FDA Patient Engagement Advisory Committee Meeting

Open Public Hearing Session
06 September 2023

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Chief Health Equity Officer
Google

Google Health Equity

Health Equity as a core value

Bold | Health equity is embedded in the work Google does with support for a **Responsible** | Equity first approach in AI through our infrastructure and **Together** | in collaboration with our partners

1

Health is more than healthcare

2

Technology has the power to improve or worsen health equity

3

We have a business and technology imperative to promote health equity

Our approach | Scaling health equity across Google

1

WHAT we do

Foster connections with Google products and research teams to incorporate health equity and social determinants of health into their work

2

HOW we work

Increase Google's reach and impact through intentional, evidence-based approaches to promoting health equity

3

HOW we partner

Driving an ecosystem of health equity through external partnerships with industry, academia, key opinion leaders, policy makers, and beyond

What we do | Building connections

1

Embedded Health Equity Expertise (Infrastructure)

2

Health Equity Playbook (Tools & Resource)

3

Health Equity Champions (Scale)

4

Health Equity Ecosystem Connections (Partnerships)

How we work | Google's AI Principles

1. Be socially beneficial

2. Avoid creating or reinforcing unfair bias

3. Be built and tested for safety

4. Be accountable to people

5. Incorporate privacy design principles

6. Uphold high standards of scientific excellence

7. Be made available for uses that accord with these principles

How we work | AI Principles & Health Equity Considerations

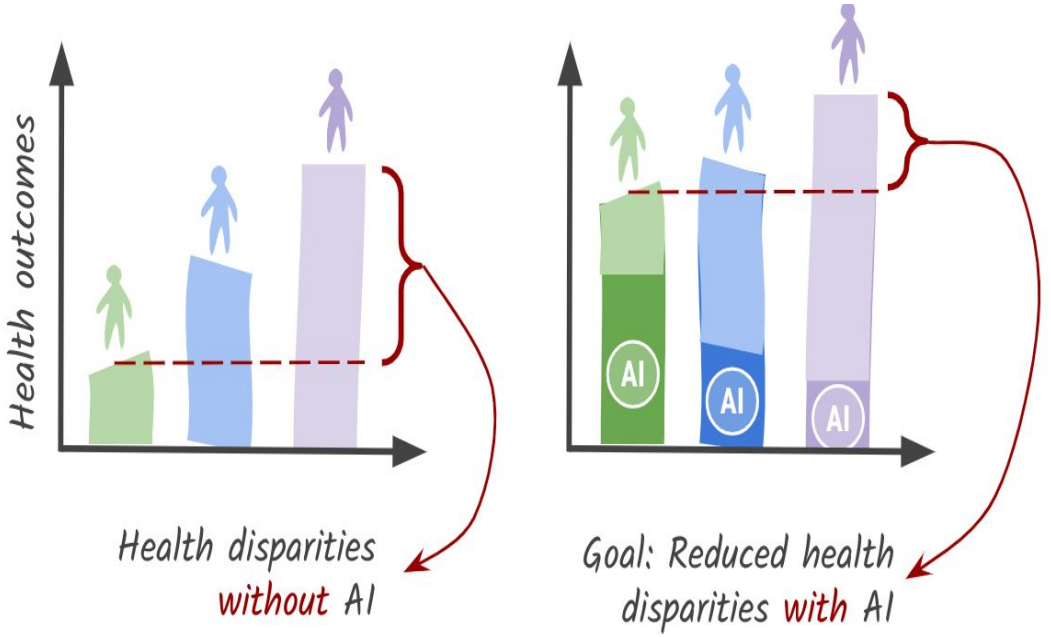
2. Avoid creating or reinforcing unfair bias

Health Equity Framework Application in Products:

AI should not accelerate or create disparities

How | Develop a scalable framework to assess the performance equity of health AI tools

We partnered with researchers across Google to develop a **Health Equity Assessment of Machine Learning performance (HEAL) framework**, which is designed to quantitatively assess the performance equity of health AI technologies



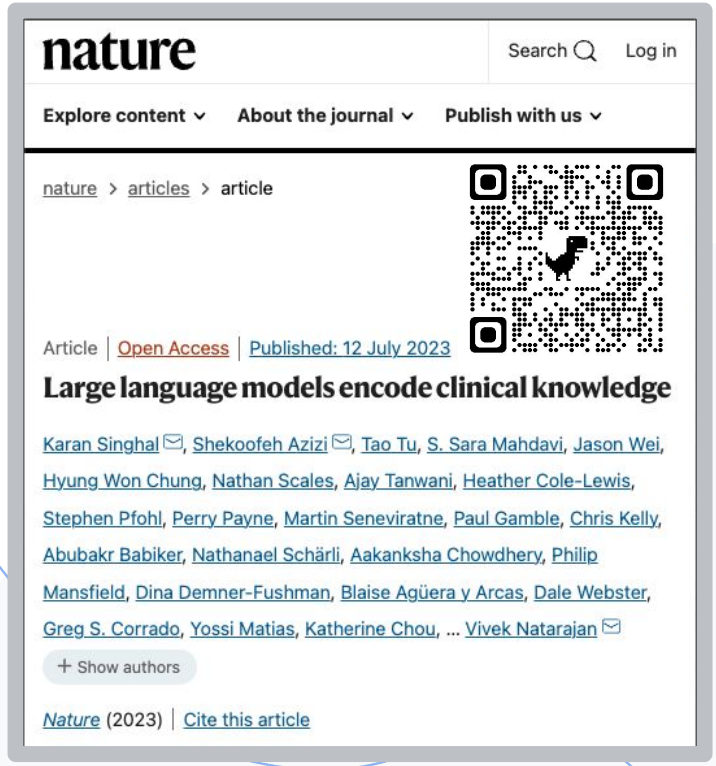
How we work | AI Principles & Health Equity Considerations

6. Uphold high standards of scientific excellence

Health Equity Pursuit of Evidence & Innovation

AI in health should advance knowledge in historically understudied, neglected, or biased areas while developing and deploying new technologies quickly

How | Embed health equity in Generative AI research



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Large language models encode clinical knowledge

Karan Singhal, Shekoofeh Azizi, Tao Tu, S. Sara Mahdavi, Jason Wei, Hyung Won Chung, Nathan Scales, Ajay Tanwani, Heather Cole-Lewis, Stephen Pfohl, Perry Payne, Martin Seneviratne, Paul Gamble, Chris Kelly, Abubakr Babiker, Nathanael Schärli, Aakanksha Chowdhery, Philip Mansfield, Dina Demner-Fushman, Blaise Agüera y Arcas, Dale Webster, Greg S. Corrado, Yossi Matias, Katherine Chou, ... Vivek Natarajan

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Health Equity Research Considerations

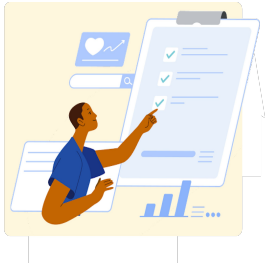
1. **Participatory research and design**
   Participatory research for design and evaluation of GenAI for health
2. **Use-case specific evaluations**
   Evaluating specific use cases for harm, bias, and equity
3. **Transparency in documentation**
   Transparent documentation of choices & assumptions during data collection, data curation, model development, model evaluation
4. **Algorithmic procedures to detect bias**
   Algorithmic procedures and benchmarks developed and used to probe for specific technical biases known to cause harm
5. **Interdisciplinary collaboration**
   Interdisciplinary collaboration to fully incorporate social determinants of health (SDOH) and societal context in GenAI

How we partner | Working together with others to responsibly innovate in health

1

Human Pangenome Project

2



Google Health Equity Research Initiative

3

Google Cloud | ACCLINATE™

Google for StartUps (Acclinate)

Thank you.