

Telemedicine Information Brief

July 2013

Introduction

The Maryland Health Care Commission (MHCC or Commission) conducted an environmental scan (scan) to assess the Maryland telemedicine landscape to inform the Telemedicine Task Force (task force). The last meetings of the task force were held in 2011, and the telemedicine landscape has since changed as telemedicine adoption has increased. The scan included a literature review of the financial impacts of telemedicine, an overview of telemedicine initiatives among office-based physicians as well as acute care hospitals, and a review of various telemedicine products. Telemedicine, as defined in Maryland law, means the use of interactive audio, video, or other telecommunications or electronic technology by a physician in the practice of medicine outside the physical presence of the patient.

Telemedicine Task Force

Maryland has been working to expand the use of telemedicine in the State to improve access to care and generate cost savings. Senate Bill 776, *Telemedicine Task Force – Maryland Health Care Commission* (SB 776), signed into law by Governor Martin O’Malley in May 2013, requires the MHCC, in conjunction with the Maryland Health Quality and Cost Council, to reconvene the task force, which met originally in 2010 and last met in 2011.¹ The 2011 task force developed *Telemedicine Recommendations*, a report to the Maryland Health Quality and Cost Council that was sent to the State Legislature.² The recommendations resulted in two laws. Senate Bill 781, *Health Insurance – Coverage for Services Delivered through Telemedicine*, was signed into law in May 2012 by Governor Martin O’Malley, requiring State-regulated payers to provide coverage for health care services delivered through telemedicine.³ Senate Bill 798, *Hospitals – Credentialing and Privileging Process – Telemedicine*, signed into law by Governor Martin O’Malley in May 2013, enables a hospital to rely on the credentialing and privileging decisions made of the physician by the distant-site hospital.⁴

The 2013 task force will identify opportunities to further expand the use of telemedicine to improve health status and care delivery in the State, to assess factors related to telehealth, and to identify strategies and solutions for telehealth deployment. The task force’s three advisory groups, clinical, finance and business model, and technology solutions and standards, will develop legislative recommendations that identify the role of telemedicine in innovative care delivery models to support the Triple Aim: to improve the health of the population served, to improve the experience of each individual, and to improve affordability as measured by the total cost of care. The task force will assess methods to use telemedicine to increase access to health care, improve patient outcomes in the State, and identify ways for health care providers to utilize telemedicine as a means to reduce health care costs. An interim report is due to the Governor, Senate Finance Committee and the House Health and Government Operations Committee by January 1, 2014, and a final report is due by December 1, 2014.

¹ *Telemedicine Task Force – Maryland Health Care Commission*, SB 776, 2013 Regular Session.

² MHCC, *Telemedicine Recommendations: A report prepared for the Maryland Health Quality and Cost Council* (December 2011). Available at: http://mhcc.dhmb.maryland.gov/hit/telemedicine/Pages/telemedicine_main.aspx.

³ *Health Insurance – Coverage for Services Delivered through Telemedicine*, SB 781, 2012 Regular Session.

⁴ *Hospitals – Credentialing and Privileging Process – Telemedicine*, Senate Bill 798, 2013 Regular Session.

Literature Review

The MHCC conducted a literature review assessing the financial impacts of the practice of telemedicine and evaluating telemedicine practiced in an office-based or ambulatory setting. The literature review included sources published since 2011, when the Commission last conducted a literature review of telemedicine for the 2011 *Telemedicine Recommendations* report to the Maryland Health Quality and Cost Council.⁵ The impact of telemedicine on overall health care cost is a key issue to consider in the expansion of telemedicine. Comparable to the implementation of other types of technology in the health care industry, the studies reviewed suggest that office-based telemedicine in certain use cases has demonstrably reduced cost.⁶

The literature review also found evidence that clinical outcomes for office-based telemedicine appear to be comparable to in-person services.^{7, 8, 9} One study found an increase in utilization of specialty services during a period of treatment via telemedicine for mental health needs. It is important to note that an increase in utilization of health care services through telemedicine may not necessarily increase overall cost to the health care system, largely due to the low cost of delivering services through telemedicine.¹⁰ The literature review also found the most widely adopted and studied use case for office-based telemedicine appears to be behavioral health.¹¹ Regarding legal liability, there has been limited telemedicine case law, and telemedicine within the legal concept of the standard of care continues to be clarified.¹² In general, the research on telemedicine is expanding rapidly; the results of these studies are increasingly being used by policy makers in expanding the use of telemedicine.¹³

Telemedicine Landscape

Nationally

The American Telemedicine Association (ATA) estimates that there are roughly 200 hundred existing telemedicine networks in the U.S., providing connectivity to over 3,500 sites; further, according to the ATA, half of hospitals nationwide also utilize some form of telemedicine to provide remote services for their patients.¹⁴ A recent report indicates that nearly 1.3 million U.S. residents will be using telemedicine services by 2017, a nearly sixfold increase since 2012.¹⁵ The majority of patients receive services via telemedicine that relate to care from a prior hospital admission. As the health care industry aims to reduce hospital readmission rates and track disease progression, telemedicine is expected to reach roughly 1.8 million patients worldwide by 2017.¹⁶ A key barrier to telemedicine

⁵ MHCC, *Telemedicine Recommendations: A report prepared for the Maryland Health Quality and Cost Council* (December 2011). Available at: http://mhcc.dhmh.maryland.gov/hit/telemedicine/Pages/telemedicine_main.aspx.

⁶ Mistry, Hema, *Systematic Review of Studies of the Cost-Effectiveness of Telemedicine and Telecare. Changes in the Economic Evidence over 20 Years*. Journal of Telemedicine & Telecare (January 2012).

⁷ Davis, Ann McGrath et. al. *Treating Rural Pediatric Obesity through Telemedicine: Outcomes from a Small Randomized Controlled Trial*. Journal of Pediatric Psychology (February 2013).

⁸ Dorsey, E. Ray et. al. *Randomized Controlled Clinical Trial of 'Virtual House Calls' for Parkinson Disease*. Journal of the American Medical Association Neurology (March 2013).

⁹ Fortney, John et. al. *Practice-Based Versus Telemedicine-Based Collaborative Care for Depression in Rural Federally Qualified Health Centers: A Pragmatic Randomized Comparative Effectiveness Trial*. American Journal of Psychiatry (April 2013).

¹⁰ Fortney, John et. al. *A Budget Impact Analysis of Telemedicine-based Collaborative Care for Depression*. Medical Care (September 2011).

¹¹ Mistry, Hema, *Systematic Review of Studies of the Cost-Effectiveness of Telemedicine and Telecare. Changes in the Economic Evidence over 20 Years*. Journal of Telemedicine & Telecare (January 2012); Fortney, John et. al. *Practice-Based Versus Telemedicine-Based Collaborative Care for Depression in Rural Federally Qualified Health Centers: A Pragmatic Randomized Comparative Effectiveness Trial*. American Journal of Psychiatry (April 2013).

¹² Gupta, Amar et. al. *Chapter 20: Legal and Regulatory Barriers to Telemedicine in the United States: Public and Private Approaches toward Health Care Reform*. The Globalization of Health Care: Legal and Ethical Issues (I.Glenn Cohen ed., Oxford University Press, forthcoming 2013).

¹³ Wootton, Richard. *Twenty Years of Telemedicine in Chronic Disease Management – An Evidence Synthesis*. Journal of Telemedicine & Telecare (March 2012).

¹⁴ American Telemedicine Association, *What is Telemedicine and Telehealth?*

¹⁵ InMedica, *The World Market for Telehealth – An Analysis of Demand Dynamics – 2012*. (January 2013).

¹⁶ InMedica, *The World Market for Telehealth – An Analysis of Demand Dynamics – 2012*. (January 2013).

adoption in the U.S. has been the absence of widespread State-regulated payer (payer) reimbursement for services delivered through telemedicine. To date, about 19 states have laws that require payers to compensate for telemedicine care just as they would for traditional face-to-face consultation. Roughly 44 states have some method of telemedicine reimbursement in place for Medicaid.

Maryland Hospitals

As of 2012, approximately 46 percent of hospitals in Maryland reported using telemedicine.¹⁷ Maryland hospitals using telemedicine to deliver health care services mostly use telemedicine for imaging and consultation. The table below outlines the services that hospitals use to deliver telemedicine.¹⁸

Count	Hospital	Imaging	Diagnostic	Monitoring	Emergency	Consultation
1	Anne Arundel Medical Center	✓	✓			✓
2	Atlantic General Hospital					✓
3	Baltimore Washington Medical Center	✓				
4	Bon Secours Baltimore Health System		✓	✓		✓
5	Calvert Memorial Hospital	✓	✓	✓	✓	✓
6	Carroll Hospital Center			✓		
7	Doctors Community Hospital	✓				
8	Frederick Memorial Hospital	✓	✓	✓	✓	✓
9	Holy Cross Hospital	✓	✓		✓	✓
10	Howard County General Hospital	✓				
11	Johns Hopkins Hospital	✓	✓	✓	✓	✓
12	MedStar Franklin Square Hospital Center	✓				
13	MedStar Good Samaritan Hospital			✓		
14	MedStar Montgomery General Hospital				✓	✓
15	MedStar St. Mary's Hospital					✓
16	Mercy Medical Center	✓			✓	
17	Meritus Medical Center	✓				✓
18	Peninsula Regional Medical Center	✓	✓	✓		✓
19	Suburban Hospital	✓				
20	Union Hospital of Cecil County			✓		
21	University of Maryland Medical Center	✓				
Totals		14	7	8	6	11

Maryland hospitals that are using telemedicine were asked to identify the type of technology they use for telemedicine. About 75 percent of hospitals that are using telemedicine are using desktop software. In general, desktop technology expanded for telemedicine use does not necessarily require purchasing additional equipment. The following table indicates the type of technology used by hospitals to provide telemedicine services.¹⁹

Count	Hospital	Desktop	Handheld Wireless	Home Devices	Interactive Video	Robotics
1	Anne Arundel Medical Center	✓				
2	Atlantic General Hospital	✓			✓	
3	Bon Secours Baltimore Health System					✓
4	Calvert Memorial Hospital	✓	✓		✓	
5	Carroll Hospital Center			✓		
6	Doctors Community Hospital	✓	✓		✓	
7	Frederick Memorial Hospital	✓	✓		✓	
8	Holy Cross Hospital	✓		✓	✓	
9	Howard County General Hospital	✓			✓	
10	Johns Hopkins Hospital	✓		✓	✓	
11	MedStar Franklin Square Hospital Center	✓				

¹⁷ MHCC, *Health Information Technology: An Assessment of Maryland Hospitals* (2013).

¹⁸ MHCC, *Health Information Technology: An Assessment of Maryland Hospitals* (2013).

¹⁹ MHCC, *Health Information Technology: An Assessment of Maryland Hospitals* (2013).

Count	Hospital	Desktop	Handheld Wireless	Home Devices	Interactive Video	Robotics
12	MedStar Good Samaritan Hospital		✓			
13	MedStar Montgomery General Hospital	✓			✓	
14	MedStar St. Mary's Hospital			✓		
15	Mercy Medical Center	✓				
16	Meritus Medical Center	✓	✓			
17	Peninsula Regional Medical Center				✓	
18	Suburban Hospital	✓				
19	Union Hospital of Cecil County	✓			✓	
20	University of Maryland Medical Center	✓			✓	
Totals		15	5	4	11	1

Maryland Physicians

Recent data collected from Maryland physicians indicate that about 10.2 percent of physicians are using telemedicine for purposes of diagnosis, second opinion, follow-up, chronic disease, and emergency care, among others.²⁰ Ad hoc discussions with various office-based physicians regarding telemedicine adoption identified several areas of concern: the lack of confidence with the technology, a lack of understanding about reimbursement opportunities, and the limited nature of the reimbursement opportunities that do exist (such as the geographic restriction on the patient location for Medicare patients and more prevalent restrictions on reimbursement for care delivered to a patient in his or her home).

Maryland Health Care Organizations

Currently, payment reform initiatives initiated by the Affordable Care Act (ACA), are generating interest in telemedicine among many provider organizations that had not considered it previously. Value-based reimbursement models²¹ make it possible for organizations to incorporate telemedicine into new models of care, as compared to the current fee-for-service model. In value-based reimbursement models, providers receive increased reimbursement when patient outcomes improve. Hospital readmission penalties introduced by the Centers for Medicare and Medicaid Services are driving providers to adopt telehealth as a means of reducing readmissions.²² Telemedicine can be used to remotely monitor and engage patients, to reduce the need for office visits, or to prevent hospital admissions. Delivering health care services virtually can be more convenient for physicians and hospitals and enable them to serve more people. The use of telemedicine to diagnose and prescribe treatment for common ailments may become an essential alternative to in-person consultations.

As part of the environmental scan, two value-based reimbursement models emerging in Maryland are planning to use telemedicine as a way to improve care delivery and control costs. Funding for the initiatives is through federal grants under the ACA, allowing for upfront investments in technology and training that would otherwise have to be absorbed by individual practices. MedChi, The State Medical Society, plans to use telemedicine in three accountable care organizations (ACOs).²³ MedChi will implement a “telemetric call center” where nurses and community health workers will monitor data feeds from the homes of its most at-risk patients. The patients will be provided blood pressure cuffs and other monitoring devices; they will be contacted proactively when regular

²⁰ 2012 Board of Physician Licensure file. A database of physician responses to the bi-annual licensure survey.

²¹ Value-based reimbursement models allow providers to earn a bonus or share of the savings generated by keeping a cohort of patients healthy.

²² InMedica, *The World Market for Telehealth – An Analysis of Demand Dynamics – 2012*. (January 2013).

²³ According to CMS (<http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/index.html?redirect=/aco/>), Accountable Care Organizations (ACOs) are groups of doctors, hospitals, and other health care providers, who come together voluntarily to give coordinated high quality care to their Medicare patients. The goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors. When an ACO succeeds both in both delivering high-quality care and spending health care dollars more wisely, it will share in the savings it achieves for the Medicare program.

readings are not received. Evergreen Health Cooperative, a health insurance cooperative in Baltimore City, intends to utilize telemedicine to foster collaboration and communication among members of its patient-centered care teams. Specialists will be accessible via live videoconference from the primary care office.

Retail Health Clinics

Retail health clinics, including those located in pharmacies and supermarkets, are beginning to develop telemedicine programs.²⁴ Most notably, the Rite Aid pharmacy chain recently extended its NowClinic program, through which patients may consult via videoconference with a physician in a private room inside a pharmacy, from Michigan to 58 locations in multiple states including Maryland. The NowClinic program is being jointly developed by Rite Aid, American Well and OptumHealth, a division of United Health Group.²⁵ Physicians are contracted by OptumHealth to provide services through the program. Other national pharmacy chains are exploring similar programs.²⁶ Walmart, which has opened retail health clinics in numerous store locations, has begun a pilot in Pennsylvania of a similar telemedicine program.²⁷ One concern about the growing utilization of retail health clinics is that telemedicine could encourage ineffectively-coordinated care.²⁸

Technology Vendors

Telemedicine technology is largely siloed and based on specific use cases with certain specialties' use of telemedicine advancing faster than others.²⁹ Widespread deployment of telemedicine across a service area, such as a region or state, is typically limited to pilots and generally relies on proprietary hardware and software. To increase the use of interconnected telemedicine solutions, constraining the broad range of standards that exist today is required. Telemedicine vendors offer unique solutions to hospitals, such as carts, routers, and switches, as well as a range of business models catering to very specific use cases. National certification of vendor products and harmonizing standards could increase interoperability among telemedicine solutions and help facilitate widespread adoption of the technology.

Remarks

Telemedicine is essential in expanding the availability of health care, improving patient experience and outcomes, and addressing the affordability of care. Telemedicine enables the implementation of new models of care delivery to improve access to health care, such as virtual practice groups, which are networks of providers who are available to consult with patients or their providers via telemedicine. ACOs also create opportunities for the use of telemedicine as part of new, innovative models of care. Although telemedicine technology has advanced in recent years, diffusion related to the number of services provided via telemedicine remains low.³⁰ A number of opportunities exist for office-based physicians and hospitals to use telemedicine to improve care delivery. Challenges around technology and identifying the appropriate use cases need to be resolved if telemedicine is to be embraced by the provider community.

²⁴ Media Health Leadership, *Telemedicine is Retail Health Clinics' Newest Tool* (June 2013). Available at: <http://www.healthleadersmedia.com/page-1/TEC-291947/Telemedicine-is-Retail-Health-Clinics-Newest-Tool>.

²⁵ California Telehealth Resource Center, *Markets in Everything: Virtual Retail Clinics* (February 2012). Available at: <http://www.caltrc.org/telehealth-news/markets-everything-virtual-retail-clinics>.

²⁶ Drug Store News *Telehealth can Further Expand Retail Clinic Model* (February 2013). Available at: <http://drugstorenews.com/article/telehealth-can-further-expand-retail-clinic-model>.

²⁷ PRLog *Smart Care Doc™ Operated by Telemed Ventures, LLC Opens Retail Telemedicine Clinic* (May 2012). Available at: <http://www.prlog.org/11881736-smart-care-doc-operated-by-telemed-ventures-llc-opens-retail-telemedicine-clinic-at.html>.

²⁸ HealthWorks Collective *Retail Clinics and Telemedicine* (June 2012). Available at: <http://healthworkscollective.com/rdowney14/34428/retail-clinics-and-telemedicine>.

²⁹ Jamie Yap, *Telemedicine Adoption 'Disappointing' So Far*. (February 2012). Available at: <http://www.zdnet.com/telemedicine-adoption-disappointing-so-far-2062303896/>.

³⁰ Tanriverdi H., Iacono C.S. *Diffusion of Telemedicine: A Knowledge Barrier Perspective*. Telemedicine Journal (Fall 1999).