DEFINITIVE HEALTHCARE
Discover opportunity

AI in healthcare study

A 2023 Definitive Healthcare special report

The use of artificial intelligence (AI), machine learning (ML), and deep learning (DL) in healthcare spans a variety of applications, from automating administrative tasks and managing healthcare data to improving imaging and diagnostics.

Definitive Healthcare has studied the changing role of AI and ML in healthcare organizations over the last few years, uncovering important trends and insights. To build on our previous work, this report reviews survey results from healthcare leaders and executives about how provider organizations use AI and ML today, any plans for future usage, and limitations in using such technology.

Data was gathered in September and October 2023 via an online survey.

We collected responses from 135 professionals at 133 hospitals, physician groups, and healthcare organizations across the U.S. Respondents hold roles in medical and care management, operations, radiology, administration, information technology, and marketing. About half of respondents are directors (48.1%) and one-quarter are C-suite level.

NOV | 2023

More than one-third of respondents said their organization uses some type of AI/ML (37.8%) technology. More than 40% of respondents have plans for AI or ML in the next two years.

The biggest challenge organizations face in implementing and using AI is cost, as reported by nearly half (45.9%) of respondents. Lack of strategic direction (30.4%), lack of necessary IT infrastructure (29.6%), and lack of technical expertise (28.9%) are also hurdles.

Respondents think that improvements to processes and workflows (49.6%) and improving or assisting in the accuracy of diagnosis (40.0%) will be the AI/ML/DL applications that impact patient care the most.

Use of AI in healthcare today

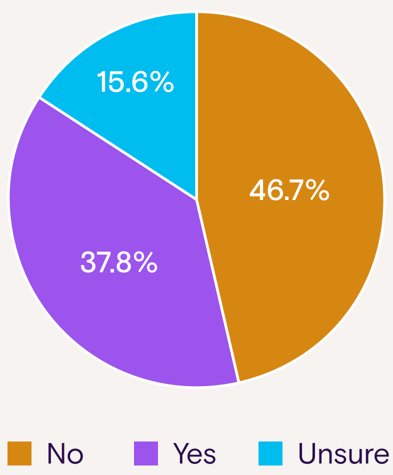
About 38% of respondents use AI or ML at their organization today. The use of AI has increased at healthcare provider organizations since our 2022 study, where only 31% of respondents reported using AI or ML.

By region, respondents from the Southeast and Southwest indicate the highest use of AI at 43.8% and 42.1%, respectively.

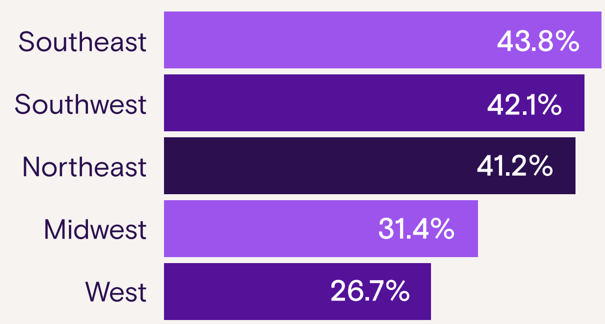
Hospital-based respondents report higher use of AI (54.8%) than outpatient facilities (25.0%).

AI IN HEALTHCARE TODAY

Does your organization currently use AL, ML, or DL to perform or aid in any tasks associated with patient care, patient monitoring, imaging, diagnostics, or business operations? (n = 135)



USE OF AI BY REGION (n = 135)



How healthcare organizations use AI

Process or workflow improvement (56.8%) is the most reported operational area of AI, ML, or DL use at provider organizations. Other top areas include computer-aided image detection for disease states (27.3%), care guideline consultation/suggestive care options (25.0%), computer-aided image detection for oncology (20.5%), and financial or revenue-related performance assistance (20.5%).

These five areas were also the top five in our 2022 study but in a different order. This year, more than half of respondents report using AI for process or workflow improvements, compared to 37% last year. The growing awareness of AI in the healthcare industry and among the general public may have contributed to the increased reported adoption.

TYPE OF AI IN USE

If yes, in what areas does your organization use AI, machine learning, or deep learning? Please select all that apply. (n = 44)

56.8%
Process or workflow improvement

27.3%
Computer-aided image detection for disease states

25.0%
Care guideline consultation/ suggestive care options

20.5%
Computer-aided image detection for oncology

20.5%
Financial or revenue-related performance assistance

Plans for AI or ML in the next two years

More than two in five respondents (42.2%) say their organizations have plans to use AI or ML in the next two years. Nearly the same percentage of respondents reported AI plans in our 2022 study (41.7%).

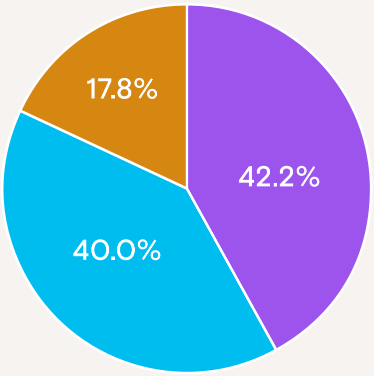
Respondents from states in the Western U.S. are more likely to have plans for AI, with more than half (53.3%) answering yes. Half of respondents from the Northeast (50.0%) also report plans to use AI.

Close to three-quarters (72.5%) of the 51 respondents currently using AI at their organization also have plans for additional uses of AI/ML technology.

AI PLAN

Does your organization have plans to use AI, machine learning, or deep learning to perform or aid in tasks associated with patient care, patient monitoring, imaging, diagnostics, or business operations within the next two years? (n = 135)

Yes Unsure No



Areas for AI plans in the next two years

Process or workflow improvement (64.7%), financial or revenue-related performance assistance (45.1%), and care guideline consultation/suggestive care options (43.1%) are the top areas of intended future AI use.

In our 2022 study, these were also the top three planned areas of AI use, except for financial or revenue-related and care guidance plans, which swapped second and third place.

PLANS FOR AI USE

If yes, in what areas do you have plans to use AI, machine learning, or deep learning? Please select all that apply. (n = 51)

64.7%
Process or workflow improvement

45.1%
Financial or revenue-related performance assistance

43.1%
Care guideline consultation/ suggestive care options

33.3%
Computer-aided image detection for disease states

29.4%
Disease state or chronic condition monitoring (via wearable, implants)

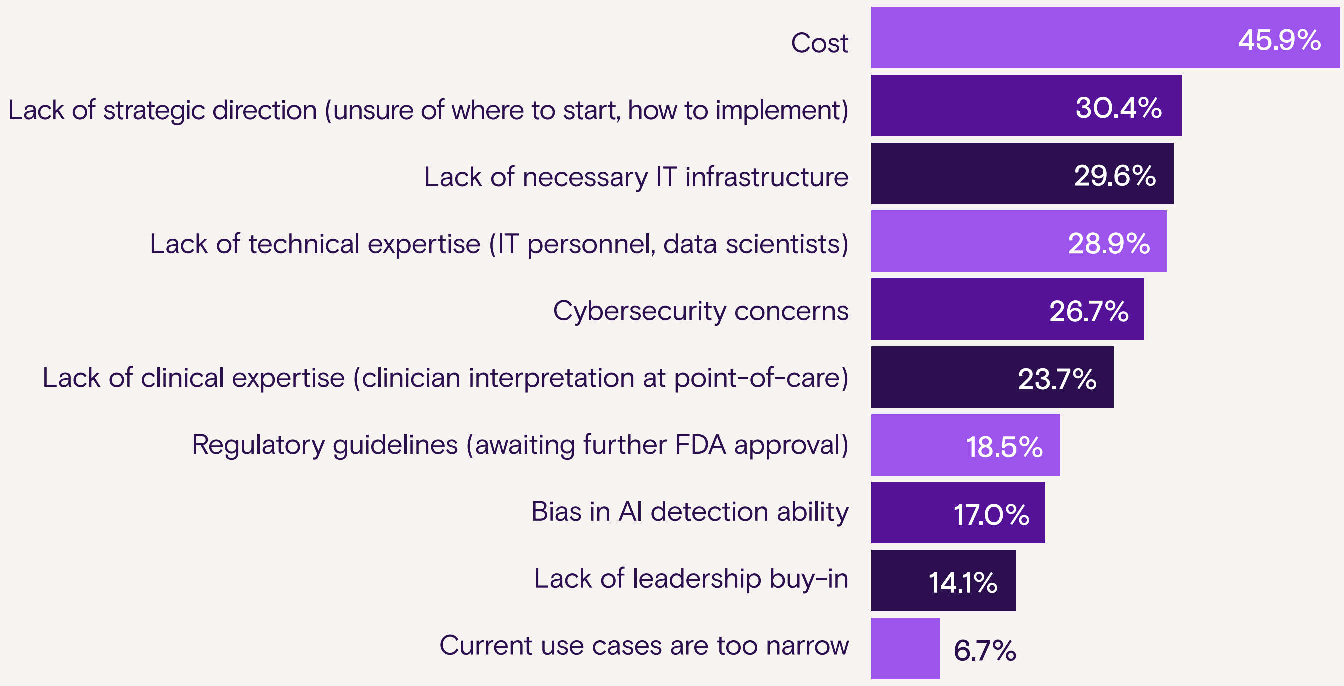
Challenges in implementing and using AI

Respondents said cost (45.9%) is the biggest hurdle their organization faces in implementing and using AI, ML, and DL. Cost was also the top challenge in implementing AI at healthcare provider organizations in our 2022 study.

Additional challenges are a lack of strategic direction (30.4%), a lack of necessary IT infrastructure (29.6%), and a lack of technical expertise (28.9%). In our 2022 study, these were also among the top hurdles after cost.

BIGGEST CHALLENGES

Which of the following best describes the biggest hurdles (experienced or inferred) your organization faces in implementing and using AI, machine learning, and deep learning? Please select up to three answers. (n = 135)



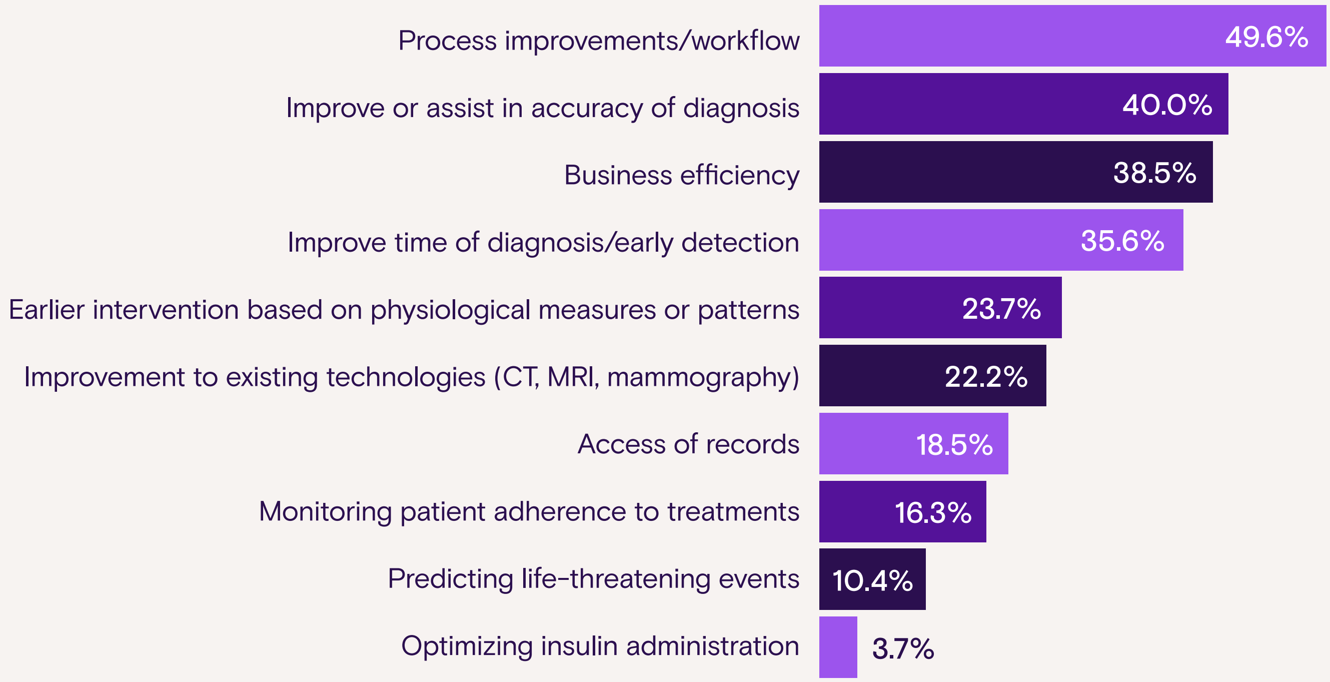
How AI will impact patient care

This year's results show that respondents believe AI will benefit patient care the most through process and workflow improvements. While this response ranked highly in our 2022 study, it increased from 37.9% to 49.6% this year. This suggests that organizations are increasingly seeing the potential of AI to impact patient care by streamlining processes and workflows.

Respondents also think AL, ML, or DL will impact patient care by improving or assisting in the accuracy of diagnosis (40.0%) and via business efficiency (38.8%). Business efficiency moved from fifth place to third this year. As more organizations adopt AI, ML, or DL, they could be seeing more immediate impacts on business operations than on disease or condition diagnosis.

THE GREATEST IMPACT

Where do you feel the use of AL, ML, or DL will have the greatest impact on enhancing patient care? Please select up to three answers. (n = 135)



Value of AI for patient care and business operations

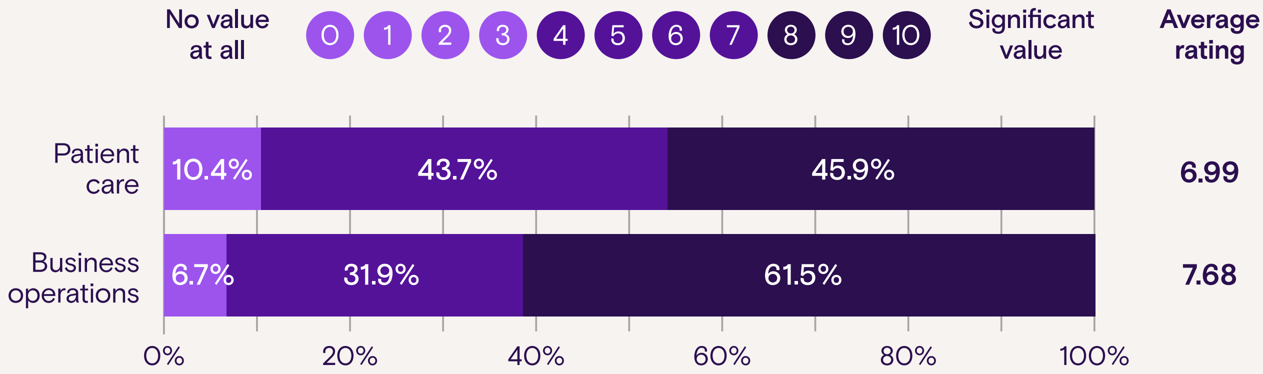
More than half (61.5%) of respondents highly rate the value AI/ML will have on business operations. On a 10-point scale, the average rating is 7.68. Compared to 2022 results, the perspective on the value of AI for business operations increased remarkably. Last year, only 48.5% highly rated AI for business operations, with an average rating of 6.77.

At the same time, fewer respondents highly rate the value of AI/ML in regard to its value for enhancing patient care — 45.9% in 2023 compared to 53.0% in 2022. On a 10-point scale, the average rating is 6.99, similar to last year's average of 6.95.

Ratings for the value AI will have on business operations and patient care are higher among respondents currently using AI at 8.12 and 7.41, respectively.

VALUE SENTIMENT

How much value do you feel the implementation and use of AI/machine learning/deep learning will provide healthcare provider organizations and their ability to enhance patient care and business operations? Please rate on a scale of 0 to 10, where 0 is "no value at all" and 10 is a "significant value." (n = 135)



Key takeaways

AI applications for business functions are emerging as a top priority:

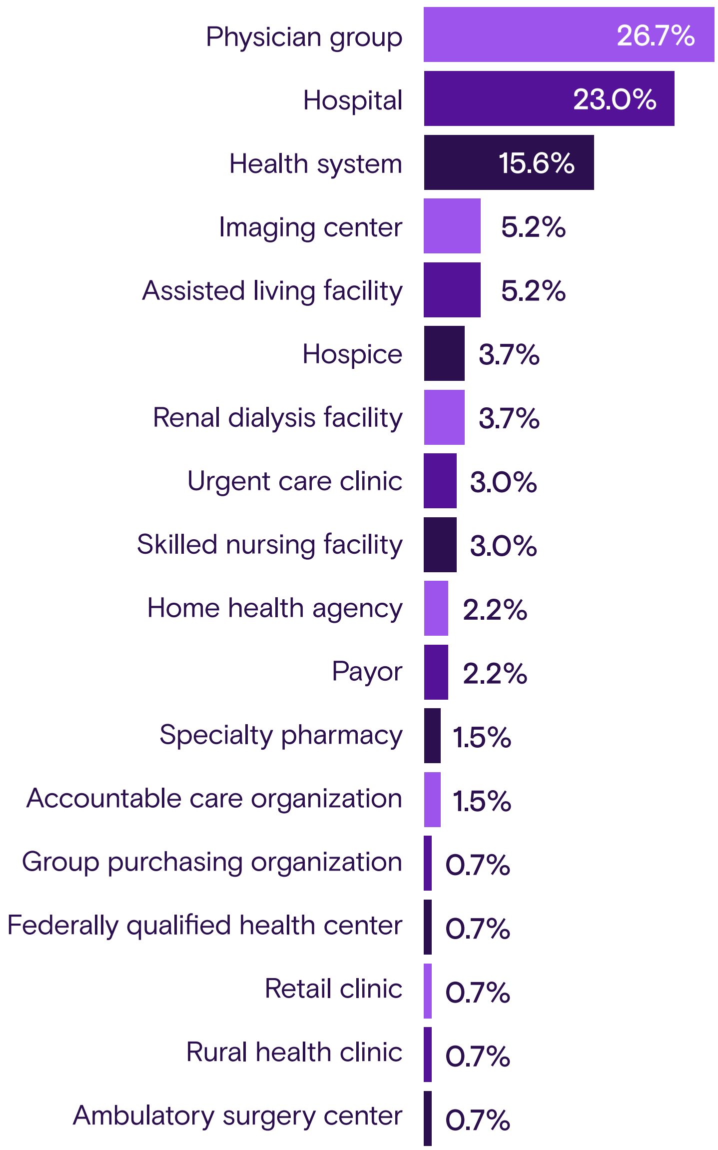
- The value of AI at healthcare organizations leans slightly toward business operations (62%) over patient care (46%).
- Process and workflow improvement is the top area of current AI use (57%) and for planned use (65%).

Cost is not the only barrier to using AI at healthcare provider organizations:

- Challenges in implementing and using AI outside of cost include lack of strategic direction (30%), lack of necessary IT infrastructure (30%), and lack of technical expertise (29%).
- Lack of necessary IT infrastructure is a top hurdle for more than a quarter of respondents that currently use AI (29%), which gives insight into the experiences provider organizations have when implementing AI.

Appendix

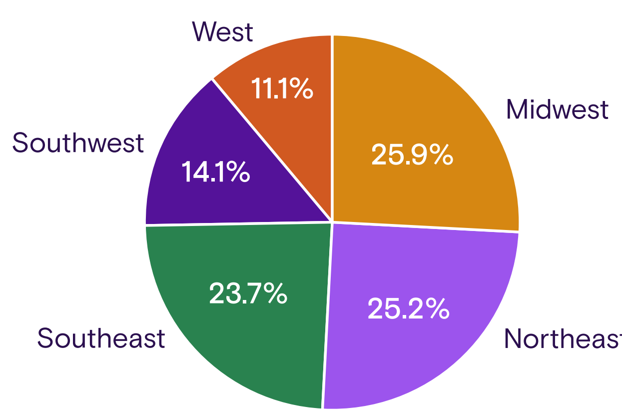
RESPONDENT ORGANIZATION TYPE (n = 135)



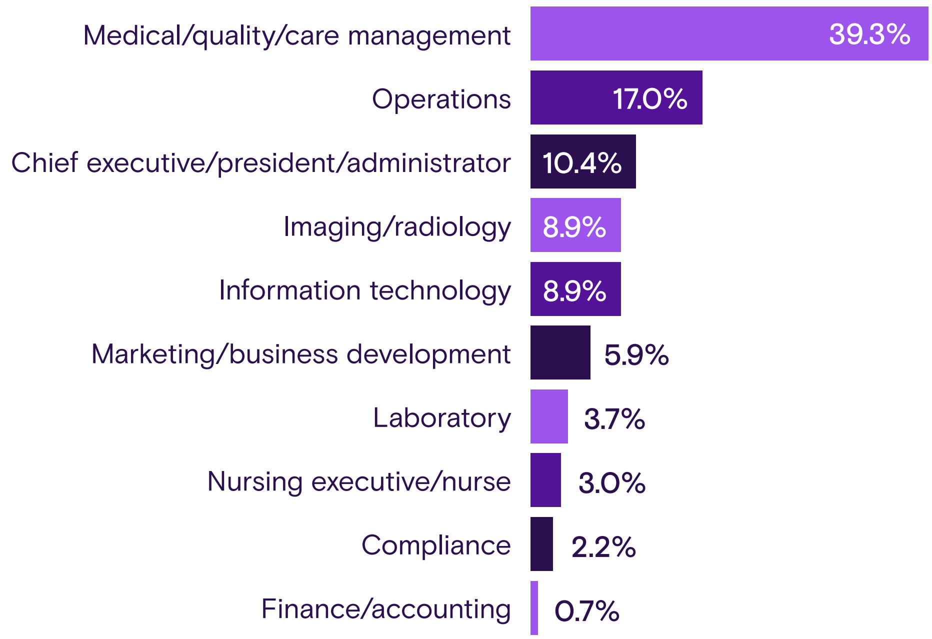
RESPONDENT POSITION LEVEL (n = 135)

Director	48.1%
C-Level	26.7%
Manager	14.1%
Vice President	9.6%

RESPONDENT REGION (n = 135)



RESPONDENT FUNCTIONAL GROUP/MEDICAL SPECIALTY (n = 135)



Study methodology

METHODOLOGY	
Data collection	Results gathered in September and October 2023 via online survey.
Targeted respondents	Healthcare provider organization leaders in clinical roles, IT, laboratory, radiology, patient care, and women's health.

RESPONDENTS	
Total number	135 respondents from 133 healthcare organizations and hospitals.
Department/ role	Administration, medical/care management, clinical, IT, operations, marketing, imaging/radiology

About Definitive Healthcare

At Definitive Healthcare, our mission is to transform data, analytics, and expertise into healthcare commercial intelligence. We help clients uncover the right markets, opportunities, and people, so they can shape tomorrow's healthcare industry. Our SaaS platform creates the path to commercial success in the healthcare market, so companies can identify where to go next.

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