning models analyze vast chemical and genomic data to identify new drug candidates and targets faster Ca Q C

Clinical trials

AI-assisted clinical trial design and feasibility: Tools help design clinical trials by simulating outcomes, selecting optimal patient criteria, enabling smaller or adaptive trial designs, and predicting patient responses Ca Q C

Automated trial monitoring: AI monitors data in real time to detect safety signals or adherence issues, flagging anomalies to facilitate earlier intervention by coordinators Ca Q E

Research operations

Automated literature review and study knowledge management:[2] AI research assistants search and summarize scientific literature; chatbots indexed on institutional research data answer researchers' questions Ca Q E

Intelligent grant, contract review, and compliance: AI systems trained on historical proposals suggest improvements to grant narratives, predict scores, and help research offices optimize drafts C Ca R Q E

Cross-cutting

Data abstraction and analysis and pattern discovery: AI automates extraction of research data from clinical records, saving hours of chart review; AI algorithms sift through complex data sets to find novel patterns or biomarkers that humans may miss Ca C E

AI-enhanced clinical trial enrollment: NLP-powered systems parse patient records and clinical trial criteria to match eligible participants to ongoing trials Ca C

Personalized clinical trial matching: AI tools help patients and physicians find relevant clinical trials for patients' condition; AI-driven engagement apps keep participants informed and engaged during trials Q E

1. Combines AI-driven hypothesis generation and in silico experimentation and drug or biological discovery.
2. Combines AI assistant for study coordination, IRB and regulatory workflow automation, and AI-enabled research portfolio management. Note: IRB = Institutional Review Board; NLP = natural language processing. AI solutions that are in use today are implemented beyond pilots (e.g., enterprise rollout, multiple sites, and routine operations). AI solutions that are in development are pilots, limited rollouts, or emerging solutions (not broadly in operation).

C Cost Ca Capacity R Revenue uplift Q Quality and risk reduction
E Experience In use today In development

Research | AI solutions

AI solution	Research subcategories			Value impact				
	Discovery and translational	Clinical trials	Research operations	Cost	Capacity	Revenue	Quality	Experience
AI-driven hypothesis generation	✓			●	●		●	
In silico experimentation and drug or biological discovery	✓			●	●		●	
AI-assisted clinical trial design and feasibility		✓		●	●		●	
Safety monitoring, protocol adherence, and decision support		✓			●		●	
AI-enabled scientific-insight generation	✓		✓		●		●	●
Laboratory automation with AI	✓			●	●		●	
AI-enhanced clinical trial enrollment		✓		●	●			
Trial data management automation		✓		●	●		●	
Participant adherence monitoring		✓		●			●	●
Data abstraction and analysis or pattern discovery		✓	✓	●	●		●	●
AI assistants for study coordination			✓	●	●			●
Intelligent grant writing, contract review, and compliance			✓	●	●	●		
Automated trial monitoring		✓		●	●		●	
IRB and regulatory workflow automation			✓	●	●		●	
AI-enabled research portfolio management			✓	●	●		●	

● **Primary value driver** (e.g., main rationale for adopting solution)

● **Secondary benefits** (e.g., possible value-add alongside primary value driver)

Education | AI education solutions help providers reduce administrative burdens and learn personalization via simulation and adaptive feedback

Classroom and didactics

Personalized AI tutor and adaptative-learning platforms:[1] GenAI TAs provide on-demand Q&A and tailored explanations based on course materials; AI-powered e-learning platforms adjust difficulty and content based on the learner's progress Ca Q E

Onboarding automation and acceleration: AI chatbots onboard new administrative staff by guiding them through required training, answering FAQs, and tracking progress Ca Q

Clinical training

Virtual patient simulation and coaching:[2] AI-driven simulators enable realistic clinical scenarios with immediate feedback Ca C Q E

AI-augmented skills training:[3] AI-enabled simulation, coaching, and competency tracking that standardizes procedures, communication, and protocol and device training Ca C E

Workforce development

Personalized learning-assessment engine and CME-planning copilot:[4] AI analyzes competencies and identifies areas for refreshers (e.g., tracking clinical errors or compliance issues) and relevant CME

Just-in-time microlearning embedded in the workflow: Intelligent personalization of CME by analyzing patient outcomes or practice patterns to recommend relevant microlearning modules Ca Q

Continuous compliance training: AI platforms help keep employees up to date on policies and skills Ca Q

C Cost Ca Capacity R Revenue uplift Q Quality and risk reduction E Experience In use today In development

1. Combines faculty content copilot, question bank and case vignette generation, automated learner feedback drafting, learning analytics for early intervention, and competency-based progression support. 2. Combines guideline and protocol update copilot for clinicians and CME-planning copilot. 3. Combines procedure coaching and skill assessment; competency-based progression support; communication skills training with AI role play; automated skills checkoffs; protocol training at scale; and equipment- and device-training copilots.
4. Combines accreditation evidence and compliance automation and credentialing automation. Note: TA = teaching assistant; Q&A = question and answer; CME = continuing medical education. AI solutions that are in use today are implemented beyond pilots (e.g., enterprise rollout, multiple sites, and routine operations). AI solutions that are in development are pilots, limited rollouts, or emerging solutions (not broadly in operation).

Education | AI solutions (I/II)

AI solution	Education subcategories			Value impact				
	Classroom and didactics	Clinical training	Workforce development	Cost	Capacity	Revenue	Quality	Experience
Faculty content copilot	✓			●	●		●	●
Question bank and case vignette generation	✓				●		●	●
Automated learner feedback drafting	✓				●		●	●
Learning analytics for early intervention	✓				●		●	●
AI “virtual patient” and interactive case simulation		✓			●		●	●
Procedure coaching and skill assessment		✓			●		●	●
Real-time coaching prompts in simulation		✓			●		●	
Competency-based progression support		✓			●		●	
Guideline and protocol update copilot for clinicians			✓	●			●	●
Just-in-time microlearning embedded in workflow			✓		●		●	●
CME-planning copilot			✓	●	●	●	●	
Instructor content copilot	✓			●	●		●	●
Automated knowledge checks	✓				●		●	●
Learner Q&A tutor (with guard rails)	✓				●		●	●
Simulation scenario authoring and variation		✓			●		●	●
Communication skills training with AI role		✓			●		●	●
Automated skills checkoffs		✓		●	●		●	
Protocol training at scale			✓	●	●		●	●
Onboarding automation and acceleration			✓	●	●		●	●
Equipment- and device-training copilots			✓	●			●	●
Curriculum mapping & content management automation	✓			●	●		●	
Learning management system copilot	✓			●	●		●	
Assessment operations automation	✓			●	●		●	
Student and trainee services chatbot	✓			1	●			●

● **Primary value driver** (e.g., main rationale for adopting solution)

● **Secondary benefits** (e.g., possible value-add alongside primary value driver)

Education | AI solutions (II/II)

AI solution	Education subcategories			Value impact				
	Classroom and didactics	Clinical training	Workforce development	Cost	Capacity	Revenue	Quality	Experience
Rotation scheduling and placement optimization		✓		●	●		○	○
Evaluation workflow automation		✓		●	●		○	
Accreditation evidence and compliance automation		✓		●	○		○	
Credentialing and CME operations automation			✓	●	○		○	
Personalized learning assignment engine			✓	●	○		●	
External education program enablement			✓	○		●		○

● **Primary value driver** (e.g., main rationale for adopting solution)

○ **Secondary benefits** (e.g., possible value-add alongside primary value driver)


BCG