

## The Potential of E-Public-Health: CDC's Focus for the Future

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Although access to and use of the internet and online applications to obtain health information continue to grow around the world,<sup>1</sup> the public health community still lacks empirical evidence that today's e-health revolution improves or protects the overall health of the populations served. Despite millions of online users and hundreds of millions of webpages, how confident are we that today's e-health is having a significant impact on reducing the morbidity and mortality of the people who use it?

E-health has been defined broadly as the “heterogeneous and evolving digital resources and practices that support health and health care” that allow users to obtain health information, make health decisions based on that information, communicate about health, manage disease, and engage in health-related activities.<sup>2</sup> A typography of today's e-health universe generally includes three categories of applications: (1) searchable, mostly text-based health resources; (2) interactive, often personalized health applications; and (3) integrated information systems for collecting, managing, and reporting health-related data. Although research and evaluation to date has demonstrated that some interactive, highly personalized e-health applications can have a positive impact on outcomes like knowledge, attitudes, and selected behaviors,<sup>2</sup> these benefits are mitigated by their limited accessibility, limited scalability, limited user relevance, and relatively high costs.

For e-health to achieve its potential of positive, widespread health impact, we must take active steps to put the “public” into e-health to create a new model of “E-Public-Health” (EPH). Drawing from time-tested public health principles and approaches, EPH can help shift the emphasis of e-health from disease diagnosis and treatment to primary and secondary prevention and health protection, thereby reducing population-level morbidity and mortality. Further, effective and participatory EPH programs can focus efforts on reducing health disparities.

To be effective, internet based e-health must be used not only for static information dissemination, but also as a ubiquitous decision support tool for all aspects of health from the most monumental health-related decisions all the way down to the most minute. For example, EPH tools can help a patient make an informed “major” decision on the best course of treatment for a diagnosed disease, thereby contributing to patient empowerment and better health outcomes. In addition, EPH tools should help individuals and communities make informed “minor” health decisions like immunizations, diet, and smoking that over time will also have a significant cumulative effect on their health.

As increased interest in and use of “user-generated content” and applications rapidly approaches the tipping point,<sup>3</sup> we must incorporate the needs and participation of the public into today's EPH models. The marketing world has known for many years that people interact most deeply with information when it is perceived as engaging and relevant to their lives; consumers want to see, hear, interact, respond, experience, and be entertained. Applying principles of health marketing

to EPH suggests that e-health information can be made even more powerful through a coordinated effort of *personalization*, *presentation*, and *participation*. When health information is personalized, population-level interventions can be theoretically matched to individual-level needs and wants. Information is most powerful when it is culturally relevant, audience-centered, action-based, and matched to evolving social norms. Presentation allows for time-relevant, accessible content on-demand through any existing or emerging electronic communication channel. The right balance of content, format, and tone are critical. Perhaps the most important component, participation allows empowered and informed users to contribute to the e-health content to make it their own and contribute the knowledge and wisdom of the crowd.

EPH is a prominent focus of the National Center for Health Marketing at the U.S. Centers for Disease Control and Prevention. It is here that the disciplines of e-health, health communication, social marketing, and health promotion converge. CDC has established an EPH vision for the future that advances EPH research and practice:

- Integrated e-health content will allow users to find and use a variety of health information topics that are applicable to their lifestyle and health status
- Interactive, entertaining, and meaningful health information will be part of daily experience and every day living
- Increased efficiency and effectiveness of public health emergency management and response by facilitating real-time integrated communication, a coordinated response to disasters at all levels, and leverage of embedded community assets.
- Increased focus on global information sharing using EPH interventions and applications, including reports from the field, coordinated outbreak surveillance, and improved containment efforts.
- CDC's science will be enhanced and health disparities will be recognized and addressed

Though CDC and other US and international government organizations are crucial in supporting and advancing EPH, governmental public health cannot shoulder the burden alone. We—EPH researchers, practitioners, and partners from the public and private sectors—must work collaboratively to address research and evaluation gaps and build core infrastructure, networks, and capacities. We especially need more empirical data to demonstrate EPH's effectiveness: measures, efficacy studies, cohort studies, qualitative studies, and other research projects. The CDC looks forward to working together with our colleagues in establishing these networks and charting a course forward together, so that e-health and e-public-health can reach its true potential.

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<sup>1</sup> Connecting for Health: Global Vision, Local Insight. Report for the World Summit on Information Society (2005). Report of the World Health Organization.

<sup>2</sup> Expanding the Reach and Impact of Consumer E-Health Tools Executive Summary and Full Report (2006). Report of the Office of Health Promotion and Disease Prevention, US Department of Health and Human Services.

<sup>3</sup> Lenhart, Amanda, Fox, Susannah (2006). Bloggers: A portrait of the internet's new storytellers. Pew Internet and American Life Project.