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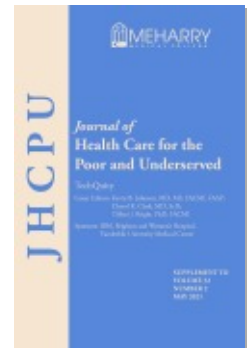
What is TechQuity?

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What is TechQuity?

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Background

Health inequities have been embedded in U.S. health care delivery since the country's inception. Three seminal reports, the 2001 Institute of Medicine's *Crossing the Quality Chasm*, the 2003 report *Unequal Treatment*,¹ and the 2020 National Academy of Medicine's (formerly Institute of Medicine) *Artificial Intelligence in Healthcare*² represented inflection points in highlighting the substantial disparities in access, clinical care, and outcomes, and recommended that *equity* in health care and health technology must be achieved to deliver quality care.³ Though *Crossing the Quality Chasm* set up the STEEEP framework, which explicitly called out equity as one of six health care quality domains (alongside safety, timeliness, effectiveness, efficiency, and patient-centered care) the issue of inequities in health care delivery was truly laid bare in *Unequal Treatment*, which also called upon health care institutions and providers to develop strategies to confront disparities in care.⁴ *Artificial Intelligence in Healthcare* introduced the "Quintuple Aim" where "Equity and Inclusion" was added to the "Quadruple Aim."⁵

Since these reports, health care institutions have slowly recognized health care delivery as one of multiple, mutually reinforcing institutions through which structural racism affects the health of people who identify as Black, Indigenous, Asian and Pacific Islander, Latino/a/x, and multiracial groups. Importantly, as technology becomes a greater facilitator and driver of health care delivery, it is urgent to recognize the ways that its misuse may exacerbate structural racism that already exists in the U.S. and in medicine. As the impact of the COVID-19 pandemic and social movements of the 2020s have again exposed the crisis of health inequities in the U.S., it is critical that we take this historical moment to promote anti-racism actively in a relentless effort to eliminate inequities in care. As we confront the role of technology as part of the reinforcing structure of health care inequities, we require a framework to guide specific anti-racism activities within health technology applications to reshape the use of technology as a force for promoting equity in health, in ways that begin to address root causes of structural racism. Specifically, an anti-racism and pro-equity approach to the use of technology, or *TechQuity*, must (1) address structural racism and discrimination to achieve a diverse workforce to co-create and implement technologies that promote health equity, (2) collect and track data that is representative of the concerns and needs of populations that face health inequities, (3) deploy data-driven and technology strategies to hold health institutions accountable for achieving equity and monitoring progress toward this end,



Figure 1. Advancing the Quintuple Aim.

and (4) use the power of artificial intelligence in transparent ways so that algorithms may be trained on diverse data and used to enhance the health of diverse communities. The definition and key priorities for TechQuity are outlined below.

4 Key Priorities for TechQuity

*TechQuity*⁶ is the strategic development and deployment of technology in health care and health to achieve health equity.⁷ We highlight four key priorities for TechQuity: (1) workforce diversity; (2) data trust; (3) equity dashboards; (4) transparent AI. (Figure 1)

I. Workforce Diversity

Marian Wright Edelman, founder of the Children’s Defense Fund stated, “It’s hard to be what you can’t see.”⁸ While she was referring to the “all-white world of children’s books,” the same saying can be applied to the worlds of health care and technology. While the U.S. population has over 30% self-identifying as African American or Hispanic,⁹ only 11% of U.S. physicians¹⁰ and 15% of people in technology jobs identify as members of these persistently underrepresented minorities.¹¹ This underrepresentation worsens as you go higher into faculty, leadership, and C-suite positions in both health care and technology.^{12,13} We must assure that our workforces represent the populations affected by structural and health inequities that we hope to support and whose health we seek to improve.

II. Data Trustworthiness

Trustworthy and complete data collection is often a critical first step for leveraging technology towards health equity. While most health care datasets already include gender,

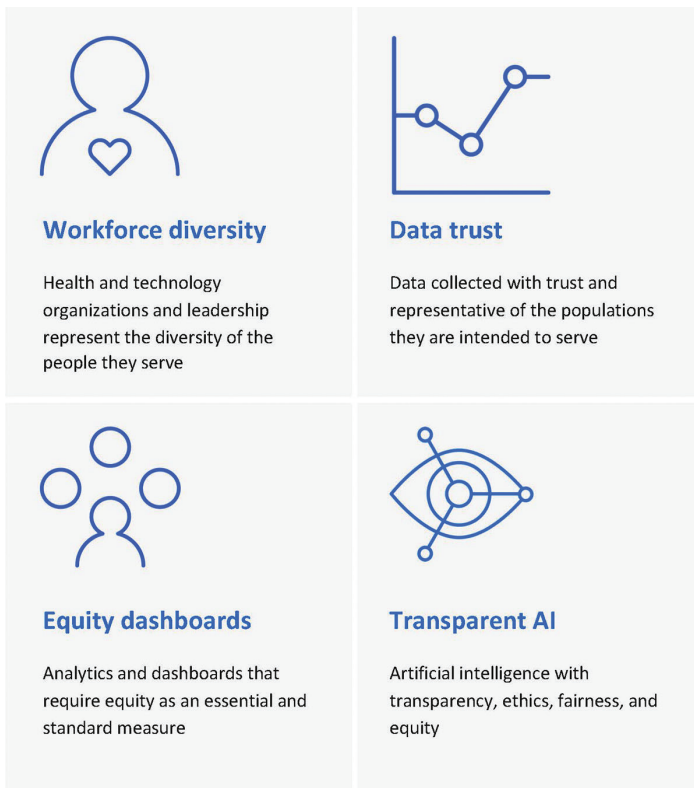


Figure 2. Four key priorities for “TechQuity.”

age, geography, and insurance status, many do not include key health determinants such as race, ethnicity, country of origin, sexual orientation, disability status, education, employment, housing, or wealth. Aligning data with the right determinants of health (e.g., environmental, social, and behavioral) is also essential.^{14,15} We must ensure data trustworthiness, transparency, and diversity to fuel the next two stages of applying analytics and artificial intelligence in order to facilitate insights of critical importance to decision-making.¹⁶

III. Equity Dashboards

The application of analytics to demonstrate health care quality in the domains of safety, timeliness, effectiveness, efficiency, and patient-centeredness has been common in diverse dashboards for hospital ratings and other key health care certifications (e.g., National Committee for Quality Assurance, Joint Commission); however, equity has often been overlooked.¹⁷ Peter Drucker, a famous business thinker and writer for the modern company, stated that “if you can’t measure it, you can’t improve it.”¹⁸ To improve equity, we must ensure that equity is foundational, standard, and required for all ratings,¹⁹ certifications, and dashboards.

IV. Transparent AI

Beyond more traditional analytics and dashboards, artificial intelligence (AI) represents perhaps the most exciting technology for improving care.^{20–22} Since the 1950s, there have been many AI winters (periods of declining interest and investment in AI); however, since IBM’s demonstration of AI on the gameshow of Jeopardy in 2011,²³ many have claimed that AI is here to stay and there will be no more AI winters.²⁴ Numerous industries are being changed and disrupted by AI.²⁵ Nonetheless, as stated in the 2020 report on *AI in Healthcare*, “it is imperative to proceed with caution or risk the potential of user disillusionment, another AI winter, or further exacerbation of existing health- and technology-driven disparities.”²⁶ For example, a 2019 study discovered bias in an AI algorithm that perpetuated disparities in chronic care coordination and treatment. This same study claimed that an estimated 200 million people are affected each year by similar tools used by providers, governments, and other stakeholders in the U.S. health system.^{26,27} Many technology companies have claimed that bias in training, datasets, and AI cannot be avoided; however, trust of AI systems is essential, especially in health care. Therefore, we must move AI from being a “black box” to a “clear box” with AI factsheets like nutrition labels where buyers and end-users of AI algorithms can transparently see who trained the AI, what datasets were used, and what specific AI algorithms and models were used.²⁸ We must assure transparent, ethical, fair, and equitable AI.

The global pandemic has brought awareness and focus to health inequities and the important role of technology in pandemic response, recovery, and preparedness. At this moment, we see a unique opportunity to advance a TechQuity movement through a moral and relentless commitment to workforce diversity, data trust, equity dashboards, and transparent AI.

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