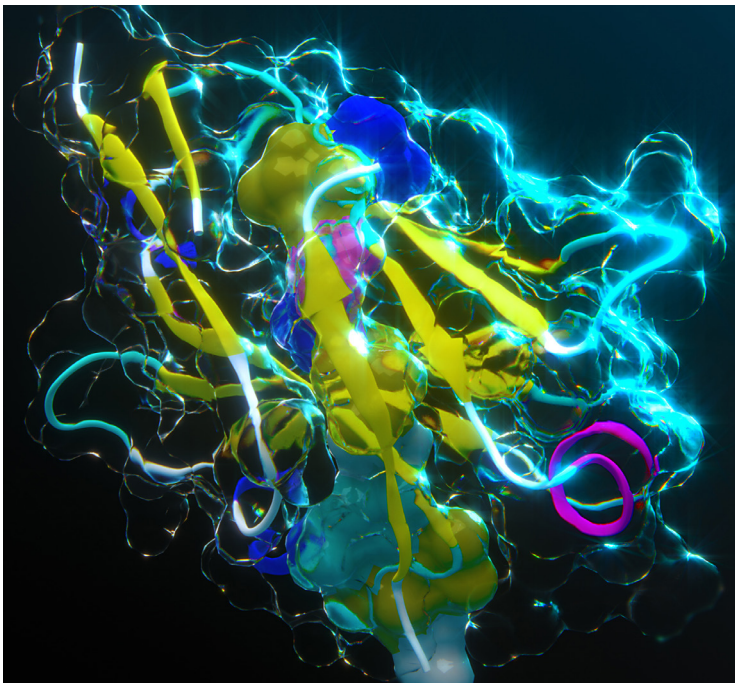
Survey Report

State of AI in Healthcare and Life Sciences: 2026 Trends



Foxconn

Table of Contents

Survey Overview

AI in Healthcare and Life Sciences: Key Trends for Industry Leaders

Artificial intelligence is everywhere in healthcare and life sciences. AI has helped medical device manufacturers maintain regulatory readiness as devices are updated to new designs and best practices. It has significantly reduced the time required for research and development of new drugs, treatments, and devices. And AI has even been used to create digital twins of the human body to map tumors and help treat cancer.

At the same time, AI agents are enabling clinicians to get back to what they were trained to do: engaging with patients.

In short, AI has been truly transformational for the industry. And it's just getting started.

In the *2026 State of AI in Healthcare and Life Sciences* report, NVIDIA surveyed hundreds of industry professionals to examine the impact that AI is having on the industry, how different industry segments are developing and deploying AI, and the impact that AI is having on companies' bottom lines.

AI has been growing into healthcare and life sciences for several years, and the maturity curve has hit an inflection point in the last year.

AI has had proven business results, with organizations seeing a return on investment from their top AI projects. In particular, organizations are building and scaling specific AI use cases, using open-source foundation models and tools to fine-tune their data to create truly impactful solutions.

The *2026 State of AI in Healthcare and Life Sciences* report examines the adoption of AI in the industry, the use cases that organizations are deploying, and the impact and investment into new solutions. A new section this year explores the adoption and use of AI agents.

Executive Summary

AI Adoption Is Growing Faster

70%

said their organizations are actively using AI, up from 63% in 2025.

69%

said they're using generative AI and large language models, up from 54%.

The healthcare and life sciences industry has a proven appetite for artificial intelligence, with strong adoption across the industry, from digital healthcare to medical technology and pharmaceutical research. Even the one segment that has historically been slow to adopt new technologies—payers and providers, which includes organizations like hospitals, primary care doctors, and insurance companies—had a strong rise in AI adoption in this year's survey.

Predictive and Data Analytics is the Core of Healthcare AI

65%

said their organizations use AI for data analytics and data science.

42%

said they use AI to support clinical decision making.

Predictive and data analytics are the core of AI in healthcare and life sciences, supporting many diverse AI workloads across each industry segment. Drug discovery, diagnostics, medical imaging, personalized medicine, and more all rely on predictive and data analytics to accomplish specific tasks. The analysis trickles down from research to the patient, with industry developers looking for turnkey solutions to integrate AI into clinical workflows.

The Tangible Business Impact

57%

from the medtech segment said they've seen ROI from AI for medical imaging.

46%

from pharmaceutical organizations said they've achieved ROI from AI for drug discovery and development.

The survey data tells a compelling story about AI in healthcare and life sciences: When specific AI is applied to distinct use cases, it's both effective and profitable. Medical technology companies are seeing ROI from their investments into medical imaging AI, and pharmaceutical companies are seeing ROI from their AI solutions for drug discovery and personalized medicine.

Digital healthcare organizations cited virtual health assistants and chatbots among the top use cases where they've seen ROI. Companies are fine-tuning with their own data and tools to create and scale AI solutions that excel at specific use cases. They're also leaning into back-office automation such as workflow optimization and natural language processing for clinical documentation.

The Importance of Open-Source Models

Open-source models allow organizations to fine-tune their AI for highly specialized applications. Open-source models open up capabilities for models and agentic AI reasoning, and their adaptability to specialized AI use cases has led to widespread use by AI innovators across the industry.

82%

said that open-source models and software were important to their organization's AI strategy.

A Promising Start for Agentic AI

47%

said their organizations are either actively using AI agents or are assessing agent use cases.

48%

of respondents from the pharmaceutical and biotechnology segment are using AI agents for drug discovery and biomarker identification.

Agentic AI—advanced AI systems designed to autonomously reason, plan, and execute complex tasks—has already made inroads into healthcare and life sciences organizations. Companies are using AI agents for tasks such as knowledge management, retrieval, and literature review, as well as in specific applications such as drug discovery.

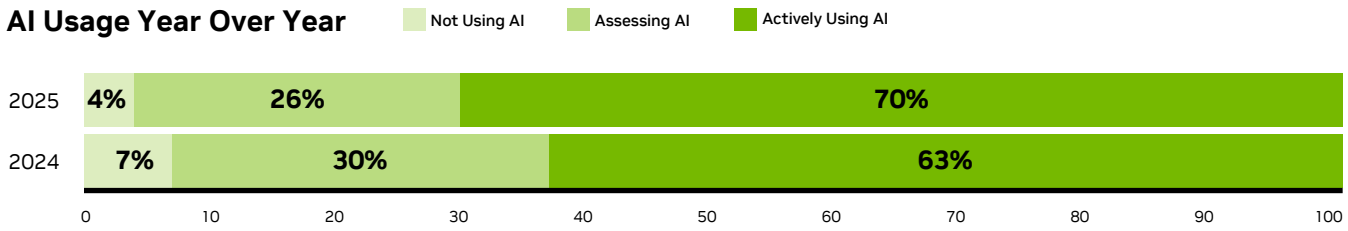
An In-Depth Look at the Results

Healthcare and Life Sciences Climb the AI Adoption Curve

Usage increased across the board, with each industry segment registering gains. In particular, the payers and providers segment, which was well behind others in the 2024 survey, jumped 13 percentage points year over year, from 43 percent to 56 percent this year. AI usage in digital healthcare is particularly robust, with 78 percent of respondents saying they're actively using it, up from 70 percent last year. Pharma and biotech registered 74 percent of active AI usage, while medical technology, tools, and diagnostics came in at 70 percent.

Every industry segment showed increases in AI usage this year.

AI Usage Year Over Year



The top AI workload among healthcare and life sciences in 2025 was generative AI according to 69 percent of respondents, up 15 percentage points from 2024. Generative AI overtook data analytics and data science at 65 percent as the top area of focus in this year's survey. Predictive analytics was at 51 percent, followed by agentic AI at 47 percent.

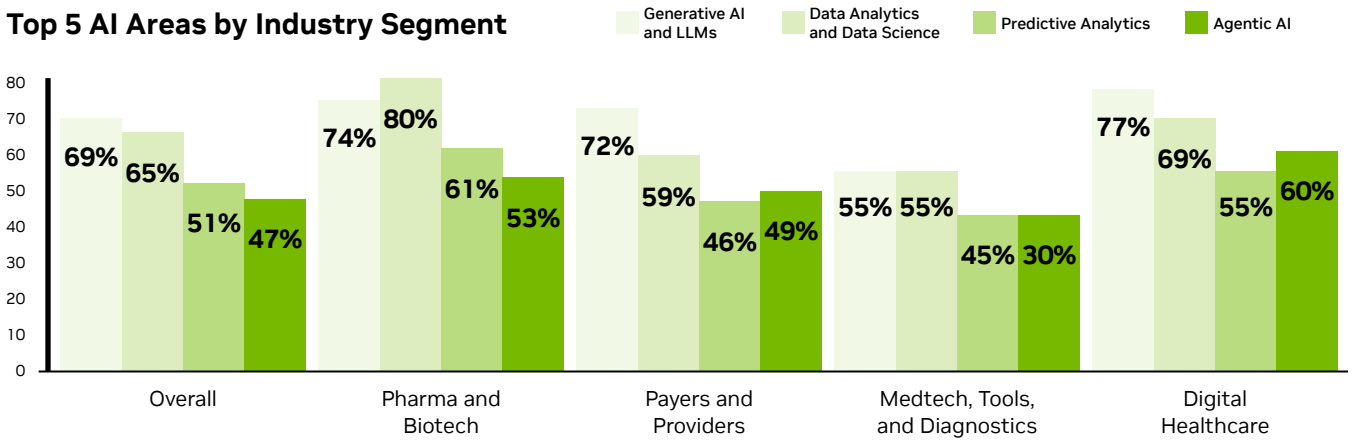
69%

cited generative AI as their top AI workload.

Medium-to-larger organizations (those above 100 employees) tend to adopt more types of AI workloads than smaller companies (below 100 employees). Nearly every workload in the survey—including generative AI, data and predictive analytics, agentic AI, data processing, and computer vision—showed a 10 percentage point delta between large and small company usage. For instance, 52 percent of respondents from larger organizations said that they're actively using or assessing agentic AI, versus 43 percent for smaller companies.

Generative AI and data analytics were among the top two AI focus areas for each industry sector, except for medical technologies, tools, and diagnostics, which registered computer vision as the top area at 59 percent.

Top 5 AI Areas by Industry Segment



AI Integrated Into Clinical Support

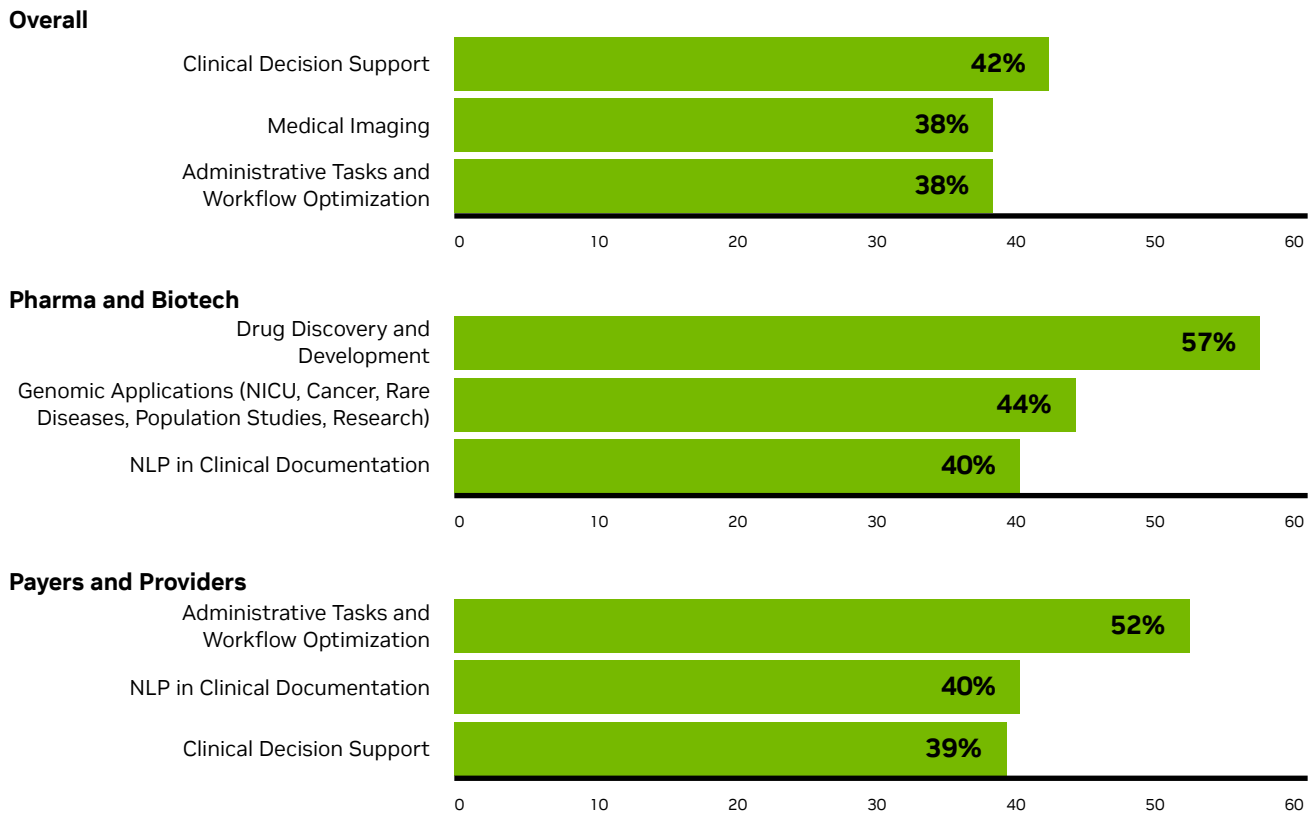
The different sectors of healthcare and life sciences use AI in different ways. Overall, the top use case for AI in the industry was clinical decision support, according to 42 percent of respondents, followed by medical imaging, and optimizing administrative tasks and workflows at 38 percent, respectively.

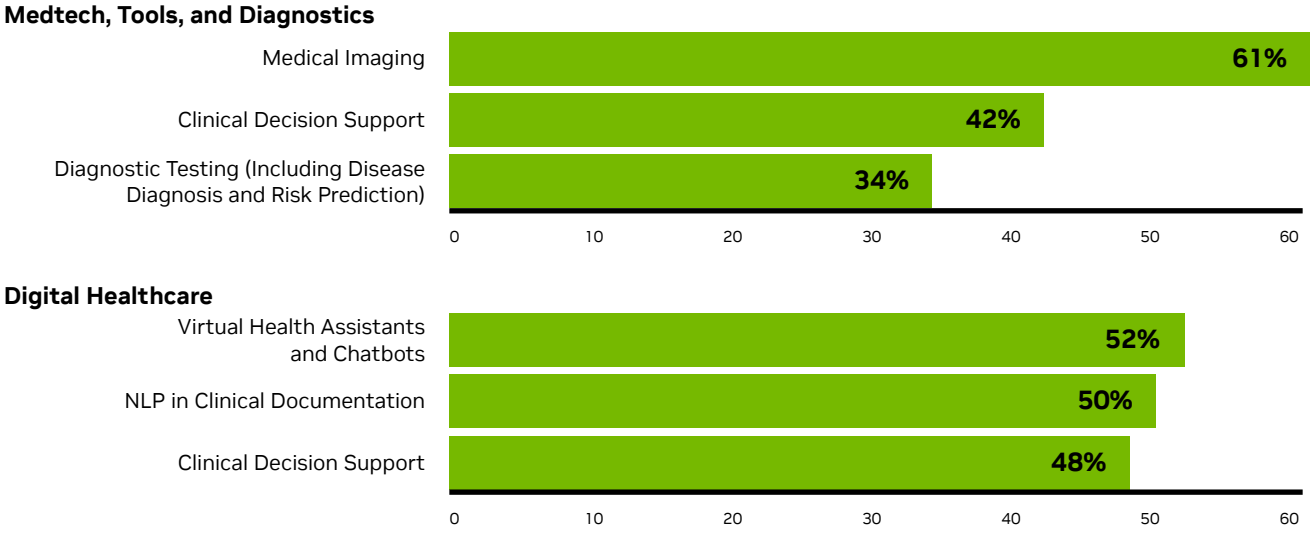
If we break it down by each sector, we see that the top use case listed for pharmaceuticals and biotech was AI for drug discovery and development at 57 percent, followed by genomic applications at 44 percent. Digital healthcare, a patient-facing sector of the industry, named virtual health assistants and chatbots as its top use case at 52 percent, followed by NLP for clinical documentation at 50 percent.

That contrasts slightly with the other patient-forward sector of payers and providers, which focused on employee productivity for its top use case. For that segment, administrative tasks and workflow optimization claimed the top spot at 52 percent, with natural language processing (NLP) in clinical documentation at 40 percent. Finally, medical technology's top AI use case was medical imaging at 61 percent, followed by clinical decision support at 42 percent.

While industry segments use AI differently, clinical decision support was cited as the overall top AI use case.

Top 3 AI Use Cases by Sector





Infrastructure Inequality Shapes AI Challenges Between Large and Small Organizations

The challenges organizations face in using AI reveal the difference between large and small companies in the healthcare and life sciences industry. Smaller companies face an AI operations gap that's primarily due to resource and budget constraints.

According to 40 percent of respondents from small businesses, lack of budget was a top challenge. Only 20 percent of respondents from large companies reported lack of budget among their biggest challenges. Similarly, 33 percent of respondents from small companies said that having sufficient data sizes for model training and accuracy was a top challenge, but only 21 percent of respondents from large organizations agreed. As the survey results reveal, larger organizations are using their greater resources to deploy more AI solutions for more purposes, from back-office operations to clinical integration.

40%

of small businesses said lack of budget was their top challenge.

That being said, large organizations face their own specific challenges. Deploying AI broadly across their organization means they need more AI experts and data scientists, but these kinds of skills can be difficult to find in the competitive job market. Thirty-three percent of respondents from large organizations cited a lack of AI experts among their top challenges. And with more access to data comes challenges in organizing, storing, and securing that data. Reflecting that, 39 percent of respondents cited data-related issues (such as privacy, location, and sovereignty) as their top challenge, with 37 percent stating that regulatory and ethical challenges were also a concern.

39%

of large businesses said their top challenges involved data, such as privacy and security.

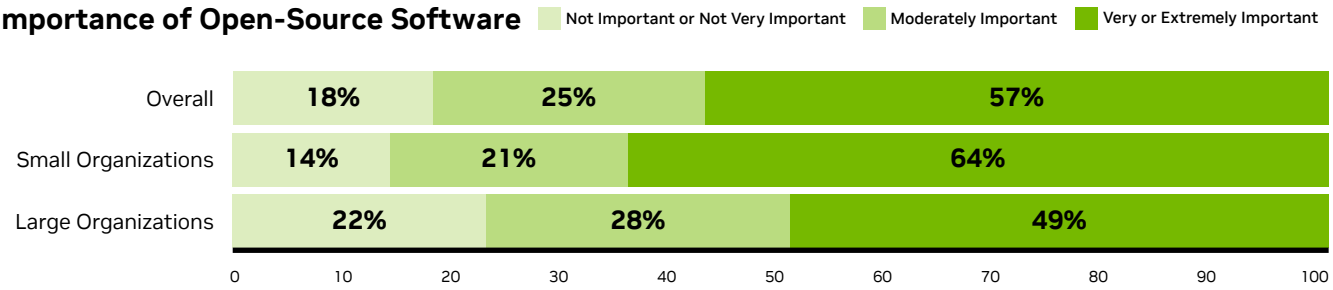
Open Source Is Key to Building Specific AI Solutions

As the survey results show, AI solutions that serve a specific purpose have delivered clearer benefits and ROI to healthcare and life sciences organizations. The key to building focused, as opposed to general-purpose, AI solutions resides in open-source tools and foundation models, which can be fine-tuned toward specific tasks. The industry understands this well, with 57 percent of respondents agreeing that open source is very or extremely important to their AI strategy. Another 25 percent said it was at least moderately important.

82%

said open source is moderately to extremely important to their AI strategy.

Importance of Open-Source Software



A Focus on Inference Performance

AI inference is the process where a trained AI model generates new outputs by reasoning and making predictions on new data, classifying inputs and applying learned knowledge in real time. Inference differs from model training as it's an ongoing process and cost. Every time a model is queried, inference takes place.

Inference is a multi-faceted aspect of AI, balancing accuracy and speed with model and infrastructure performance, power usage, and the cost efficiency of the entire system. When asked about the most important factors for their organizations when running inference, 38 percent cited model performance and benchmarking, as well as data residency and compliance. Another 37 percent cited cost efficiency and total cost of ownership as the most important factors.

The Rise of Hybrid Computing for AI Workloads

A trend across all industries has been companies embracing hybrid computing architecture for AI workloads, as opposed to just cloud computing or on-premises infrastructure. Hybrid architecture is flexible and scalable, letting organizations manage AI workloads with performance and security needs on premises, while using the cloud for projects that require elastic scalability. The trend can be seen in healthcare and life sciences. The use of hybrid computing for AI projects rose from 35 percent last year to 43 percent this year, while cloud computing fell from 41 percent to 35 percent year over year.

43%

of organizations are using hybrid computing for their AI projects, up from 35% last year.

Agentic AI Makes a Promising Debut

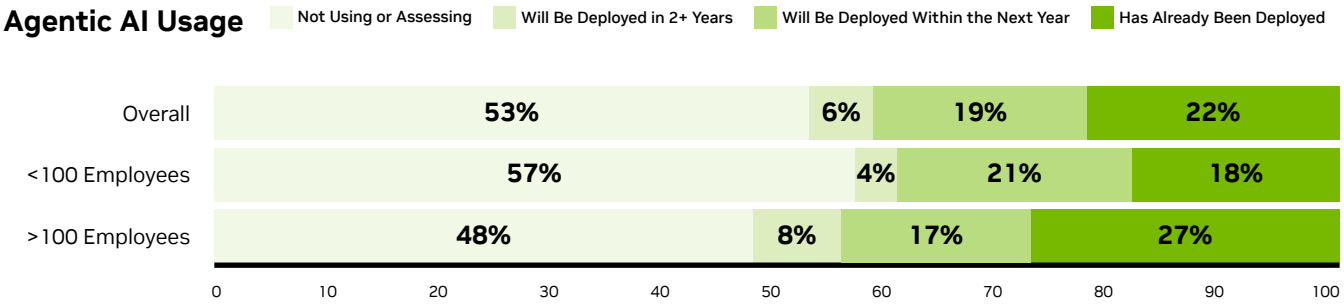
A new question in the 2026 NVIDIA State of AI surveys concerns the use of agentic AI, or the use of AI agents in organizational operations. AI agents are advanced AI systems designed to autonomously reason, plan, and execute complex tasks based on high-level goals.

The healthcare and life sciences industry is well on its way toward adopting AI agents into its workflows. As stated above, 47 percent of all respondents said they're already using or assessing AI agents, including 22 percent who said that agents are already deployed in their organizations. Another 19 percent said they'll be deployed within the next year.

47%

said they're already using or assessing AI agents.

Agentic AI Usage



Knowledge Management and Digital Agents Among Top Agentic AI Use Cases

Overall, the top use cases for AI agents are knowledge management and retrieval, according to 46 percent of respondents, followed by literature review and analysis at 38 percent and internal process optimization at 37 percent.

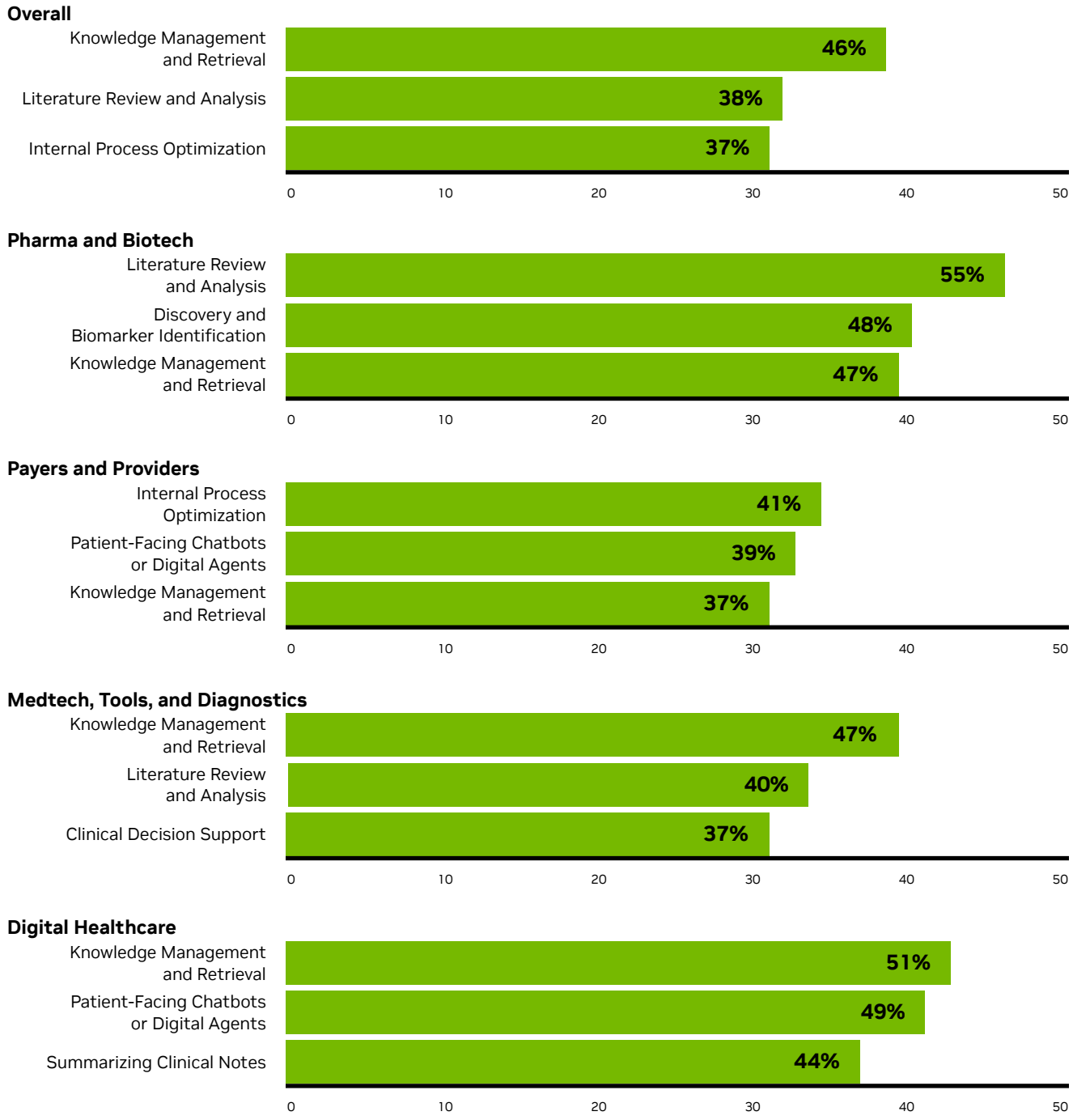
Each industry segment has different priorities in how they're deploying AI agents. Pharmaceutical and biotech's top two agentic AI use cases are literature review at 55 percent and drug discovery and biomarker identification at 47 percent. The medical technology segment values knowledge management and retrieval as the top use case at 47 percent, followed by literature review at 40 percent.

The patient-facing segments understandably value technology that's beneficial to the relationship between their organizations and the people they serve. Chatbots and digital agents for patient interaction are among the top use cases, according to 49 percent of respondents from digital healthcare and 39 percent from payers and providers.

46%

cited knowledge management and retrieval as their top use case for agentic AI.

Top 3 Agentic AI Use Cases by Industry Segment

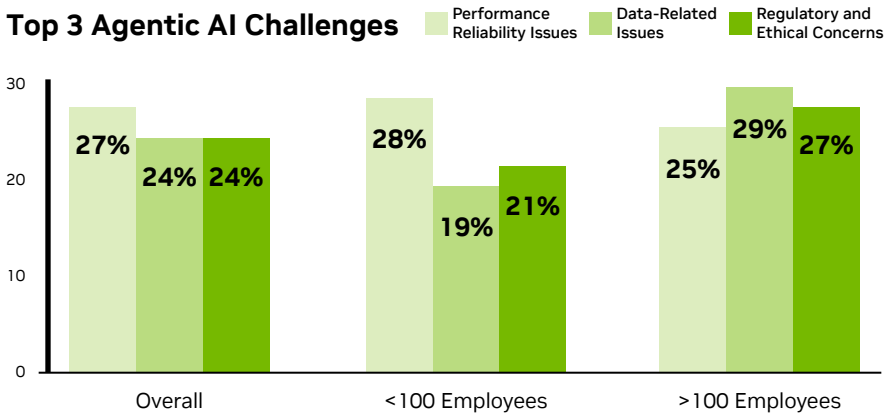


Regulatory and Compliance Is the Top Issue for AI Agents

The challenges that healthcare and life sciences organizations face with agentic AI mirror those of AI usage overall, with data-related issues, regulatory concerns, and lack of internal skills among the top issues cited. Performance and reliability was the top concern, cited by 27 percent of respondents and 28 percent of people from small companies. Large companies cited data-related issues as their top challenge at 29 percent.

Data-related issues, regulatory concerns, and lack of internal skills are the main challenges with agentic AI.

Top 3 Agentic AI Challenges



Time is needed to integrate any new technology into the complex landscape that includes healthcare data regulations and patient privacy. When asked which factors are influencing their organization's approach to implementing agentic AI solutions, 40 percent cited compliance with healthcare regulations, such as HIPAA, FDA approval, and GDPR.

The Revenue Impact of AI on Healthcare and Life Sciences

One of the true strengths of artificial intelligence is its ability to help organizations do what they do, but better. For instance, 57 percent of respondents from the medical technology, tools, and diagnostics industry segment said that they've seen a return on investment with AI for medical imaging. And 46 percent from the pharmaceutical and biotech segment said they've achieved ROI with AI for drug discovery and development. Digital healthcare providers cited chatbots and digital assistants as their top ROI use case, while payers and providers said using AI to tackle administrative tasks and workflow optimization is their top choice.

For the entire industry, medical imaging, workflow optimization, and natural language processing for clinical documentation were the top three use cases for ROI, reflecting a mix of industry-specific use cases and back-office optimization, which has proven beneficial for enterprises across industries.

From a long list of options, 19 percent of respondents identified improved employee productivity as the top way AI has improved their organization. Nineteen percent cited accelerated research and development, and 18 percent said AI has helped them create a competitive advantage.

57%

from the medical technology segment have seen an ROI with AI for medical imaging.

46%

from biotech have seen an ROI with AI for drug discovery.

AI Has a Positive Effect on the Bottom Line

The survey results show a clear pattern: AI deployed toward specific use cases benefits an organization's bottom line. Supporting this, 85 percent of management-level respondents said AI has helped increase their annual revenue, while 80 percent said AI has helped to decrease annual costs.

For many organizations, the revenue impact of AI has been substantial. This year, more respondents said AI had a bigger impact on increasing revenue and reducing costs than last year, while fewer reported AI had no impact on revenue. Overall, 44 percent of management respondents said that AI has helped increase annual revenue by more than 10 percent. Small companies in particular have benefited from AI, with 56 percent saying that AI has helped increase revenue by more than 10 percent. The same is true for decreasing annual costs, with 35 percent overall and 44 percent of small companies saying that AI has helped decrease costs by 10 percent or more.

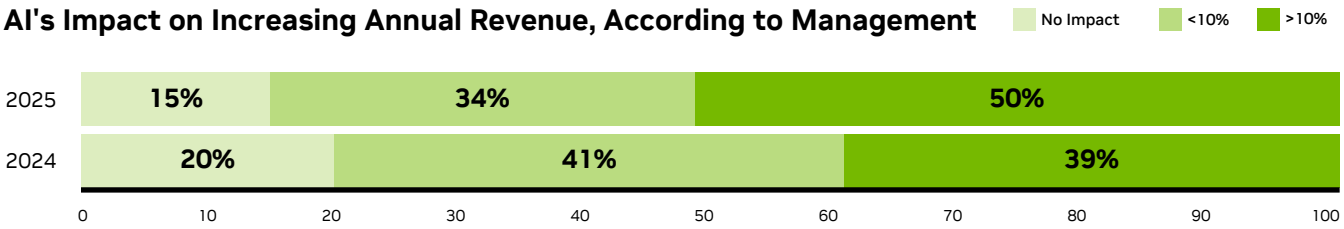
85%

of management said AI has helped increase annual revenue.

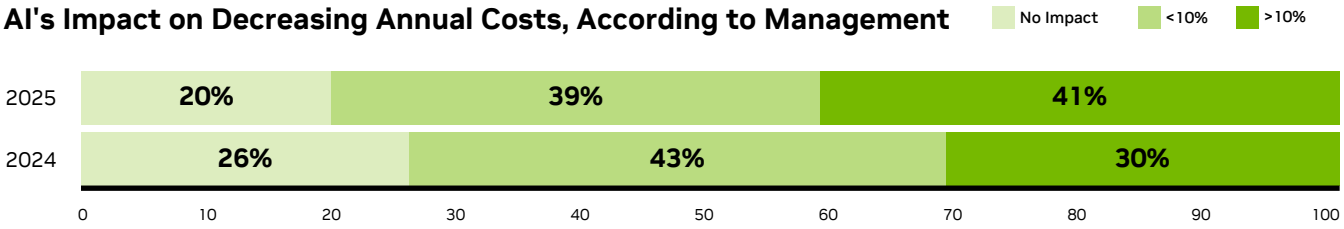
80%

said AI has helped reduce annual costs.

AI's Impact on Increasing Annual Revenue, According to Management



AI's Impact on Decreasing Annual Costs, According to Management



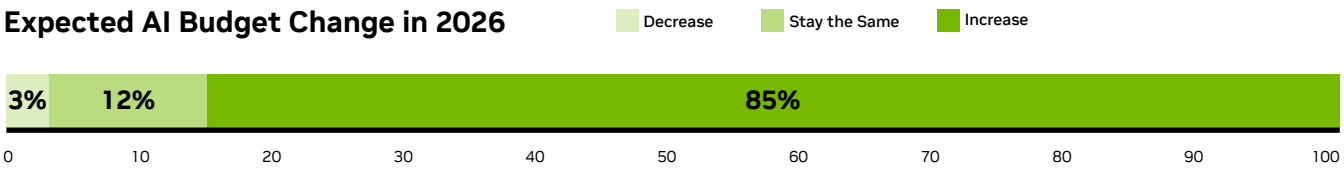
AI Budgets to Increase Substantially in 2026

The acceleration of AI into healthcare and life sciences, combined with the clear benefits and ROI, will lead to organizations increasing their AI budgets in 2026. Overall, 85 percent of respondents said their budgets will increase in 2026, while 12 percent said that budgets would stay the same. For nearly half of all respondents, that increase will be substantial, with budgets growing more than 10 percent year over year. This number includes 50 percent of respondents from small companies and 40 percent from large companies.

85%

said their AI budgets will increase in the next year.

Expected AI Budget Change in 2026



The correlation between budget growth and ROI suggests healthcare AI is entering a flywheel phase, where organizations are reinvesting because of measurable outcomes from earlier trials and proofs of concept.

The new spending will go toward improving the AI that organizations have already deployed. Overall, 47 percent of respondents said that optimizing AI workflows and production cycles was among their top AI spending priorities in 2026, up from 34 percent last year. On the flip side, 37 percent said that spending would go toward identifying additional AI use cases, down from 47 percent last year. This trend shows what's been clear with AI adoption in the last year: Companies are focusing on AI solutions that have proven to be effective and are investing resources into scaling those use cases.

47%

plan to focus their 2026 spending on optimizing AI workflows and production cycles.

To achieve this, organizations realize they need access to more AI infrastructure. Thirty-four percent of respondents said that building or gaining access to AI infrastructure will be a spending priority in 2026, up from 24 percent last year.

Looking Forward

The healthcare and life sciences industry provides a unique model for how AI can be applied to specific problems to create beneficial solutions. Organizations are improving operational workflows and seeing positive business impact. At the same time, they're looking for ways to make their current AI better while exploring new use cases.

An interesting delta in the survey data shows that companies who use AI well understand its benefits. For organizations that are actively using AI, 24 percent of respondents said that lack of AI experts and data scientists was a top challenge. Similarly, for companies still in the early stages of assessing AI pilots and projects, 39 percent cited the lack of AI experts as a top challenge. Creating useful AI is more than just buying and deploying AI hardware and software. Rather, it's a collaborative effort that includes the expertise of an expansive partner ecosystem to help overcome initial hurdles. Once AI solutions are in place, the results can be truly astounding.

It seems likely that, by 2027, healthcare AI will shift from only predictive analytics toward more consistent deployment of agentic systems capable of reasoning across patient populations, trials, and care workflows.

Methodology

Fielded from August to September 2025, the survey garnered responses from more than 600 respondents. It included a 60/40 split between management (including executives) and AI practitioners, as well as a range of industry segments, including biopharma data platforms and analytics, biotechnology and bioinformatics, clinical services, clinical research, diagnostics, genomics, digital healthcare, health informatics, health insurance, home healthcare, hospital, instruments and equipment, medical devices (including imaging), pharmaceuticals, surgical robotics, and telemedicine and telehealth. Respondents came from companies from a spectrum of sizes, with a third reporting annual revenues of over $20 million and another 40 percent from companies with over 1,000 employees. The online survey was sourced from NVIDIA's distribution lists globally.

Ready to Get Started?

To learn more about how leading healthcare and life sciences companies are using AI, visit: nvidia.com/healthcare

NVIDIA