

# A Review of the Role of Cost–Benefit Analyses in 2-1-1 Diffusion

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**Context:** The 2-1-1 helpline is a social services innovation that has spread rapidly throughout the U.S. Policy diffusion theory suggests that policymakers seek to reduce uncertainty by anticipating the effects of a proposed innovation through tools such as cost–benefit analyses. Few policy diffusion studies have examined use of information, such as cost–benefit analyses, in the diffusion process. The purpose of this study is to examine how cost–benefit analyses were used during the rapid diffusion of 2-1-1 across states. The paper also describes components of 2-1-1 cost–benefit analyses.

**Evidence acquisition:** In 2011, cost–benefit analyses of 2-1-1 and substantive citations of them were identified through scholarly key word searches using Academic Search Premier and Web of Science, general Internet searches using Google search terms, and communications with academicians and 2-1-1 practitioners through personal contact and e-mail discussion groups. To be included in this study, documents had to be related to 2-1-1 helplines, present information about their costs and benefits, and be formal documents. The documents were catalogued and analyzed for cost–benefit analyses or references to analyses, and stated purpose.

**Evidence synthesis:** Of the 19 documents that met eligibility inclusion criteria, nine were original cost–benefit analyses and ten referenced analyses conducted for other jurisdictions.

**Conclusions:** The diffusion of 2-1-1 helplines in the U.S. has been influenced by interjurisdictional exchange of cost–benefit analyses, in both the creation of original analyses and/or the referencing of previous work. (Am J Prev Med 2012;43(6S5):S497–S505) © 2012 American Journal of Preventive Medicine

## Context

In 2000, the Federal Communication Commission (FCC) set aside the three-digit dialing code 2-1-1 for community services information and referral.<sup>1</sup> In the decade since, use of 2-1-1 has spread to each of the 50 states, Washington DC, and Puerto Rico.<sup>2</sup> There are 16 problem/need categories of information and referral provided by 2-1-1s (Table 1).<sup>3</sup> Although call proportions vary from state to state, health and mental health calls typically account for 15% to 25% of calls.<sup>4–6</sup> Increasingly, 2-1-1 helplines are serving as public information points for health concerns including Severe Acute Respiratory Syndrome (SARS), West Nile, and flu shots.<sup>7</sup> These helplines also have participated in community health prevention outreach to vulnerable populations to promote smoking cessation programs, mammography, adult human papillomavirus (HPV) vaccination, and Paps.<sup>8</sup>

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Despite the rapid adoption of 2-1-1 helplines across the U.S., there has been limited scholarly attention paid to this social services innovation. Cost–benefit analyses (CBAs), often sponsored by advocates for 2-1-1, informed policymakers about likely economic impacts. It is well known in the 2-1-1 community that CBAs conducted for one jurisdiction were sometimes used by other jurisdictions as evidence of a positive economic benefit.

However, no systematic documentation has been conducted on the use of 2-1-1 CBAs from one jurisdiction to take action in another jurisdiction. Moreover, there is little guidance in the academic literature generally that documents information flows between jurisdictions in the policy diffusion process.<sup>9</sup> The present study addresses this gap by using 2-1-1 as a case study to document possible use of CBAs done by one jurisdiction to justify policy action about 2-1-1 in other jurisdictions. This paper also describes use of CBA for understanding components of 2-1-1 and provides one case example of components of a 2-1-1 CBA.

## Policy Regarding 2-1-1

The first 2-1-1 started in Atlanta GA in 1997.<sup>10</sup> The ability to offer information and referral services through a three-digit dialing code was embraced by organizations across

**Table 1.** Problem/need national categories for 2-1-1 helplines<sup>3</sup>

Problem/need category
Arts, culture, and recreation
Clothing/personal/household needs
Disaster services
Education
Employment
Food/meals
Health care
Housing/utilities
Income support/assistance
Individual, family, and community support
Information services
Legal, consumer, and public safety
Mental health/addictions
Other government/economic services
Transportation
Volunteers/donations

the U.S., who successfully banded together to petition the FCC to reserve 2-1-1 nationwide for community information and referral.<sup>11</sup> The FCC gave states the responsibility of determining what organization(s) would be responsible for delivering the service.

For most states, this determination would be made by a public service or public utility commission. In a limited number of states, the determination was made by a legislative body or delegated to a coalition of information and referral organizations.

States have varied in whether they have staged approval for 2-1-1 geographically or done so in a single action. Some states, such as Michigan, Nebraska, and California, have staged 2-1-1 successively within their state, adding regions over a number of years. Other states, such as Hawaii and Texas have assigned 2-1-1 responsibility across their state in a single action.

Once authorized, 2-1-1 services typically have been responsible for developing their funding and implementing the service. A limited number of 2-1-1 services receive substantial state support, but most rely primarily on a combination of public and private support.<sup>12</sup> The 2-1-1s have not addressed funding and implementation challenges in isolation. Several national not-for-profit organizations have promoted 2-1-1 nationally. Notably, United Way Worldwide and the Alliance of Information and Referral Systems (AIRS) have jointly championed 2-1-1

development. United Way Worldwide used its nationwide network of United Way member agencies to advocate at the national and local levels for adoption of and funding for 2-1-1s across the U.S. AIRS, the association of information and referral organizations, leveraged its network and incorporated 2-1-1 into its professional standards and certifications. These two national organizations, along with local 2-1-1s, worked with legislators to propose federal funding through the Calling for 2-1-1 Act. The Act would have provided substantial federal funds to support 2-1-1s throughout the U.S. Although the act was not passed, several 2-1-1s successfully received targeted congressional appropriations.<sup>13</sup>

United Way Worldwide and AIRS have served as networks for information sharing about the costs and benefits of 2-1-1, typically by equipping local 2-1-1 supporters who were in contact with their state and local policymakers. AIRS and United Way Worldwide publicized documents and toolkits with information about the service's costs and benefits through e-mail discussion groups, at national conferences, and through personal communications. In 2004, United Way Worldwide also commissioned a CBA for adoption of 2-1-1 across the entire U.S. AIRS' and United Way Worldwide's dissemination strategies appear to have promoted sharing of CBAs in states through local 2-1-1 supporters.

One national 2-1-1 leader reflected on a typical encounter of a 2-1-1 supporter with a state policymaker (anonymous, personal communication, 2012):

The rote question [asked by state policymakers] was often "Have you done a cost-benefit analysis?" . . . [The] answer would be, "Not yet, although we would be willing to develop one if you could help with the funding of the study. However, cost-benefit documents have been published by Texas and Nebraska [for example]. Would you like to review those?"

### Cost-Benefit Analyses

Types of cost analyses include CBAs, cost-effectiveness analyses, cost-utility analyses, and cost-feasibility analyses.<sup>14</sup> CBAs judge the worth of a policy based on its economic impact by assigning and comparing the costs of the inputs to the value of the outcomes.<sup>15</sup> CBAs have been used in a variety of human service settings, such as education,<sup>16</sup> corrections,<sup>17</sup> poison control centers,<sup>18</sup> services for people with dementia,<sup>19</sup> and health promotion.<sup>20</sup> Proponents of CBAs claim that the economic valuation of policies provides objective criteria with which to make decisions. They claim that the valuations are transparent methods used to weigh relevant factors. Critics charge that it is impossible to monetize all inputs and outcomes of a proposed program and therefore cost analyses ignore important intangible outcomes. Despite ongoing debate

about CBAs, they continue to be a popular tool considered by policymakers.

Cost—benefit analyses have been used by advocates of 2-1-1 to demonstrate its worth. Some jurisdictions have developed CBAs, and others simply have cited the results of other jurisdictions' analyses. There has been limited scholarly work examining 2-1-1 CBAs.<sup>21,22</sup>

Only two peer-reviewed articles were found that explored costs and/or benefits of 2-1-1s. The first focused solely on the benefits that 2-1-1s offer to communities and described the challenges and approaches to quantifying those benefits.<sup>21</sup> That study was not an analysis of a specific 2-1-1 service; rather, it was an overview of the types of benefits 2-1-1s accrue and a description of how those benefits might be measured. The second article documented potential costs and benefits at the individual, organizational, and societal levels and incorporated a temporal dimension to benefits calculation (i.e., short-, medium-, and long-term).<sup>22</sup> Neither of the scholarly articles calculated the costs and benefits of a specific 2-1-1 service or reviewed the role of CBAs in the diffusion of 2-1-1 across the U.S.

## Policy Diffusion

Policy diffusion has been a topic of keen interest to scholars over the past several decades.<sup>23</sup> Researchers seek to explain why some governments adopt innovative public policies whereas other jurisdictions do not. Walker's seminal work<sup>24</sup> defined a *policy innovation* as any program new to a government, regardless of how many other governments may have adopted it. For him, and the researchers who have followed his lead, it is not the novelty of the idea but the fact that it is new to the jurisdiction that qualifies it as an innovation.

Many diffusion researchers have examined the interdependence of governmental bodies when making policy decisions, recognizing that policymakers do not enact policy in isolation.<sup>24</sup> Policymakers reduce the risk of making bad decisions by relying on a variety of sources, including those used by policymakers in other jurisdictions.<sup>24,25</sup> Based in Rogers's<sup>25</sup> broader theory of diffusion of innovation, policy diffusion describes how policymakers opportunistically scan their environment for new ideas or solutions to problems. When an idea is identified, it is subjected to an information-gathering and testing period. During this period, policymakers may seek to reduce the risk of unexpected consequences by looking to the experiences of others.<sup>26</sup>

Researchers hypothesize that jurisdictions emulate each other for four reasons: (1) policymakers face a problem and use solutions already developed by others as a decision-making shortcut; (2) policymakers want to remain competitive with other states to provide a

good economy and quality of life for residents; (3) policymakers want to conform to the norms of other states or the expectations of the federal government; or (4) policymakers respond to public pressure from citizens and media.<sup>27,28</sup> Researchers have studied diffusion in the context of a wide range of policies including lotteries,<sup>26</sup> gaming,<sup>29</sup> school choice,<sup>30</sup> end of life,<sup>31</sup> water fluoridation,<sup>32</sup> living wills,<sup>33</sup> antismoking,<sup>34</sup> and HMOs.<sup>35</sup>

Policymakers may learn of innovations from policy networks,<sup>30</sup> professional associations,<sup>35</sup> epistemic communities,<sup>36</sup> nongovernmental organizations,<sup>37</sup> think tanks,<sup>38</sup> and the media.<sup>28</sup> This transfer of information may take place through face-to-face communications, but it also may occur through documentary and informal evidence.<sup>39</sup> Formally documented expert-based information, such as cost analyses, may be particularly desired and persuasive when policymakers are developing policy decisions.<sup>40,41</sup> Despite the important and powerful role of such information, researchers have noted that few policy diffusion studies have focused on the use of information in the diffusion process.<sup>9</sup> The present study addresses this gap by examining the use of information produced through a popular policy tool (i.e., CBAs) in the rapid spread of 2-1-1 in the U.S.

## Evidence Acquisition

Both scholarly and gray literatures were searched. Documents identified through the searches were included in the current study if they were related to 2-1-1, examined 2-1-1 costs and benefits, and were formal documents (e.g., not simply website narrative). Excluded from the study were analyses not specific to 2-1-1, information sources that were not formalized, or that presented costs or benefits only in a very general way. Information collected from each document included the author, title, publisher, year of publication, and how costs and benefits were monetized. The documents were coded independently so no test of inter-rater reliability was required.

Scholarly literature was identified through computerized searches using Academic Search Premier (ASP) and Web of Science (WoS). The searches were conducted for the presence of keywords in scholarly, peer-reviewed publication abstracts prior to March 2011. Each database was searched using keyword combinations of: 211 AND cost; 2-1-1 AND cost; 2-1-1 AND call center; 211 AND call center; 2-1-1 AND human services; 211 AND human services; human services AND telephone; information AND referral AND human services; and telephone AND community-based services. Of the 1165 articles returned by the searches (duplicates included), 195 were found by ASP and 970 through WoS. Only one of the articles met the eligibility criteria for the present study.

Gray literature was searched in three ways: (1) through existing lists of CBAs; (2) via personal communications; and (3) using Internet searches. Lists of CBAs were obtained from AIRS, United Way Worldwide, and the Center for Excellence in Cancer Communication Research at Washington University in St. Louis. Personal communications in the form of e-mail inquiries were sent on April 18, 2011, and

**Table 2.** Chronologic listing of 2-1-1 cost–benefit analyses

Document title	Year	Author	Jurisdiction	Cost–benefit analysis referenced	Valuation time frame (years)
The value of a comprehensive Texas information and referral network <sup>42</sup>	1998	King CT, O’Shea DP, Betsinger AM	Texas	None	10
Final 211 report: survey of existing I&R services and a Nebraska 211 system cost/benefit analysis <sup>43</sup>	2000	University of Nebraska Public Policy Center	Nebraska	Texas 1998	5
The value of a comprehensive Texas information and referral network: August 2000 update <sup>44</sup>	2000	O’Shea DP, Kegler L, King CT	Texas	Texas 1998	10
Maryland 2-1-1: benefits and costs of a 2-1-1 system for Maryland <sup>45</sup>	2001	PSComm, LLC	Maryland	Nebraska	1
National benefit/cost analysis of three digit–accessed telephone information and referral services: final report <sup>46</sup>	2004	O’Shea D, King CT, Greenfield S, Shelton E, Sullivan L, Taber E, Olson JA	United States	None	10
WIN 2-1-1: performance evaluation and cost-benefit analysis of 2-1-1 I&R systems <sup>47</sup>	2005	Fisher KE, Saxton M, Naumer C, Pusateri C	Washington	Texas 1998; Nebraska; Maryland; National	Not applicable
Arkansas 211 system cost/benefit analysis <sup>48</sup>	2009	Arkansas 211	Arkansas	Nebraska	1
Benefit/cost analysis of Aloha United Way’s 211 program <sup>49</sup>	2009	Souke J, Takenaka A, Roberts B, Ng C	Hawaii	Maryland; National; Arkansas	10
Michigan 2-1-1 business plan <sup>50</sup>	2011	Michigan 2-1-1	Michigan	None	10

I&R, information and referral; WIN, Washington Information Network

June 6, 2011, to 2-1-1 administrators and staffers through two e-mail discussion groups: the Airnetworker (approximately 800 recipients) and the 2-1-1 DISCUSSION-L list (693 recipients). The e-mails requested cost–benefit or cost-effectiveness analysis, or any other type of analysis that attempted to compare the costs of 2-1-1s to positive outcomes. The third information source was web searches. Searches were conducted using the terms *2-1-1 cost benefit*, *211 cost benefit*, *211 feasibility study*, and *2-1-1 business plan*.

## Evidence Synthesis

The search identified 19 documents for inclusion in the study.<sup>22,42–59</sup> Only one document was found through the scholarly database search,<sup>22</sup> whereas the remaining 18 were identified through the gray literature search. Three documents were from national organizations: two from United Way Worldwide and one from the National Aging Information and Referral Support Center. Eleven documents covered an entire state or area within a state, with some states represented by multiple documents (number denoted parenthetically): Arkansas, California, Hawaii, Kentucky, Maryland, Michigan (2), Nebraska, Oregon, Pennsylvania (2), Texas (2), and Washington (3).

## Documentation of Cost–Benefit Analyses

Approximately half ( $n=9$ ) of the 19 eligible documents were original CBAs. All but one of the CBAs were conducted at the state level. Of the documents, six were identified as CBAs,<sup>43,45–49</sup> two were identified as valuation documents,<sup>42,44</sup> and one was identified as a business plan.<sup>50</sup> Table 2 lists the CBAs in chronologic order based on publication date.

The analyses included those that were developed prior to delivery of 2-1-1 services (relying on speculative projections) and those developed after 2-1-1 had been established (incorporating actual delivery experience in projections). Two studies, the 1998 Texas study and the 2000 Nebraska study, predated the 2000 ruling by the FCC. The remaining seven studies were conducted in the years following the FCC designation.

Five CBAs were conducted prior to their states’ authorization, and three were conducted subsequent to state authorization. The studies conducted prior to 2-1-1 authorization within their state were Texas (1998); Ne-

**Table 3.** Case example—costs and benefits from the Texas analysis (1998)<sup>42</sup>

Monetized costs	Nonmonetized costs	Monetized benefits	Nonmonetized benefits
<b>Start-up costs</b>	None	Call avoidance (911 and other N11)	Cost avoidance—expensive alternatives (early intervention broadly)
Hardware and software costs		Time savings in locating services	Information about service coverage and need
Setup and engineering		Call avoidance—providers	Hope
<b>Ongoing costs</b>		Lost productivity	Access to comprehensive info
Telecommunication technology and services		Referral to volunteer tax assistance and value of tax credit dollars recovered to community	Tax assistance and recovery (including earned income tax credits)
Salaries and fringe benefits		Cost avoidance—ancillary services	Employer—reduced absenteeism and increased productivity
Professional fees and services		Cost avoidance—inappropriate evaluations	
Materials, supplies, postage		Cost-avoidance job training program—reduced intake and eligibility certification	
Facilities		Cost-avoidance job training program	
Travel		Links to workforce centers	
Promotion/marketing			
Training			

braska (2000); Texas (2000); Maryland (2001); and Arkansas (2009). These CBAs were conducted to predict the potential value of 2-1-1s for the states. The cost analyses conducted following 2-1-1 authorization within their state (or the first 2-1-1 authorization within their state) were for Washington (2005); Hawaii (2009); and Michigan (2011). According to the documents, the purpose of these analyses was to estimate the value of the existing service. The national study (2004) was conducted following the FCC decision, but prior to widespread adoption of 2-1-1 across the U.S.

Several of the prospective CBAs compared varying service-delivery structures. For example, the Nebraska study compared three models of situating call centers (i.e., single statewide center, six regional centers open 24/7, and six regional centers operating weekdays and one becoming the overnight and weekend center). In other studies where information and referral services (e.g., Texas, 1998) or actual 2-1-1s were already in place (e.g., Michigan, 2011), existing call volumes and organizational structures were analyzed. In all of the CBAs, except Maryland's, benefits outweighed costs. (Maryland projected a slightly higher per capita cost and monetized a smaller number of benefits than did other states).

Some of the CBAs were used as models or information sources for work done in subsequent cost analyses. For example, both the Maryland and Arkansas studies explicitly mentioned that they used aspects of the Nebraska study. The Texas study and the national study shared several authors and featured similar valuation approaches. The Washington study reviewed benefits that were quantified in the Maryland and Nebraska studies. The Hawaii study referenced Arkansas, Maryland, Michigan, and the national analyses.

### Components of Costs and Benefits

The analyses across the nine CBAs varied in depth and scope of costs and benefits. Moreover, there were variations in which costs and benefits were monetized or simply described in nonmonetary terms. For the purpose of illustration, the costs and benefits identified in Texas's 1998 CBA are listed in Table 3.

**Costs.** All the CBAs, except the Washington study, monetized the costs of implementing 2-1-1. None of the analyses presented nonmonetized costs, suggesting that the authors believed all 2-1-1 costs were able to be valued financially. Of the monetized costs, most of the studies (Maryland, Michigan, National, Nebraska, Texas 1998 and 2000) divided costs into start-up costs and ongoing costs. The Arkansas (pre-implementation) and Hawaii (post-implementation) studies made no distinction. Start-up costs included such items as capital expenses for hardware, software, telephony, databases, and office furnishings. The Nebraska study also included training as a start-up cost. All studies, except the Washington study, calculated operating expenses. Operating expenses included personnel costs; materials and supplies; travel; facilities rental; promotion/marketing; training; insurance; technology (e.g., telecommunications, hardware and software); professional services (e.g., legal, information technology, telecommunications, accounting); and equipment.

**Benefits.** Both monetized and nonmonetized benefits were reported in most studies. Many of the studies categorized monetized benefits. For example, the Texas studies examined benefits to individuals, government, and society, whereas the Nebraska and Arkansas studies categorized benefits to individual citizens, employers, human service providers, planners, and funders. The most commonly monetized benefits included call avoidance

for other three-digit numbers (e.g., 911, 311); personal and professional time-savings in locating services; call avoidance for community human service programs; cost avoidance for needing redundant information and referral lines that could be handled by 2-1-1; improved productivity for providers; tax dollars recovered to the community through referrals to volunteer tax-assistance programs; and cost avoidance for more-expensive interventions that could be addressed through less-expensive programs (e.g., nursing homes, early intervention).

Most studies also included nonquantified benefits. The most-frequently mentioned nonquantified benefits were reduced frustration for individuals seeking services, reduced cost of services, cost avoidance of more-expensive interventions that could be addressed through less-expensive programs, improved information about service coverage and needs, and reduced toll-free lines sponsored by governments. Some studies did not quantify benefits that were quantified by other studies. For example, the Nebraska, national, Arkansas, and Michigan studies monetized the benefit of avoiding redundant information and referral calls, whereas Maryland mentioned call avoidance as a benefit but did not attempt to value it.

### Use of Cost–Benefit Analyses

Ten documents referred to other jurisdictions' 2-1-1 CBAs and did not present original analyses (Table 4). Most of the documents ( $n=7$ ) were local or state-focused. Two had a national focus. The remaining study was a combination of a national and municipal focus. The experience of other states appears to have been important as most of the reports explicitly stated their desire to learn from other states who had implemented 2-1-1.

Two states (Michigan and Pennsylvania) did not have state authorization for 2-1-1 at the time of publication of the documents referring to others' CBAs. One state (Washington) had authorized a third party to make a decision about what organization would be authorized to operate their 2-1-1, but at the time of the statewide plan (2004), had not made an assignment. The one local plan (Peninsulas region of Washington) had received state authorization to operate a 2-1-1 but had not yet implemented the service. Two states (California and Kentucky) had achieved authorization of at least one 2-1-1 within their boundaries at the time of publication, but only approximately one half of their state's populations had access to 2-1-1.

Most often, the results of other jurisdictions' CBAs were reported as a net monetary value. For example, the California study is typical in referring to the national study's finding that the net present value to the nation over 10 years of complete 2-1-1 coverage would be \$530

million. Five of the documents reported the results of only one of the CBAs (Table 4). Four studies mentioned two analyses. One study mentioned three analyses. The most-frequently reported analysis was the national analysis, which was reported in eight of the documents. The Nebraska analysis was cited in seven reports. One report mentioned the 1998 Texas analysis. Essentially, it appears that the case for 2-1-1 was established by 2004, as none of the CBAs published after 2004 were referenced in other documents.

Many of the documents presented the challenge of identifying financial support for 2-1-1 services. For example, Pennsylvania's plan states that building a 2-1-1 network:

requires a significant long-term commitment from state government as well as ongoing support from a broad mixture of private sources—United Ways, private foundations and business—and local funding obtained by the regional 2-1-1 call centers from both public and private sources.<sup>57</sup>

### Discussion

An important but largely unexamined question in policy diffusion is how information is used by jurisdictions throughout the policy diffusion process. Researchers increasingly are viewing products of policy analyses as contributing to wider processes beyond that for which they originally were authored.<sup>37,60</sup> The present study provides evidence that specific results produced by CBAs were used in the rapid diffusion of 2-1-1s across the U.S.

The current study begins to fill a gap in policy diffusion research, because there has been little documentation of the use of information by others.<sup>9</sup> The results illustrate policy information sharing through the example of CBAs in the diffusion of 2-1-1. As one national leader in 2-1-1 commented (anonymous, personal communication, 2012):

Some leaders in the political sphere and/or major internal government administrators liked to know that they could be a trailblazer in their state with some security that other states had adopted it and that studies were available to back it up.

### Limitations

There are several limitations to the present study. First, archival evidence was the sole source of information. Thus, study scope limited to documented analyses and their mention in formal documents by other jurisdictions. This approach prevents exploration of the comparative valance of CBAs in relation to other information policymakers may have accessed. Therefore, this study is not able to describe the persuasiveness of CBAs results in

**Table 4.** Chronologic listing of documents that use results of 2-1-1 cost–benefit analyses

Title	Year	Author	Jurisdiction	Cost-benefit analysis referenced	First authorization in jurisdiction	Type of authorization at time of analysis	Status of implementation at time of analysis
Aging network involvement in 2-1-1 <sup>51</sup>	2000	National Aging I&R Support Center	National	Nebraska	2000	FCC had just reserved 2-1-1 across U.S. for community information and referral	Several states had already assigned 2-1-1 to at least one organization
Washington Information Network 2-1-1 business plan <sup>52</sup>	2004	Washington Information Network 211	Washington	Nebraska	2003	The state assigned the responsibility for authorizing 2-1-1s in the state to a coalition of local providers, WIN 2-1-1	WIN 211 had not yet authorized any 2-1-1s
United Way 2-1-1 of the Peninsulas business plan <sup>53</sup>	2005	Kincaid B, James H	Peninsula Region of Washington	National	2005	WIN 2-1-1 had named United Way 2-1-1 of the Peninsulas as the 2-1-1 provider	United Way 2-1-1 of the Peninsulas had not yet implemented 2-1-1
2-1-1 across California by 2010—business plan <sup>54</sup>	2005	2-1-1 California	California	National	2002	State had authorized several 2-1-1s, but had not authorized 2-1-1s in all regions of the state	California's existing 2-1-1s covered approximately one half of the population
Michigan 2-1-1 business plan <sup>55</sup>	2006	Michigan Association of United Ways	Michigan	Nebraska; National	2006	State had authorized several 2-1-1s, but had not authorized 2-1-1s in all regions of the state	Michigan's existing 2-1-1s covered 56% of the population
How does 211 reduce state spending? <sup>56</sup>	2006	UW of SE PA	Pennsylvania	Nebraska; National	2010	The state had not yet authorized any 2-1-1s	No 2-1-1s had yet been implemented
Pennsylvania 2-1-1 business plan <sup>57</sup>	2007	United Way of Pennsylvania	Pennsylvania	Nebraska; National	2010	The State had not yet authorized any 2-1-1s	No 2-1-1s had yet been implemented
2-1-1 information services: outcome assessment, benefit—cost analysis, and policy issues <sup>22</sup>	2007	Saxton ML, Naumer CM, Fisher KE	National review and Portland, Oregon focus	Texas 1998; Nebraska; National	2003	Some 2-1-1s had been authorized, including Portland's, but 2-1-1 was not authorized in all regions of the state	Portland, Oregon 2-1-1 had been implemented
Fact sheet for 2-1-1 <sup>58</sup>	2008	United Way of America	National	National	2000	FCC had reserved 2-1-1 across U.S. for community information and referral, but 2-1-1 was not authorized in all regions of the U.S.	Existing 2-1-1s covered approximately 75% of the U.S. population
Kentucky 2-1-1 strategic business plan <sup>59</sup>	2009	United Way of Kentucky	Kentucky	Nebraska; National	2001	The state assigned the responsibility for authorizing 2-1-1s in the state to United Way of Kentucky. The organization had authorized 2-1-1s in several regions, but had not authorized 2-1-1s in all regions of the state.	Existing 2-1-1s covered 43% of the population

FCC, Federal Communications Commission; I&amp;R, information and referral; WIN, Washington Information Network

comparison to other information. Second, only formal documents were included in this study, thus omitting the use of CBAs that may have been transmitted through more transient means, such as verbally or through brochures, briefings, or websites. Third, this study did not assess the quality of the CBAs to determine their comprehensiveness.

The results of the current study point to areas for future research and practice. The rapid diffusion of 2-1-1s suggests that the national network of 2-1-1s was an effective channel for sharing policy-relevant information. This raises further research questions: What contributed to the efficacy of this diffusion process? How might the network be used to spread future policy innovations? Does diffusion theory help us understand the mechanisms associated with early and late adoption of policies like 2-1-1? Why have certain groups not adopted 2-1-1? These questions may benefit from both qualitative and quantitative (e.g., mixed-methods) approaches.

Understanding the potential inequities in policy diffusion will be important. Diffusion theorists have posited that jurisdictions' internal characteristics (e.g., socioeconomic of the intended population) and propinquity to other innovators are related to likelihood to adopt, suggesting that isolated, economically disadvantaged areas may be less likely to adopt policy innovations, such as 2-1-1.<sup>61,62</sup> Data from United Way Worldwide indicate that rural communities may be disproportionately represented in areas without 2-1-1.<sup>63</sup> Rural areas tend to have greater need for, but fewer, social services.<sup>64</sup> This leads to the disquieting possibility that the areas whose residents could most benefit from 2-1-1 services may be the very ones lacking access. Future research should explore disparities in adoption and access to innovative social policies such as 2-1-1, as well as to understanding the mechanisms by which successful adoption is accomplished. As a result, research will benefit policymakers, policy implementers, and other practice-based professionals who are striving to accelerate the uptake of life-saving 2-1-1 services.

A practical implication of the present study is that 2-1-1s are able to work together to share information and mobilize quickly, despite the fact that 2-1-1s are not a single national body but rather a collection of independent organizations. There is promising evidence, for example, in the realm of disaster response and recovery, that 2-1-1s together form an effective national network that is able to meet unanticipated surges of need.<sup>12,60,65,66</sup> In their role in providing health-related information and referral, and in their emerging role as a proactive source for promoting community and individual health, the 2-1-1 network comprises an effective vehicle for diffusing new practices. Further, 2-1-1 and health practitioners

may find fertile ground for furthering mutual goals by working together.

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