

# Connecting eHealth with 2-1-1 to Reduce Health Disparities

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Several years ago, a colleague offered a prescient reminder about the socioeconomically disadvantaged: “They’re not hard to reach, they’re hard for *us* to reach.” Hard indeed, and the consequences of our constrained ability to reach these populations are growing increasingly dire. Today, those who lack a high school diploma have life expectancies similar to those of the average American in the 1950s and 1960s.<sup>1</sup> Even more shocking, these socioeconomic gaps in longevity do not appear to be closing. What is particularly frustrating about these trends is that we already have excellent evidence-based interventions for most of the health conditions that disproportionately affect the socioeconomically disadvantaged.<sup>2,3</sup> Yet, we know very little about how to reliably deliver these interventions to those who need them most.<sup>4</sup>

That is what makes the 2-1-1 system so exciting. By quickly and effectively connecting its callers to essential human services, 2-1-1 directly targets some of the elusive social determinants (e.g., access to educational, economic, health, and occupational resources) that are fundamental drivers of health disparities.<sup>5</sup> Although much has been written about the importance of tackling upstream social conditions,<sup>6</sup> such interventions are rare. So, from a social determinants perspective, 2-1-1 is already good health policy. But can we do more?

The papers in this supplement to the *American Journal of Preventive Medicine* raise the tantalizing question of whether the 2-1-1 system can be leveraged as a platform to connect callers to health-related programs and services.<sup>7–23</sup> Health is mentioned rarely in popular and policy discussions about 2-1-1, and the reasons are understandable. Health concerns are usually not the primary reason that most dial 2-1-1. In New York City, which has one of the largest and best funded 2-1-1/3-1-1 systems, health issues do not appear among the top ten identified call concerns.<sup>24</sup> Many of the studies in this special issue report similar findings. However, we should not mistake the lack of expressed need for the lack of actual need. For the 2-1-1 population—the majority of which is socioeconomically disadvantaged—

health concerns often take a back seat to more acute concerns regarding finances, food, shelter, and work. As this special issue shows, there is pressing health need among 2-1-1 callers. Health concerns likely will increase in magnitude with continued macroeconomic difficulties, shortages in primary care provider coverage, and the influx of tens of millions into the healthcare system as a result of the Affordable Care Act. Although frequently hidden, health needs persist. How might the 2-1-1 system best be mobilized to help?

Kreuter et al.<sup>17</sup> offer a glimpse of what expanded health-related services could offer. More than one third of 2-1-1 callers took advantage of a cancer control referral when provided with a patient navigator to assist them. Even more exciting, the study showed that a more scalable intervention—sending a mailed tailored reminder—resulted in nearly one quarter of 2-1-1 callers acting on their cancer control referral. Kreuter and colleagues rightfully suggest that rolling out such interventions nationally might be an effective tool in our efforts to reduce cancer disparities. However, even proven strategies like mailed tailored reminders—which have long been a preferred intervention strategy for health plans and the disease/care management industry—might not be a sufficient driver of widespread adoption, especially among more poorly resourced 2-1-1 organizations. Fortunately, we have a range of additional solutions at hand, including one that is literally in the hands of 2-1-1 callers.

The information technology revolution of the past 2 decades has driven a parallel surge in studies testing electronic health (eHealth) intervention strategies.<sup>25</sup> Despite constraints imposed by funders, research designs, and the rapid pace of technologic developments, herculean strides have been made in the eHealth evidence base. There are now a host of evidence-based interventions—ready for dissemination—for a wide range of clinical outcomes, settings, and populations. For example, we recently demonstrated that an eHealth intervention (delivered via web or an interactive voice response system) produced weight loss, improved blood pressure control, and slowed systolic blood pressure increases among socioeconomically disadvantaged, racial/ethnic minority community health center patients.<sup>26</sup>

However, spend enough time with the eHealth literature and you might wonder whether any progress has

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been made in closing the digital divide. Studies in the eHealth literatures have very limited sociodemographic diversity,<sup>27</sup> and it is not entirely clear why. It is true that racial/ethnic and socioeconomic gaps in technology access persist, particularly for broadband Internet access and desktop computer ownership. However, smartphones and mobile Internet connectivity options have drastically minimized the digital divide. In some cases, the divides have been reversed. Blacks and Hispanics are significantly more likely than whites to own mobile phones (87%, 87%, and 80%, respectively) and to use them for Internet access (46%, 51%, and 33%, respectively); text messaging (79%, 83%, and 68%, respectively); and a host of other advanced data functions (e.g., sending/receiving email, video, pictures, downloading applications, and sending instant messages).<sup>28</sup> Some have even expressed concern about the excess media exposure resulting from smartphone *overutilization* in socioeconomically disadvantaged communities.<sup>29</sup> If mobile is the “digital onramp” for historically disconnected groups,<sup>24</sup> then perhaps 2-1-1 can be the “bridge” to a new generation of eHealth interventions, designed specifically for these populations. However, what kind of science do we need to realize this vision for 2-1-1?<sup>8</sup>

To be sure, there are file cabinets full of evidence-based interventions that could be revived using mobile delivery strategies and extended to meet the needs of the 2-1-1 population. The emerging science of dissemination and implementation<sup>4</sup> can be used to answer several key questions: First, how do we identify those in need of intervention without disrupting 2-1-1’s core operations? Fortunately, as Alcaraz et al.<sup>19</sup> showed, 2-1-1 callers need not be directly surveyed to characterize their likely health risks. Predictive algorithms can be fashioned to target intervention content using case-finding strategies similar to those that are employed widely in industry by health plans, employers, and the disease/care management industry.

Next, what types of eHealth intervention strategies promote 2-1-1 client uptake and improve outcomes? Ideally, 2-1-1–based interventions might be delivered without substantial human support. Such designs may decrease effectiveness but contain costs, ease adoption, and facilitate scalability. Which interventions (personally directed, decision support, referral to extant apps); modalities (mobile app, interactive voice response, SMS text messaging, mobile web, multiple-modality designs); and referral strategies (referral with reminder, immediate sign-up, navigated referral) best promote caller uptake and positive clinical outcomes?

Finally, what adoption models might make eHealth interventions widely available via 2-1-1? Although there are examples of 2-1-1 organizations launching programs beyond their core services, this is often done using out-

side staff so as not to risk compromising their core missions.<sup>18</sup> Who are the best partners for 2-1-1? For example, would foundations or federal funders support regional or national platforms for intervention delivery? What types of community organizations would be best positioned to offer such services? What about industry or social entrepreneurial ventures? For example, might a partnership be formed with the Federal Communication Commission’s LifeLine Assistance program, which provides millions of low-income Americans in 38 states with a free mobile phone, service, and a low-cost texting plan? Several of the reports in this special issue demonstrate 2-1-1’s ability to form productive partnerships with a diverse range of organizations,<sup>10,12,15,16</sup> suggesting that new collaborative initiatives to offer health-related services are not only possible but promising. With increased attention to efficient and cost-effective care delivery, such research also might help renew interest in public financing for the system.

The papers in this supplement<sup>7–23</sup> make a compelling case that 2-1-1 systems could serve as a platform for connecting the socioeconomically disadvantaged to health-related interventions. We especially need rigorous dissemination and implementation science to evaluate how best to launch such strategies without overburdening 2-1-1’s core operations. Given this reality, eHealth approaches are particularly well suited for 2-1-1. Mobile technology use is high in socioeconomically disadvantaged populations, and eHealth interventions have demonstrated health benefits and offer potential efficiencies in cost and healthcare delivery.<sup>9</sup> Although many believe that technologic innovations exist only in the domain of the advantaged, we should remember Steve Jobs’s maxim that “these technologies can make life easier, can let us touch people we might not otherwise.” Indeed, blending 2-1-1’s core mission of connection with eHealth offerings might make it a little easier to reach socioeconomically disadvantaged populations with efficacious eHealth interventions. Doing so might provide an unmatched opportunity to improve health and reduce health disparities.

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