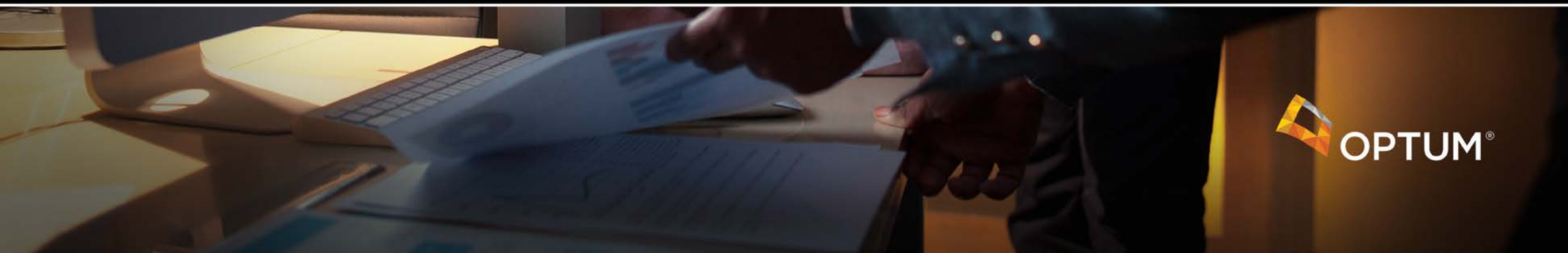
SPECIAL REPORT

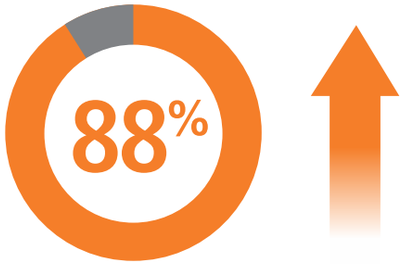
OPTUM IQ™ ANNUAL SURVEY ON AI IN HEALTH CARE



Measuring attitudes and **adoption of AI**

Artificial intelligence (AI) is proving transformative in modern health care delivery. From natural language processing to deep learning and machine learning, AI can enhance human decision-making and turn "smart" tasks — like learning and reasoning — into game-changing tools and technologies for patients, providers and researchers.

Health care leaders are increasingly turning to AI capabilities to streamline processes, reduce costs and improve outcomes and patient experience.



The second OptumIQ survey of health industry leaders, fielded in the fall of 2019, found an 88% increase in respondents whose organizations have implemented AI compared to 2018.

With its myriad potential benefits, leaders from provider, payer, life science and employer organizations all have different expectations when it comes to how they will infuse AI into their processes and workflows.

This special report details findings from the OptumIQ™ Annual Survey on AI in Health Care.

What the survey found

- Adoption of AI is growing rapidly among health industry leaders.
- When it comes to the use of AI to improve health care, confidence remains high, but respondents indicated a higher level of trust for AI in administrative functions than clinical applications.
- Leaders estimate their organizations will invest more in AI over the next five years, focusing most on administrative process improvements.
- Hospitals and health plans expect to see a positive return on AI investment in three years or less — less time than expected by the same groups surveyed in 2018.

By the numbers

51%

of **providers** report they have implemented an AI strategy, compared to 22% in 2018.

88%

of **health plan** respondents report they have implemented an AI strategy, compared to 50% in 2018.

70%

of leaders at **life sciences** organizations report they have implemented an AI strategy, compared to 34% in 2018.

58%

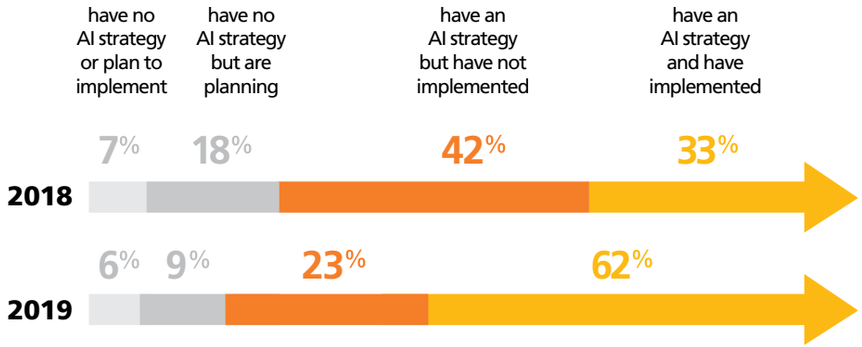
of health care **employers** report they have implemented an AI strategy, compared to 38% in 2018.

Progress toward **AI strategy implementation**

AI strategy implementation has increased since 2018. Health plans are furthest along, with **88% reporting to have implemented their AI strategy.** Providers lag behind at 51%.

As AI implementation has progressed, so has AI/data security policy development. Significantly, 68% of respondents report having AI/data security policies in place (compared with 48% in 2018.) Health plans lead the way in policy adoption at 85%.

85% of responding executives have implemented or plan to implement an AI strategy



The bottom line

Reviewing and processing millions of claims daily is a task today's AI is ideally suited for, so it's not surprising that health plans report being furthest along in AI adoption. But the gains across the board point to a wider acceptance of AI as an important tool to hit business objectives and keep populations happier and healthier.

Employers, for example, can use AI to administer and track progress in wellness programs. Life sciences organizations can find patients for trials easier. Health systems face no shortage of possible AI applications — they could use it to streamline their revenue cycle, help predict OR or exam room utilization, or help diagnose disease more quickly.

By the numbers

70%

of **providers** trust AI to manage and leverage information in electronic health records (EHRs).

74%

of **health plan** respondents see AI as trustworthy for detection of fraud, waste and abuse in reimbursement.

63%

of leaders at **life sciences** organizations trust AI for identifying patients for clinical trials.

63%

of health care **employers** trust AI to provide individuals with relevant health actions using personalized communications.

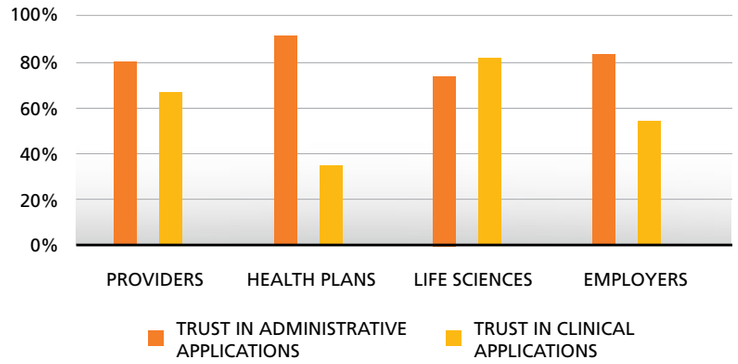
Trust in AI for **health care applications**

Overall, confidence in AI is high, with nearly all respondents signaling a trust for AI technologies that support administrative functions or clinical decisions. But when broken down by application, trust in AI for administrative tasks leads the way.

The top five areas in which respondents see the most AI potential are:

- Automating prior authorizations for providing care or services
- Providing individuals with relevant health actions using personalized communication
- Managing electronic health records (EHRs)
- Detecting fraud, waste and abuse in reimbursement
- Selecting the appropriate care setting

97% of responding executives trust AI in some way, but perspectives differ by segment and function



The bottom line

Across the board, most health industry leaders see AI as a trustworthy partner for administrative tasks, with a growing interest in clinical functions. Leaders believe that human expertise should be a balancing factor in making informed clinical decisions.

The slight gap in trust between using AI for administrative tasks compared to clinical functions has many possible explanations. Administrative functions have long been considered an ideal area to improve with the use of AI and is already in place at many organizations, making it a tried and true solution.

Trust in AI will drive investment. And more investment will allow for the clinical validation needed to reassure all health care stakeholders of the promise AI has to offer for clinical decision support: reducing care variation, minimizing trial-and-error approaches and freeing up clinicians' time so they can focus on their patients.

By the numbers

55%

of **providers** expect to see a positive ROI in less than three years, compared with 26% in 2018.

52%

of **health plan** respondents expect to see a positive ROI in less than three years, compared with 20% in 2018.

46%

of **life sciences** organizations expect to see a positive ROI in less than three years, compared to 30% in 2018.

46%

of **employers** expect to see a positive ROI in less than three years, compared to 38% in 2018.

Investment plans and **ROI expectations**

Leaders estimate their organizations will invest an average of **$39.7 million in AI over the next five years — a $7.3 million increase** over 2018's estimate.

Most of this investment is expected to be directed toward administrative process improvements. More than a third (36%) of those surveyed will invest in personalizing clinical care recommendations, and the same percentage (36%) will invest in accelerating research for new therapeutic or clinical discoveries.

50% of health industry leaders rank automating business processes as their top AI investment priority. This priority leads the way across three of the four sectors surveyed

Providers
51% automating processes
39% personalizing care recommendations

Health plans
64% automating processes
56% detecting fraud, waste and abuse

Life sciences
53% accelerating research
47% personalizing care recommendations

Employers
51% automating processes
30% monitoring users of Internet of Things devices/wearable technologies

The bottom line

The investment strategies identified by health care industry stakeholders suggest a greater awareness of the proven use cases for AI. For example, employers have likely seen proof of the value of AI for population health management, making their investments in AI for monitoring users of Internet of Things (IoT) devices and wearable technologies a no-brainer.

As more health care AI use cases are published, watch for investments to broaden or shift.

By the numbers

56%

agree that more **accurate collection or use of data** is the greatest benefit of incorporating AI into health care.

52%

expect AI to create more **work opportunities**.

87%

agree that hiring **candidates with experience** in AI technology is a priority.

Other AI **deployment benefits**

When it comes to the greatest expected benefit of AI in health care, more accurate collection or use of data leads the way for providers, life science organizations and employers. Health plans, however, put more accurate reimbursement (60%) at the top of their list.

Where workforces are concerned, **52% of responding executives expect AI to create more work opportunities**. This varies across the health industry segment. Of health plan respondents, for example, 61% said AI deployment would create more opportunities for employees.

Coming in second for greatest expected benefit:

50%

Providers: Reduced administrative or operating costs

54%

Health plans: More accurate data collection or use of data

43%

Life sciences: More accurate or efficient diagnosis

53%

Employers: Increased consumer satisfaction

The bottom line

That all sectors of the health industry recognized how data-driven insights can help their businesses perform better speaks to AI's potential as a general purpose technology. After that, responses coalesced around benefits that were more segment-specific.

For example, life sciences respondents valued AI's ability to more efficiently diagnose disease - that translates to more appropriate prescription habits. And employers want to see better results for their employees, which in turn means a more productive work force.

As for AI and talent, while more than half of health industry leaders see AI creating more work opportunities for employees, the other 48% say AI will reduce work opportunities. One of the greatest benefits of today's AI is its ability to take on mundane, repetitive tasks. As those tasks become automated, workers can be freed up to focus more on interactions that require a human touch, complex reasoning or empathy.

Conclusion

As quickly as AI is advancing and changing, so too are attitudes and perspectives on AI implementation in health care:

- In just one year, 88% more health executives say their organizations have implemented an AI strategy.
- Health care industry leaders are poised to make larger investments in health care AI — a net increase over 2018 of $7.3 million.

Providers, life sciences organizations, health plans and employers have recognized and deployed AI technologies to make their businesses perform better.

As time moves on and more applications of AI evolve from proof of concept into production, these health care leaders are poised to reap the benefits and deliver a health system that is more accessible, equitable and affordable.

About the Annual OptumIQ Survey on AI in Health Care

Distributed: September 2019
Method: Online survey administered by Wakefield Research
Reach: 500 senior health care industry executives
Respondents: C-level executives across care provider, health plan, life sciences and employer health benefits organizations

AI as defined for the survey: "Artificial intelligence" (AI) refers to technology that emulates human performance by coming to its own conclusions or the understanding of content to enhance human capabilities, using methods such as natural language processing (NLP), machine learning (ML) or deep learning (DL)

Organizations represented: hospitals, ACOs, clinics, health plans, medical device manufacturers, pharmaceutical companies, health care IT and other organizations working in the health care sector

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About Optum

Optum is a leading information and technology-enabled health services business dedicated to helping make the health system work better for everyone. We deliver integrated solutions infused with OptumIQ™, our unique combination of data, analytics and health care expertise, to help modernize the health system and improve overall population health.