
Embracing Equitable Medicine: Toward Responsible Clinical Algorithms



The use of race in clinical algorithms has increasingly come under scrutiny as healthcare organisations pursue health equity initiatives and challenge race-based medicine. The long-standing recognition that race is a social construct rather than a biological one has gained renewed focus, driving the move towards race-conscious medicine. This shift aims to address the real and potential harms of race-based algorithms, particularly as AI and machine learning (ML) technologies become more prevalent in healthcare. At a recent event, healthcare leaders discussed how the industry can move away from the use of race as a biological construct in clinical algorithms, highlighting the importance of transparency, fairness, and accountability.

Building Transparency into Clinical Algorithms

The push for health equity has led to critical discussions about the transparency and fairness of clinical algorithms. Rapid advancements in AI technology have made these considerations urgent, with public and private stakeholders striving to catch up. The FDA Center for Devices and Radiological Health (CDRH) has issued guiding principles for ML-enabled devices, emphasising the need for transparency in these tools.

Tina Hernandez-Boussard, MD, PhD, MPH, from Stanford University, highlighted the importance of embedding transparency into clinical algorithms. This involves developing rigorous standards and tools to ensure that information on a tool's training data, validation metrics, and target population is accessible and comprehensible. Hernandez-Boussard also emphasised the need for distributed accountability, where model developers and implementers share responsibility for reporting and monitoring their clinical AI tools. This framework is essential for ensuring that algorithms are transparent and used responsibly, ultimately promoting health equity.

Building Consensus on Responsible Health AI

Achieving transparency and accountability in clinical algorithms requires consensus on what constitutes responsible AI in healthcare. The Coalition for Health AI (CHAI) is working to develop this consensus by bringing together a diverse range of organisations. CHAI aims to create a definition for responsible healthcare AI and establish technical standards to guide developers throughout a model's lifecycle.

CHAI's efforts also include the development of a national network of AI assurance labs and a national registry for evaluating the fairness and performance of clinical AI tools. This registry would empower patients to engage with their healthcare providers about the models used in their care, fostering transparency and trust. However, defining fairness, bias, and transparency remains challenging, as these concepts are complex and multifaceted. Collaborative efforts across the industry are necessary to build consensus and advance the use of equitable clinical tools.

The Challenges of Defining and Measuring AI Fairness

Despite significant progress in AI development and efforts to build consensus around fairness, defining and measuring AI fairness remains challenging. Shyam Visweswaran, MD, PhD, from the University of Pittsburgh, emphasised the need to evaluate current statistical algorithms and future AI tools for bias, particularly those incorporating race variables.

Visweswaran highlighted the importance of developing performance metrics for statistical algorithms and AI tools to ensure they do not perpetuate racial disparities. He also pointed out that the lack of transparency in AI models complicates efforts to assess their fairness. An online database cataloguing information about race-based algorithms and their biases is crucial in addressing these issues. Additionally, the development of fairness profiles, which use group fairness metrics to evaluate tools, can help identify and mitigate biases. However, the challenge of defining individual fairness, which posits that similar individuals should receive similar treatments, remains unresolved.

The pursuit of health equity in clinical algorithms necessitates a shift away from race-based medicine towards race-conscious approaches. Building transparency, accountability, and consensus on responsible AI are critical steps in this journey. Efforts to define and measure AI fairness, while challenging, are essential for ensuring that clinical tools promote rather than hinder health equity. Collaborative initiatives, such as those led by CHAI, are vital for advancing the use of equitable clinical algorithms and fostering trust among patients and healthcare providers. As

the healthcare industry continues to innovate, maintaining a focus on transparency, fairness, and accountability will be key to achieving health equity for all.

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