Emerging Technologies in Healthcare Delivery

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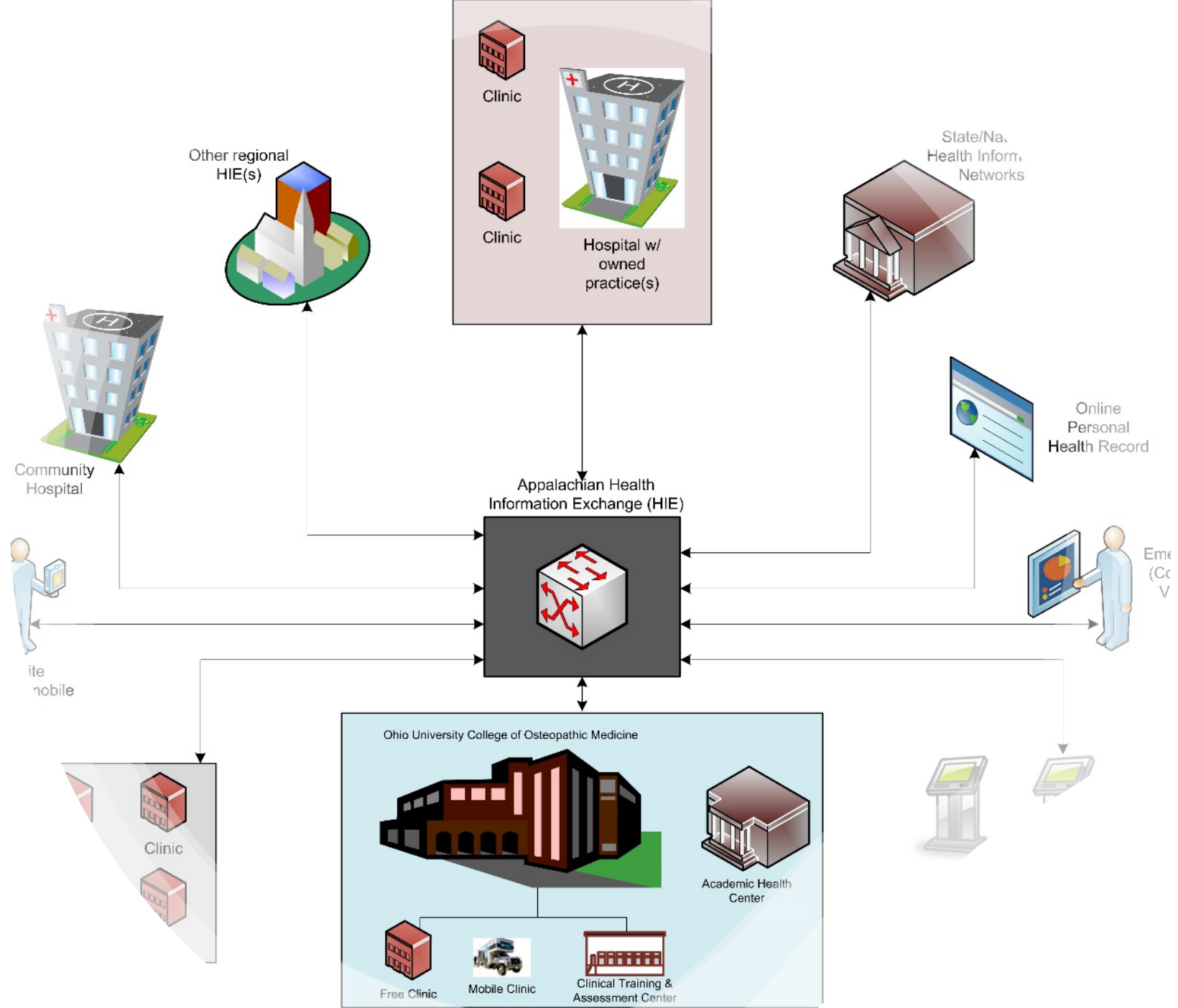# Existing technologies that have transformed healthcare delivery:

Telehealth and Telemedicine

Electronic Health Records (EHR)

Health Information Exchange (HIE)

Mobile Health (mHealth)

Artificial Intelligence (AI)

Clinic

Clinic

Hospital w/
owned
practice(s)

Other regional
HIE(s)

State/Na...
Health Inform...
Networks

Community
Hospital

Online
Personal
Health Record

Appalachian Health
Information Exchange (HIE)

Eme...
(C...
V...

...ite
...obile

Clinic

Ohio University College of Osteopathic Medicine

Academic Health
Center

Free Clinic

Mobile Clinic

Clinical Training &
Assessment Center

Emerging Technologies in Healthcare

Generative AI	Personalized/precision medicine	Virtual Healthcare
Modeling (physical/digital)	Virtual/Augmented Reality	3D Printing

Pilot Projects at Baptist Memorial Healthcare

Ai engine that will evaluate radiology notes to look for undiagnosed lung tumors

Ai and GenAi models in the Epic platform on a proof of concept basis (proactive physician note summarizations)

Revenue Cycle is looking to implement BOTS for repetitive administrative tasks

DAX (Dragon Ambient eXperience) to speak encounter notes and have them summarized into the patient record.

February 22, 2024   Baptist News, Team Updates

Baptist Memphis Begins Virtual Nurse Pilot Program to Help Support Bedside Nurses

Rush Memorial's virtual ICU reduces transfers, boosts patient experience

And the telemedicine technology has increased the number of surgeries. It has enabled surgeons to feel comfortable performing more surgeries knowing they have available the clinical expertise to care for those patients in recovery in the ICU.
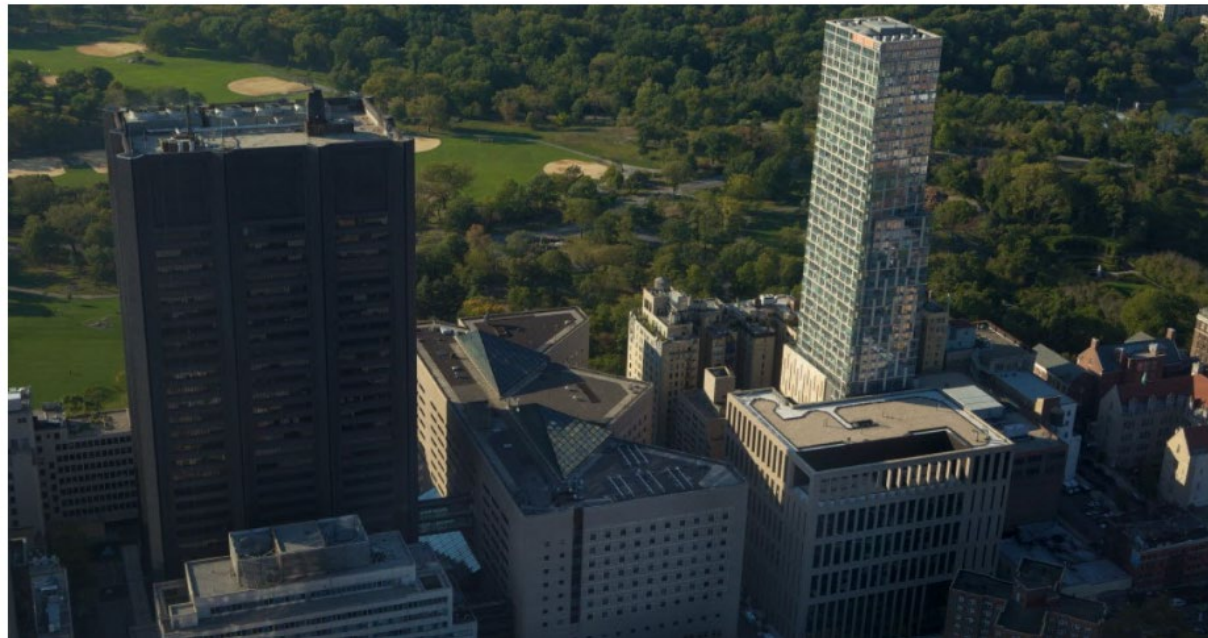
By **Bill Siwicki** | April 03, 2024 | 11:07 AM

Mount Sinai slashes 10-year IT capital costs by moving to the cloud

The New York health system also successfully migrated, consolidated and shut down data centers and servers, achieving monetary savings and remediating security risks.

By **Bill Siwicki** | November 10, 2023 | 01:42 PM

Virtual group therapy enables Geisinger to treat more patients and maintain care continuity

With waits for individual psychotherapy as long as several months and several thousand outstanding orders, the mostly rural health system needed a solution. Combining group therapy and telemedicine was the answer.
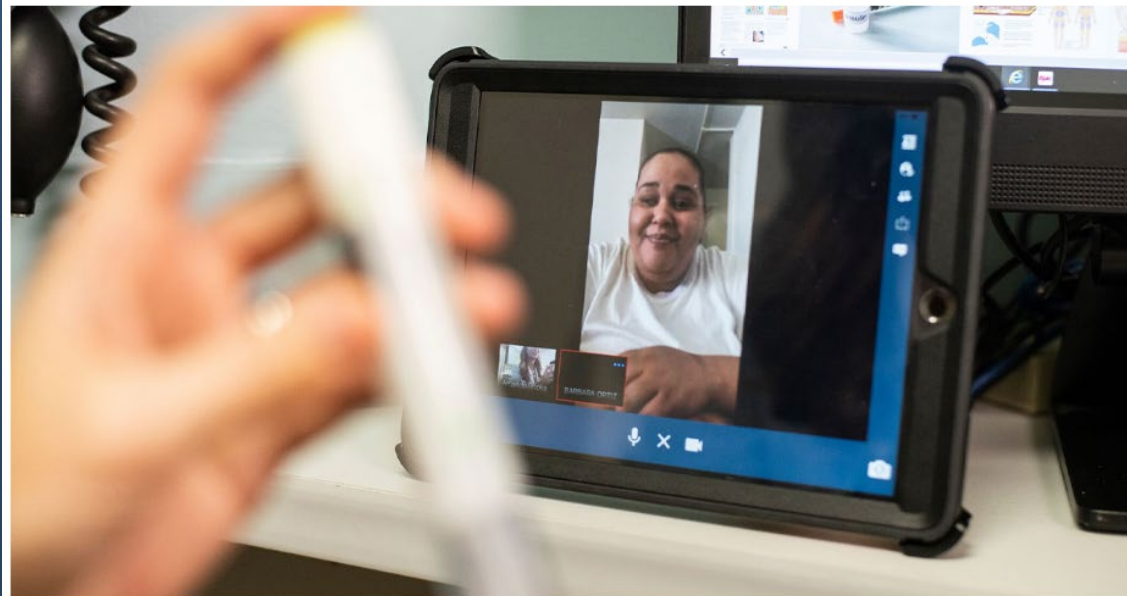
By **Bill Siwicki** | January 10, 2024 | 12:49 PM

Photo: Geisinger

Generative AI

"there's no other technology currently as impactful as Generative AI is poised to be, in healthcare delivery"

The potential of artificial intelligence (AI) to simplify existing healthcare processes and create new, more efficient ones is a major topic of discussion in the industry. Yet healthcare lags other industries in AI adoption. In this paper, we estimate that wider adoption of AI could lead to savings of 5 to 10 percent in US healthcare spending—roughly $200 billion to $360 billion annually in 2019 dollars. These estimates are based on specific AI-enabled use cases that employ today's technologies, are attainable within the next five years, and would not sacrifice quality or access. These opportunities could also lead to non-financial benefits such as improved healthcare quality, increased access, better patient experience, and greater clinician satisfaction. We further present case studies and discuss how to overcome the challenges to AI deployments. We conclude with a review of recent market trends that may shift the AI adoption trajectory toward a more rapid pace.

Newsletters   Events   Virtual Events   Webinars   Partner Content   Podcasts

Cybersecurity   EHRs   Telehealth   Innovation   Digital He

# 75% of healthcare professional foresee widespread AI adoption

Naomi Diaz - 22 hours ago

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Seventy-five percent of healthcare professionals say widespread AI adoption will happen within the next three years, a Feb. 27 report from Berkeley Research Group found.

Accenture debrief on AI

"A fundamental shift in our relationship with and access to knowledge"
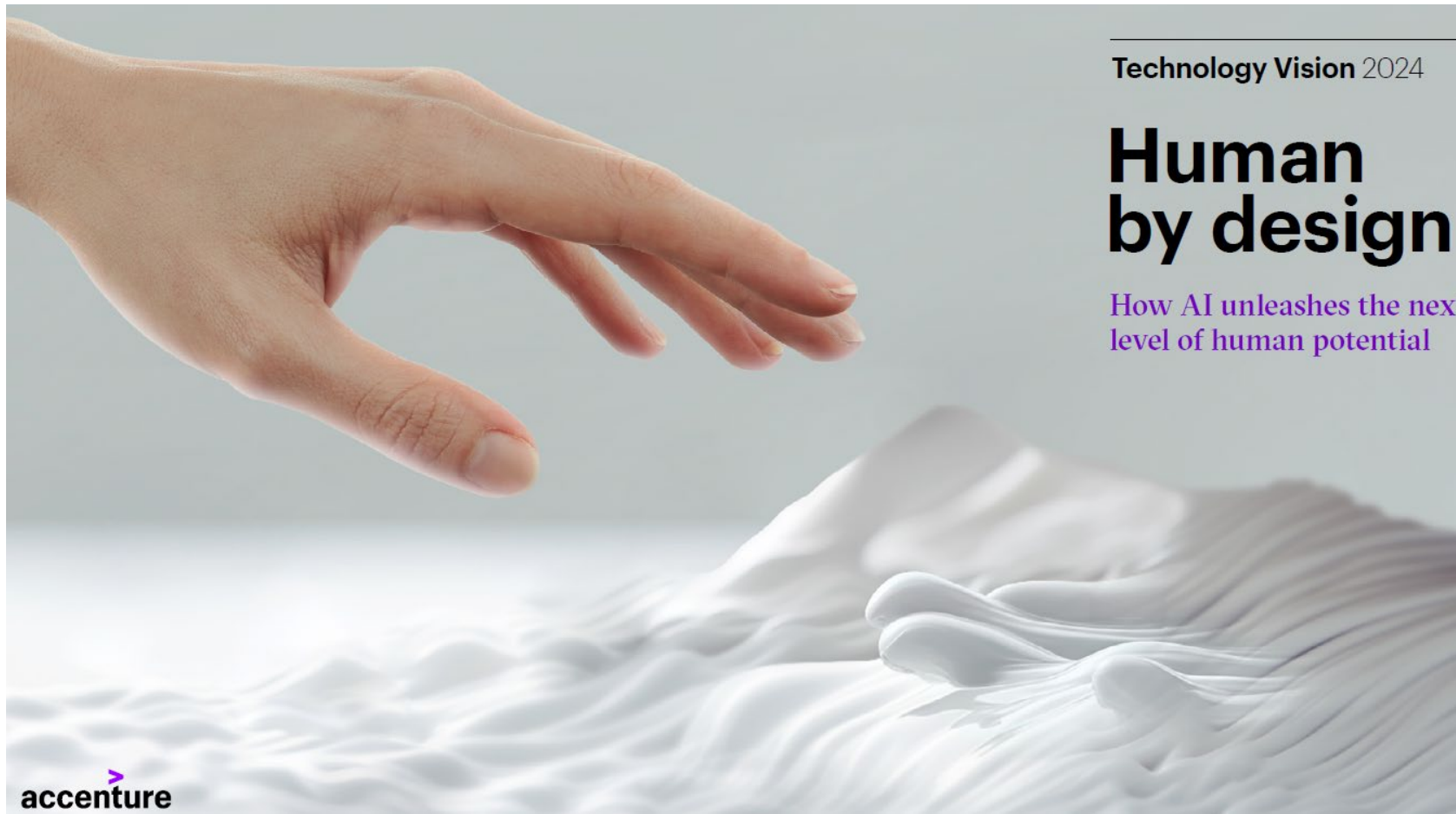
Epic's AI sepsis model faces hurdles, study finds

Naomi Diaz - an hour ago

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A recent study conducted by the University of Michigan has revealed shortcomings in the effectiveness of the proprietary artificial intelligence software known as the Epic Sepsis Model.

Developed to serve as an early warning system for sepsis, the AI tool, integrated into Epic's EHR software, struggles to differentiate between high- and low-risk patients before they receive treatments, according to the research published in the *New England Journal of Medicine AI*.

The Epic Sepsis Model automatically generates sepsis risk estimates in the medical records of hospitalized patients every 20 minutes. The intention is to provide clinicians with timely information to identify patients at risk of sepsis before the symptoms become severe.

However, the study pointed out key challenges in the AI's performance.

Not all AI is made equal

- AI can be many things, and has been successfully used in healthcare for quite some time:
  - Predictive analytics
  - Diagnostics
  - Decision Support Systems
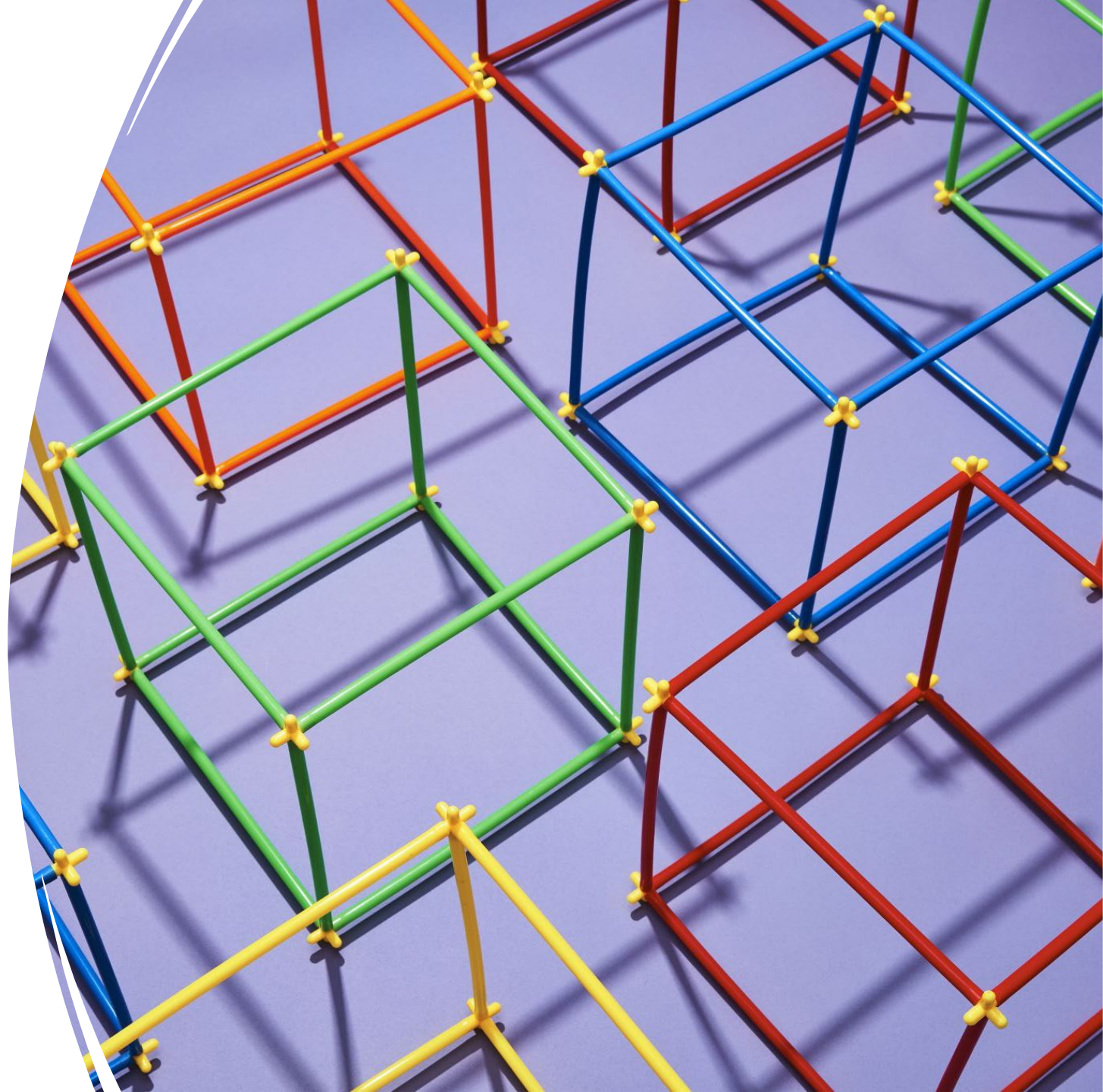 - AI embedded in home health monitoring and implanted devices

Generative AI

- LLM (Large Language Models) based on
  - ANN (Artificial Neural Networks)

Challenges and Opportunities

- Privacy and Security
- Regulatory Compliance
- Integration with Existing Systems
- Health Equity

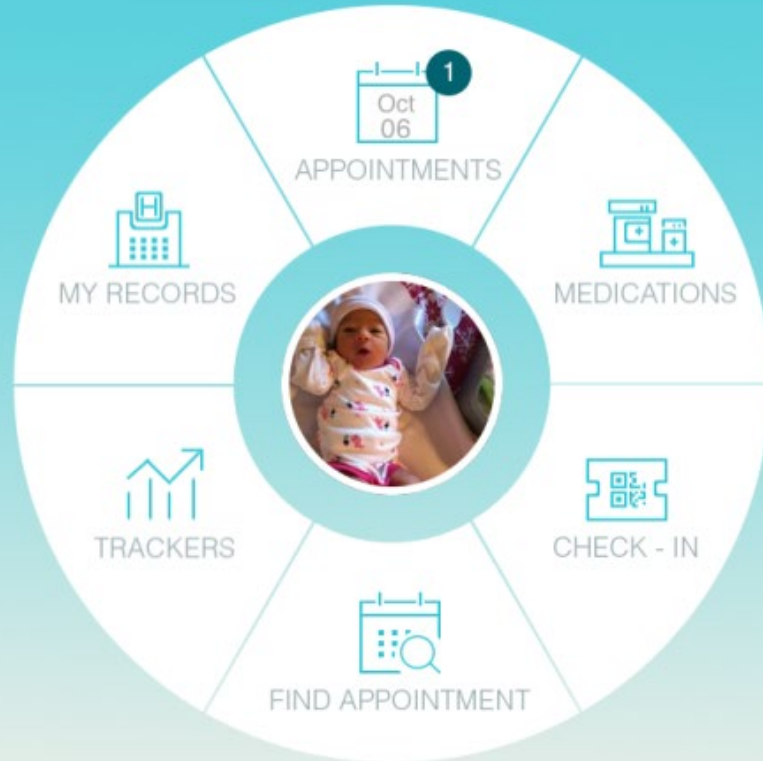# Future Trends and Ethical Considerations

Genomic Medicine

Brain-Computer Interfaces

Healthcare AI Ecosystems

Conclusions/takeaways

Emerging Tech – AI – "Sky is the Limit"

Integrate both, mature and emerging technology in curriculum

Integrate soft skills in the curriculum (or provide electives)

Communication

Ethics

Project Management

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