SUPPORT THE THOUGHTFUL APPLICATION OF TRUSTWORTHY AI IN HEALTHCARE

We are witnessing the accelerated use of AI in healthcare. To ensure this technology will improve patient outcomes and create a more sustainable and accessible healthcare system, public policy must support its innovation and safe use. Well-designed policies should be based on a shared understanding of the different capabilities and applications of AI in healthcare. This brief is a first step toward creating a shared awareness about Health AI.

What is Health AI?

In general, AI is "a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments."[1] In the healthcare sector, AI-supported technology is designed to help in multiple ways, including assisting medical professionals, improving administrative processes, and enhancing the patient care experience.

While many of these Health AI applications are not new, other capabilities are unprecedented. Both predictive and generative AI models are being utilized in the healthcare system; it is important to understand the difference between these models. Predictive AI employs rules-based algorithms that are pre-defined, logic-based principles confined to a closed dataset. These algorithms automate tasks by using "if, then" instructions and can generate limited-range forecasts and estimations. Generative AI utilizes extensive datasets for learning, enabling it to produce novel data through prompts that create proposed solutions, text, or other new content like images and sound.

Novel applications and the rapid advancement of AI technologies present challenging questions about topics such as unwanted bias, privacy protections, and risk – which are even more sensitive when applied in a healthcare context. Understanding what health AI is capable of and how it is applied will help policymakers consider solutions to these increasingly important questions.

Below are examples of the capabilities and applications of Health AI.

What Can AI Do in Healthcare?

- Improve Decision-Making: Some AI models can take large amounts of data and process them to generate insights that a human cannot, helping to inform the many decisions part of a patient's healthcare journey. Data analytics can be used to help identify patterns within a certain population to target healthcare interventions or process medical data to augment the detection of trends and diagnoses.
- Enhance Communication and Patient Access: AI models, like chat bots, can take data and transform it into understandable language. This "natural language processing" can improve communication in the healthcare sector through triaging customer support requests and patient intakes, helping with clinician documentation by transcribing clinicians' conversations, and converting unstructured clinical notes to structured data to reduce burden and improve patient care. Additionally, use of AI tools may support individuals engaging with providers via chatbot screening tools, beneficiary enrollment, and more.
- Streamline Processes: AI can also be used to automate certain tasks that clinicians are burdened with – like health data entry, document processing, and other aspects of electronic health record (EHR) management. Health plans benefit from automation by promoting efficiencies in operations – like claims processing, fraud detection, and member engagement. These efficiencies may help reduce overall healthcare costs.
- Integrate Data Sets: AI may be useful in bringing disparate traditionally siloed data pieces together by surfacing previously unseen relationships, patterns, and abnormalities to surface across larger quantities of data.

[1] https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/

What Are Some Applications of AI in Healthcare?

- Administrative processes: AI can streamline administrative processes like scheduling and patient intake, claims processing, or care referral tracking. Predictive AI models can be used to identify instances of fraud as well as patterns for workforce optimization. Generative AI chatbots may be used to help consumers make decisions about coverage or treatment.
- Operational support: AI can support healthcare operations, including quality measure data collection and analyses or business management tools.
- Clinical decision support (CDS): CDS tools — software that can help physicians analyze patient data and interpret clinical guidelines — can be used to generate individualized recommendations for patient care plans. Some CDS tools are regulated by the FDA as medical devices. Examples of regulated device CDS and non-device CDS include but are not limited to, computerized alerts, clinical guidelines, condition-specific order sets, diagnostic support, and focused patient data reports.
- Population health interventions: By analyzing data sets of patient populations, AI tools can target interventions for those who would benefit from them the most.
- Medical devices: AI can be used as a medical device to aid in the treatment, cure, prevention, mitigation, and diagnosis of disease. For example, a doctor may use an AI-enabled device to analyze medical images (e.g., from ultrasound or CT scan) to help identify features or patterns that may not be apparent to the human eye.
- Drug discovery: AI can be used to identify new molecules for the development of drugs or new treatments based on existing drugs.

The time is now for policymakers to prioritize solutions — leveraging existing authorities and standards where possible — that support the thoughtful application of trustworthy AI. While policymakers focus on regulatory options, our intent is that this shared understanding of Health AI will help us take the necessary leaps forward to create a better healthcare system.

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