Evaluating the Potential Role of Social Media in Preventive Health Care

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According to an estimate from the Centers for Disease Control and Prevention, more than 100,000 lives could be saved every year if everyone in the United States received clinical preventive services. Preventive health care includes well-established approaches such as blood pressure checks, cancer screening, counseling in regard to tobacco use, and vaccination. These interventions enable early detection of disease when treatment is likely to be most effective. Previous work has shown that less than 10% of US adults aged 35 years and older routinely receive all high-priority clinical preventive services recommended for their age group. Access, cost, and awareness continue to be barriers to receiving these services.

Social media and other digital platforms that enable connectivity have unprecedented influence and are expanding their reach into health care. These platforms have a singular advantage that health care organizations do not have in that they are widely used across broad demographic categories, are nearly ubiquitous among teenagers and young adults, and, perhaps more important, may significantly affect—for better or worse—perceptions, actions, and lifestyle choices. These platforms also may have a role in health care, given the recognition that patients seek greater agency in managing, tracking, and having ownership of their health.

One of the most widely used social media platforms is Facebook, which reportedly has more than 175 million adult users in the United States and has had increased involvement in health care initiatives. For example, the Facebook blood donation program was launched in 2017 and reportedly led more than 35 million people worldwide to sign up on Facebook as blood donors.

In November 2019, Facebook launched the Facebook Preventive Health tool on its mobile app for US users in an effort to better inform individuals about health recommendations and resources. The app uses age and sex information already provided to Facebook, or individuals can provide it, and Facebook then lists guideline-recommended preventive health services and offers geotargeted locations where users can obtain the service, such as federally qualified health centers or retail clinics for flu vaccines. The initial list of health recommendations focuses on heart disease, cancer, and flu and is based on guidelines from the American Cancer Society, American College of Cardiology, the American Heart Association, and the Centers for Disease Control and Prevention. User actions in the tool are collected by Facebook and reportedly not shared with third parties.

Can this and other social media platforms increase receipt of preventive care for millions of individuals who would otherwise not receive these services? During the past few years, concerns have been raised about some of Facebook’s policies, and many users report not understanding how the site works or why they receive messages about specific content, and report feeling uncomfortable about the information that is collected about them. Two central questions to assess for Facebook’s tool and other emerging digital health interventions are, do these tools improve health outcomes? and do these tools cause harm? This Viewpoint explores how information on social media platforms is shared, altered, disseminated, and protected, and how strategies for engagement may vary for different populations.

Gaps in Current Understanding of How Health-Related Information Spreads Online
The Facebook Preventive Health tool prompts individuals to share the tool with their network and offers users an option to write a corresponding post. This could help to raise awareness about screening and potentially increase uptake of guidelines because much of behavior change relies on the influence of trusted networks. The expansion of social media during the last decade provides a new approach to what word-of-mouth communication means, such that virtual social networks are larger than in-person networks and friends of friends can be persuasive in spreading information. In a study of 15 million Facebook users, targeted messages to vote directly influenced the voting behavior of millions of individuals and their online friends. The indirect effect of the message on friends accounted for twice as many votes compared with the direct effect on users who were exposed to the message to vote. A better understanding is needed in regard to whether information about preventive health propagates across users and how new users and influencers affect dissemination.

Identifying and Addressing Misinformation
Previous work has demonstrated that fact checking declines when information is presented on social media compared with in an individual setting. For health data, it is important to avoid misinformation. The increasing presence of antivaccine proponents online, for example, could appear to legitimize discourse about vaccine harms and contribute to outbreaks and resurgence of diseases that could be otherwise prevented. For any health intervention on a social media platform, it will be important to determine how to assess the success of an intervention that includes vetted health recommendations on the same platform as misinformation.

Dissemination and Evolving Recommendations
Guidelines are constantly evolving as additional scientific evidence becomes available. The US Preventive Services Task Force (USPSTF) regularly updates recommendations for clinical preventive services in accordance with...
peer-reviewed science. When recommendations change, social media platforms are well poised to seamlessly update this information, although Facebook has not made clear its mechanisms for keeping its Preventive Services tool updated with the latest recommendations across conditions and organizations. It is also unclear how it navigates health recommendations when trusted organizations or public opinion are in opposition. For example, USPSTF recommendations for primary prevention statin therapy and screening recommendations for breast and cervical cancer have previously differed from guidelines endorsed by professional societies. Because the current recommendations on the Facebook Preventive Health Tool do not include all high-priority clinical preventive services, there may be public health implications related to which recommendations (eg, screening for tobacco use, opioid use) are not displayed in this iteration of the tool.

**Protection of Social Media Data**
Patients are willing to relinquish their data to fitness trackers, mobile applications, and other digital platforms for convenience and meaningful insights that can help them achieve health goals. This is relevant for population-based online interventions when the value of data shared by individuals may not be apparent to them. Seemingly innocuous data can be combined with other data sources to yield information about a user that he or she may not have been aware of or wanted shared with others. Facial images can be used to infer sexual orientation, “likes” can be used to predict psychological profiles, and posts can predict a diagnosis of depression. An important and understudied area is understanding patients’ knowledge and preferences for how health-related data contributed (or inferred) from social media are shared, used, and interpreted by a hosting platform.

Data breaches, lack of transparency about data sharing, data profiling, and the Cambridge Analytica controversy have all eroded public trust in social media and raise questions about how health care data are commoditized and algorithms are deployed. Although protected health information is covered by the Health Insurance Portability and Accountability Act, data posted on social media platforms do not have the same safeguards. What are the risks of sharing updates about preventive services with friends online and other data (eg, demographics, appointment reminders, completion of appointments) with a social media platform provider? More transparency about the design, algorithms, and data protections will be important for evaluating the risks of social media-based health interventions.

**Influencing Difficult-to-Access Populations**
Accessing and influencing uninsured individuals and those without primary care clinicians has been a long-standing challenge. This population is at risk for poor health outcomes and has low rates of uptake of preventive services. Simply sending notifications, making them social, or dispelling misinformation will not remove barriers to accessing a primary care clinician or reduce the cost of care. For individuals who lack health insurance, this information may be of no value. Although federally qualified health centers are safety-net facilities and retail clinics offer convenience, providing the contact information for these facilities is also likely to be of limited benefit for this population. Further efforts are needed to better understand how to effectively deliver information online to high-risk groups that is most likely to result in sustained behavior change. Do these groups need messages delivered via social media conveyed in targeted formats, with relatable messengers, or in different intervals?

**Advancing a Public Health Agenda**
Throughout history, the introduction of technology into health care has often been met with skepticism. Skepticism can be generative because it allows for careful evaluation. There is an opportunity to advance preventive health through partnerships among researchers, health care organizations, and social media industry leaders that enable scientific studies of population-based interventions. This can also inform how success is measured: engagement (eg, application visits, shares, appointment reminders marked as complete), outcomes (eg, the number of individuals who would not have otherwise received care who now schedule and keep an appointment and follow through with screening and results, proportion of new enrollees in federally qualified health centers, proportion of administered flu vaccines in retail clinics), and harm (eg, overscreening, data profiling, data breaches). Social media have captured the attention (often undivided) of the public, and there are unique opportunities, as well as risks, that should be evaluated to better understand the influence and ability of technology-based platforms to advance preventive health.