Technology, Regulations, and Reimbursement impact on Telemedicine in Physician Practices

AN EXPLORATORY STUDY

By

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Introduction

The purpose of this exploratory study is to review, analyze and evaluate the evolution of technology, regulations and reimbursement issues that could potentially have a significant impact on the way physicians view and accept the use of telemedicine in an ambulatory care setting. The sheer volume of smartphones and tablets in use today by patients, the enhanced connectivity available from Wi-Fi networks and satellites, and consumer demand for better access to healthcare, among other things, will contribute to acceleration in the acceptance and use of telemedicine. “With the wide spread expansion of broadband technology, telemedicine is becoming an incredibly effective solution that is providing a new alternative to improve our current health care landscape. These innovations not only result in the substantial reduction of health care disparities, but also in a reduction of healthcare costs across the country.”¹ This paper will further explore the potential consequences to a physician practice if competitive advances in telemedicine and patient demand for telemedicine services are not considered in a provider’s strategic plan.

This study occurred over a period of two years and involved three different medical practices which were collectively integrated into a hospital owned network. The providers included both physicians and nurse practitioners. The hospital owner is a rural critical access hospital. The practices provide services in two neighboring states so all providers are licensed to practice in both states. In order to maintain anonymity the states in question will be referred to as State A and State B. The practices observed during the study will be referred to as practice 1, practice 2 and practice 3 if necessary. The hospital owner will be identified as the critical access hospital.
Data was gathered through a comprehensive literature review, a series of interviews with physicians and nurses, and observation of three medical practices. Two physicians from different practices were asked to attend to a national meeting conducted by the American Telemedicine Association\textsuperscript{2} (ATA) primarily to learn more about regulations, equipment and trends in the telemedicine industry. The author of this study also actively participated in an innovation council established by a rural hospital to develop, \textit{inter alia}, a strategic plan for implementing outpatient and inpatient telemedicine services.

**Background**

“The Health Resources Services Administration defines telehealth as the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration. Technologies include videoconferencing, the internet, store-and-forward imaging, streaming media, and terrestrial and wireless communications.”\textsuperscript{3} Telehealth is different from telemedicine in that it refers to a broader scope of remote healthcare services compared to telemedicine.\textsuperscript{4} Telemedicine refers primarily to clinical services compared to telehealth that also includes non-clinical remote services such as administrative meetings.

Telemedicine in its basic form involves communication between providers or patients and providers to gain access to healthcare decision making that is not available at the site of origin. The equipment used to establish communication between providers needing assistance with a patient or between providers and patients has included the telegraph, telephone, and radio communication used in remote areas such as Alaska. The introduction of computers with video technology and the internet significantly improved
the acceptance and use of telemedicine particularly between rural healthcare providers and specialists in larger cities. In recent years the introduction of smartphones and tablets has resulted in greater acceptance of telemedicine as a form of healthcare delivery between a physician and a patient. Although the technology has improved the ability of physicians to use telemedicine in an ambulatory setting, regulations and reimbursement issues continue to limit the acceptance and use of telemedicine. When technology, regulations and reimbursement issues are synchronized, patient demand will compel providers to reevaluate how and when to use telemedicine. This study found that the rate of advancement in technology, particularly in mobile health, seems to outpace the rate of change in regulations.

Regulations, Licensure and Reimbursement

Federal regulations impact on telemedicine

The author of this study, in addition to serving as administrator of the three integrated practices referenced above, also supervises a central billing office established to provide billing services for the three practices. In evaluating whether or not payers would pay for telemedicine services, the author, in collaboration with the staff in the central billing office, reviewed the Medicare, Medicaid and commercial payer rules regarding reimbursement for telemedicine services. The author found that Medicare has taken a lead in providing clear guidance to providers regarding the provision of telemedicine services and reimbursement for these services.

In 2012, a Washington D.C. attorney named Rene Quashie spoke at a webinar and stated, inter alia, that “telemedicine has the potential of improving access to care in a more efficient and cost-effective manner while maintaining quality, particularly in rural areas.” Quashie was joined by attorney Amy Lerman and together they presented
information on legal and regulatory barriers related to telemedicine. Some of the areas they discussed in the webinar included licensure, reimbursement, prescribing, privacy, security, and insurance coverage.\(^6\)

The federal government and some state governments have introduced legislation designed to promote and expand the application of telehealth. One example of this type of legislation is H.R. 3306 introduced by Senator Mike Thompson.\(^7\) According to Senator Thompson, “Telehealth is health care, and it should be a tool in every doctor’s toolbox.”\(^8\) H.R. 3306 is titled, “The Telehealth Enhancement Act of 2013” and was introduced to allow Medicare payments for remote patient monitoring, and expand locations where patients can receive Medicare-covered telehealth services.\(^9\)

In 2011 the Centers for Medicare and Medicaid Services (“CMS”) changed regulations to support the use and reimbursement of telemedicine. For example, hospitals and critical access hospitals may rely on the credentialing and privileging conducted by a distant-site facility for telemedicine practitioners providing telemedicine services so long as the respective hospitals have a written agreement that credentials and privileges the provider where the patient presents.\(^10\) Medicare beneficiaries are eligible for telehealth services only if they are presented from an originating site located in a rural health professional shortage area (HPSA) or in a county outside of a Metropolitan Statistical Area.\(^11\) Anyone who may be interested in determining if an originating site is eligible for reimbursement can check by visiting http://www.cms.gov/Medicare/Medicare-General-Information/Telehealth on the CMS website. Originating sites authorized by law include: the offices of physicians or practitioners; Hospitals; Critical Access Hospitals (CAH); Rural Health Clinics; Federally Qualified Health Centers; Hospital-based or CAH-based
Renal Dialysis Centers (including satellites); Skilled Nursing Facilities (SNF); and Community Mental Health Centers (CMHC). ¹² To further clarify the role of the originating site, it is the site where the patient is located. Therefore in this study the physician practices and the critical access hospital were eligible to receive reimbursement for telehealth services as originating sites by law. Where the provider of services is located is referred to as the distant site.¹³ Pursuant to CMS rules, payment for telehealth services is the same as for services furnished without the use of a telecommunications system.¹⁴ CMS also requires that the encounter between the provider and the patient be a two-way, continuous communication as opposed to using store and forward technology.¹⁵ Examples of store and forward technology would be lab results, X-rays, and electrocardiograms. Medicare pays for a wide range of telehealth services so long as the services are delivered in accordance with applicable coding and documentation guidelines.¹⁶ The following table is a sample of a few of the services and associated codes that are covered by Medicare.
Table A. Covered telehealth services and their codes

<table>
<thead>
<tr>
<th>SERVICE</th>
<th>CPT/HCPCS Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telehealth consultations, emergency department or initial patient*</td>
<td>G0425-G0427</td>
</tr>
<tr>
<td>Follow-up inpatient telehealth consultations furnished to</td>
<td>G0406-G0408</td>
</tr>
<tr>
<td>beneficiaries in hospitals or Skilled Nursing Facilities (&quot;SNF&quot;)</td>
<td></td>
</tr>
<tr>
<td>Office or other outpatient visits</td>
<td>99201-99215</td>
</tr>
<tr>
<td>Subsequent hospital care services</td>
<td>99231-99233</td>
</tr>
<tr>
<td>Individual and group health and behavior assessment and intervention</td>
<td>96150-96154</td>
</tr>
<tr>
<td>Individual and group medical nutrition therapy</td>
<td>G0270; 97802-97804</td>
</tr>
</tbody>
</table>


Any code submitted to be paid as a telehealth service must be appended with GT. For example to report a level III established patient office visit provided by telehealth, report 99213-GT. In addition to the provider being paid for his or her professional services, the originating site may bill for an originating site facility fee to receive a separate Part B payment as detailed in the Medicare Benefit Policy Manual, Chapter 15 § 270.5.

In this study, a hospital in an originating site provided the critical access hospital a robot to connect neurologists to stroke patients managed by the emergency room physicians in the critical access hospital. The neurologists, located in another larger city, were credentialed by the critical access hospital and provided necessary privileges for the critical access hospital. Additionally, the critical access hospital introduced inpatient telemental health services allowing providers from one of the practices observed in this exploratory study the opportunity to care for inpatients needing mental health services without having to travel to the hospital. In this case, the critical access hospital will
receive revenue as an originating site and the hospital owned practice will receive revenue as the distant site. These two scenarios highlight how one hospital can be both a distant site and an originating site for purposes of Medicare reimbursement.

**HIPAA Privacy and Security**

There are three issues that must be assessed in determining whether or not a particular application meets the security requirements of the Health Insurance Portability and Accountability Act of 1996 (“HIPAA”). The issues are encryption, business associate relationship and the HITECH Act of 2011. From a purely technical standpoint HIPAA does not require encryption, although the privacy rules and security rules discussed further below provide strong justification for vendors and healthcare providers to incorporate encryption into their applications and polices.

The HIPAA Privacy Rule is located at 45 CFR Part 160 and Subparts A and E of Part 164. The Privacy Rule applies to protected health information (PHI) in any form and requires covered entities to put in place "administrative, physical, and technical safeguards" for protecting PHI. “The HIPAA Security Rule establishes national standards to protect individuals’ electronic personal health information that is created, received, used, or maintained by a covered entity. The Security Rule requires appropriate administrative, physical and technical safeguards to ensure the confidentiality, integrity, and security of electronic protected health information.” Both rules can be found in the same section of the Code of Federal Regulations as referenced above with the distinction that the Security rule applies only to electronic PHI whereas the Privacy rule applies to all forms of PHI.
The Health Information Technology for Economic and Clinical Health (HITECH) Act was enacted to promote the adoption and meaningful use of health information technology. Subtitle D of the HITECH Act specifically addresses the privacy and security concerns associated with the electronic transmission of health information. This rule was instrumental in each of the practices herein and the critical access hospital adopting new technology that provides for the use of electronic health records and the ability to serve either as an originating site or a distant site through the use of videoconferencing technology. Without this significant investment in technology, it would not be possible to even consider implementing a telemedicine program so this exploratory study could not have been completed.

Privacy, Security and HITECH will be discussed further below in the section on technology and vendor applications. The critical access hospital in this study has a dedicated compliance officer tasked with establishing, maintaining, and monitoring HIPAA policies and procedures. The author of this study also serves as the compliance officer for the three practices evaluated through the study period. Annually all employees of each of the practices are required to complete online compliance training. In the author’s opinion, formalizing compliance training that is easily monitored is an integral element to the development and maintenance of a telemedicine program.

Stark Law and Physician Self-Referral

It is beyond the scope of this exploratory study to provide a detailed review of the Federal Fraud and Abuse Law known as Stark. But is important to note that the author discovered Stark is implicated in the areas of e-prescribing and electronic health records
as a minimum. In general, the Stark Law prohibits a physician (or an immediate family member of such physician) from referring Medicare patients to entities providing designated health services if that physician, or the physician’s immediate family member, has a financial (ownership, compensation or investment) interest in the entity. Stark law provides some exceptions and there are two exceptions that could have an impact on implementing a telemedicine program. They are the e-prescribing exception and the electronic health records exception. To qualify for the physician self-referral exception regarding donations of electronic prescribing technology or electronic health records arrangements, several criteria found in 42 CFR § 411.357 must be met.

**State regulations, licensure and insurance requirements**

Telemedicine is restricted by state in regulations that limit whether or not a provider can treat a patient across state lines. According to Jonathan Linkous, ATA CEO, “Physician licensure has been a barrier to telemedicine because digital health care does not stop at state borders. A physician, who may supply treatment remotely, must obtain a medical license in each of the states where patients receive care via telemedicine.”

However, the restriction on physician license portability is slowly changing. In 2012, the Veterans E-Health and Telemedicine Support Act (“VETS”) was introduced to enable providers to practice across state lines if they weren’t licensed in the same state where the patient was located. The American Telemedicine Association maintains a state by state matrix with updates on the various legislative efforts to extend physician capabilities and more.
Recognizing that the issues of licensure and the delivery of telehealth services were evolving and becoming more complex, the U.S. Congress passed the Health Care Safety Net Amendments of 2002, Public Law (P.L.) 107-251. Section 102 authorized the award of incentive grants to state professional licensing boards to promote cooperation and encourage development and implementation of state policies that will reduce statutory and regulatory barriers to telehealth. (Wakefield, 2010)

The National Council of State Boards of Nursing (“NCSBN”) received a licensing portability grant and used the grant to develop a mutual recognition model that allowed nurses to practice across state lines, whether physical or electronic, so long as the state entered into an interstate compact, called the Nurse Licensure Compact (“NLC”). More than 20 states have signed the NLC. The mutual recognition model is common to all Americans because it is the model used by states to recognize the driver’s license across state borders. As referenced below, efforts are underway to develop a similar interstate licensing compact for physician licensure.

Many rural western states have recognized the benefit of providing telemedicine services for the benefit of their citizens. For example, in Wyoming, more than 75 percent of the physicians licensed in Wyoming are licensed in another state but only 40% of the physicians licensed in Wyoming live in Wyoming. The Executive Director of Wyoming’s State Medical Board has expressed support for this changing development in state licensure. In 2013, the Federation of State Medical Boards approved a resolution calling for the FSMB to formally explore the creation of a new system that would utilize an “interstate compact” to increase efficiency in the licensing of physicians who practice in multiple states. Some medical services are more adaptable to delivery via telemedicine, such as tele-radiology, tele-pharmacy, and tele-mental health. Between
technology, reimbursement and licensure, the most restrictive issue delaying
development of telemedicine is licensure.

In this study, one practice has a facility in two different states separated by
approximately ten (10) miles. As of the completion of this study, the providers in the
practices were required to have licenses in each of the two states where their offices are
located. This would be true even if the providers did not have a physical office located in
State B if the providers wanted to continue offering services to patients who reside in
State B. The participants in this study believe that the Federal government and the State
governments will need to develop an interstate compact as briefly referenced above
before the full benefits of telemedicine will be realized.

Medical Malpractice and Professional Liability for Telemedicine.

There is limited case law as of the date of this study on the issue of malpractice in
telemedicine. There are certainly many potential risks that potentially can come from the
delivery of telemedicine. However, the majority of the telemedicine malpractice cases
to-date have related to internet prescribing as opposed to some form of negligence. One
of the reasons for a lack of case law may come from the fact that in many telemedicine
encounters there is more than one medical provider involved in making decision
regarding the patient. But there are potential specialties at risk which include, but are not
limited to, Tele-ICU, Telepsychiatry, Teleneurology, Tele-emergency medicine, and
Tele-radiology. The advancement of technology and the ever growing consumer
demand for telemedicine services has resulted in the establishment of several non-
government agencies such as the American Telemedicine Association and the Center for
Telehealth and e-Health Law (“CTel”). Some of the legal considerations related to
telemedicine include jurisdiction and choice of law.\textsuperscript{40} In the case of jurisdiction, the court will decide if the defendant can be compelled to appear in the defendant’s home state or not.\textsuperscript{41} The choice of law determines which state law will govern the case. Choice of law is a complicated area of the law and neither the plaintiff nor the defendant should presume to know how the choice of law will be applied in their particular case.\textsuperscript{42}

**Professional Liability Insurance**

According to the Director of Research at Physician Insurance Association of America (“PIAA”), telemedicine providers should verify that their professional liability insurance covers telemedicine services.\textsuperscript{43} During this study, all three practices shifted professional liability coverage from a company they had been covered by for several years, to a company that covered both the critical access hospital in the study and the three practices in the study along with many other hospital based providers. The first professional liability insurance company was surprised when asked if their policy covered the practice providers for telemedicine services. After several days, the representative of the first insurance company verified the providers were covered so long as the providers did not receive any compensation for the service. The representative was unable to provide a clear explanation for this strange coverage condition.

The second professional liability company provides coverage for telemedicine services for the providers without any conditions or surcharges. As case law develops insurance companies will undoubtedly add surcharges or adjust premiums to account for the telemedicine service.\textsuperscript{44}
Reimbursement

It has been already established above that CMS will reimburse Medicare providers for telemedicine services. Medicaid, a federally-funded, state-run program for low income families, considers telemedicine a more cost-effective alternative to traditional face-to-face medicine. States are encouraged to develop Medicaid reimbursement programs that support payment for telemedicine services. The two states referenced in this study provide reimbursement comparable to face-to-face services for telemedicine services when the claim is properly coded with the appropriate modifier. As of October, 2012, 45 states and DC have some form of coverage and reimbursement for services delivered via interactive/video conference.

Although many commercial payers have some form of reimbursement for telemedicine services, states are considering implementing laws mandating reimbursement for telemedicine services. The governor of Hawaii recently signed a law that requires equivalent reimbursement for services, including behavioral health services, provided through telehealth as for the same services provided via face-to-face contact between a health care provider and a patient. Including Hawaii, 21 states have enacted laws requiring reimbursement for telemedicine services. As of May of 2014, 10 other states were considering legislation that would further promote telemedicine services.

In August of 2014, the critical access hospital observed in this exploratory study added telemedicine services to their charge master. The three practices added telemedicine services to their charge masters in May of 2013 and have received reimbursement comparable to reimbursement for face-to-face services from commercial payers for the telemedicine services provided.
Current and prospective review of technological innovations in telemedicine

This section of the study addresses hardware and software availability and capability and does not address the privacy and security requirements related to HIPAA and discussed above.

According to GlobalMed, a telehealth technology company, more than 2,000 studies have been conducted researching telemonitoring and the results included reducing hospital readmissions by 83 percent, decreasing home nursing visits 66 percent, and lowering overall costs by more than 30 percent.51

The rate of change and availability of hardware that enables telemedicine services has been so fast that the author of this study found that articles more than two years old addressing technology were often no longer relevant. Because so many consumers own smart phones, tablets, and laptops, vendors are focusing their attention on the patient-centered home.52 As of 2014, 90% of American adults have a cell phone, 58% of American adults have a smartphone, 32% of American adults own an e-reader, and 42% of American adults own a tablet computer.53 In September of 2014, ABI research reported that over the next five years, over 100 million wearable patient monitoring devices will be shipped.54 There are so many new innovative devices being developed for the telemedicine industry that it is overwhelming.

Software is no exception when it comes to the rate of development and implementation compared to the rate of change in hardware. This study evaluated three video applications that were reviewed by the participating physicians who attend an annual meeting of the American Telemedicine Association. The three video applications included Skype (see www.skype.com), Vidyo (see www.vidyo.com), and Vsee (see
All three applications worked well from a purely technical standpoint. The consumers interviewed for this study preferred Skype because that is the application most of them already had installed and were familiar with. Skype technically works but the owner of Skype, Microsoft, has not signed a Business Associate agreement so it does not meet the HIPAA requirement discussed above. Both Vidyo and Vsee meet HIPAA requirements. After evaluating both applications, the study participants, including the hospital opted to name Vidyo as the standard video application that will be used for telemedicine services with one exception. The robot donated to the critical access hospital emergency room is accessed by the hub hospital to help care for stroke patients using proprietary software integral to the robot.

In 2009, before smartphones were as sophisticated as they are today and before computing in the cloud was as common place as it is today, a survey commissioned by the Health Research Institute unit of PricewaterhouseCoopers, found that three-fourths of U.S. consumers would use telemedicine. The survey also found that half of consumers would be willing to seek health care through the Internet or other computer technology as a substitute for face-to-face, non-emergency visits. At the Digital Health Summer Summit 2014, Daniel Ruppar, Director of Research for Frost & Sullivan, presented findings of a recent survey of industry stakeholders in “Pulse of Telehealth 2014: Stakeholder Views on Telehealth from the American Telemedicine Association (ATA) Annual Meeting.” The survey respondents predicted the specific telehealth and mhealth markets will have the highest impact on healthcare over the next five years, in order of priority. The video telemedicine market was rated second highest for its impact on telemedicine in the next five years. The complete prioritized list of telehealth and
mhealth markets included, Home and Disease Management/Remote Patient Monitoring, Video Telemedicine, mHealth Applications, Tele-mental Health, Tele-Imaging, Medication Management Systems, Tele-Emergency Services, Remote ECG Services, Personal Emergency Response Systems (PERS), Tele-Pharmacy and Retail Telehealth Kiosks.59 Also at the Digital Health Summer Summit 2014, the CEO of ATA estimated that approximately 10,000,000 Americans were served by telemedicine in the previous year.60

The data from the surveys referenced above infer that consumers and technology have a greater influence over the development and acceptance of telemedicine technologies when compared to providers. The providers in this study expressed concern that consumer demand and preference for convenience is overshadowing quality in healthcare. The providers admitted that telemedicine is here to stay so despite their reservations concerning quality, the providers installed mobile carts with camera equipped computers so that the cart could be moved from exam room to exam room as necessary to either interact with a specialty physician in a larger city or interact with a patient in a rural area who for other reason was unable to come personally to the office. One problem quickly identified from their rural locations is if there is a lack of high speed internet service, productivity is adversely affected. In the office locations where fiber optics was available, the telemedicine hardware and software performed in a manner that did not adversely impact provide productivity more than any other EHR type product already has.

The future “Internet of Things” may have on telemedicine
“The Internet of Things ("IOT") is a new vision of the technological ubiquity in communication era radically transforming the society, corporate, communities, and personal spheres.”\textsuperscript{61} The IOT will rely on radio frequency identification ("RFID"), miniaturization, nanotechnology and embedded technology to connect humans to humans (H2H), humans to things (H2T), and things to things (THT).\textsuperscript{62} It is not within the scope of this study to provide a fully technical explanation on how the IOT will affect all of our lives but suffice it to say the technology already exists and is being deployed in subtle ways to bring about the evolution of the digital hospital. One small example found in this study is the IT department of the study hospital deployed RFID technology to monitor critical temperatures in refrigeration units. The hospital CEO even shared a story where Disney World is using RFID chips in the bottom of drink cups to limit the number of refills a patron can obtain and in fact the Disney World system verbally alerts the patron when they only have a single refill remaining. For a greater understanding of the potential impact IOT will have on healthcare, the author suggests any reader review the Simonov, et al. article reference herein and entitled, “Personalized Healthcare Communication in Internet of Things.

**Increased Competition for Patients from Telemedicine Providers**

The advancement of telemedicine is not only related to a particular physician group practice or hospital but now includes national companies competing for local patients. A few examples of these companies include, Ameridoc (see ameridoc.com), Teladoc (see teladoc.com), Dr Connection Benefits, (see drcconnectionbenefits.com) and MDlive (see mdlive.com). The former CEO of Apple Computer, John Sculley, is backing the start-up of MDlive. In January of 2014, MDlive obtained venture financing worth $23.6 million from Heritage Group and Sutter Health.\textsuperscript{63} MDlive is also a strategic
partner with Vsee, one of the video applications referenced above. The company has
developed a mobile app for smartphones that is integrated with Vsee and seamlessly
connects patients, providers and insurance companies.

As stated above, the companies referenced above are a small sample of companies
offering telemedicine services. Additionally, Google, Microsoft, iRobot, and Medtronic
are exploring how they can be involved in the rapidly growing telehealth and
telemedicine markets.

The companies and their activities have the potential of shifting patient volume
from traditional physician practices and hospitals. In a recent webinar, Dr. Shez Partovi,
VP of Informatics and Chief Medical Information Officer of the Arizona Service Area at
Dignity Health, stated that if you wait to implement a telemedicine strategy until you are
ready, you will be too late.

Conclusion

This exploratory study evaluated the impact of technology, regulations and
reimbursement on telemedicine in physician practices. The practices, as stated in the
introduction, were three different practices owned by a small critical access hospital.
One of the three practices had office locations in two adjacent states.

This study identified the fact that commercial industries and consumer demand
are responsible for setting the pace of acceptance and the implementation of the
telemedicine services. Here, the study hospital readily accepted the challenge of
developing a system wide telemedicine strategic plan and during the study, the hospital
introduce telestroke, telespeech and telepsychiatry services. One of the outpatient
practices implemented the ability for patients to schedule an appointment for telemental
health services and supported the hospital’s telepsychiatry services through a provider
call schedule. One of the three practices, although expressing interest, did not complete
any progress towards adopting a telemedicine strategy. Finally, the practice that
expressed the highest level of skepticism and concern has completed several steps towards being able to function as both an originating and distant telemedicine service provider.

The author, through his role in an Innovation Council, will continue to work towards adding new telemedicine services while enhancing the services that have begun since the beginning of this study.
END NOTES


3 Health Resources and Services Administration (HRSA). 5600 Fishers Lane, Rockville, MD, 20857. www.hrsa.gov/ruralhealth/about/telehealth/

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