



e-Health:
Empowering Nevadans
Across All Walks of Life

November 10, 2011

The topic of e-Health is one of growing importance in both the public health and technology fields and has been characterized as an “intersection of medical informatics, public health, and business.”ⁱ As healthcare costs rise, more and more residents are finding that broadband empowers them to seek out healthcare information and communicate with medical specialists from around the world. These opportunities make e-Health a valuable asset for residents and healthcare providers that can improve healthcare quality, streamline the healthcare process, provide more timely care, improve patient safety, and increase access to healthcare.ⁱⁱ

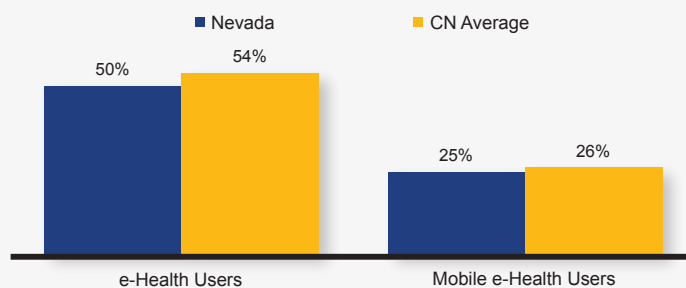
Providing access to e-Health tools and the knowledge of how to use those capabilities has been pinpointed as an achievable goal in the health services field.ⁱⁱⁱ While many underserved groups (such as the elderly, low-income individuals, and minority populations) have fallen behind in home broadband adoption, it has been shown that, given the proper access and training, e-Health systems would be used extensively by and provide many benefits for these groups.^{iv v vi}

Connect Nevada examined the topic of e-Health in its latest Residential Technology Assessment. These results show that, while residents across a wide variety of demographic groups utilize e-Health, there are many underserved groups who may benefit from training in e-Health use and increased access to e-Health opportunities.

e-Health in Nevada

Across the state of Nevada, one-half of Internet users (50%) say they go online for e-Health purposes, such as searching for medical information or communicating with doctors or other healthcare professionals. This represents approximately 853,000 Nevadans age 18 or older, or 42% of all Nevada adults (Figure 1).

Figure 1.
e-Health Application Usage



i Eysenbach G. What is e-health? *J of Med Internet Research* 2001 Jun 18:3(2):e20, doi: [10.2196/jmir.3.2.e20](https://doi.org/10.2196/jmir.3.2.e20). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1761894/>

ii European Commission, authors. *eHealth is Worth it*. (2006). <http://www.ehealth-impact.org/download/documents/ehealthimpactsept2006.pdf>

iii Norman C, Skinner H. eHealth Literacy: Essential Skills for Consumer Health in a Networked World. *J of Med Internet Research* 2006 June 16: 8(2):e9,doi: [10.2196/jmir.8.2.e9](https://doi.org/10.2196/jmir.8.2.e9). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1550701/>

iv Gustafson D et al. Use and impact of eHealth systems by low-income women with breast cancer. *Journal of Health Communication* 10(Suppl1) (2005): 195-218.

v Botella et al. An e-Health System for the Elderly (Butler Project): A Pilot Study on Acceptance and Satisfaction. *CyberPsychology & Behavior*. 12(3) (June 2009): 255-262.

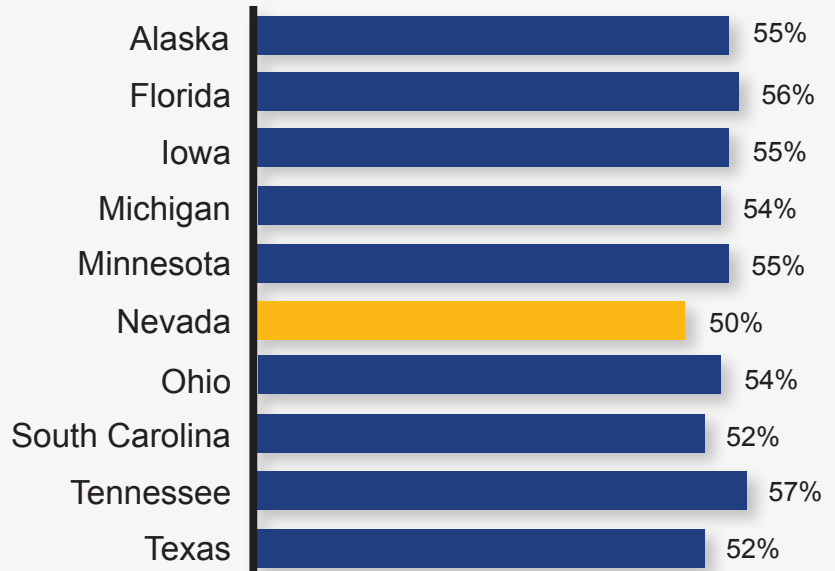
vi Shore J, Manson S. Telepsychiatric Care of Maerican Indian Veterans with Post-Traumatic Stress Disorder: Bridging Gaps in Geography, Organizations, and Culture. *Telemedicine Journal and e-Health* 10(Suppl2) (Nov 2004): S-64-S-69.

Among the findings from this survey:

- **One-half** of Nevada Internet users go online to search for medical information or communicate with healthcare professionals; this represents approximately 853,000 Nevada adults.
- **One in four** Nevadans (25%) who access the Internet on their cell phones say they use their cell phone or mobile device for e-Health purposes.
- **More than one in ten** e-Health users are age 65 or older; altogether, approximately 96,000 Nevadans in this age group go online to use e-Health applications.
- While many Nevadans utilize e-Health technology to improve their medical care and reduce costs, **nearly 300,000** low-income Nevada adults do not tap into this resource.
- Hispanic and African American Nevadans are significantly less likely to use e-Health tools; altogether, **approximately 125,000** African American and 170,000 Hispanic adults in Nevada still do not use the Internet for e-Health purposes.
- e-Health is a vital tool for Nevadans with disabilities, as approximately **129,000** use the Internet to access e-Health tools, and 38,000 use cell phones or mobile devices. Still, the use of e-Health applications among adults with disabilities is lower than in other states surveyed by Connected Nation.

In addition, one-quarter of Nevada adults who say they access the Internet on their cellular phone report doing so for e-Health applications. While mobile e-Health usage in Nevada is on par with other states surveyed by Connected Nation, overall use of the Internet for e-Health applications in Nevada is the lowest across the ten states surveyed by Connected Nation in 2011 (Figure 2). Yet within Nevada, deeper analysis shows variances across different economic, racial, ethnic, and age groups. These gaps show that even among Internet users, populations who often have the most to gain by increasing their health knowledge or reducing their medical bills currently are not taking advantage of these opportunities online.

Figure 2.
Internet Users
Who Go Online for e-Health Applications



e-Health Usage by Age

Use of e-Health applications has been widely promoted as a way to empower the elderly by helping save money through reducing the number of unnecessary trips to the doctor or hospital, providing information on preventative care, and allowing them to communicate with their healthcare providers from their own homes; this last benefit is important since leaving home can be a considerable challenge for many older Nevadans. Connect Nevada research shows that many older Nevadans are taking advantage of this opportunity.

Figure 3.
e-Health Usage by Age
Among Internet Users

Age 18-24	42%
Age 25-34	41%
Age 35-44	56%
Age 45-64	54%
Age 65-69	58%
Age 70+	50%
Nevada Average	50%

There is a clear increase in the use of e-Health applications across different age groups, with older Nevadans using the Internet for e-Health applications more often than younger adults (Figure 3).

Over one-half of Internet users who are age 65 or older (54%, representing approximately 96,000 Nevadans in this age group) say they go online for e-Health applications. In fact, more than one in ten e-Health users (11%) are age 65 or older. Nevada Internet users age 35 and older are significantly more likely to use e-Health applications than younger adults - 55% of all Nevada Internet users age 35 and older go online to look up health information or interact with healthcare professionals, compared to only 42% of Nevada Internet users age 18-34.

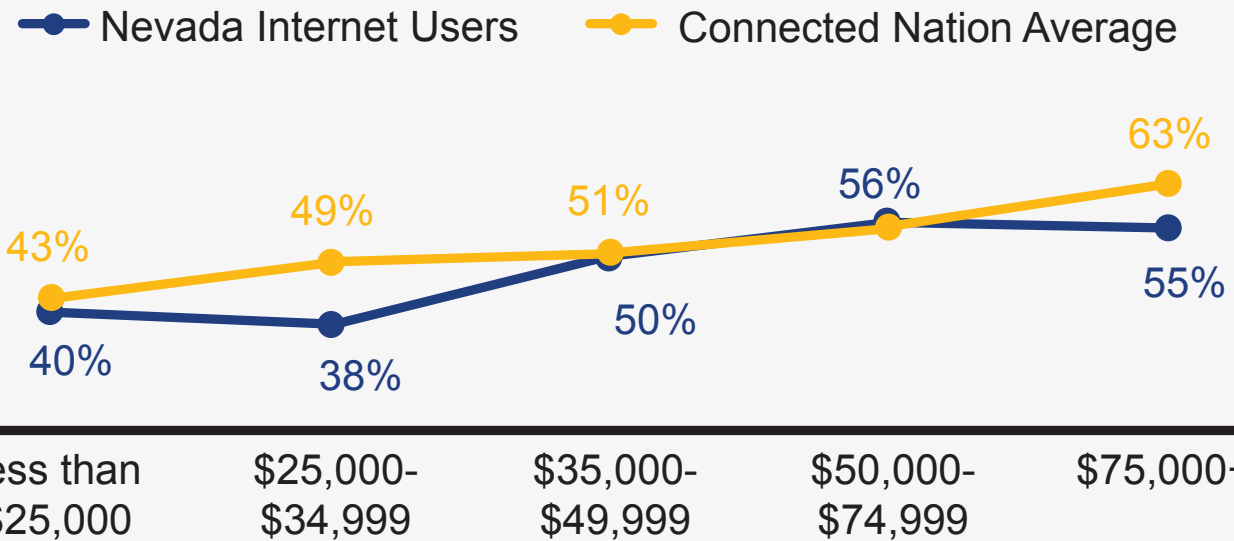
e-Health Usage by Income

Nevadans of every economic stratum can benefit from the use of e-Health applications, but the cost savings for low-income households can provide a necessary boost in today's sagging economy. In a 2007 study, Kentucky adults who said that they had become healthier by accessing health information online saved a self-reported \$217 per person, as well as saving money on doctor visits and unnecessary trips to the hospital emergency room.^{vii}

vii http://connectednation.org/_documents/Connected_Nation_EIS_Study_Full_Report_02212008.pdf

Across Nevada, household income impacts the likelihood that an Internet user will access e-Health tools online. Only 40% of adult Internet users living in households where the annual income is less than \$25,000 per year say they go online for e-Health purposes; this means that nearly an additional 300,000 low-income Nevada adults could potentially improve their health by going online. On the other hand, 55% of adult Nevada Internet users with annual household incomes of \$75,000 or more say they go online for e-Health purposes (Figure 4).

Figure 4.
e-Health Usage by Annual Household Income



A sharp divide can be seen between Nevada Internet users with annual household incomes of \$35,000 or more, compared to those whose annual household incomes are less than \$35,000; 54% of those in the higher income brackets say they use the Internet to access e-Health applications. By comparison, fewer than two out of five Internet users (39%) with annual incomes below \$35,000 access e-Health applications.

Even those income groups that tend to use e-Health applications more often in Nevada, though, fall behind other states. Compared to other states surveyed by Connected Nation, Internet users in Nevada tend to use e-Health applications less often than Internet users in other states, particularly at the two ends of the income scale.

e-Health Usage by Race/Ethnicity

Minority Internet users in Nevada are less likely to use e-Health applications than Caucasians, though different racial and ethnic groups are using these applications at different rates (Figure 5).

Statewide, 48% of all minority Internet users in Nevada say they go online for e-Health applications, compared to 52% of Caucasians. This includes 42% of non-Hispanic African American Internet users and 48% of Hispanic Internet users. This translates into 382,000 minority Nevada adults who do not benefit from accessing e-Health applications online, including 125,000 African American and 170,000 Hispanic adults.

Figure 5.
e-Health Usage by Race/Ethnicity

Caucasian	52%
Black or African American	42%
Hispanic	48%
Other	55%
Nevada Average	50%

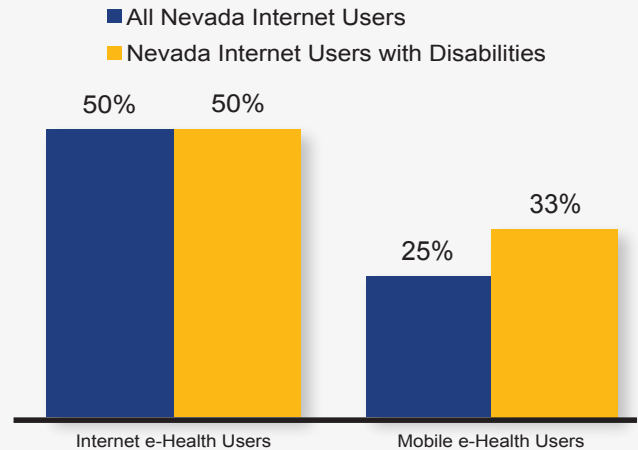
e-Health Usage by Adults with Disabilities

Connect Nevada research indicates that many adults with disabilities are using e-Health applications, especially on their cell phones or mobile devices (Figure 6).

Statewide, one-half (50%) of Nevada Internet users with disabilities (approximately 129,000 Nevadans) go online to access e-Health applications. Though this is equal to the percent of all Nevada Internet users, it is lower than the Connected Nation average, where 55% of adult Internet users with disabilities say they use e-Health applications.

Particularly noteworthy is that one-third (33%) of adult Nevadans with disabilities who access the Internet on their cell phone say they use these devices to access e-Health applications. This is higher than the average rate across Nevada, and translates into 38,000 adult Nevadans with disabilities who use a cell phone or mobile device to access information and interact with healthcare professionals online.

Figure 6.
e-Health Application Usage
Among Adults with Disabilities



Methodology and Definitions

Between June 29 and August 16, 2011, Connect Nevada conducted random digit dial telephone surveys of 1,202 adults across the state. Connect Nevada also oversampled an additional 1,830 Nevada adults who were specifically selected because they did not subscribe to home broadband service. This oversample of non-adopters was conducted separately to further explore barriers to broadband adoption and their willingness to subscribe to home broadband service in the future.

Of the 1,202 respondents randomly contacted statewide, 202 were called on their cellular phones, and 1,000 were contacted via landline telephone. Of these 1,202 respondents, 984 said that they use the Internet, either at home or someplace else, such as work, school, or a public library. The results of this survey have been compared to similar surveys that Connected Nation conducted across ten states in 2011 (Alaska, Florida, Iowa, Michigan, Minnesota, Nevada, Ohio, South Carolina, Tennessee, and Texas). Altogether, Connected Nation surveyed 27,086 residents across these ten states in 2011 for this study.

Respondents were defined as having a disability based on answering “yes” to one of a series of questions (see Appendix A). When respondents were asked about their race and ethnicity, multiple responses were allowed, so the sum may not equal the total sample size.

“Internet users” are defined as those who met either of the following two criteria:

1. Respondents who answered “yes” when asked “Do you subscribe to the Internet at home?” and answered that they used the Internet at home when asked “How often, if ever, do you go online from home?”
2. Respondents who answered “yes” when asked “Do you use the Internet from any locations outside of your own home?”

Multiple attempts were made to each working telephone number on different days of the week and at different times of the day to increase the likelihood of contacting a potential respondent. To ensure a representative sample, quotas were set by age, gender, and county of residence (rural or non-rural), and the results were weighted to coincide with 2010 United States Census population figures. For the purpose of setting quotas and weighting, “rural” respondents are defined as living in a county that is not a part of a Metropolitan Statistical Area (MSA), as designated by the United States Office of Management and Budget. Weighting and design consultation were provided by Lucidity Research.

Surveys were conducted by Thoroughbred Research Group and were offered in both English and Spanish. On average, the survey took approximately 12 minutes to complete after the respondent agreed to participate. Based on the effective sample size, the margin of error = + 3.2% at a 95% level of confidence for the entire population, and +3.6% for the sample of Internet users. As with any survey, question wording and the practical challenges of data collection may introduce an element of error or bias that is not reflected in this margin of error.

These surveys were conducted as part of the State Broadband Initiative (SBI) grant program, funded by the National Telecommunications and Information Administration (NTIA). The SBI grant program was created by the Broadband Data Improvement Act (BDIA), unanimously passed by Congress in 2008 and funded by the American Recovery and Reinvestment Act (ARRA) in 2009. To learn more about Connect Nevada and its programs please visit www.connectnv.org or e-mail us at info@connectnv.org.

APPENDIX A:
Select questions and sample sizes

	<i>n</i> All Respondents	<i>n</i> Internet Users
Total	1,202	984

May I have your age, please?

Age 18-24	82	72
Age 25-34	200	186
Age 35-44	215	192
Age 45-54	253	224
Age 55-64	225	186
Age 65-69	77	60
Age 70+	150	64

Do you have any long-term physical, mental, or emotional conditions that make it difficult to do any of the following tasks?

Walking or climbing stairs	127	82
Concentrating, remembering, or making decisions	90	66
Visiting a doctor's office or shopping by yourself	71	44
Dressing or bathing	37	24
Are you blind, or have serious difficulty seeing even when wearing glasses?	55	32
Are you deaf, or have serious difficulty hearing?	63	42
Any of the above	239	162

**Which of the following race (or races) do you consider yourself to be?
And are you, yourself, of Hispanic, Latino, or Spanish origin or descent?**

White (non-Hispanic)	870	732
Black or African American (non-Hispanic)	79	59
Asian or Pacific Islander (non-Hispanic)	35	33
American Indian, Eskimo, or Alaska native (non-Hispanic)	55	39
Hispanic	130	101
Other (non-Hispanic)	2	1
No answer/refused	75	55

**Which of the following categories best describes the total
annual household income earned by all wage earners in your household?**

Less than \$25,000	233	136
\$25,000 to less than \$35,000	107	82
\$35,000 to less than \$50,000	151	133
\$50,000 to less than \$75,000	199	180
\$75,000 or more	300	292
No answer/refused	212	161