VIEWPOINT

The Ethics of Behavioral Health Information Technology
Frequent Flyer Icons and Implicit Bias

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A subpopulation of individuals with serious mental health conditions makes repeated and frequent visits to emergency departments and psychiatric crisis centers. These so-called super utilizers often have financial problems and present with chronic or untreated comorbid psychiatric and substance use disorders.[1] These patients are often well known to clinical staff and are sometimes colloquially labeled "frequent flyers." A pejorative branding, "frequent flyers" are often assumed to be problem patients. In psychiatric settings, these patients are sometimes said to be "borderlines," "drug seekers," "malingerers," or "treatment resistant."

These patients can be identified in different ways. Some emergency departments maintain lists or files of patients with frequent visits. One electronic medical record system provides an airplane icon, which system administrators may elect to configure so that clinicians can identify a patient as a high utilizer. The icon appears near the patient's name and various colors indicate strata of utilization.

This iconography is ethically and clinically inappropriate for 2 interdependent reasons. First, the icon reinforces and encourages the use of disrespectful and stigmatizing terminology. Second, the icon may frame the initial clinical interaction in a way that inhibits good diagnostic judgment, potentially placing the patient at increased risk of a poor outcome.

> Stigmatizing iconography presents the potential for problematic clinical consequences.

More broadly, the icon offers an example of how potentially harmful biases may be built into and reinforced by well-intentioned but ill-conceived information technologies, such as those deployed widely across all sectors of health care, and particularly in psychiatric treatment settings where clinical interactions are often more interpersonally sensitive.

Stigma and Clinical Consequences

Individuals with mental illness and addiction experience negative stereotyping, prejudice, discrimination, distancing, and marginalization—social dynamics commonly called stigma.[2] These dynamics are also often internalized and accepted by individuals with mental health conditions, amplifying their negative effect. Somewhat counterintuitively, stigmatizing beliefs about these patients are common among health care workers and often more common among mental health care professionals.[3] Given these facts, the reinforcement of any stigmatizing concept within the medical record system or health information infrastructure is ethically problematic.

Stigmatizing iconography presents the potential for problematic clinical consequences. Patients with dual psychiatric and medical conditions often receive low-quality medical care and experience worse outcomes. One factor in this disparity is the phenomenon of diagnostic overshadowing.[4] For example, diagnostic overshadowing can occur in patients with co-occurring mental illness and conditions such as cardiovascular disease or diabetes. These patients are less likely to receive appropriate medical care than patients without a mental health condition—their psychiatric conditions overshadow their other conditions, potentially biasing the clinician's judgment about diagnosis and treatment such that the clinician may misattribute physical symptoms to mental health problems.

The potential for enhancing diagnostic overshadowing with iconography is particularly disconcerting because patients with serious mental illness are more likely than the general population to receive less treatment and have higher morbidity and mortality for illnesses like cardiovascular disease.[5] Seeing the high utilizer icon at the time of the patient encounter may increase the likelihood that a clinician will possibly fail to recognize medical problems. The notion that the patient is a "frequent flyer" may interfere with the assessment of legitimate somatic symptoms and may cause the clinician to withhold or delay needed tests and procedures, which could lead to serious negative outcomes. In a population of individuals who may have a life expectancy shortened by 13 to 30 years, largely due to comorbid physical illness, appropriate assessment is important.[6]

However, a patient's past visit history should not be off limits to clinicians. Central to taking a patient's history is learning how often and for what reasons the patient frequently presents in the emergency department or other health care settings. For clinicians to properly construct this history requires a deeper examination of utilization, something that the high utilizer icon—particularly when positioned on the initial page of the medical record—may discourage. Instead, the icon provides a shortcut that may provoke negative assumptions and associations implicit in the concept of the frequent flyer.

Implicit Bias and Inclusive Development of Behavioral Health Care Technology

Algorithms and computer systems reflect the intentional or unintentional biases of their designers.[7] By extension, problematic iconography in health information technology could reflect the biases and stigmatizing beliefs held by clinicians who advise and influence system designers. In the case of the airplane icon, it seems unlikely that those who developed it and those who agreed to deploy it did so without direct guidance and endorsement from clinicians whose professional vernacular may include the term "frequent flyers."

Beyond electronic medical records systems, advances in leveraging big data and social media technologies now offer powerful solutions to both inform clinical practice and empower patients. For example, new smartphone applications provide clinicians with real-time updates on their patients' well-being and medication adherence. Some social media platforms now provide crisis intervention tools. There is increasing research and funding into the development of mental health apps, and such technologies are likely to become a larger part of the future landscape of health and illness. It is therefore imperative that health information technologies be developed and deployed in a way that minimizes the likelihood of potentially harmful implicit biases.

Electronic medical record systems and behavioral health care applications should be built and tested in collaboration with patients, consumers, clinicians, social scientists, and ethicists who are sensitive to the broader ramifications of iconography and language. Algorithms designed to identify patients who may present with a specific set of challenges should be carefully created to avoid reinforcing nontherapeutic biases.

At the very least, health information technologies should do no harm. A system that confusingly displays acronyms or medication names would be considered unsafe. Likewise, systems that use stigmatizing iconography should also be unacceptable.

The frequent flyer icon is a reminder that technological systems embody social and political values.[8] These technologies also tacitly endorse, amplify, and broadly disseminate these values. Technological systems will always be value laden to a degree. Instead of trying to sanitize these technologies, the goal should be to improve health care by designing systems that encourage ethical behavior and respectful interactions between physicians and patients.

ARTICLE INFORMATION

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