

## VIEWPOINT

**Courtney R. Lyles, PhD**  
Department of  
Medicine, University of  
California, San  
Francisco; and  
Department of  
Epidemiology and  
Biostatistics, University  
of California, San  
Francisco.

**Robert M. Wachter,  
MD**  
Department of  
Medicine, University of  
California, San  
Francisco.

**Urmimala Sarkar, MD,  
MPH**  
Department of  
Medicine, University of  
California, San  
Francisco.



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**Corresponding  
Author:** Courtney R.  
Lyles, PhD,  
University of California,  
San Francisco, 1001  
Potrero Ave, Box 1364,  
San Francisco, CA  
94143 (courtney.lyles@  
ucsf.edu).

jama.com

## Focusing on Digital Health Equity

**The disproportionate toll** of the COVID-19 pandemic on Black, Hispanic/Latinx, and lower-income communities highlighted long-standing disparities in health and health care. Addressing these disparities requires fundamental changes to health care delivery; more equitable outcomes will not be achieved without changing the underlying system.

The renewed focus on health equity comes at a time of rapid digital transformation of the health care system. This transformation offers an opportunity to address many core health equity challenges. Digital health involves digitally enabled tools and environments to augment in-person health care with digital communication, education, and remote care management. These approaches have the potential to address some of the structural challenges for marginalized populations, including lowering access barriers of time and distance and providing tailored communication by language and literacy. Yet the digitization of health care can also harm health equity if this digitally enabled ecosystem moves forward without proactive engagement, planning, and implementation.

Digital access and skills are foundational social determinants of health,<sup>1</sup> as effective use of both social services (including educational, housing, and other resources) and health care information (such as patient medical records) are increasingly moving online. The

achieving digital health equity, such as the Lifeline program and the Emergency Broadband Benefit that support smartphone ownership, reduce broadband and data costs, and provide a device stipend for low-income US residents. Moreover, many safety-net health systems lack critical digital infrastructure, such as access to devices to conduct video visits and lack of sophisticated electronic health record infrastructures. Because safety-net health care systems serve a higher proportion of marginalized populations, enhancing digital infrastructure in these settings must be prioritized.

Moreover, many digital health tools are developed with homogeneous, highly educated, and advantaged populations in mind. For example, despite the ability to leverage technology to design apps in multiple languages or with audiovisual features to support both personalization and accessibility, most available digital health tools are available in English only and are written at high reading levels (eg, greater than 12th-grade readability).<sup>4</sup> Universal design approaches—defined by the Center for Universal Design at North Carolina State University as “the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design”<sup>5</sup>—could create better and more effective digital platforms, and these must be core principles for new technology development.

Even if digital tools are built to be more usable and accessible, implementation considerations remain. Providing training and support to help patients use digital health tools like patient portals has been shown to increase uptake, yet

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implementation often overlooks the importance of human support within the rollout. This includes both health care-specific support for patients to use existing digital tools, as well as stronger connections to community resources, such as public libraries and community-based organizations. Similarly, integration into existing clinical workflows and systems is not always thoroughly considered, especially within underresourced safety-net health care settings. For example, many patients want their clinicians' recommendations for using specific digital health tools in their everyday health management,<sup>6</sup> yet care teams do not feel equipped to prescribe specific apps to patients, nor do they believe they have the time to review additional flows of data from these platforms. This could result in patient-facing health apps being used in ways that are disconnected from clinical relationships and care.<sup>7</sup>

Furthermore, evaluation of digital health tools is lacking, especially considering the need for effectiveness research to demonstrate population-level health improvements attributed to digital health solutions. For example, although many digital solutions are marketed for use by

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Figure. Digital Health Equity Mapped to Socioecological Framework

Domains	Elements of digital health equity	Recommendations
Individual	<ul style="list-style-type: none"> <li>Digital literacy</li> <li>Interest</li> <li>Readiness</li> </ul>	<ul style="list-style-type: none"> <li>Focus on usability and relevance</li> </ul>
Family and home	<ul style="list-style-type: none"> <li>Caregiver and family support</li> <li>Private and secure space</li> </ul>	<ul style="list-style-type: none"> <li>Design for multiple contexts</li> <li>Blend digital and human support</li> </ul>
Community	<ul style="list-style-type: none"> <li>Trusted partners (eg, community organizations)</li> <li>Digital capacity and infrastructure needs</li> </ul>	<ul style="list-style-type: none"> <li>Codesign with community</li> <li>Develop reciprocal relationships</li> </ul>
Services (including health care)	<ul style="list-style-type: none"> <li>Digital training</li> <li>Technical assistance</li> <li>Linguistically and culturally concordant staff</li> </ul>	<ul style="list-style-type: none"> <li>Implement and evaluate in clinical settings</li> </ul>
Policy	<ul style="list-style-type: none"> <li>Broadband internet</li> <li>Devices</li> <li>Accessibility standards</li> <li>Reimbursement</li> </ul>	<ul style="list-style-type: none"> <li>Improve connectivity</li> <li>Improve accessibility</li> <li>Utilize value-based payment system</li> </ul>

Source: Sallis et al.<sup>3</sup>

patients with chronic diseases like diabetes or hypertension, very few studies have evaluated effectiveness of such solutions in marginalized populations who experience a disproportionate burden of chronic disease in the US.<sup>8</sup> Even in the few studies that have evaluated use of digital health solutions as a primary end point, there is

a lack of robust measurement of patient characteristics that reflect equitable uptake, such as patient race and ethnicity, socioeconomic status, language, digital literacy, and health literacy.<sup>9</sup>

Health care is on the cusp of a digital transformation that could harm health equity or improve it. To improve equity will require building scalable solutions that get the design right from the start. Building and testing tools in the populations who need and can benefit from them offer the best opportunity to ensure that the health care digital revolution improves health equity. Also needed is intentional implementation that carefully leverages in-person support and builds from trusted relationships.

Since building and implementing digital tools is resource intensive, a clear focus on population-level evaluation and influence also must be maintained. Lack of a specific focus on equity risks building digital solutions that improve the health outcomes only for selected, advantaged individuals, without improving overall outcomes or decreasing entrenched health disparities.<sup>10</sup> Development of effective solutions will require appropriate incentives for both industry and clinicians, as well as capacity building within the health care digital ecosystem.

Patients who experience systemic, structural, institutional, and social barriers within society want and need better and more convenient health and health care access. The opportunity to design systems that address these critical needs should be foremost while building out the digital tools and platforms that will transform health care over the next generation.

#### ARTICLE INFORMATION

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