Qventus

White paper

How healthcare CIOs are shaping AI's role in patient care and operations

Inside the minds of IT leaders driving AI strategy

The rapid evolution of artificial intelligence (AI) and digital solutions has placed unprecedented demands on healthcare leadership—especially Chief Information Officers (CIOs) and Chief Medical Information Officers (CMIOs)—who are now central to strategic decision-making.

Healthcare leaders must navigate a high-pressure, rapidly evolving environment: identifying and prioritizing AI use cases, deciding between buying solutions from vendors or partnering with their EHRs, and navigating the urgent need for clear AI governance as innovation accelerates.

Over the past five years, the CIO's role has shifted dramatically, from traditional "keep the lights on" responsibilities, to a strategic leadership position. **"As of the last 10 to 15 years, the role has transitioned to be problem solvers and be at the table,"** says a Florida-based CIO of an academic health system, reflecting on the importance of the CIO in the C-suite. **"There's nothing in an organization that doesn't rely on IT."**

These technology investments have ranged from moving paper records to electronic medical records, building cloud-based data environments to bolster the availability of that data and integrate multiple applications more seamlessly, and more recently, embracing AI and generative AI. According to that same Florida-based CIO, creating efficiencies through the use of technology is of great importance to technologists. **"AI is a big part of that,"** he says.

CIOs' roles in leading AI strategies increased from 31% to 86%, while CEO involvement dropped from 34% to 8%, year over year[1]. **"Today's CIO persona is 'I prefer you not pick me out of the lineup as an IT person.' I'm a health system executive thinking about our bigger objectives," observes the CIO of a large nonprofit health system.**

Today, no operational transformation—whether it's reducing length of stay, driving strategic surgical growth, or alleviating staff burnout—can succeed without IT's input and support. AI is rapidly emerging as a critical tool for innovative CIOs seeking to enhance operational efficiency and deliver measurable impact for their organizations.

> **"There is a tremendous amount of risk in doing nothing. So whether we are comfortable or not, we need to embrace experimentation. It is essential for everything from a competitive recruitment standpoint to delivering better medicine."**
>
> Mid Atlantic-based Chief Innovation Officer

1. "KPMG AI Quarterly Pulse Survey." KPMG, April 16, 2025

Methodology

This white paper is based on a survey and 1:1 interviews with CIOs, Chief Medical Information Officers (CMIOs), and other senior IT leadership at medium and large health systems. The findings focus on how hospitals and health systems are investing in AI to deliver more quality care to patients—tools that can make workers more productive, happier, and less burnt out; more efficiently treat and discharge patients; and boost capacity. This survey delivers a comprehensive, actionable roadmap for healthcare leaders, addressing:

- **How to make smart build-versus-buy decisions for AI**
- **Key criteria for evaluating and selecting AI vendors**
- **Identifying and measuring high-ROI AI use cases**
- **What it takes for successful AI implementation**

The imperative is clear: health systems that fail to act risk falling behind in both patient care and clinician recruitment. Embracing AI and digital transformation is no longer optional—it is essential for future competitiveness and excellence in healthcare delivery.

About the survey respondents

100%
VP and above

70%
have more than 750 beds

54%
have more than 60 ORs

70%
using Epic

All respondents meet the following criteria:

- In their role for more than 3 years
- Involved in decision-making around purchasing and evaluating AI technology
- Involved in AI strategy and implementation
- Work at health systems that have a minimum of 500 beds and 30 ORs

AI solutions for strained health systems

Hospitals and health systems are facing numerous challenges: rising costs, increased cybersecurity threats, workforce shortages, a post-pandemic staff that feels burnt out, rising labor expenses, and aging populations that require more care.

These challenges are heightened for small, regional health centers that are frequently confronted with funding constraints, limited access to new forms of technology, and aging infrastructure. Academic medical centers, meanwhile, face challenges related to labor, operational inefficiencies, and reimbursement rates rising at a lower rate than costs. "Staying afloat—net profitability—is the challenge," says Joseph Sanford, MD, Chief Clinical Informatics Officer at University of Arkansas for Medical Sciences (UAMS).

"Besides financial stability, which everyone has on their plate—as we say, 'no margin, no mission'—a big objective for us is we're always focused on patient satisfaction, patient care quality", says a Senior Vice President and CIO at a Texas-based health system. **"But our other really big one is growth."**

Most CIOs say they are still developing their AI strategies

AI has the potential to solve some of the key challenges around healthcare worker shortages, capacity constraints, and revenue generation. Unfortunately, it can become a catch-22 where AI solutions could alleviate pressures on profit, but freeing up the dollars to get there is an uphill battle for IT leaders. Within the next five years, it is projected that AI technologies available today could generate $24 billion to $48 billion for hospitals in annual run rate net savings from administrative costs.

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Today's CIOs are in the strategy setting, experimentation, and learning phase. Only 14% of survey respondents told Qventus that their health system's current AI strategy was "comprehensive and well defined." Two thirds say they were still developing their AI strategy, while 20% concede it is "limited or fragmented."

How would you describe your health system's current AI strategy?

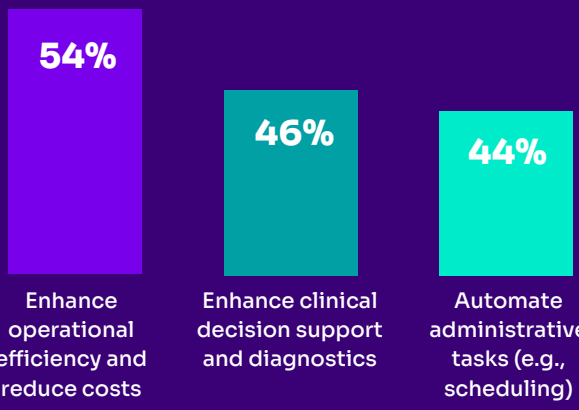
Over half of CIOs and other technology leaders surveyed say that **"Leading strategy development and execution"** is the primary role of IT within their organizations. **"AI is transformational, and as a system we need to be experimenting, learning, and growing in our use of it,"** says the mid-Atlantic-based chief innovation officer. **"Recognize that transformation is a forever objective."**

2. "How the healthcare industry can weather ongoing challenges," McKinsey, December 5, 2024

Aligning AI with business impact

Nearly two thirds of CIOs surveyed say that their IT strategies are very well aligned with overall business objectives. IT plays a critical role in streamlining workflows, enhancing data management and security, improving communication between providers and patients, and enabling technologies like AI—all of which drive operational efficiency and better patient outcomes.

On which strategic objectives do you think AI will have the biggest impact in care operations?



But AI is not merely a shiny object that CIOs can deploy across a health system solely because it is a new, buzzy technology. **"We believe AI is a tool along with other technologies and tactics to support continuous improvement,"** says a Mid-Atlantic-based Chief Innovation Officer.

One CMIO at a large Midwest academic health system says his AI roadmap must align with the medical center's strategy. New investments in the technology must align with business impact. **"It's easy to think about what AI can do, but the more important issue is what AI is solving,"** he says. **"Is this a problem we really have and is AI the thing to fix it?"**

At one large non-profit health system, the VP of IT says IT leaders must work collaboratively with users to best understand where AI can have the greatest impact. **"If we come up with any brilliant idea as a technologist and push that solution to the business user, it is not going to work,"** he says. **"But if business users say, 'This is where my problem is, this is the way it can be fixed'—that is the way this is going to work."**

While most healthcare, pharmaceutical, and medical products organizations have adopted generative AI in at least one function[4], many CIOs insist that keeping humans in the loop is critical to avoiding risks and ensuring safe, effective deployment. **"Everyone thinks AI is going to come in and save the day—save resources and make things better,"** says a Vice President & CIO at a large Northeastern U.S. health system. **"It's just not the case. If you get an AI process involved and you don't deal with the workflow and human factors, you're just going to make bad things happen faster."**

One CIO says his Miami-based medical system gets frontline workers engaged to understand where there are gaps in workflows that technology can help solve. **"It's not about IT...It is about you and how you want technology to help you,"** he says.

4. "The state of AI", McKinsey, March 2025

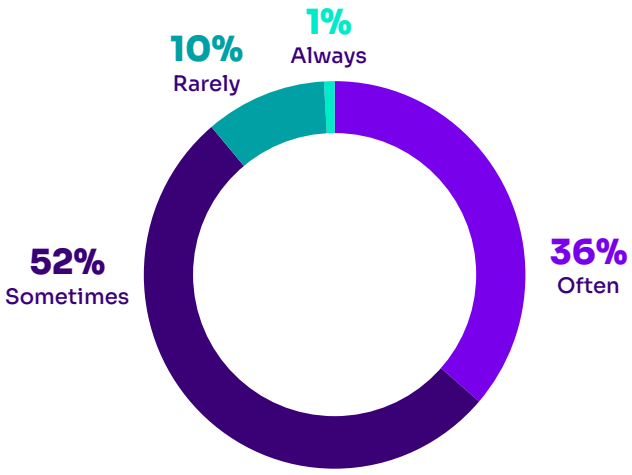
CIOs weigh buy vs. build for AI solutions

As CIOs settle into the reality that they will be investing more dollars in the years ahead in AI, they have to confront the "buy versus build" conundrum that arises with every new technology advancement.

To harness the true power of AI, organizations must first determine if it makes sense to build solutions internally, which requires employees that have the expertise, time to build, and ability to maintain in perpetuity; buy off-the-shelf AI products and services from vendors, where cost effectiveness and speed to implementation are often the top considerations; or partner with their current EHR, which is already integrated and offers convenience but may lack the sophistication that is needed to generate the results systems are seeking and that patients deserve.

A clear path is already emerging. Many CIOs interviewed and surveyed felt that they did not have the internal expertise or resources to successfully build and deploy their own solutions. Many CIOs opt to move forward with their EHR—it's what's familiar and it's already deeply embedded in workflows, but stagnation can quickly creep up as they wait for promised technology solutions to move from roadmap to reality. In some cases, when those solutions are eventually deployed, they don't produce nearly the same results that a company specializing in AI could provide.

On average, do EHRs stick to their roadmap commitments and timelines?



When asked where CIOs thought that their electronic health records (EHR) system is on their AI journey, 60% of respondents said it was "early days." Only 2% deemed them "mature."

One VP says he never intends to build his own AI tools, as his not-for-profit health system is not a software company. **"We don't believe that's the way to go,"** he says. **"Some of your bigger academics and larger health systems that have deep pockets and big resource pools might feel differently, but that's where we are."**

The healthcare industry is already embracing AI technologies at a far faster pace than when they moved from paper to EHRs, a process that took more than a decade to complete. 60% of executives report that their AI budgets outpace overall IT spending, and 95% of healthcare organizations see AI as a strategic priority[5].

Only **2%** of CIOs think that their EHR system is "mature" on their AI journey and roadmap.

5. "The Healthcare AI Adoption Index." Bessemer Venture Partners, Amazon Web Services, Bain & Company, April 15, 2025

CIOs get on the same page with their AI vendors

A CMIO at a large academic health system says most health systems don't have a huge team of AI scientists and researchers and tend to gravitate to big tech companies. That leads the medical center to buy more than build. **"We think that there is a growing trend of vendors who want to partner with a medical center,"** he says, and that those AI vendors want to trial a proof of concept for their technology and scale the technology to other clients. **"We recognize we don't have all the IT experts internally, but we can work with a vendor more in a partnership model, which means lower licensing costs and overall costs in terms of using their resources."**

One CIO says she has an ongoing conversation with current vendors to understand what technology solutions they are planning to launch next. **"If they have something in the road map in the next year or so, we are not going to think about going any further with somebody else."**

CIOs ranked cost comparisons, the size of a return on investment, and speed to unlock value as the most important issues they would consider when deciding to buy versus build AI solutions. Customization, change management, and time to implementation were all less important.

When opting to build, nearly two thirds of those surveyed said that team labor and EHR integration costs were the primary way they would quantify the costs of internal AI development.

"A purchase with a vendor who has a very mature model may help you get some use cases off the ground quicker, whereas building it, it's going to probably be a highly iterative, longer process to get to your desired end state and you have to have the ability to withstand the failures," explains the CIO of one of the largest New Jersey-based health systems. **"And if you're dealing with patients, you may not be able to withstand the failures, it could become, for example, a perception problem for your organization."**

Weighing EHR-based AI development versus third-party vendors

When asked to rank their primary considerations when choosing between EHR-based AI development and third-party vendors, the top considerations were functionality and features, integration capabilities, and cost.

A Mid-Atlantic-based Chief Innovation Officer says their organization has an AI steering group that oversees governance and guides the system's policies around use and ethics of AI. **"We identify problems to solve and consider the best solution, which may or may not be AI."**

CIOs say great collaboration is needed between hospitals and health systems to better understand workflow challenges and where AI solutions can be adopted to create a solution.

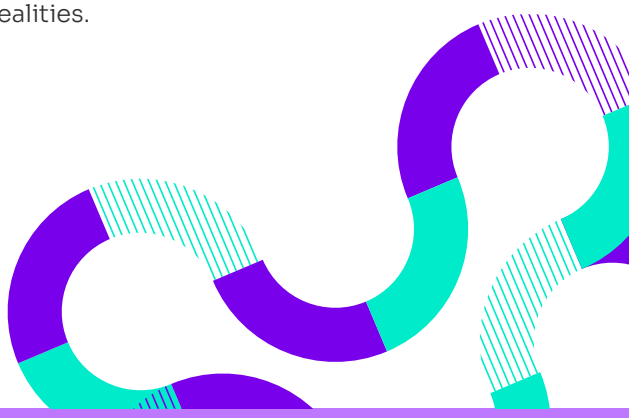
That sounds simple enough, but there are plenty of pitfalls. There's a lot of mistrust about proclaimed ROI from vendors, actual adoption from the workforce can be a challenge if AI isn't built for purpose, and it isn't enough to just get the AI "right." Data must be properly organized, workers trained to understand how to use the tools, and the right large language model needs to be trained on relevant healthcare data for the proper outcomes.

One of the IT leaders said they are weary of what third-party vendors have to offer, ensuring that his team verifies whether it's a model that the vendor actually built themselves—as promised—and not just repackaging a large language model built by another vendor.

And then, there are the risks associated with AI. Healthcare involves troves of sensitive personal health information that must be protected from inadvertently being exposed to nefarious bad actors. Only 11% of executives self-report that they've fully implemented responsible AI capabilities[6], which include data governance, upskilling, embedding AI risk specialists, third-party risk management tools, and monitoring and auditing.

Says a Vice President and CIO at a large non-profit academic medical center, **"If you're not careful, the evaluation and the governance can be so overbearing that, because of the nature of AI, the model becomes antiquated by the time you approve it. And so that's a real challenge for us: how do we make sure that we are crossing the T's and dotting the I's and giving proper sign-off, but being agile enough to do it in a timely fashion!"**

Success, CIOs say, is when organizations are able to identify the problems in their systems clearly, evaluate all options rigorously, and then choose a path—whether to buy or build—that best aligns with strategic objectives, risk tolerance, and operational realities.



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Vice President and CIO at a large non-profit academic medical center

6. PwC's 2024 US Responsible AI Survey

Determining AI's ROI

When asked about their primary method for evaluating the ROI of AI investments, improved margins were ranked at the top, followed by cost reductions and staff productivity and clinician satisfaction.

What is your primary method for evaluating ROI?

26%
improved margins

24%
cost reductions

16%
staff productivity and clinician satisfaction

If AI investments are making it easier for physicians to see more patients, to complete their work in a timely manner and give them more time at home, and to lessen turnover, those satisfaction metrics can be linked to financial value for a health system. **"I'd say the clinician's satisfaction is going to be right underneath that hard dollar ROI,"** says the CIO at a large, faith-based healthcare network.

CIOs say that evaluating ROI for AI investments can vary depending on the tool. After deploying new AI solutions, IT teams review the results to determine whether they've achieved the expected ROI, and if not, reevaluate the best way to move forward.

Nearly six out of 10 CIOs and other technology leaders say that their EHR's AI features have delivered measurable ROI as they expected. But 40% surveyed said the ROI from those AI features was less than expected in a market where it's nearly impossible to be competitive operating solely on the EHR that every other health system uses.

40%

surveyed said the ROI from their EHR's AI features was less than expected.

It's critical that AI investments that go beyond the EHR are tied to high-impact use cases. Every percentage improvement in surgical capacity, for example, drives millions of dollars of impact. And for AI tools that make physicians and providers more efficient, CIOs are doing the math to determine what's the additional cost of making AI available and does it result in seeing more patients on a monthly basis to justify the licensing fee. **"Does the tool actually generate revenue through its immediate activity? If yes, how much?"** asks Joseph Sanford, MD, Chief Clinical Informatics Officer at the University of Arkansas for Medical Sciences (UAMS).

2. PwC's 2024 US Responsible AI Survey

Managing AI risks in healthcare

More than half of survey respondents say they have a formal AI governance committee—a group that tends to combine the expertise of CIOs and other IT leaders, chief financial officers, clinicians, regulatory compliance advisors, and end users, who collectively oversee and manage the development and deployment of AI tools.

Patrick Woodard, CIO at Monument Health, says he doesn't approach AI governance any differently than the other technologies the IT department deploys within the South Dakota-based health care system. **"We don't currently approach AI tools differently,"** says Woodard. **"They all follow through the same formal process that has intake and demand management ; and formal portfolio management, that goes through our organizational operational governance."**

One CIO said they have an AI steering group that oversees governance and guides the health system's policies around the acceptable and ethical use of AI. **"The AI Innovation Steering Committee is where we will consider the problems to solve, design the experiences we want to deliver, and select the solutions that help enable those experiences. They may or may not be AI, based off of the desired experience we're trying to craft,"** he says.

IT, clinicians most frequently included in healthcare industry's AI governance committees

The mix of experts included in AI governance committees varies by organization. IT had the greatest representation (94% of survey respondents), followed by clinicians (78%), and then CFOs and regulatory (each 62%).

One Chief Medical Information Officer at a Louisiana-based organization has an AI governance committee that includes himself serving as the chair, and involves a mix of expertise including physicians, nurses, the chief information security officer, VPs, the top compliance officer, and others. The committee gets pitched new ideas on AI at least once every week.

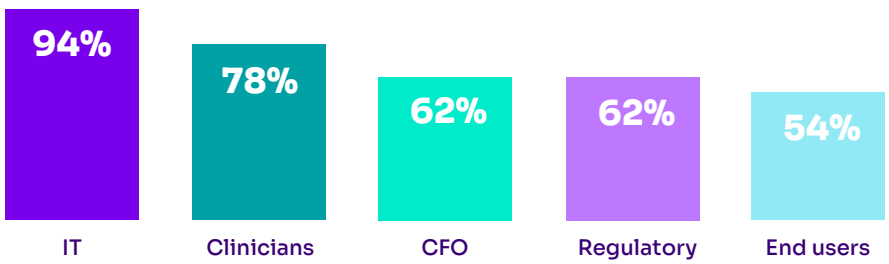
"You've got to be careful about who you're partnering with, the ROI, where they're going, and if it's sustainable," he says.

A Director of IT at a California-based nonprofit integrated health system is currently setting up an internal committee that will oversee AI governance. This group will be responsible for looking at different benchmarking capabilities, metrics of success, and how the organization can fund these AI tools.

"The other thing that we're going to look at from a governance-based perspective is regulatory," he says. **"Within healthcare, there are not a lot of regulations and a lot of hospitals are waiting for regulations to come into place before they embark on their journey."** Government regulations, he says, will play a huge role in the health system's decision-making process on AI.

CMIO at large Midwest-based academic health system created policies regarding safe use of generative AI after those technologies emerged, but cautioned that such governance would need to evolve with future advancements. **"Something that works great at first, doesn't mean that two years later it is still doing well,"** he says. **"Health systems always evolve. You can acquire additional hospitals, meaning you get additional data that influences your results....all those changes can potentially affect the AI performance. We are setting up a formal monitoring mechanism."**

Who is included in your AI Governance Committee?



Managing change as CIOs embrace AI

CIOs surveyed about the biggest frustration clinicians express about AI tools reported that a "lack of integration between systems" was the top complaint. This was followed by "wasn't built with clinician input," followed by "frequent updates and changes to tech stack" and "complexity and difficulty of use."

What are the biggest frustration clinicians express about AI tools?

34%
Lack of integration between systems

24%
Wasn't built with clinical input

16%
Frequent updates and changes to tech stack

"When we implement new workflows using AI, without close supervision, they return to their old processes and procedures," said one CIO.

At Banner Health, Brock Bassetti, Senior Director of Customer Experience Data, Design and Technology, says the Arizona-based health system has **"a nurse who leads the engagement of online scheduling. She doesn't have the technical know-how necessarily, but she's the senior consultant that onboards clinics and talks to physicians and they have immense trust in her. That's the best way to lead change management."**

A CIO at a large academic medical center says change management around AI tools looks different than other technologies, given the rapid pace of product updates that can come semi-annually or even quarterly. **"It's just a different model that you have to manage,"** he says. **"We want to make sure we have an intake process that goes before a responsible AI committee that does a full evaluation. We're doing everything we can to make this a timely process."**

CIOs say that data security and integration challenges were their biggest concerns regarding AI implementation.

Northwestern Medicine CIO Doug King says that **"Clinical champions are the number one thing you need to have a successful AI implementation. It is DOA [dead on arrival] and will become shelfware if you don't have a clinical champion."**

"If you don't have a business partner that's right there who can own that process with us, I don't want to tackle that effort," says the New Jersey-based CIO.

CIOs face more pressure than ever: health system operating margins are tight, demand for services is increasing, new technologies are continuously developed and changing the future of care, and IT leaders are increasingly being mandated to make the hospital workforce more efficient, while improving client satisfaction scores. AI is a new tool that's only beginning to make all of this work easier, but there are a lot of unknowns, including establishing proper governance, properly organizing data to take full advantage of LLMs, picking the right vendors to provide AI that comes with ROI, and for EHRs to deliver on their product roadmap.

There is a clear path for CIOs and other technologists to leverage AI and get meaningful results. Find the problem, define the desired performance metrics and business outcomes, and work collaboratively—with clinicians and other healthcare employees, the IT department, and vendors—to go deep and develop, deploy, and customize the right AI solution that works for your community of patients and care workers.

Qventus

Qventus uses AI to intelligently automate operations across care settings and help health systems achieve the margins needed to achieve their mission of delivering exceptional care to their communities.

Think of Qventus as an AI teammate working alongside your care teams. We reduce the administrative burden, identify potential issues upstream, surface suggested interventions, and actually take action to solve problems for busy staff—a collective system of action that sits on top of your enterprise systems of record.

Let's talk