CONNECT IOWA®

Broadband Expanding Access to Healthcare in Iowa

August 2012

With rising national healthcare costs (mounting to $2.6 trillion in 2010), more and more Americans are going online to access health information and communicate with healthcare professionals, saving both time and money.[1] According to a 2006 report by World Hospital and Health Service, a properly-implemented Health Information Network would not only improve healthcare quality but also save a total of $162 billion annually, while a 2008 report released by Connected Nation estimated that broadband saved Iowans $6.6 million annually in doctor visits and unnecessary trips to hospital emergency rooms.[2] Online healthcare applications, often referred to as e-Health, provide access to medical information and provide residents the opportunity to quickly communicate with doctors and other healthcare professionals who might be miles away.

Providing access to e-Health tools and the knowledge of how to use those tools is a priority for Iowa, especially for rural residents who may not have access to the world-class healthcare options available to Iowans living in the metropolitan areas. As part of the American Recovery and Reinvestment Act/Health Information Technology for Economic and Clinical Health Act, Iowa received an $8.4 million grant from the Department of Health and Human Services to create Iowa e-Health, a collaboration between the Iowa Department of Public Health, consumers, healthcare providers, and insurers to build the Iowa Health Information Network (IHIN) and encourage Iowa healthcare providers to use electronic health records (EHRs).[3]

In addition to this effort, Connect Iowa surveyed Internet users regarding their use of e-Health applications as part of its 2011 Residential Technology Assessment. Connect Iowa's 2011 Business Technology Assessment also examined technology adoption among businesses in the state's healthcare sector. The findings show that e-Health is growing in popularity in Iowa, though rural residents who may have the most to gain from easier access to medical care are using this application less often than Iowans living in urban and suburban parts of the state.

Among the findings from this survey:

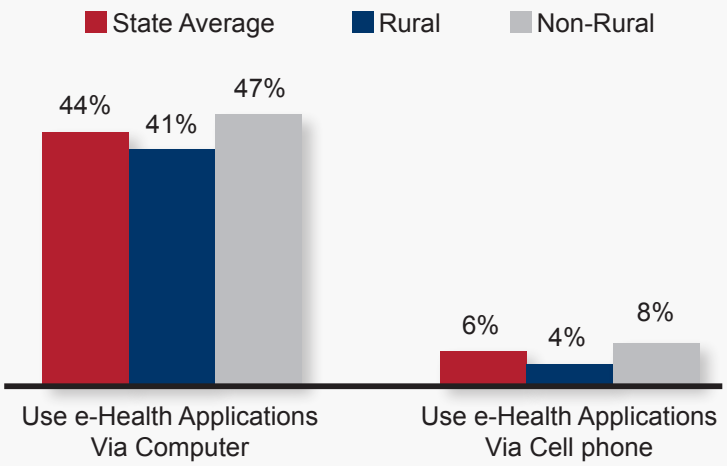
- Across the state, more than two out of five Iowans (44%) go online to access e-Health applications, while 6% use smartphones to access e-Health applications.
- More than half a million Iowans age 55 and older, many of whom could benefit from easier access to physicians and diagnostic tools, still do not use e-Health applications.
- Urban and suburban e-Health users are more likely to have college or advanced degrees than rural e-Health users, with 51% having earned a college or advanced degree.
- Approximately 91,000 rural Iowans with disabilities are using e-Health tools to stay connected to their doctors and access the latest medical information.
- Statewide, the median income of e-Health users in Iowa is $61,000, compared to $70,000 for non-rural e-Health users.
- Approximately 1,000 healthcare businesses in Iowa do not use computers and an additional 1,000 healthcare businesses operate without broadband service.

1 Center for Medicare and Medicare Services (CMS), http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/highlights.pdf
2 World Hospital and Health Services, http://www.himss.org/ihf/docs/IHFJournal/Health_care_IT_save_162B.pdf and
The Economic Impact of Stimulating Broadband Nationally, http://connectednation.org/_documents/Connected_Nation_EIS_Study_Full_Report_02212008.pdf
3 Iowa eHealth, http://www.iowaehealth.org/consumer/resources_healthreform.html. IHIN started the pilot program of messaging this summer, with a full implementation planned by December 2012.

e-Health Usage

Across the state of Iowa, more than one million adults use the Internet to access e-Health applications such as searching for medical information or communicating with healthcare professionals. This represents 44% of Iowa's adult population, with a slightly lower share of rural adults using e-Health applications than urban or suburban Iowans (Figure 1). This translates into nearly 420,000 rural Iowans who use e-Health applications.

Figure 1.
e-Health Usage in Iowa



The upward trend in mobile broadband is also seen in the use of smartphones to access e-Health information. Across Iowa, one in seventeen adults (6%) use smartphones to access e-Health applications. This translates into approximately 143,000 adult Iowans who use their smartphones to access healthcare information while on the go. Once again, rural Iowans are less likely than their urban and suburban neighbors to use e-Health applications on their smartphones, in part due to lower smartphone usage in rural portions of the state.

Demographic Profiles of Iowa e-Health Users

In addition to differences between how rural and non-rural Iowans use e-Health applications, there are also stark differences between the demographic profiles within these two groups (Table 1).

While the largest shares of e-Health users in both rural and non-rural Iowa have annual household incomes of $50,000 or more, rural e-Health users tend to have lower incomes than non-rural Iowans who use e-Health applications. Statewide, the median income of e-Health users in Iowa is $61,000, compared to $70,000 for non-rural e-Health users.

Rural e-Health users also tend to be older, as nearly two in five rural e-Health users (39%) are age 55 or older, compared to only 24% of non-rural e-Health users. Statewide, more than half a million Iowans age 55 and older, many of whom could benefit from easier access to physicians and diagnostic tools, still do not use e-Health applications.

Table 1: Demographic Distribution of Rural and Non-Rural e-Health Users in Iowa

Demographic Profile	Percent of Non-Rural e-Health Users	Percent of Rural e-Health Users
Annual Household Income		
Less than $25,000	9%	14%
$25,000 to less than $49,999	15%	33%
$50,000 or more	58%	43%
Don't know/refused	18%	10%
Age		
18 to 34 years old	32%	23%
35 to 54 years old	44%	38%
55 to 64 years old	12%	23%
65 or older	12%	16%
Educational Attainment		
High school diploma or less	16%	27%
Some college	31%	36%
College graduate	51%	36%
Don't know/refused	2%	1%
Gender		
Male	47%	39%
Female	53%	61%
Disability		
Adults with disabilities	14%	22%
Adults without disabilities	82%	76%
Don't know/refused	4%	2%

Statewide, e-Health users are more likely than average to have a college or advanced degree. In Iowa, 31% of e-Health users have college degrees and 14% have advanced or professional degrees, compared to the statewide averages of 25% and 10%, respectively. Urban and suburban e-Health users are more likely to have college or advanced degrees than rural e-Health users, with 51% having earned a college or advanced degree.

The majority of e-Health users in Iowa are women, with 56% of e-Health users being female. In urban and suburban Iowa, e-Health users are split fairly evenly with a slight edge among women users (53%); however, rural e-Health users are significantly more likely to be women, with 61% of e-Health users. This indicates that women in Iowa, especially in rural Iowa, are more likely to obtain health information online.

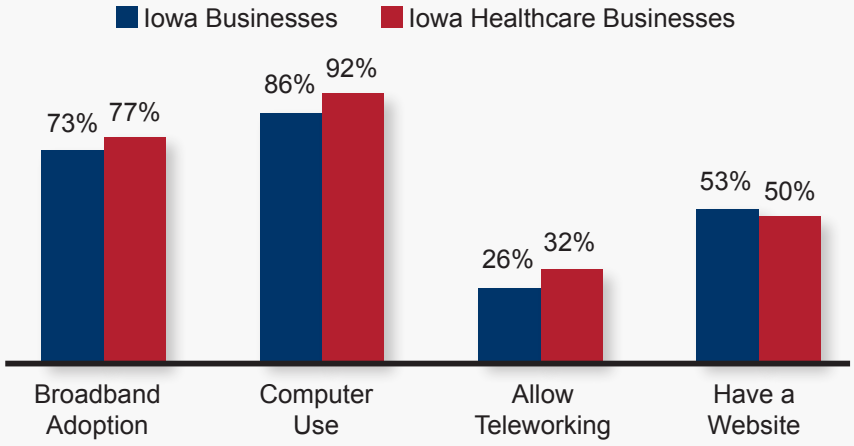
Rural e-Health users also have a larger share of disabled adults compared to non-rural Iowans. Nearly one-fourth, or 22%, of the e-Health users in rural Iowa report that they have a disability, compared to only 14% of non-rural e-Health users. This means that approximately 91,000 rural Iowans, who may have disabilities that make it difficult to make the trip to visit a doctor, are using e-Health tools to stay connected to their doctors and access the latest medical information.

Healthcare Businesses in Iowa

According to the 2010 County Business Patterns report released by the United States Census Bureau, there are approximately 81,000 business establishments in Iowa.[4] This includes about 8,000 business establishments in the healthcare industry, employing over 207,000 Iowans. Not only does Iowa's healthcare industry employ a significant portion of Iowa's workforce, it is also leading the way in technology usage compared to other businesses in the state.

Across Iowa, 86% of business establishments (approximately 70,000 establishments statewide), use computers, compared to 92% of healthcare establishments (Figure 2). Similarly, Iowa healthcare businesses are also more likely to subscribe to broadband service. Although the healthcare industry is ahead of the state average, these figures still mean that approximately 1,000 healthcare businesses in Iowa do not use computers and an additional 1,000 healthcare businesses operate without broadband service.

Figure 2.
Technology Adoption among Iowa Businesses



Iowa businesses in the healthcare sector are also significantly more likely to allow their employees to telework. Statewide, nearly one-third of Iowa businesses in the healthcare sector (32%, representing approximately 2,000 Iowa healthcare businesses) give their employees the flexibility of working from home.

4 U.S. County of Business Patterns, http://www.census.gov/econ/cbp/

Although businesses in Iowa's healthcare sector lead the state in terms of computer and broadband usage, they are slightly less likely than other businesses to maintain a website. This leaves nearly 4,000 Iowa healthcare businesses still operating without a website, which can allow healthcare providers and their patients to interact from miles away. It not only saves time and money for both the providers and patients but also helps remote patients get quick and reliable advice from their caregivers.

Conclusion

Providing vital health information and real-time access to healthcare professionals are crucial elements of modern medicine that are made possible by e-Health. Initiatives like the Iowa Health Information Network are striving to maintain and improve healthcare quality, efficiency, and patient safety, while supporting Iowans in their efforts to live healthy lifestyles.

Nearly one-half of Iowans use the Internet to help in that effort to stay healthy. This leaves nearly 1.3 million adult Iowans, including more than half a million Iowans age 55 and older, who have not yet made use of this tool. With broadband adoption still a significant issue in many parts of rural Iowa, the possibility of adding more e-Health users in remote Iowa is greater if broadband access were available and affordable for more households.

Iowa has made a strong start in this effort, though, as evidenced by the healthcare sector's willingness to embrace technology like broadband and teleworking. By harnessing this capability to provide a greater variety of options to consumers, Iowa can soon lead the nation in its adoption and usage of e-Health applications.

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Methodology and Definitions

2011 Residential Technology Assessment

Between June 27 and August 19, 2011, Connect Iowa conducted a random digit dial telephone survey of 1,200 adults across the state. Of the 1,200 respondents randomly contacted statewide, 200 were called on their cellular phones, and 1,000 were contacted via landline telephone.

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, and the survey results were reviewed by Dr. Mingjie Sun of The Institute of Design Research and Outreach at Iowa State University.

Surveys were conducted by Thoroughbred Research Group. 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 = ± 3.21% at a 95% level of confidence for the statewide survey of 2011. 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.

2011 Business Technology Assessment

Between October 4 and November 2, 2011, Connect Iowa conducted a telephone survey of 804 Iowa business establishments. Data were collected by Thoroughbred Research Group, located in Louisville, KY. The purpose of this survey was to measure trends in technology adoption; measure barriers to technology adoption; determine how Iowa businesses are using broadband as an engine of economic growth; and measure the average price and speed of broadband service among business establishments across the state. On average, these surveys took approximately eight minutes to complete.

Sample quotas were established by company size (5 brackets) and industry sector (8 sectors). Within these 40 cells, a randomly-drawn sample of businesses listed with Dun & Bradstreet was contacted for the survey. Altogether, this sample included 163 businesses with 50+ employees, 234 businesses with 20-49 employees, 207 businesses with 5-19 employees, and 200 businesses with 1-4 employees. In cases where the respondent's information regarding the number of employees at the establishment differed from the information provided by Dun & Bradstreet, the respondent's answer was used in determining business size quotas. Connect Iowa intentionally over-sampled large businesses to ensure a sample that was large enough to analyze and compare to smaller businesses.

In addition to the size and sector quotas, the data was subsequently weighted to ensure that the sample was representative of all employer business establishments statewide, with targets determined according to the 2009 United States Census Bureau's County Business Pattern report, the most recent data that was available at the time the survey was conducted. Weighting of the survey data and research consultation were provided by Lucidity Research LLC, located in Westminster, MD, and the survey results were reviewed by Dr. Mingjie Sun of The Institute of Design Research and Outreach at Iowa State University.

This sample provides a margin of error of ± 4.94% at the 95% confidence level for the total sample of 804 businesses. This sample error accounts for sample weighting, using the effective sample size. 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 Iowa and its programs please visit http://www.connectiowa.org or e-mail us at info@connectiowa.org.

APPENDIX A:
Select sample sizes

2011 Residential Technology Assessment

	n All Respondents	*n* e-Health Users
Total	1,200	546
Non-Rural	800	378
Rural	400	168

2011 Business Technology Assessment

	n All Businesses	*n* Businesses in the Healthcare Sector
Total	804	99