

Tipping Telemedicine Adoption - Barrier Mitigation White Paper

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Introduction

This paper outlines the opportunities and challenges associated with the use of telemedicine in current healthcare practice and provides a set of recommendations to drive the necessary local regional and national adoption to meet the needs of the changing U.S. healthcare ecosystem. The information contained within grew out of a state-wide Arizona telemedicine forum, “Got telemedicine? Driving healthcare improvement in Arizona,” held in Phoenix, AZ on October 11, 2013. Organized by Don Graf of UnitedHealthcare and Robert K. Smoldt of the Healthcare Delivery and Policy Program at Arizona State University, the meeting featured presentations by and discussions with operational, technical, and medical leaders involved in testing and implementing telemedicine programs across the state. Participating organizations included: UnitedHealthcare, Banner Health, Carondelet Health Network, Dignity Health, Flagstaff Medical Center, Mayo Clinic, North Country Healthcare, and the University of Arizona.

What telemedicine delivers

The American Telemedicine Association defines telemedicine as “the use of medical information exchanged from one site to another via electronic communications to improve a patient’s clinical health status.”¹ Originally aimed at improving access to specialty care for patients in remote and underserved areas, the field of telemedicine has grown rapidly over the past 40 years and includes a growing variety of applications and technologies deployed across the entire patient care continuum in both rural and urban markets. It should be noted that telemedicine does not constitute a distinct medical specialty, rather, it is a tool or set of tools (e.g., two-way video, email, remote monitoring devices) that help a variety of healthcare providers deliver high quality and low cost care to patients they serve. As highlighted by Arizona-based telemedicine case studies in the Appendix, telemedicine offers patients the promise of better access, fewer and shorter hospitalizations, as well as reduced travel time and expenses. For clinicians, the telemedicine delivery model carries the potential of more efficient and effective management of their practices.

Barrier Categories

Despite evidence of lower costs and improved access to care, the healthcare ecosystem remains “resistant” to a broader implementation of services using telemedicine. Forum participants identified a range of challenges and barriers to telemedicine adoption that fall into the following key categories:

- **Legal:** Rules/Mandates legislatively governed though local and national policymakers
 - *Examples Include:* Provider licensure, which creates additional administrative and operational burdens for treating patients across state lines
- **Regulatory:** Public sector rules established by Medicare and Medicaid
 - *Examples Include:* Provider credentialing; place and/ or type of service restrictions; rural/ underserved/ urban market designation
- **Financial:** Costs including: equipment, connectivity, staff support. Limited reimbursement.

¹ <http://www.americantelemed.org/learn/what-is-telemedicine>, accessed 12/04/13

- *Examples include:* Lack of consistent payer reimbursement and investments required to purchase and maintain telemedicine equipment.
- **Technological:** Includes equipment, communication bandwidth, security and privacy
 - *Examples include:* Equipment compatibility, technological standards, interoperability, process flow standardization and integration with disparate Electronic Health Records and Health Information Exchanges
- **Cultural:** Different degrees of acceptance among clinical, administrative, payer and technical communities
 - *Examples include:* Access to care, return on investment, operational value add, improved clinical outcomes, cross sectional education, over engineered complexity

Of these categories, legal, regulatory, and financial issues were viewed as among the biggest hurdles to broader adoption/ scalability of telemedicine.

Barriers: Where do they come from?

Legal: An Example from Arizona Revised Statutes

Coverage Restrictions: Although Arizona Revised Statutes §36-3601, requires parity in private insurance coverage for telemedicine for rural areas (starting in 2015) it places significant restrictions on what locations and services are covered by the mandate. The law defines a rural area as an area in a county with a population with less than 900,000 persons or a city or town that is located in such a county whose nearest boundary is more than 30 miles from a city that has population of 500,000 or more. Moreover, services covered under the rural designation mandate are restricted to trauma, burns, cardiology, infectious diseases, mental health disorders, neurological diseases (strokes), and dermatology.

Real Time Restrictions: The recently passed commercial payer parity legislature in the state of Arizona recognizes telemedicine only as the interactive use of audio, video, or electronic media. Asynchronous or store and forward telemedicine often used in radiology, pathology, ophthalmology and other medical services do not meet the definition for required coverage under this parity law. Although Arizona's Medicaid program (AHCCCS) has the most extensive list of store and forward telemedicine services,² the existence of a list automatically excludes every service that is not included, creating unnecessary restrictions on providers.

Regulatory: An Example from Arizona's Medicaid Program (AHCCCS)

Subspecialty Restrictions: AHCCCS limits use of telemedicine by provider type and subspecialty. This restricts the opportunity for providers to use telemedicine in innovative and collaborative ways to provide care for patients.

Presenting site designation: AHCCCS provides a limiting presenting site designation which lacks clarity and seemingly excludes a patient residence from inclusion in places considered eligible to be a presenting site.

² ATA State Medicaid Best Practice, Store and Forward Telemedicine 2013

Patient Presenter: For all real-time services AHCCCS requires the presence of a patient presenter. This means that the patient’s primary care physician, attending physician, other medical professional or trained telepresenter who is familiar with the patient’s condition must be with the patient at the presenting site in order to qualify for reimbursement.

Financial:

The legal and regulatory barriers cited above have significant implications for the financial viability of telemedicine programs. Given the upfront financial and time investment to establish a telemedicine program, it is essential that services rendered via telemedicine are given adequate opportunity to be self-sustaining. It can be costly to establish a telemedicine infrastructure - startup costs for telecommunications lines and equipment for teleradiology services alone can range from \$70,000 to \$100,000 and can take six months to a year to install in rural areas.³ In addition to the costs of starting a program, system and equipment maintenance upgrades create ongoing costs that require funding. In order to make these costs manageable for providers, legal and regulatory systems must align to recognize the value of telemedicine services.

Recommendations: Where do we go from here?

Many states, including Arizona, have passed parity statutes mandating that private insurers cover services delivered through telemedicine as if the services were provided face-to-face (where the use of telemedicine was deemed appropriate by the service provider).⁴ Telemedicine use is also allowed on a limited basis for the treatment of Medicare and Medicaid recipients. Rules limiting when, where, and by whom public sector services can be provided are primarily based on a fear of overutilization in the fee-for-service payment model of these government insurance programs. While some Medicare rules are slowly loosening, many restrictions remain. Medicaid rules, including those administered by the Arizona Health Care Cost Containment Program (AHCCCS), generally follow CMS regulations, and while some are less restrictive than CMS, many still lag behind private sector legislation governing parity. Below are recommendations for steps legislators and regulators can take to help overcome the various barriers described above.

Legal: Support efforts to revise Arizona parity legislation, specifically amending mandate language so it resembles more broadly held positions used by several other parity states. Currently the Arizona parity legislation only creates partial parity, as it restricts the scope of parity coverage to rural areas and certain specialties. Full parity is legislatively mandated in other states, including Georgia⁵ and Texas⁶, without a “rural” designation restriction. In addition, legislation must look to enable physicians and other healthcare providers to practice in multiple states without separate licensure requirements. This reduces disparities in access to care for patients, as well as significantly reducing the administrative burden for physicians.

³ Arizona Telemedicine Program Estimate

⁴ Beginning January 1, 2015 for the state of Arizona.

⁵ Off. Code of Georgia Ann. §43-34-31

⁶ Tex. Insurance Code Ann. §1466.004

Regulatory: Support efforts that encourage CMS to lift originating site designations. Support efforts that encourage AHCCCS to create full parity for all telemedicine services otherwise covered by AHCCCS when provided in-person. Eliminate presenting site requirements that a) require a patient to be present in a clinical environment or b) require a patient telepresenter be present in order to be reimbursed for real-time telemedicine services.

Financial: Develop tools that use telemedicine data to empirically measure and demonstrate the value proposition that telemedicine brings, e.g.,

- Improved access to care
- Reduced cost
- Improved clinical efficiencies
- Improved patient satisfaction
- Appropriate telemedicine utilization

Update billing codes to ensure that both hub and rural spoke sites receive equitable payment for telemedicine services. Encourage the adoption of various pay-for-value approaches, e.g., bundled payments, capitation models that would promote the use of innovative delivery models and tools, e.g., telemedicine services.

Technical: Require that tools and IT systems being developed for telemedicine (and other applications) are interoperable with existing systems. Expand broadband wireless communications networks to increase access to telemedicine services in rural areas. Promote the use of PCs, laptops, tablets, smartphones and mobile applications to create simpler telemedicine delivery models that emulate the face-to-face experience. Educate and empower patients to use mobile health tools to communicate with their providers and manage their care. Using less expensive established technology will allow greater access for all patients and freedom of choice regarding how they receive treatment.

Cultural: Expand efforts that provide easily accessible education, training and resource support specific to operational, financial, clinical and technical needs in the community. Encourage specialists to mentor groups of primary care physicians in care management using telemedicine tools. This can be accomplished by modeling web based educational series such as those offered through Telehealth Resource Centers. Encourage provider acceptance of telemedicine through payment reform. Cultural issues may remedy themselves if we change payment models. For example, high-turnover rates of rural healthcare workers may be addressed if there is adequate reimbursement for telemedicine services. In addition, restructuring payment models in a way that encourages providers to look to innovative ways to provide care will encourage a shift in healthcare culture. As we move toward bundled payments and capitation based models providers may be more open to investment in telemedicine services.

Appendix: Arizona-based telemedicine examples

Case Study: UnitedHealthcare – Children’s Services Program (CRS)

The UnitedHealthcare CRS program provides clinical tertiary and therapeutic services to over 25,000 complex pediatric Medicaid patients throughout the state. CRS has been offering clinical services using the telemedicine delivery model for over fifteen years. Currently over 300 patients per year receive pediatric neurology, orthopedic and therapy clinical services through live interactive telemedicine. Clinical services delivered through telemedicine save over \$400,000 per year in transportation cost, lost wages, and improved provider efficiencies.

Case study: Banner Health iCare

iCare aims to provide high value continuous telemedicine services in the acute care setting and to achieve the goals of standardizing ICU practice, reducing ICU mortality and overall length of stay. iCare centers around a team of intensivists headquartered in Mesa, Arizona that work around the clock to oversee and assist in the management of 450 hospital beds at 17 hospitals in 4 states using audiovisual telecommunication. The team monitors ICU patients for adverse trends and alerts the bedside team if problems are detected. Timely responses have resulted in better patient outcomes, e.g., reduced ICU mortality (31%) and lower costs of care (savings of ~\$70M).

Case study: Carondelet Telehealth

What began as program to provide telemedicine services to the prison population, now provides a wide range of services (including telecardiology, teleneurology, and telenutrition) to a number of facilities across the state. In case of telecardiology, a program established in 2009, Carondelet Health cardiologists are available around the clock to conduct inpatient and outpatient audiovisual (AV) consults for rural patients with chest pain, heart failure, and new-onset atrial fibrillation. Within the first six months of providing telecardiology services to Copper Queen Community Hospital (Bisbee, AZ), Carondelet Telehealth services reduced air and ground transfer by 75% and demonstrated savings of \$540,000.

Case study: Mayo Clinic Telestroke Network

Established in 2007, the Mayo Clinic Telestroke Network aims to use telemedicine to improve stroke care in underserved areas by providing timely and adequate assessment, accurate diagnosis, and delivering emergency stroke treatment for rural or remote patients. Operating from the Mayo Clinic Phoenix hub, the network links neurologists, emergency physicians, nurses, and radiologists with remote bedside physicians and nurses at 13 spoke hospitals across Arizona. The program has a 1 minute median response time, achieved 96% accuracy of diagnosis and decision making, resulted in a ten-fold increase in thrombolysis rates (from 2% to 20% of the rural population) with safety and efficacy outcomes comparable to those of stroke centers, and a 60% reduction in air and ground ambulance transfer. It is estimated that since 2007, the telestroke network saved >70 quality years of human life and >\$5M societal dollars.

Case study: Flagstaff Medical Center

The Telehealth Program was established at the Flagstaff Medical Center in April of 2010 and extended to a system level initiative in July 2013 acting as both a hub and spoke site initiative. Services are received in stroke, acute neurology, and burn care and then hub site services through virtual clinics are in place for both adult and pediatric patients in multiple specialties. A very

active mHealth program, Care Beyond Walls & Wires, provides remote monitoring and care coordination of chronically ill adults across northern Arizona.

Case study: North Country HealthCare

North Country HealthCare, a publicly-supported community healthcare center in Northern Arizona, has linked with remote care providers across the state to provide greater access to a comprehensive continuum of care for its lower-income rural patients. Beginning in 2009, North Country began caring for remote patients in 13 different communities using video conferencing in order to take advantage of the real-time and asynchronous aspects of the technology. They fulfill needs spanning clinical, educational, administrative and research aspects of medicine. For example, North Country has spearheaded research efforts to evaluate the effectiveness of digital stethoscopes for listening to heart and lung sounds in telemedicine encounters. North Country seeks to provide primary care services to anyone, anywhere, and they are making significant inroads in doing so.

Case study: Northern Arizona Regional Behavioral Health Authority

In 1996 the Northern Arizona Behavioral Health Authority (NARBHA) established Arizona's first interactive telemedicine network, NARBHAnet, to address the critical shortage of behavioral health practitioners in northern Arizona. With over 80 sites and headquartered in Flagstaff, the network provides psychiatric care to patients in the remote areas of five counties in northern Arizona as well as in a handful of sites in the greater Phoenix area, accommodating more than 113,000 patient services since its inception. A 2010 analysis of NARBHAnet found that providers saved enough travel time to attend to an additional 2,593 patient sessions that year and saved \$484,407 in travel costs.

Case study: University of Arizona Health Network

The University of Arizona College of Medicine (U of A) and its faculty physicians (University of Arizona Health Network) have provided telemedicine services in over 60 subspecialties of medicine, surgery, pediatrics, pathology, psychiatry, radiology and others. As examples, the University of Arizona is a pioneer in the development of digital radiology. Since 1997, its Department of Radiology (recently renamed the "Department of Medical Imaging") has diagnosed over 1,300,000 teleradiology cases originating from 25 rural communities. In turn, the Department of Pathology has provided telepathology services for over 4,000 surgical pathology cases including intraoperative frozen section cases. Since 2006, the U of A Department of Pediatrics has provided critical tele-echocardiology services for over 500 infants in the Neonatal Intensive Care Unit (NICU) at the Yuma Regional Medical Center. Urgent decisions are made regarding the Air Vac of newborns with congenital health disease from Yuma to Phoenix or Tucson. Teletrauma services are provided on an Indian Reservation. Faculty telephysicians provide telemedicine services for the Arizona state prisons and the Pima County jails. Telegenetic services and breast cancer survivor tele-support group services are provided to half dozen rural communities, both in English and Spanish.

Case study: Arizona Telemedicine Program

Housed at the U of A, the Telemedicine Program (ATP) was established in 1996 by the Arizona State Legislature to provide telemedicine services to Indian tribes, Department of Corrections, prisons, and other geographically isolated communities. The Arizona Telemedicine Council, a

non-statutory overarching authority, chaired by the ATP's co-founder State Senator Robert "Bob" Burns (retired) provides oversight for the Arizona Telemedicine Program and other telemedicine activities in the state. Since 1996, the ATP has expanded to partner with many non-university service providers to provide both real-time and store-and-forward services to dozens of communities. ATP engineers designed and now operate the Arizona Rural Telemedicine Network for the state, bringing broadband telecommunications to many rural communities for the first time. The ATP and T-Health Institute in Phoenix, a division of the ATP, also provide training in telemedicine, telehealth, and mHealth, for healthcare workers from throughout the state. Over a thousand Arizona health industry workers, including many staff members at Mayo Clinic and Banner Health, have gone through these ATP training programs. The ATP also supplies continuing medical education for many rural communities as well.

Case study: Southwest Telehealth Resource Center

Created to advance the use of telemedicine throughout the southwest, the federally funded Southwest Telehealth Resource Center assists start-up telehealth programs in the Four Corners states and Nevada. The Resource Center works with hospitals, clinics, public health offices as well as private healthcare providers to provide online education resources for a number of telehealth specialties including telecardiology, teledermatology, telepathology, and teletrauma. The Telehealth Resource Center works closely with the Arizona Telemedicine Program to provide assistance and education to providers throughout the state.