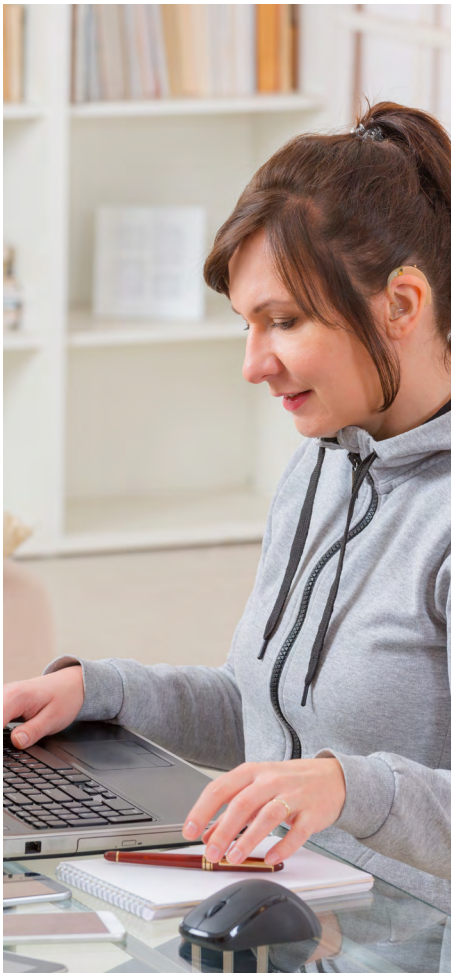
Generative AI

New models are poised to deliver significant advancements in every area of health

Generative AI is about to become increasingly ubiquitous in health care. It has powerful new abilities, when combined with other forms of AI and ML and other technologies, to streamline tasks through real-time consolidation of a complete array of clinical and financial information sources. It is projected that through these new capabilities, AI could generate $1 trillion in improvements across the health industry.[1]



Generative AI is a powerful tool gone mainstream. Used in connection with other advanced technologies, it increases our ability to efficiently analyze large quantities of complex information. This information is unstructured data, including clinical notes, diagnostic imagery, medical charts and recordings. This data can be used independently or in conjunction with structured data, such as claims, to extract valuable insights, speed decision-making and streamline workflows. It can be leveraged with cloud-based services and made interoperable for maximum efficiency and scalability.

As inspiring as these breakthroughs are, there are inherent risks associated with the use of generative AI in health care. It is imperative to continually involve health care practitioners to verify the accuracy and usefulness of any technology as its applied.

Health care executives will need to weigh the benefits and risks of incorporating generative AI tools. Health care organizations will be responsible for ensuring the safe and responsible use of these innovative technologies. Even as regulations surrounding generative AI continue to evolve, advocating for responsible use, regardless of legislative action, will be the focus for many organizations.

Forces driving generative AI decisions in 2024

Generative AI hit the mainstream in 2023 and has only gained steam in health care through evolving multimodal and small language models.[1] This adoption also continues driving down costs of using these advanced tools, increasing access to them over time.

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By analyzing and combining both structured and unstructured data, multimodal AI models can now generate insight as a tool for informing human decision-making. These models can understand multiple types of data, such as images, text and videos. They leverage capabilities such as machine learning, natural language processing and computer vision to integrate content across various modalities. With human oversight and governance, they can make predictions, help humans take action, automate tasks, and continuously learn and adapt. With each passing day, these tools are becoming increasingly intuitive and more dynamic.

Small language models are constructed using high-quality sources, yet they have lower storage and memory requirements. These models can be customized to suit specific tasks and meet regulatory standards, thereby facilitating faster adoption.

The administration's recent budget and executive order on the use of AI outlines priorities for AI-enabled capabilities within the Health and Human Services sector. Focus areas include the development of AI tools that can aid in diagnosis and treatment, monitor and address public health risks, accelerate the approval process for medical products and therapies, and support AI regulation and safety efforts.[2,3]

Generative AI: Progress, challenges and what to watch

Health care has been using AI in administrative and risk management areas for some time. But generative AI's capability to include unstructured data and speed insight across the entire health ecosystem is a significant change. Its multimodal capabilities allows it to cut through in health care in new ways. Combining generative AI with clinical judgment and clinical insights can help many get to sustainable and equitable use cases.

For instance, consider a scenario where a nurse practitioner has access to a comprehensive overview of a patient's health history. By employing predictive analytics, generative AI can assist the nurse practitioner in identifying the most pertinent questions to ask. This enables clinicians to quickly address immediate needs and uncover previously unnoticed concerns or underlying causes. These types of insights can now be scaled and applied to various objectives. They are anticipated to tackle goals such as minimizing complications during care transitions, expediting diagnostic reviews, supporting virtual care and reducing unnecessary or avoidable utilization.[4]

Now consider a scenario where a call center employee has access to comprehensive member information and immediate resources and guidance. This real-time information enables the call center to provide consumers with a comprehensive list of available services or covered benefits. It can prompt care authorizations and deliver upfront information regarding scheduling, cost obligations and payment options.

Imagine a scenario where a consumer has ongoing access to an integrated physical and mental health care plan. They can communicate directly with their care team, employ digital monitoring tools, and receive ongoing coaching and decision support – anywhere, anytime.

> AI can now be used to solve consumers' most frustrating pain points, support the front-line workforce and enable clinicians to practice at their highest level. The emerging opportunities are in aiding disease prediction and prevention.
>
> **– Dame Vivian Hunt**
> Chief Innovation Officer
> UnitedHealth Group

Consumers will thrive from a unified approach that keeps them informed and engaged in their health and financial well-being.

Using population-level data and broad data sets, generative AI can help us tackle systemic issues such as accessibility, affordability and equitable outcomes. This presents an opportunity and responsibility to make meaningful improvements.

Moving forward with AI

Bring cross-functional leadership together to identify relevant new use cases.

Appraise the quality of existing data sets and, if necessary, strategies to improve them.

Assess existing operations, human resources, existing AI tech stack, cloud and interoperability needs to determine requirements needed to accommodate large models.

Determine what is required to integrate generative AI models into existing data and analytics models and AI roadmaps.

Consider the value of building custom models that work in a health care-accredited environment and to your organization's ethical and operating standards.

Gauge the various levels of risks related to privacy, security and error associated with each use case. Then create the testing, governance, policies and legal frameworks that are critical to overseeing the use and fairness of generative AI.

Make sure adoption of new AI-driven processes is well supported with training, resources and support.

Always prioritize safe and responsible use to ensure patient safety and security and maintain trust in the health system.

Why the time to act is now

Generative AI has the power to cut through the enigmas facing health care – simplification, satisfying experiences, expedited decision-making, lower costs and improved outcomes. Generative AI can learn and adapt by analyzing data and patterns and then make adjustments based on what it discovers and what human guidance is received. This adaptive learning has already begun, and health organizations need to engage now or risk being left behind. By effectively integrating generative AI, organizations can reshape the health care experience and demonstrate the performance and simplicity that consumers and the workforce have long awaited.

Generative AI sources

1. Bhasker S, Bruce D, Lamb J, Stein G. Tackling health care's biggest burdens with generative AI. McKinsey & Co. July 10, 2023.
2. The White House. Executive order on the safe, secure, and trustworthy development and use of artificial intelligence. October 30, 2023.
3. The White House. Fact Sheet: The President's Budget Advances President Biden's Unity Agenda. March 11, 2024.
4. Kuwaiti Aa, Nazer K, Al-Reedy A, Al-Shehri S et al. A review of the role of artificial intelligence in health care. *J Pers Med*. June 2023.

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