Public Interest Law Reporter

Volume 13
Issue 2 *Spring 2008*

Article 8

2008

How Illinois Is Using Telemedicine to Improve Health Care Access in Rural Communities

Holly Carnell

No. 2 • Spring 2008

FEATURE ARTICLE

HOW ILLINOIS IS USING TELEMEDICINE TO IMPROVE HEALTH CARE ACCESS IN RURAL COMMUNITIES

by HOLLY CARNELL

The health care needs of rural Illinois residents often exceed those of their urban counterparts, but the resources to address those needs are largely inadequate.[1] Rural health care consumers struggle to obtain affordable and accessible health care as a result of geographic isolation, lack of transportation,

language and cultural differences, economic disparities and educational deficits.[2]

Geographic isolation in particular has had several negative effects for Illinois rural hospitals. Since 1991, seven rural hospitals have closed in Illinois.[3] The number of hospital beds in rural hospitals also has decreased by 30.9 percent since 1991.[4] Additionally, the cost absorbed by rural hospitals in providing uncompensated care rose by 93 percent in the last decade.[5]

Rural health care delivery systems also face unique challenges to assure safe, high-quality care for rural populations.[6] Some of those challenges include workforce shortages, rising health care liability premiums that drive up the cost of healthcare and poor access to capital because of the age of facilities combined with the demand for expensive information systems.[7]

TELEMEDICINE AS A SOLUTION

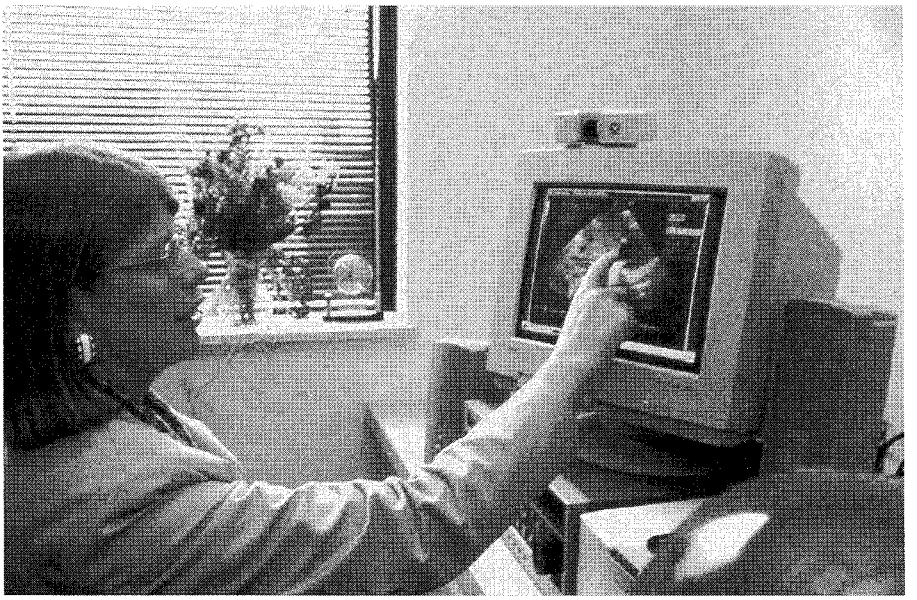
Telemedicine's ability to bring health care to patients in distant locations might be particularly helpful for patients in rural communities.[8] The American Telemedicine Association (ATA) defines telemedicine as "the use of medical information exchanged from one site to another via electronic communications to improve patients' health status."[9] Telemedicine encompasses different types of programs and services, including specialist referral services, patient consultations, remote patient monitoring, medical education and consumer medical and health information.[10]

Harry Wolin, CEO of Mason District Hospital in Havana, Illinois explained that, "so much of medicine requires specialization that is so driven by seeing enough cases of anything to be competent, in a rural area with a low population density, telemedicine provides the opportunity for access to the specialists that we need for our patients."[11]

Telemedicine also can reduce the cost of health care and increase efficiency through better management of chronic diseases, shared health professional staffing, reduced travel times and fewer or shorter hospital stays.[12]

"The quality [of care] is much improved," said Dr. Catherine Webb, professor of pediatrics at Northwestern University's Feinburg School of Medicine and

director of telemedicine at Children's Memorial Hospital in Chicago (Children's). "The remote physician can tell the patient or their family right away, 'this is serious and the patient needs to be transferred,' or 'this is minor and can be managed out at your hospital'."[13]



Dr. Catherine Webb reads an ultrasound scan at Children's Memorial Hospital in real time. The scan is being performed remotely and transmitted to Children's Memorial Hospital.

Webb also believes that telemedicine improves access to healthcare. She said that smaller hospitals can now say that they have a given specialist available 24 hours a day, 7 days a week, so consideration of serious conditions can be provided without transportation delays.[14]

Do Legal and Regulatory Barriers to Telemedicine Get in the Way?

Lynn Fleisher and James Dechene, health care attorneys at Sidley Austin, LLC in Chicago, and co-editors of the treatise entitled "Telemedicine and E-Health Law," assert that while treating patients remotely has many benefits, the legal implications of practicing telemedicine require careful attention and planning.[15] Licensure, reimbursement, the Health Information Portability and Ac-

countability Act (HIPAA) and privacy laws are among the legal issues that have created barriers to the development of telemedicine programs.[16]

As a general matter, states require a physician treating a patient located in that state to be licensed by that state's licensing body.[17] "Illinois is no different," Fleisher explained. "They want practitioners who diagnose and treat patients that are in Illinois to be licensed in Illinois."[18] As a result, out-of-state physicians providing telemedicine services to Illinois citizens are required by statute to be licensed in Illinois.[19] The statute excludes from the licensure requirement only periodic consultations, the provision of a second opinion or follow-up care where the initial treatment occurred outside the state of Illinois.[20] Yet, according to Fleisher, while we know that telemedicine practice does occur across state lines, "enforcement actions in Illinois and other states are dramatic in their absence."[21]

Some telemedicine services such as teleradiology have been more amenable to reimbursement. Dechene explains, "the reason is that in teleradiology the doctor is being reimbursed for the interpretation of an image, and payers have generally drawn no distinction between seeing the image on a film versus interpreting an image sent electronically to a radiologist."[22]

According to Dechene, "the bigger issue in telemedicine reimbursement is where the service involves a doctor-patient interaction and relationship, so the interaction is not just reading a static image and transmitting a radiology report."[23]

Payers have generally not reimbursed providers for remote evaluation and management (E&M) services on the same level as they have for face-to-face consultations.[24] The distinction drawn between E&M services and diagnostic services has created a barrier to the development of telemedicine, according to Dechene.[25]

However, Illinois has recently recognized the need to reimburse providers for telepsychiatry services, and in 2007 enacted a law requiring the Department of Healthcare and Family Services to reimburse psychiatrists and federally qualified health centers for mental health services provided by psychiatrists, to patients via telepsychiatry.[26]

"The new legislation is just one answer to the variety of challenges that citizens in our downstate and rural communities face as they seek access to health care, especially mental health services, which are limited in many areas due to lack of psychiatrists," said Illinois Sen. Deanna Demuzio (D-Carlinville).[27]

Telemedicine raises several privacy issues that are not typically encountered during conventional medical practice such as the involvement of technical support personnel in the delivery of care who will have access to protected health information.[28] Applications of telemedicine must meet HIPAA privacy requirements.[29] According to Fleisher, as with most HIPAA issues, the important consideration is appropriate patient authorization.[30]

"The authorization must be specific," said Fleisher. "The patient needs to know who is going to have access to their health information, and what will be done with it."[31]

Telemedicine in Illinois

Telemedicine is not as new as one might think. Even before television, the concept of using videoconferencing technology as a means for doctors to care for patients was envisioned and illustrated on the cover of Radio News in April, 1924.[32] And after televisions started appearing in living rooms across the United States, in 1959 the University of Nebraska developed a means of two-way interactive television for transmission of neurological examinations across campus.[33] And in 1963, Dr. Kenneth Bird established a telecommunications link between Massachusetts General Hospital and Boston's Logan Airport.[34]

Across the United States, in the late 1980s and early 1990s several hospitals began programs that allowed for diagnostic images to be transmitted over phone lines so that the image could be interpreted remotely.[35]

One of the first telemedicine programs in Illinois began in 1972 when the Illinois Mental Health Institute in Chicago was one of seven demonstration projects to receive funding from the Health Care Technology Division of the U.S. Department of Health, Education and Welfare (HEW).[36]

And one of the Illinois pioneers of telemedicine is Carle Hospital Foundation (Carle), which has been offering telemedicine services to rural hospitals in downstate Illinois since 1994.[37] Carle is connected to hospitals and clinics in central and southern Illinois, as well as hospitals in Chicago and St. Louis.[38] It offers telemedicine services in seven specialty areas: cardiology, psychiatry, neurology, sleep disorders, oncology, gastroenterology and colorectal surgery, and it plans to add further specialties to that list in the near future.[39]

Carle connects to remote sites via high-speed Internet connections over either T1 or T3 lines and uses Internet Protocol (IP) almost exclusively.[40] By using a videoconferencing management system, Carle clinicians are able to connect with nearly all other videoconference sites.[41] Carle clinicians are able to monitor and control video connections from remote locations via the Internet.[42]

Efforts like Carle's are critical because of events that might at first glance seem far removed from health care. For example, in 1997 the Illinois Department of Transportation closed the bridge that connected Havana to Fulton County in downstate Illinois.[43] Both of the Mason District Hospital radiologists lived in Fulton County and practiced at the hospital, which is located in Havana.[44]

Harry Wolin, CEO of Mason District Hospital explained, "we had real concerns in terms of the turn around time for radiology reports so that is when we put in our first telemedicine system."[45]

Wolin applied for, and was awarded a Rural Utility Service grant from the U.S. Department of Agriculture to implement a teleradiology system.[46]

After receiving the grant, Mason District, an Illinois Critical Access Hospital (CAH) implemented technology that enabled the radiologists to read their radiology films remotely over the phone lines.[47] Today, the images all reside on a web server and radiologists, tertiary centers or other specialists can access the films provided they have the appropriate security clearance.[48]

Bringing the Patient to the Specialist Without Having to Travel

In the early 1990s, faced with the problem of outside hospitals frequently calling for an expert opinion on potential congenital heart defects in new born

babies, Children's realized there was a better solution than getting in a car and driving to the outside hospital.[49]

Today, Children's is the e-hub for approximately 10 hospitals.[50] At each hospital, there is a connection hooked up to the ultrasound machine in the nursery, and if a baby is born – and the outside hospital is worried about the baby having heart or lung disease – they call Children's, where a specialist is able to make a diagnosis remotely.[51]

"Real time interaction between the ultrasound technician and the Children's physician is critical," said Dr. Webb.[52] "To be most effective, the physician provides feedback to the technicians and has them adjust the baby or the equipment. In addition, there is the ability for the physician to either view the ultrasound images or the streaming video image of the baby and the technician in the nursery."[53]

Webb pointed to a variety of additional benefits, including improved care for infants with suspected congenital heart disease, improved technician efficiency, skill and education, significant cost reduction, more efficient pediatric cardiologist time utilization, enhanced referring physician and parent satisfaction, and improved community relations.[54]

Webb calls telemedicine a "win-win solution."

"The outside hospitals like it that they don't have to transfer babies they otherwise would have historically," said Webb. "And we know that if there is a serious problem, that baby will get appropriate care."[55]

The Future of Telemedicine

Telemedicine currently has many supporters, but will it keep up with the needs of 21st century healthcare? The Communications Act of 1996 enabled the Federal Communications Commission (FCC) to establish rules to enhance access to advanced telecommunications and information services for all public and nonprofit health care providers.[56] In November 2007, the FCC announced grants of more than $417 million for the construction of 69 statewide or regional broadband telehealth networks in 42 states and three U.S. territories under the Rural Health Care Pilot Program (RHCPP).[57]

The Illinois Rural HealthNet (IRHNet), a consortium of universities and rural health care providers, was awarded a pilot grant, the third largest in the nation, of $21 million from the FCC with a plan that connects 88 locations across the state including the state's CAHs.[58]

Alan Kraus, the director of the broadband development group at Northern Illinois University (NIU), spearheaded the grant proposal.[59] Kraus realized that it represented a great opportunity for the state and the university.[60] With Kraus' leadership, NIU coordinated the necessary resources and submitted a successful grant proposal.[61]

Kraus said that the mission for the project is that, "when we look back 10 years from now, every hospital, every doctor's office throughout the state is connected together at high speeds, and is able to do the things that we believe can be done today."[62]

The Illinois Critical Access Hospital Network ("ICAHN") is another group seeking to increase access to rural health in Illinois through telemedicine, and is a member of the IRHNet consortium.[63] The ICAHN provides IT services and administers a large number of federal grants as well as providing educational opportunities and shared services, and provides programs and support for CAHs.

Early on in the CAH program, Illinois provided funding for installing video equipment in the CAH hospitals and gave them access to the Illinois Century Network for broadband access.[64]

According to ICAHN Executive Director Pat Schou, providing this equipment and access "really opened up [the CAHs] world."[65] This access enabled CAHs to use additional technologies including Picture Archival and Communications Systems for digital radiology as well as telemedicine connectivity.

Confronting "Bandwidth" and Other Technology Issues

Due to the size of the medical images and files, the bandwidth needed to transmit telemedicine files is becoming insufficient.[66]

Schou explained that "CAT scans have historically been performed using a 16-slice CT, the images created from this type of machine can take 10-12 minutes

to be transmitted down a T1 line."[67] Ten to 12 minutes may not seem like a long time now, but more institutions are moving to a 64 or 128 slice CT scanner that creates much larger images.[68]

According to Schou, "the transmission time can increase to 45-60 minutes when transmitting images created by the 64 or 128 slice, yet this will become the medical standard of care."[69] In layman's terms, it would be like trying to suck an orange through a straw.

The IRHNet can solve this problem because it will use the FCC grant to connect providers across the state to a fiber optic network with speeds ranging from 100 megabits to 1 gigabit of information per second.[70] According to Kraus, the new technology does much more than simply increase the speed at which static images are transmitted.[71]

"It really changes the dynamic," said Kraus. "We are not thinking about e-mail or data files. We are talking about the ability to move voice data and large video files, and being able to do telemedicine where literally the doctor who is sitting hundreds of miles away has a tele-presence in the operating room or the emergency room. It is a real shift in how we do things."[72]

NOTES

1 Illinois Institute for Rural Affairs, *Improving Local Health Care Access: Innovative Approaches to Meeting Rural Health Demands,* http://www.iira.org/research/abstracts/10.asp, (last visited Mar. 21, 2008).

2 *Id.*

3 Illinois Hospital Ass'n, Focus on Rural Community Hospitals in Illinois, (June 4, 2007) http://www.ihatoday.org/membership/smallrural/factsheet.pdf

4 *Id.*

5 Illinois Hospital Ass'n, Facts about Illinois' Rural Hospitals, (June 4, 2007) http://www.ihatoday.org/membership/smallrural/facts.pdf

6 Mary Wakefield, Ph.D., R.N., *Patient Safety and Medical Errors: Implications for Rural Health Care,* 23 J. LEGAL MED. 43, 55 (2002).

7 American Hospital Ass'n, *Rural Health Care, available at* http://www.aha.org/aha_app/issues/Rural-Health-Care, (last visited Mar. 25, 2008).

8 American Telemedicine Ass'n, *What Is Telemedicine & Telehealth?, available at* http://www.americantelemed.org/news/What%20Is%20Telemedicine.pdf (last visited Mar. 7, 2008)

9 American Telemedicine Ass'n, *ATA defining telemedicine,* http://www.atmeda.org/news/definition.html (last visited Mar. 7, 2008)

10 *Id.*

11 Telephone interview with Harry Wolin, Administrator and CEO, Mason District Hospital. (Feb. 20, 2008).
12 *Id.*
13 Interview with Dr. Catherine Webb, Director, Telemedicine, Children's Memorial Hospital, in Chicago Ill. (Feb. 18, 2008)
14 Webb, *Supra* note 13.
15 Telephone interview with Lynn D. Fleisher, Counsel, Sidley Austin LLP. (Feb. 15, 2008); Telephone interview with James C. Dechene, Partner, Sidley Austin LLP. (Feb. 19, 2008)
16 Fleisher, *Supra* note 15.
17 225 ILCS 60/49.5
18 Fleisher, *Supra* note 15.
19 Fleisher, *Supra* note 15.
20 225 ILCS 60/49.5
21 Fleisher, *Supra* note 15.
22 Dechene, *Supra* note 15.
23 Dechene, *Supra* note 15.
24 Dechene, *Supra* note 15.
25 Dechene, *Supra* note 15.
26 305 ILCS 5/5-5.25
27 Maggie Borman,, *Law gives rural Ill residents better access to psychiatric care*, (July, 2007), *available at* http://www.myjournalcourier.com/news/care_14845___article.html/health_rural.html
28 Fleisher, *Supra* note 15.
29 Fleisher, *Supra* note 15.
30 Fleisher, *Supra* note 15.
31 Fleisher, *Supra* note 15
32 Sherryl Fisk, University of Illinois, *Telemedicine*, (Nov. 1997), *available at* http://www.quasar.org/21698/textfodder/Telemedicine.html
33 *Id.*
34 *Id.*
35 *Id.*
36 Roger Allan, A Brief History of Telemedicine, (June 2006), *available at* http://electronicdesign.com/Articles/ArticleID/12859/12859.html
37 Press release, Carle Foundation Hospital Public Relations, *FCC awards $21 Million for Illinois Rural Health Program*. (Nov. 30, 2007)
38 Carle, *Supra* note 37.; Carle is located in Urbana, Illinois and is a 305-bed regional care hospital, the primary teaching hospital for the Univ. of Illinois Coll. of Med. at Urbana-Champaign and a level 1 trauma center.
39 Carle, *Supra* note 37
40 E-mail from Nancy Eisenmenger, Coordinator of Telemedicine, Carle Foundation Hospital (Feb. 25, 2008, 2:59 CST) (on file with author)
41 Eisenmenger, *Supra* note 40.
42 Eisenmenger, *Supra* note 40.
43 Wolin, *Supra* note 11.
44 Wolin, *Supra* note 11.
45 Wolin, *Supra* note 11.
46 Wolin, *Supra* note 11.
47 Wolin, *Supra* note 11.
48 Wolin, *Supra* note 11.

49 Webb, *Supra* note 13.
50 Webb, *Supra* note 13.
51 Webb, *Supra* note 13.
52 Webb, *Supra* note 13.
53 Webb, *Supra* note 13.
54 Webb, *Supra* note 13.
55 Webb, *Supra* note 13.
56 47 U.S.C.A. § 254(h)(2)(A)
57 Press Release, Federal Communications Commission, *FCC launches initiative to increase access to health care in rural America through broadband telehealth services* (Nov. 19, 2007) *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-278260A1.pdf
58 Press Release, Illinois Rural HealthNet Consortium, FCC awards $21 Million for Illinois Rural Health Network (Nov. 28, 2007) *available at* http://illinoisruralhealthnet.org/irhn/news/Consortium_release_11-28-07.pdf; Telephone interview with Alan Kraus, Director of Broadband Development, Northern Illinois Univ. (Feb. 22, 2008)
59 Kraus, *Supra* note 58.
60 Kraus, *Supra* note 58.
61 Kraus, *Supra* note 58.
62 Kraus, *Supra* note 58.
63 Telephone interview with Pat Schou, Executive Director, Illinois Critical Access Hospital Network (ICAHN), (Feb. 22, 2008). .
64 Schou, *Supra* note 63.
65 Schou, *Supra* note 63.
66 Schou, *Supra* note 63.
67 Schou, *Supra* note 63.
68 Schou, *Supra* note 63.
69 Schou, *Supra* note 63.
70 Carle, *Supra* note 37.
71 Kraus, *Supra* note 58.
72 Kraus, *Supra* note 58.