

ANNALS OF HEALTH LAW

ADVANCE DIRECTIVE

VOLUME 19

SPRING 2010

PAGES 215-226

Telemedicine: Revamping Quality Healthcare in Rural America

*Dominique LeVert**

I. INTRODUCTION

For everywhere we look, there is work to be done. The state of our economy calls for action: bold and swift. And we will act not only to create new jobs but to lay a new foundation for growth. We will build the roads and bridges, the electric grids and digital lines that feed our commerce and bind us together. We will restore science to its rightful place and wield technology's wonders to raise health care's quality and lower its costs.¹

These words by President Obama reflect the need to expand the use of technology in healthcare. The media and opinion polls convey the general public sentiment that the healthcare system needs revamping.² Healthcare reform policies consistently emphasize three areas where change is necessary: cost, access, and quality.³ Telemedicine offers a medium through which the healthcare system can improve healthcare costs, increase patient access to the system, and potentially improve the quality of care patients receive.⁴

* Juris Doctor Candidate, Loyola University Chicago School of Law, Class of 2011. Ms. LeVert is a staff member of *Annals of Health Law*.

¹ President Barack Obama, Inaugural Address (Jan. 20 2009), available at <http://www.whitehouse.gov/blog/inaugural-address/>.

² Thomas Bodenheimer, *The Political Divide In Health Care: A Liberal Perspective*, 24 HEALTH AFF. 1426, 1429 (2005).

³ Heather L. Daly, *Telemedicine: The Invisible Legal Barriers to the Health Care of the Future*, 9 ANNALS HEALTH L. 73, 74 (2000).

⁴ *Id.*

In addressing the need for improvement in quality care for rural residents, the advantages of telemedicine are endless. In 2005, only 25% of the entire medical community used telemedicine.⁵ Providing better quality care to rural residents is a major issue today. A nationwide shortage of primary care professionals affects rural healthcare providers at higher rates than their urban counterparts.⁶ Roughly 10% of physicians practice in rural America, which represents nearly one-fourth of the national population.⁷ Factors that influence where physicians choose to practice include locations offering higher incomes, professional status, and prestige.⁸ Reasons that deter physicians from moving to and practicing in rural areas include professional isolation, unavailability of continuing education, limited support services, lack of complete medical facilities, excessive work loads, and time demands.⁹

“Some rural areas do not have a sufficient number of medical personnel and lack facilities to provide basic health care services.”¹⁰ As rural hospitals close their doors, patients in need of care must travel further distances to receive health care services.¹¹ If patients have to travel long distances to receive care, they are less likely to receive regular physicals and are more likely to wait for a medical

⁵ Lisa Rannefeld, *The Doctor Will E-mail You Now: Physician's Use of Telemedicine to Treat Patients Over the Internet*, 19 J.L. & HEALTH 75, 78 (2005).

⁶ Ann Davis Roberts, *Telemedicine: The Cure for Central California's Rural Health Care Crisis?*, 9 SAN JOAQUIN AGRIC. L. REV. 141, 150 (1999).

⁷ Nat'l Rural Health Ass'n, *What's Different about Rural Health Care?*, <http://www.nrharural.org/go/left/about-rural-health> (last visited February 26, 2010).

⁸ Daniel McCarthy, Note and Comment, *The Virtual Health Economy: Telemedicine and the Supply of Primary Care Physicians in Rural America*, 21 AM. J.L. & MED. 111, 120 (1995).

⁹ Roberts, *supra* note 6, at 151.

¹⁰ Ira Moscovice & Roger Rosenblatt, *Quality-of-Care Challenges for Rural Health*, 16 J. RURAL HEALTH 168, 171 (2000).

¹¹ Roberts, *supra* note 6, at 152.

crisis to occur before receiving care.¹² Thus, a major obstacle to providing better quality care to rural residents is attracting and retaining providers to serve in these communities and hospitals.¹³

This article will examine the potential telemedicine has to improve quality of care for patients living in rural areas. First, this article will discuss the background of telemedicine in health care. Second, it will address the issue of quality of care and discuss the lack of quality medical care rural patients receive. Finally, the paper will provide insight as to whether telemedicine will help address quality of care issues for rural patients.

II. HISTORY OF TELEMEDICINE

The advent of telecommunication has forever changed the way society conducts daily affairs.¹⁴ Telecommunication is the “communication over a distance by cable, telegraph, telephone, or broadcasting.”¹⁵ The healthcare industry began employing telecommunication in the 1950s at the National Institute of Mental Health when it connected seven state hospitals in four states through a closed-circuit telephone system.¹⁶ The use of telecommunication in healthcare continued to expand as technology advanced, and today, this is referred to as telemedicine, telehealth, and cybermedicine. Although some organizations

¹² Nicole Winbush, M.D. & Renee Circhlow, M.D., *Rural Health Care—A Perport from Montana and Beyond*, WOMEN’S HEALTH ACTIVIST NEWSLETTER, January 2005, <http://nwhn.org/rural-health-care-perport-montana-and-beyond>.

¹³ Moscovice & Rosenblatt, *supra* note 10.

¹⁴ LILLIAN GOLENIOWSKI, *Understanding the Telecommunications Revolution*, in TELECOMMUNICATIONS ESSENTIALS: THE COMPLETE GLOBAL SOURCE FOR COMMUNICATIONS FUNDAMENTALS, DATA NETWORKING AND THE INTERNET, AND NEXT-GENERATION NETWORKS 3, 3 (2001), available at <http://www.informit.com/articles/article.aspx?p=24667>.

¹⁵ OXFORD MODERN ENGLISH DICTIONARY 504 (2d ed. 1996).

¹⁶ Shannon S. Venable, *A Call to Action: Georgia Must Adopt New Standard of Care, Licensure, Reimbursement, and Privacy Laws for Telemedicine*, 54 EMORY L.J. 1183, 1185 (2005).

prefer to keep telehealth and cybermedicine as distinct categories separate from telemedicine, others incorporate the terms into the broader category of telemedicine, and still others believe that the definition of telehealth is the most expansive definition by including telemedicine and cybermedicine.¹⁷ For the purposes of this paper, telemedicine will not be a distinct classification, but instead will include telehealth and cybermedicine in its characterization.

Due to the vast array of services telemedicine encompasses, defining “telemedicine” is complex. Simply defined, telemedicine is the provision of healthcare consultation and education using telecommunication networks to transfer information.¹⁸ This refers to all health care practiced at a distance, ranging from a telephone call to remote surgery.¹⁹ The World Health Organization states that “telemedicine consists of using remote transmission of video, audio, and text data to provide information to individuals involved in a patients care.”²⁰ Telemedicine is applied by “transporting medical data through phone or fax machines” and the use of “interactive video conferencing by satellites or fiber optic technology.”²¹ Telemedicine provides numerous programs and services such as “specialist referral services, patient consultations, remote patient monitoring, medical education, and consumer medical and health information.”²²

¹⁷ See *Id.*; See also Rannefeld, *supra* note 5, at 77.

¹⁸ Daly, *supra* note 3, at 76.

¹⁹ *Id.* at 75.

²⁰ Venable, *supra* note 16.

²¹ *Id.*

²² Holly Carnell, *How Illinois is Using Telemedicine to Improve Health Care Access in Rural Communities*, 13 PUB. INT. L. REP. 159, 160 (2008).

Following the start of the closed-circuit telephone system in the 1950s,²³ NASA implemented the use of telemedicine in the 1960s to monitor the health of astronauts in space via satellite transmissions of voice and data.²⁴ The information and technology boom that occurred in the mid-1990s greatly expanded the use of telemedicine by allowing more sophisticated applications to be used, such as electronic patient records and the use of smart cards.²⁵ Today, telemedicine uses are commonly divided into four broad categories of programs: (i) electronic records; (ii) store and forward technology; (iii) interactive video conferencing; and (iv) remote surgery.²⁶

The technology and information boom prompted the federal government to examine the barriers and implications in expanding telemedicine applications within the healthcare system.²⁷ The first step came with the enactment of the Telecommunications Act of 1996 which required telephone companies to provide universal service in remote areas and prohibited excessive charges to residents accessing telephone services.²⁸ Additional provisions required the “[Federal Communications Commission] to assure that health care providers serving rural areas have access to telecommunication services necessary for the delivery of health care.”²⁹ Rural areas rank the lowest in accessibility to high quality and

²³ Venable, *supra* note 16.

²⁴ Rannefeld, *supra* note 5.

²⁵ *Id.*; See also Venable, *supra* note 16, at 1186.

²⁶ Daly, *supra* note 3, at 78.

²⁷ See DEPARTMENT OF HEALTH AND HUMAN SERVICES, TELEMEDICINE REPORT TO CONGRESS 1 (2001), available at <ftp://ftp.hrsa.gov/telehealth/report2001.pdf>.

²⁸ Thomas R. McLean, *The Offshoring of American Medicine: Scope, Economic Issues and Legal Liabilities*, 14 ANNALS HEALTH L. 205, 216 (2005).

²⁹ THE JOINT WORKING GROUP ON TELEMEDICINE, TELEMEDICINE REPORT TO CONGRESS 54 (1997), available at http://telehealthlawcenter.org/loadattachment.php?attachmentid=127_1356_179 [hereinafter TELEMEDICINE REPORT].

high capacity modern telecommunications.³⁰ The current lack of accessibility to broadband services hinders the furtherance of telemedicine because broadband services are needed to achieve “meaningful use” of electronic health records.³¹

Furthermore, the Act granted the use of up to \$400 million annually to subsidize the improvement to rural providers’ telecommunication networks.³² The federal subsidies combined with a restriction on providers from charging higher rates in rural areas than urban, the intervention by the federal government allowed urban specialists to communicate with rural practitioners or patients in a cost-effective manner.³³ Although this Act provided a means to improve healthcare access and address the issue of cost, it failed to address the standards by which telemedicine practice should be governed.³⁴ Thus, although access improved between the urban and rural populace, legal barriers prohibited the expansion across state lines.³⁵

In 1997, the Joint Working Group on Telemedicine (the Group) issued a Telemedicine Report to Congress stating that before telemedicine can flourish, numerous legal, technical, and political issues must be resolved.³⁶ Key areas the Group highlighted include the licensure of telemedicine health professionals, reimbursement for telemedicine services, and the infrastructure costs and

³⁰ *Id.* at 53.

³¹ Kendra Casey Plank, *Providers, Payers Praise FCC Broadband Plan as Practical for Advancing Health IT*, 15 HEALTH CARE DAILY REP. (2010), <http://healthcenter.bna.com/pic2/hc.nsf/id/BNAP-83NM8C?OpenDocument>.

³² Erin K. Grunzke, *Long-Distance Doctors: The Crossroads of Telemedicine Licensure in Illinois*, 89 ILL. B.J. 362, 362 (2001).

³³ McLean, *supra* note 28.

³⁴ Grunzke, *supra* note 32.

³⁵ *Id.* at 363.

³⁶ TELEMEDICINE REPORT, *supra* note 29, at 1.

accessibility for telemedicine use.³⁷ Additionally, the Group emphasized the critical role the federal government would need to play in the expansion of telemedicine.³⁸ The Report also stressed that the issue of reimbursement remained a critical barrier to the expansion of telemedicine.³⁹

III. QUALITY OF CARE AND THE RURAL PATIENT

Despite the legal barriers telemedicine must overcome before it proliferates throughout the healthcare industry, telemedicine proponents stress that the technology will vastly improve the quality of care patients will receive, especially in underserved rural areas.⁴⁰ But how does one define “quality of care?” The Institute of Medicine defines “quality of care” as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”⁴¹ Elements of quality care include: (i) recognizing patients at risk for diseases; (ii) conducting the appropriate evaluation(s); (iii) making the appropriate diagnosis; (iv) starting the appropriate treatment; (v) scheduling the appropriate follow-up; and (vi) encouraging adherence to treatment plan.⁴²

Policymakers and providers face the daunting task of improving quality care while enacting policies to curb the rising costs associated with the delivery of

³⁷ *Id.*

³⁸ *Id.*

³⁹ *Id.* at 41.

⁴⁰ Telemedicine Info. Exch., HHS Details Impact of Telehealth and Broadband Funding, <http://telemed.org/news/archive.asp?ID=1624> (last visited Mar. 30, 2010).

⁴¹ Stanley Feld, What is the Definition Of Quality Medical Care?, http://stanleyfeldmdmace.typepad.com/repairing_the_healthcare_/2007/03/what_is_the_def.html (last visited Apr. 12, 2010).

⁴² *Id.*

health care.⁴³ The quality of care a patient receives depends on various factors, such as the healthcare provider itself, training of healthcare personnel, where the patient lives, and the types of technology available to providers.⁴⁴ The criteria for evaluating the quality of care providers offer patients are considered on various levels. Accrediting bodies, such as the National Committee for Quality Assurance or the Joint Commission on the Accreditation of Healthcare Organizations, check medical providers to ensure providers are meeting specific standards of care.⁴⁵ These standards of care are applicable not only to the institutions, but healthcare personnel as well.⁴⁶ Furthermore, agencies, such as the Agency for Healthcare Research and Quality, instituted programs that allow consumers to offer their opinion on the quality of health plans and providers from the enrollee's perspective.⁴⁷

Ensuring that quality care is provided means different things at various levels in the delivery of health care. Proper procedures and staffing ratios must be met.⁴⁸ If a provider cannot maintain an appropriate staff, then the quality of care will likely suffer due to a higher patient to staff ratio.⁴⁹ Providers must strike the

⁴³ See The Henry J. Kaiser Family Found., Quality of Care, <http://www.kaiseredu.org/topics.asp?id=70&isID=30&refID=31&sidenav=249&smart=59&tuID=65> (last visited Mar. 6, 2010) [hereinafter Kaiser].

⁴⁴ Agency for Healthcare Research & Quality, Understanding Health Care Quality, <http://www.ahrq.gov/consumer/guidetoq/guidetoq4.htm> (last visited Mar. 6, 2010) [hereinafter AHRQ]; see also Kaiser, *supra* note 43.

⁴⁵ Denise Wang, *Definition of Quality Health Care*, EHOW, http://www.ehow.com/about_5085075_definition-quality-health-care.html.

⁴⁶ *Id.*

⁴⁷ Agency for Healthcare Research & Quality, The CAHPS Program, https://www.cahps.ahrq.gov/content/cahpsOverview/OVER_Program.asp?p=101&s=12 (last visited Apr. 12, 2010).

⁴⁸ Wang, *supra* note 45.

⁴⁹ John M. Welton, *Mandatory Hospital Nurse to Patient Staffing Ratios: Time to Take a Different Approach*, 12 ONLINE J. ISSUES IN NURSING (2007), <http://www.nursingworld.org/>

right balance when supplying health care services, such as avoiding overuse, avoiding underuse, and eliminating misuse.⁵⁰ Establishing measures that outline what services should be provided to patients and under what conditions, helps providers maintain this balance when delivering patient care.⁵¹ Providers set procedures for screening, immunizations, and other preventive care.⁵² Often, patients do not receive proven therapies or preventative measures, resulting in a high rate of preventable medical errors.⁵³ Quality care involves not only the proper measures for evaluating patients, but also the diagnosis, treatment, and follow-up.⁵⁴

Proponents continue to push for more legislation to aid the expansion of telemedicine usage in the healthcare industry.⁵⁵ They argue telemedicine improves the quality of care patients receive, especially in rural areas where quality care is especially hard to find.⁵⁶ A recent study found that patients reported a higher rate of satisfaction with patient-physician communication during telemedicine consultations as opposed to in-person visits.⁵⁷ Based upon this study, telemedicine poses to improve quality care in rural areas because it offers

MainMenuCategories/ANAMarketplace/ANAPeriodicals/OJIN/TableofContents/Volume122007/No3Sept07/MandatoryNursetoPatientRatios.aspx.

⁵⁰ AHRQ, *supra* note 44.

⁵¹ *Id.*

⁵² *Id.*

⁵³ Kaiser, *supra* note 43.

⁵⁴ Feld, *supra* note 41.

⁵⁵ Andrew Noyes, *Tech Groups Push for Telehealth Provisions in Health Reform Bill*, CONGRESSDAILY, <http://www.ihealthbeat.org/articles/2009/7/29/tech-groups-push-for-telehealth-provisions-in-health-reform-bill.aspx>.

⁵⁶ Charles Casey, *Telehealth Resource Center Breaks Ground*, <http://www.universityofcalifornia.edu/news/article/22673> (last visited Apr. 12, 2010).

⁵⁷ Zia Agha et al., *Patient Satisfaction with Physician-Patient Communication During Telemedicine*, 15 *TELEMEDICINE & E-HEALTH* 830, 834 (2009).

rural patients the opportunity for more health care services without negatively affecting patient satisfaction levels.

IV. TELEMEDICINE AND THE RURAL PATIENT

Proponents boast that telemedicine will minimize the non-financial factors associated with physician's aversion to practice in rural areas.⁵⁸ First, telemedicine decreases physician isolation by allowing physicians to consult with other physicians without having to travel long distances.⁵⁹ Second, telemedicine will expand physicians' educational resources by providing up to date information on medical studies and technology; thus, allowing physicians to continue their education without having to travel long distances.⁶⁰ In addition, telemedicine will fuel medical knowledge by connecting physicians from all over the world.⁶¹ Third, support services will increase because telemedicine connects physicians in rural areas to specialists located in urban centers, permitting concurrent examination and consultations regarding a patient.⁶² Rural physicians' connections to specialists will also increase the physicians' medical knowledge as they will learn the skills needed to treat the same or similar conditions on their own in the future.⁶³ This decreases the effect of isolation by allowing the physician to easily consult with another physician or specialist when difficult cases arise, as would occur in larger urban hospitals.⁶⁴

⁵⁸ Roberts, *supra* note 6; *see also* McCarthy, *supra* note 8, at 126.

⁵⁹ Roberts, *supra* note 6.

⁶⁰ *Id.* at 151.

⁶¹ *Id.*

⁶² *Id.*

⁶³ *Id.* at 152.

⁶⁴ *Id.* at 151.

In addition to diminishing the factors that deter physicians from practicing and remaining in rural areas, telemedicine can improve the quality care rural patients receive by diminishing the distance the patients must travel to receive care.⁶⁵ Proponents argue that telemedicine will address the intangible physician concerns because it decreases the need for primary care physicians, while not completely replacing them.⁶⁶ Telemedicine offers rural patients the choice of being examined by a primary physician at a distant site.⁶⁷ Rural facilities linked to an off-site location that houses a primary care physician will enable rural residents to receive complete physical examinations by an off-site physician.⁶⁸ Mid-level practitioners are able to act as primary care providers for rural patients because they are supervised by primary care physicians via telemedicine systems.⁶⁹ Furthermore, telemedicine decreases the need for patients to see primary care physicians. Physicians can do follow up care after emergency treatment remotely, instead of face-to-face.⁷⁰

Telemedicine increases the quality of care provided to rural patients because it expands the services rural facilities can offer.⁷¹ The quality of physicians increases when providers use telemedicine.⁷² Local physicians become more educated through the use of telemedicine, and increased access to

⁶⁵ McCarthy, *supra* note 8, at 126-27.

⁶⁶ *Id.* at 126.

⁶⁷ Roberts, *supra* note 6, at 152.

⁶⁸ *Id.*

⁶⁹ McCarthy, *supra* note 8, at 127.

⁷⁰ *Id.*

⁷¹ BRIAN E. WHITACRE ET AL., NAT'L CTR. FOR RURAL HEALTH WORKS, ECONOMIC IMPACT OF TELEMEDICINE CAPABILITY IN A RURAL HOSPITAL 8 (2007), http://www.ruralhealthworks.org/downloads/Economic/Telemedicine_EI_Study.pdf.

⁷² *Id.*

specialists allows rural facilities to offer better quality care.⁷³ Furthermore, even when mid-level practitioners supply services under the supervision of an off-site physician, quality care for rural patients is enhanced because the patients receive services that they may have otherwise gone without.⁷⁴

V. CONCLUSION

The delivery of health care forever changed with the onset of telecommunication. As technology advanced, the concept of telemedicine expanded and includes the electronic delivery of health records, remote consultations, remote surgeries, and remote patient monitoring. President Obama's proposed budget for 2011 cut rural healthcare projects by \$44 million dollars.⁷⁵ However, Obama defended this by stating that the budget slated \$142 million for improving rural residents' access to quality care.⁷⁶ Additionally, the proposal to improve access in rural areas further stated that "[the Health Resources Services Administration] will develop stronger links between telehealth activities and other investments in rural health."⁷⁷ Rural health care needs help, and telecommunication can provide the answer with higher quality services.

⁷³ *Id.*

⁷⁴ McCarthy, *supra* note 8, at 127.

⁷⁵ Cheryl Clark, *Obama's Proposed Budget is a Mixed Bag for Rural Health*, HEALTHLEADERS MEDIA, Feb. 2, 2010, <http://www.healthleadersmedia.com/content/COM-245925/Obamas-Proposed-Budget-is-a-Mixed-Bag-for-Rural-Health>.

⁷⁶ *Id.*

⁷⁷ *Id.*