

How to build a foundation in AI to accelerate health transformation



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In brief

- ▶ EY interviews with global executives show the use of AI/GenAI in health care requires committed leaders, and the right governance, data and skill sets.
- ▶ Only 36% of health care CEO respondents said they had assessed how to effectively govern the risks unique to AI, according to the EY CEO Outlook Pulse Survey.
- ▶ As health organizations mature their governance and foundational capabilities, they can evolve their use of AI from back office to care delivery.
- ▶ Executives must consider how to maintain a portfolio of algorithms, monitor underlying data and support testing, training and change management around each.

Health executives must be strategic about what to do now, and what groundwork to lay for the future, to create value through AI.

Health executives are both intrigued and wary when it comes to AI and generative AI (GenAI) for health, and rightly so, given its potential to improve health care delivery and the unique challenges around privacy, bias and trust.¹ The EY CEO Outlook Pulse survey found that 66% of global health care CEO respondents say more work is needed to address the social, ethical and criminal risks in the new AI-fueled future.² In our interviews with health executives and clinicians across the globe, they highlighted the importance of building out governance and skill sets that will enable the organization to balance the risks and rewards of AI.

An example of the many ways in which AI can provide critical new insights to improve health involves the use of GenAI, a form of AI that leverages an unprecedented ability to work with unstructured data to generate new content. If GenAI could be applied in ways that would signal to care teams what patients need and when, health organizations could prevent health conditions from escalating to crisis levels and move toward better quality of care. “Why can’t every single patient who has ever had a diagnosis for diabetes be screened and analyzed to ensure that every recommendation associated with diabetes care has been applied to the patient?” asked Dr. C. Matthew Stewart, Associate Chief Medical Officer at The Johns Hopkins Hospital and core faculty at the Armstrong Institute for Patient Safety and Quality. “That one intervention alone would have such a profound effect on the health of the US population and other countries.”

While GenAI holds much promise, many organizations are starting with strategically integrating it into their back offices to get comfortable with how the technology works and to institute the proper AI and data governance before moving into the clinical space. Billing, claims, waste reduction, and scheduling are perceived as safer realms to gain their footing.

With wearables collecting real-time, accurate physiologic and biometric data from patients, some health systems are adopting AI technology solutions to go beyond traditional threshold alerts and monitor for clinically meaningful trends in the patient's status longitudinally to create opportunities for earlier interventions prior to catastrophic deterioration events. While clinical staff may be taking temperatures and listening to the heart and lungs every six hours, health systems generally do not have the staff to effectively monitor that data so they may miss overall trends, said Dr. James Mault, CEO of BioIntelliSense, a medical-grade wearable and AI analytics solution for continuous patient monitoring. "So that's where AI really is the game changer. We're watching for trends and not for spot values, which is a big difference," he said. "With AI, you now move from 'I wonder why this patient crashed' to 'I can see this crash before it happens and intervene appropriately.'"

Better outcomes, of course, are the goal for a clinical workforce that is often mission-driven and frustrated by unsustainable health care delivery models. Clinicians are clamoring for actionable insights to help them reduce patient suffering.³ For their part, consumers told EY they are coming to expect AI to be used in health care in the next decade, but they want to make sure their health information is properly protected (see Figure 1).⁴ As the AI arsenal grows in number of algorithms and in complexity, it requires a highly mature level of governing, monitoring and quality oversight. So, how can health executives begin taking advantage of the wealth of opportunities that AI has to offer, while maintaining a level of assurance that the insights provided will not put patients in harm's way?

As health organizations develop their AI and GenAI strategies, here are five key principles for health executives to consider:

1. Obtain executive commitment to activate and scale AI and GenAI projects

A holistic AI-at-scale strategy is necessary, so if the organization needs to recalibrate during an initial AI project, it does not lead to a loss of organizational buy-in around realizing the power of GenAI for health. "Adoption of bold new innovations is often challenging, especially with health care professionals whose overriding concern is, first and foremost, patient safety. Nonetheless, strong leadership can overcome these challenges through proper education and proof points of clear clinical benefit to patient care," said Dr. Mault.

More than 40% of health care CEO respondents to the EY CEO Outlook Pulse survey said they had already established an AI task force, with a direct line to the C-suite, responsible for the firm's vision and strategy (see Figure 2).

First, leadership must bring clarity and strategic vision around the future AI/GenAI-infused operating model. Planning for this future state, executives must consider how the organization will mature

Figure 1: Both health consumers and clinicians recognize AI's potential in health care

52%

of respondents to the EY Global Consumer Health Survey said they feel AI will be commonly used in health care in the next 10 years.

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clinicians interviewed for EY Global Voices in Health Care Study said they have access to analytic insights about their patient population to improve outcomes.

its capabilities around operating and maintaining a portfolio of algorithms, monitoring the underlying data supporting the algorithms, supporting testing, training and change management around each algorithm and how changes in the health care environment, such as new data elements, new care models and procedures, may affect the relative effectiveness of each algorithm. One can imagine a future wherein algorithms will be dependent on other algorithms and, hence, the change management capabilities, roles and skills across the enterprise must evolve to appropriately manage such complexities and risks. As such, executives must consider these future health care operating model impacts and what steps need to be taken now to plan, invest, hire, train and protect the health organization.

What you can do now: Start with a quick win – an internal-facing use case that is low risk, low cost and will allow executive stakeholders to understand the algorithms, governance process and change management needed before venturing into higher complexity use cases.

Focus for the future: Executives should be key players in championing new projects, and in providing strategic communications and project oversight.

2. Inspire confidence in your AI strategies through appropriate governance, legal, and risk management

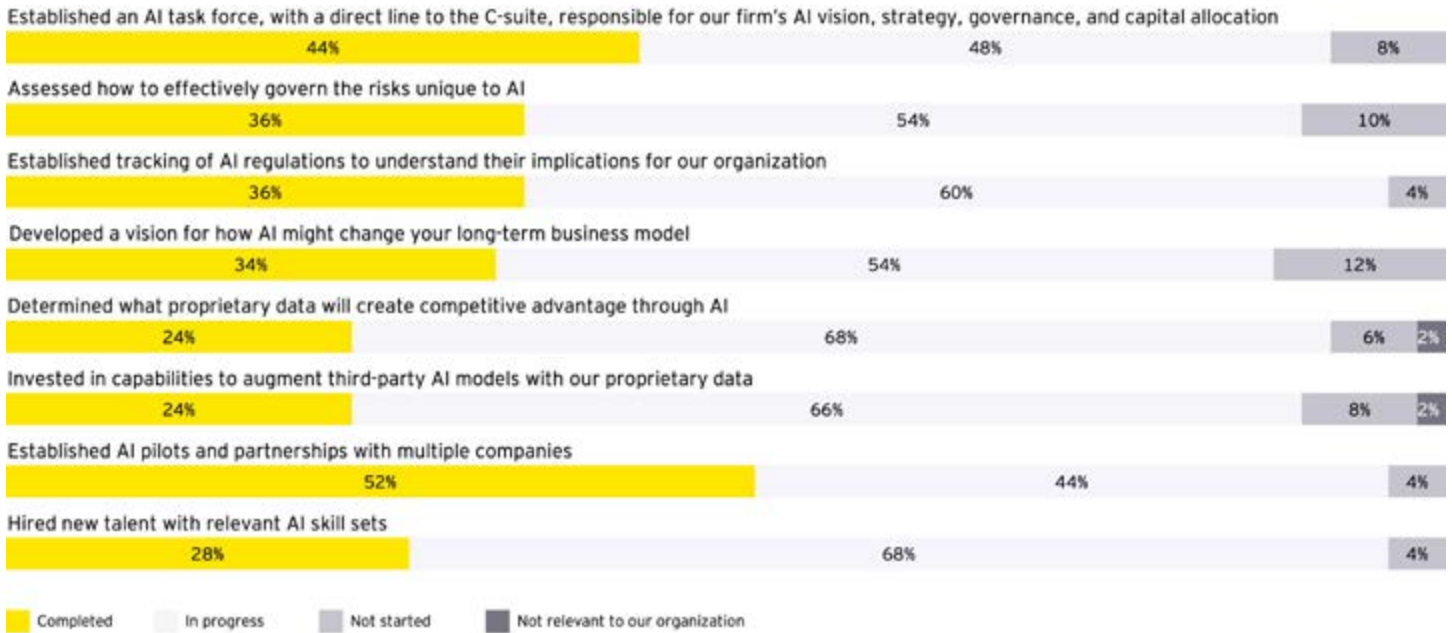
As AI continues to evolve globally, regulators are scrambling to navigate this new environment, especially when it comes to integrating the technology into medical devices and clinical workflows. To guard against the risks of hallucinations, biased algorithms or shifting datasets impacting patient care, health organizations must be vigilant about performance monitoring and change management.⁵

Governance must be the anchor to ensure secure, sustainable, responsible and transparent AI (see Figure 3).⁶ "Explainable AI is important so that physicians can understand that the information presented is based on clinically accepted treatment protocols, and

Figure 2: Health care CEOs are taking steps to shape their AI strategies

What is the current state of the following actions relating to AI in your organization?

[The respondents were allowed to select one option for each statement]



Source: EY CEO Outlook Pulse Survey

can make better informed decisions,” said Femi Ladega, Group Chief Digital Officer of Dedalus, a global digital health care and diagnostic solutions company. “An organization’s AI governance should be flexible to meet maturing needs of AI models in the health care enterprise.”

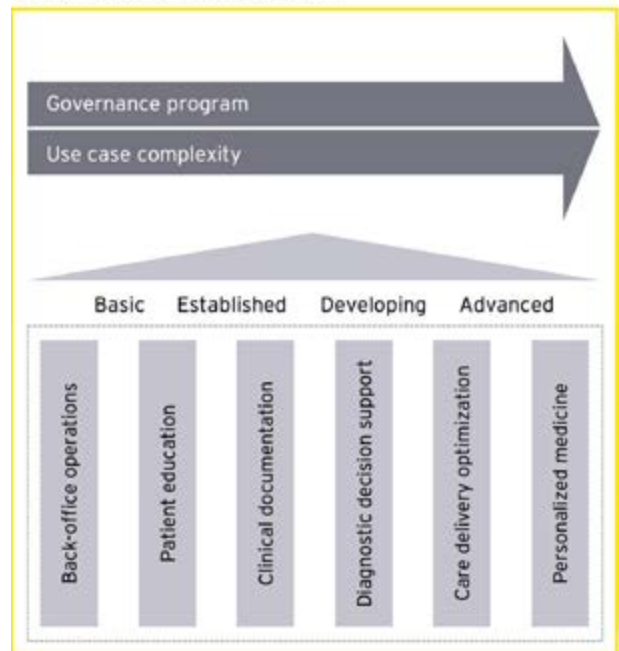
As health organizations turn to external parties to help with AI/GenAI, potential danger exists in leaning on dozens of point solutions, which could become unmanageable and expensive. Health organizations need policies in place to properly vet and assemble the ecosystem of partners and solutions that they may choose in this rapidly changing environment.

What you can do now: Harmonize your AI governance with the existing organizational and data governance. AI must be plugged into existing processes so that the organization can better embrace and understand it.

Focus for the future: Establish continuous feedback loops that monitor for regulation changes, risks, and biases across the AI portfolio. The feedback loop should be part of the governance structure to be constantly overseeing and improving all algorithms.

Figure 3

As governance matures, health organizations can move closer to realizing the full potential of AI to keep people well



3. Build the right data infrastructure to power your AI strategy

One of the key obstacles for health organizations with AI is data infrastructure. In integrating five of its care systems, London's health organizations adopted a single health information exchange infrastructure to securely share records at the point of care across all its organizations. This is called the "London Care Record," and helps ensure frontline staff have the information they need about a person when they need it, wherever they are working in London. Nationally in England, a process is underway to implement a federated data platform in support of consistent approaches to local use of data for multiple purposes. To enable AI now and in the future, health systems must craft a data infrastructure that can bend and flex to the needs of the health care system.

"The London health data strategy was saying actually, we make all this data available – not just six months' data, but near to real-time in a linked way across all our patient contacts and patient care settings," said Luke Readman, Director of Digital Transformation for NHS England, London.

What you can do now: Review your data strategy and data governance, including existing metadata, data lineage, data ownership and infrastructure. Leveraging data standards is key. Ingest data and map the various standards to each other. Moving from on-premises to the cloud allows for more scalability and flexibility. Create a semantic layer of data to make the information consumable and exposed via APIs. Determine the key infrastructure components that are necessary for the desired business outcomes.

Focus for the future: Focus on building a scalable, flexible infrastructure that can withstand a portfolio of AI algorithms. Be strategic with procurement decisions when running a suite of GenAI and AI algorithms at once and at scale enterprise-wide, as it can become expensive in a very short time.

4. Equip and upskill your workforce with AI training

Health organizations will have employees either starting to use AI and GenAI on their own, or who are making decisions based off the outputs, so it is important to think through the training needed to help workers recognize bias and understand how to monitor performance. Working with clinicians when implementing AI or GenAI tools is integral to successful integration. Transparency around the data and models that feed the outputs is necessary from the beginning so that clinicians know which variables are interacting to produce a recommended clinical action.

What you can do now: When it comes to AI education in general, many prominent universities are incorporating AI courses to prepare the future workforce. Individuals delivering care should receive AI literacy training to prepare them for the incorporation of AI and GenAI in their daily lives. Leaders also should evaluate board member readiness around AI, and the skills it takes to steer an AI-enabled organization.

Focus for the future: Establish specific roles for more AI-literate or AI-interested health care providers to work with those developing and maintaining AI algorithms to continually optimize care delivery and to create experiences that satisfy patients.

5. Prioritize GenAI use cases in alignment with the maturity of your AI strategy, governance and foundational capabilities

Health organizations will want to make sure their investment will pay off in terms of value – whether it be financial value, or to the clinician and patient experience. To produce value, the right type of AI must be applied based on the situation, and what is most clinically applicable, cost effective and, importantly, sustainable. Each use case might not revolve around just GenAI or one type of AI, but rather a mixture of RPA, machine learning and GenAI together to be cost effective and sustainable. The key is architecting these tools together in a way that is manageable and has the appropriate oversight to produce ethical, valuable algorithms at scale.

Cost is certainly a driver when it comes to maintaining algorithms at scale. Data sets and trends in algorithms may change over time, meaning they will continually need to be optimized. As algorithms become more complex and grow in scale, the operating model of how to manage them changes drastically. Further, from an enterprise level, there will be a portfolio of AI algorithms consistently needing to be overseen, maintained, traced and regulated, which requires specialist skills, data infrastructure and significant oversight.

But value is not just financial, says Dr. Stewart. Value can come in the form of increased clinician satisfaction through reducing EHR clicks or taking giant steps forward to improve the world's health. "If I could address health care disparity in the application of best practices across all people for hypertension, diabetes, congestive heart failure and breast cancer, and eliminate the health care disparities for those diseases across all people, then I almost really wouldn't care how much it cost," he said.

Here's what you can do now: Determine your organization's strategic objectives and goals when using AI. Is the goal cost reduction, revenue growth, operational efficiency, customer satisfaction or innovation? Start with a low risk, easy to implement use case that fits your objectives.

Focus for the future: Once your organization has tested its governance on a few use cases and as the infrastructure and skill sets mature, it can take on more complex, transformative use cases. Continually measure the use cases that are implemented to determine if they are meeting the desired outcomes or if they need to be optimized further.

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Extra insight: Lessons from the field

A datahub that leads to consensus, better patient experience and reduced care burden

At Erasmus MC in Rotterdam, the Netherlands, a research team evaluated intensive care AI models globally and found less than 2% of the models had been implemented at the bedside to help the patient, as they were stuck in development and prototyping.⁷

“One of the biggest obstacles is the cross-disciplinary collaborations needed between data scientists, health care professionals, and regulatory experts,” said Davy van de Sande, PhD candidate, Intensive Care Adults at Erasmus MC. “Usually when you talk about innovations in a health care organization, they’re implemented top down, and all other health care professionals need to use it. And that could lead to misunderstanding between the different stakeholders.”

In January 2022, Erasmus MC created a center called The Datahub, which aims to foster collaboration among all stakeholders to develop AI innovations that eventually are adopted and trusted at the bedside. “Initially, our approach was to directly engage with our nurses and physicians, asking

them about the challenges in their daily routines that AI might be able to address,” van de Sande said. He emphasized the importance of involving health care professionals in the process, as their input and influence are crucial in the evaluation and integration of AI technologies into clinical practices and workflows.

Erasmus MC recently introduced a comprehensive AI Governance Policy. This policy outlines the process from conceptualization to business case development, including prototyping, external validation in other hospitals, and prospective simulation to ensure safety in clinical settings.

The Datahub team has developed a surgical prediction model that identified a third of patients do not actually need inpatient care past the second day, in contrast to a typical five- or six-day stay. According to van de Sande, this could result in up to 250 saved inpatient bed days per year for a single surgical ward.

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