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# Health Disparities, Communication Inequalities, and eHealth

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## Introduction

Advances in communication and computer technologies have revolutionized the way that health information is gathered, disseminated, and used by healthcare providers, patients, citizens, and mass media, leading to the emergence of a new field and new language captured in the term “eHealth.” As exciting as these technologic changes are, they have led to sometimes overly optimistic prognostications about what eHealth can do to improve the health of patients and the public and the quality of care available from providers. While conceding the significant advantages bestowed by the technologic developments and their adoption into the healthcare system, we contend that without careful and systematic research and policy, eHealth may work primarily to the advantage of individuals and communities with greater resources and the healthcare systems that serve them. This could have the effect of deepening disparities in health status among population subgroups.

There are significant challenges that must be addressed by the research community to ensure that advances in eHealth will help eliminate, not exacerbate, health disparities. These include identifying and clearly articulating specific disparity issues that affect various domains of eHealth, enhancing survey sampling and measurement in eHealth research to better understand and address disparities, and critically examining eHealth and communication-related policies that may affect health disparities.

## Disparity Issues Across eHealth Domains

For some eHealth researchers, the focus is on hardware such as the Internet and telecommunication technologies. For others, the focus is on software and content such as online support groups and provision of information on defined health topics. Addressing health disparities presents important but different challenges and key research questions for each group.

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If the focus is on hardware and using eHealth as a means of information delivery and exchange among people and systems, then we must examine its reach and access by various social groups. For example, extensive documentation has shown that **communication inequalities** exist where technologies such as the Internet are used by higher-income, more-educated, younger, and employed groups, even though the differences are narrowing in certain areas.<sup>1</sup> People with limited access to computer technology are largely the same as those traditionally under-served by the healthcare system and who suffer the greatest health disparities.<sup>2</sup>

Similarly, not all health systems have equal capacity to invest in installing new technologies to assist them in their operations. For example, some healthcare organizations may not have the financial and/or human capital to implement and maintain complex technologic systems. A continuing question for scholars is the extent to which these differences in access to and use of technologies by people and health systems will narrow over time. It is also unknown whether making the required investment in these technologies will compel people and health systems to shift resources from other more exigent needs. Finally, given that eHealth technologies require recurring expenditures, can access, deployment, and use be sustained over the long term? If not, what are the effects of these disruptions on people's experiences with eHealth technologies and their health?

Even if access to eHealth hardware was universal, the usability and content of its programs and services can pose barriers to some user groups. For example, few websites are designed to facilitate easy navigation, and most are designed for people who are educated far beyond the 8th-grade level, which is the average reading level of U.S. adults.<sup>3</sup> In addition, cultural differences in how people attend to, process, and use information are not always taken into account, even though it is known that culture is an important variable in health communications.<sup>4</sup>

## Methodologic Challenges

New communication technologies can offer significant advantages in data collection. The Internet, for example, is now being widely used to conduct surveys. Online surveys allow considerable flexibility in data collection, obtaining large samples quickly, and relative

simplicity in conducting experiments using diverse stimuli. Use of the Internet as a survey tool and the challenges associated with it has been extensively discussed elsewhere in this issue. The challenges are particularly critical for health disparities research. As Couper<sup>5</sup> and others have observed, while most attention has been focused on sampling errors associated with survey research, other sources of error are equally important. From the perspective of disparities research, it is important to investigate how each source of error associated with survey research—coverage and sampling, nonresponse and measurement—influences the health outcomes of interest.

For example, given well-documented differences among population subgroups in access to and use of Internet, how do we address both coverage and sampling errors? Is it possible that reliance on online surveys could systematically bias against the poor and the under-served who are much less likely to be on the Internet? Second, are the motivations and capacity to respond to surveys equally distributed across population subgroups or are they likely to work to the disadvantage of certain groups? Third, are measures employed in surveys over the Internet valid and reliable for vulnerable populations who may be novice users of computers and the Internet?

While the influence of the social and physical environment on people's health and behavior is widely recognized and increasingly understood due to focused research in this area, effects of the **information environment** have received much less attention in scientific inquiry. It is likely true that most people get most of their health information not from planned programs or interventions, but rather from the secular environment. A full understanding of what, how often, and how much health information one encounters must include not only information available in social interactions and physical living space, but also cyberspace. Lack of online access obviously limits one's information environment. But access alone, if not accompanied by services, programs, and resources designed to reach and appeal to diverse populations, may not expand one's information environment by much. Developing sound metrics for health information exposure from online and other sources that go beyond theoretical access to include actual attention and appeal will help us understand how the true reach of online programs may vary by population subgroups.

From a system perspective, one of the major advantages of eHealth is the ability to marry electronic medical records (EMRs) with provision of health information and facilitating patient-provider communication. Data gathered through careful combing of EMRs may provide information on patient-provider communications, patient compliance and adherence to drug regimens, patient use of health services, and the organizational environment of the health system. However,

if the capacity to deploy EMR systems varies among resource-rich and -poor health systems, is it likely to result in incomplete information on the under-served and eventually work to their disadvantage?

## **Policy Considerations in eHealth and Health Disparities**

Compared to individual-level behavioral interventions, policy- and system-level interventions often have a greater impact on population health. In health disparities research, structural adjustments are often necessary to remove system barriers that impede or constrain health-promoting behaviors among socioeconomically disadvantaged populations. Research examining eHealth-related policies as they affect health disparities is sorely needed. We must understand the extent to which current communication policies and health policies perpetuate the gulf between the haves and have-nots. For example, part of the digital divide could be explained by the relative lack of investment by the poor and the under-served in broadband services. Although prices are falling, the places where they fall depend in large part on where competition exists among Internet service providers (ISPs). If there is no competition, there is no incentive for ISPs to lower prices, thus limiting affordable broadband access to those who live in areas where demand for these services is already high. Is it likely that current telecommunication policies could leave rural areas, inner-city neighborhoods, and the poor behind, thereby leading to an exacerbation of "digital divisions"?<sup>6</sup>

There is also an urgent need to work closely with healthcare systems—especially those that serve disadvantaged populations—to build a strong evidence base for health information services that would be valued and used by providers and for which insurers would reimburse. Without this translation of science into healthcare policies and programs that would benefit all within a system, eHealth is likely to follow the pattern of other health industry products and services that seek out and serve only those individuals and families with the means to pay.

## **Conclusion**

Our argument is not that eHealth is undesirable but rather that a systematic and focused approach to research and application of findings in policy and practice is needed to ensure that exciting and promising developments in eHealth benefit all members of society. We are at the cusp of a new era in communication and health where conventional assumptions are being upended by fast-changing technologies. We believe that thoughtful and responsible "eHealth" research can contribute to eliminating health disparities and go a

long way toward fulfilling the promise that the new communication technologies hold.

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