

TELEMEDICINE RECOMMENDATIONS

A Report prepared for the
Maryland Quality and Cost Council

December 2011

Robert R. Bass, M.D.
Executive Director



Ben Steffen
Acting Executive Director

Table of Contents

Executive Summary.....	1
Report Limitations.....	3
Introduction.....	3
Literature Review.....	3
Telemedicine Task Force Recommendations	6
Conclusions and Next Steps	12
Acknowledgements	15
Appendix A: Telemedicine Licensure Overview by State.....	19
Appendix B: Select Profiles of State Telemedicine Initiatives	30
Appendix C: Environmental Scan of Telemedicine Initiatives in Maryland.....	35
Appendix D: Clinical Scenarios from the Clinical Advisory Group.....	39
Appendix E: Statewide Telemedicine Network Architecture	40
Appendix F: Core Technology Standards.....	41
Appendix G: Maryland Broadband Cooperative Network 2011	42
Appendix H: Glossary	43

Executive Summary

Effective use of telemedicine can increase access to health care, reduce health disparities, and create efficiencies in health care delivery. Telemedicine is generally considered as a viable means of delivering health care remotely through the use of communication technologies.¹ Telemedicine can bridge the gaps of distance and health care disparity.^{2, 3, 4, 5, 6} Although telemedicine is well established, a number of technology and policy challenges need to be resolved before its full potential can be realized. In June 2010, the Maryland Health Cost and Quality Council convened a Telemedicine Task Force (Task Force) to address challenges to widespread adoption of a comprehensive statewide telemedicine system of care.

The goal of the Task Force was to identify challenges and develop solutions to advance telemedicine in Maryland. The Task Force submitted its final report to the Maryland Health Quality and Cost Council in September 2010. In November, former Secretary of the Department of Health and Mental Hygiene John Colmers established a Leadership Committee of the Task Force and requested that the committee develop specific recommendations to advance telemedicine in Maryland. Former Secretary Colmers requested that the Leadership Committee present its recommendations to the Maryland Health Cost and Quality Council in December 2011.

The Leadership Committee was jointly directed by the Maryland Institute of Emergency Medicine Services Systems (MIEMSS) and the Maryland Health Care Commission (MHCC). The Leadership Committee established three advisory groups to formulate recommendations: the Clinical Advisory Group, the Technology Solutions and Standards Advisory Group, and the Financial and Business Model Advisory Group. After nearly six months of deliberation, the advisory groups identified the following recommendations to promote telemedicine in Maryland:

- *State-regulated payers should reimburse for telemedicine services*

State-regulated payers (payers)⁷ should provide reimbursement for health care services delivered through telemedicine to the same extent as health care services provided face-to-face, regardless of the location for which the services are provided.⁸ Telemedicine services should be assessed to determine the appropriateness, provided that the appropriateness is determined in the same manner as it is for face-to-face services. These assessments may be conducted as part of benefit design and retrospectively through utilization review.

¹ Health Affairs, *Health Information Systems and the Role of State Government*, 16(3), 1997.

² Journal of Telemedicine and Telecare, *Systematic Review of Evidence for the Benefits of Telemedicine*, 8(1), 2002.

³ Journal of Telemedicine and Telecare, *Economic Evaluation in Telemedicine – Still Room for Improvement*, 16(5):229-231, 2010.

⁴ Neurology, *Long-Term Outcome after Thrombolysis in Telemedical Stroke Care*, 69(9): 898-903, August 2007.

⁵ CNS Spectrums: First in Applied Neuroscience, *Can Telepsychiatry Replace In-Person Psychiatric Assessments? A Review and Meta-Analysis of Comparison Studies*, 10(5): 403-413, May 2005.

⁶ Archives of Internal Medicine, *Impact of Telemedicine Intensive Care Unit Coverage on Patient Outcomes: A Systematic Review and Meta-analysis*, 171(6): 498-506, March 28, 2011.

⁷ State-regulated payers are insurers, nonprofit health services plans, or any other person that provides health benefit plans subject to regulation by the State.

⁸ Self-insured health care plans and government plans are exempt from State insurance regulation under the Employee Retirement Security Act of 1974 (ERISA). State mandated health insurance benefits affect around 25 percent of insured Maryland residents. Additional information is available from the U.S. Department of Labor at:

<http://www.dol.gov/dol/topic/health-plans/erisa.htm>.

- *Establish a centralized telemedicine network built on existing industry standards*

An interoperable telemedicine network that is built on existing standards and is integrated into the state designated health information exchange would enable broad provider participation, allow networks to connect to other networks, and have access to clinical information through the exchange. Organizations that adopt telemedicine should meet certain minimum requirements related to technology and connectivity to a centralized telemedicine network.

- *Implement changes in licensure, credentialing, and privileging of providers to facilitate the adoption of telemedicine*

Regulations should be aligned with newly revised Center for Medicare and Medicaid Services rules that permit privileging and credentialing by proxy, a process by which an originating-site hospital may rely upon the credentialing and privileging decisions made by a distant-site telemedicine entity. As telemedicine advances in the state, additional consideration regarding expanding existing regulations to support out-of-state providers that meet certain conditions to provide telemedicine services to patients in Maryland is required. Future changes in licensure are needed to enable reciprocity of licensure for physicians practicing in border states.

Telemedicine is an important strategy for Maryland to embrace for its cost reduction benefits and to improve access and delivery of health care services.^{9, 10} Both providers and consumers can benefit from telemedicine. Consumers can experience expanded access to providers, faster and more convenient treatment, better continuity of care, reduction of lost work time and travel costs, and the ability to remain with support networks. Providers can experience instant access to other providers, a reduction of medical errors, an increase in efficiency with reduced travel and research times, and enhanced educational opportunities.

Telemedicine has the potential to increase access and reduce the cost of care. Setting prices for telemedicine that reflect actual costs and incorporate broad payments reforms are critical to ensuring appropriate access. Bundled payments incorporating telemedicine services are an example of how innovations in technology and payment could be fused to expand access and reduce costs. Maryland has been a leader in implementing the Patient Protect and Affordable Care Act (ACA); the expansion of telemedicine will support the success of the ACA. It is not yet clear what insurance benefits will be designated as essential by the federal government. The premature establishment of a mandate for telemedicine could add additional costs to the state, if the telemedicine benefit is not specified as essential by the federal government.

⁹ Journal of Telemedicine and Telecare, *Improved Access to Subspecialist Diabetes Care by Telemedicine: Cost Savings and Care Measures in the First Two Years of the FITE Diabetes Project*, 11(1) 2005.

¹⁰ Neurology, *The Cost Effectiveness of Telestroke in the Treatment of Acute Ischemic Stroke*, 77(17), 2011.

Report Limitations

This report builds on the findings from the Telemedicine Task Force from the prior year. Information included in this report represents the views of participants of the advisory groups. The scope of the report is limited to a defined set of clinical, technology, and financial barriers related to telemedicine. A financial impact assessment of implementing the recommendations was not included in the scope of work. Developing an implementation strategy related to telemedicine will be the challenge for others who share the commitment to expand its use in Maryland.

Introduction

The mission of the Maryland Health Quality and Cost Council (Council) is to maximize the health of the citizens of Maryland through strategic planning, coordination of public and private resources, and evaluation that leads to: effective, appropriate, and efficient policies; health promotion and disease prevention initiatives; high quality care delivery; and reductions in disparities in health care outcomes.¹¹ In June 2010, after a preliminary report to the Council on the use of telemedicine for emergent use cases such as stroke care, the Council created a Telemedicine Task Force (Task Force) with the charge to develop a plan for a comprehensive statewide telemedicine system of care.

The goal of the Task Force was to develop recommendations to advance telemedicine in Maryland. The Task Force submitted its final report to the Council in September 2010. In November, former Secretary of the Department of Health and Mental Hygiene John Colmers established a Leadership Committee of the Task Force and requested the Leadership Committee to further develop recommendations on advancing telemedicine in Maryland. Former Secretary Colmers requested the Leadership Committee to submit a final report to the Council in December 2011.

The Leadership Committee has been jointly directed by the Maryland Institute of Emergency Medicine Services Systems (MIEMSS) and the Maryland Health Care Commission (MHCC). Three advisory groups were formed to complete the work: the Clinical Advisory Group; the Technology Solutions and Standards Advisory Group; and the Financial and Business Model Advisory Group. The advisory groups convened multiple times over a nearly six month timeframe. All meetings were open to the public and meeting materials and key items from the meetings have been posted online.¹²

Literature Review

Evidence of the value of telemedicine is wide-ranging. A study of 170 acute stroke patients treated at community hospitals with access via telemedicine to stroke neurologists and 132 comparable patients treated in stroke center hospitals with attending neurologists found that mortality rates and levels of impairment after six months were comparable for both groups.¹³ Similarly, a survey on the application of telemedicine in Intensive Care Units (ICUs) found that telemedicine reduced

¹¹ Maryland Health Quality and Cost Council. Available at: <http://dhmh.maryland.gov/mhqcc/>.

¹² The Clinical Advisory Group meeting materials are available on the Council Telemedicine Task Force website at: <http://www.dhmh.state.md.us/mhqcc/telemedicine.html>, and the Technology Solutions and Standards Advisory Group and the Financial and Business Model Advisory Group meeting materials are available on the MHCC website at: <http://mhcc.maryland.gov/electronichealth/telemedicine/index.html>.

¹³ Neurology, *Long-Term Outcome after Thrombolysis in Telemedical Stroke Care*, 69(9): 898-903, August 2007.

ICU mortality by about 20 percent and shortened the average hospital length of stay by more than a full day.¹⁴ Telemedicine has been shown to improve time-to-diagnosis, facilitate care access for patients in remote regions, and increase patient satisfaction.¹⁵ Research on telepsychology, conducted by researchers at Columbia University, found that there is no difference in the accuracy or satisfaction between psychiatric consultations provided via telemedicine and those conducted in person.¹⁶

Health care organizations, networks and government organizations faced with provider shortages, access disparities and budget challenges, are adopting telemedicine to effectively connect geographically-remote patients with specialists based in centers of excellence, to allow scarce specialists to be on call across networks, and to provide remote monitoring of patients.¹⁷ A number of recent studies support the view that telemedicine-based interventions can result in comparable outcomes to traditional, in-person meetings, while at the same time offering the potential for cost savings and other efficiencies.^{18, 19, 20, 21}

The U.S. Agency for Health Care Quality and Research published findings from a study in the *New England Journal of Medicine* that support the use of video conferencing technology in the treatment of patients with hepatitis C virus infections.²² The study found that, for several hundred hepatitis C patients in New Mexico, the rate of serious adverse events was significantly reduced and cure rates were comparable for patients treated by local primary care providers and patients seen at the geographically distant University of New Mexico hepatitis C clinic. The authors concluded that local providers, properly supported via telemedicine by specialists, tended to be more culturally competent with regard to their specific community. Therefore, by allowing the patients to stay close to home instead of traveling for care, patients' adherence to treatment tended to improve and they were generally in more frequent contact with their providers.²³

Researchers at the University of Arkansas for Medical Sciences tracked the effects of a longstanding telemedicine initiative aimed at poor, underserved, rural populations in the East Arkansas Delta.²⁴

¹⁴ Archives of Internal Medicine, *Impact of Telemedicine Intensive Care Unit Coverage on Patient Outcomes: A Systematic Review and Meta-analysis*, 171(6): 498-506, March 28, 2011.

¹⁵ Journal of Telemedicine and Telecare, *Economic Evaluation in Telemedicine – Still Room for Improvement*, 16(5):229-231, 2010.

¹⁶ CNS Spectrums: First in Applied Neuroscience, *Can Telepsychiatry Replace In-Person Psychiatric Assessments? A Review and Meta-Analysis of Comparison Studies*, 10(5): 403-413, May 2005.

¹⁷ For instance, the U.S. Military has implemented one of the largest telemedicine networks in the world. The Telemedicine and Advanced Technology Research Center, which is based in Fort Detrick, Maryland, supports the Army's research and rollout of advanced telemedicine services ranging from bio-monitoring to medical imaging, psychological health, training, and trauma care. Available at: www.tatrc.org.

¹⁸ New England Journal of Medicine, *Outcomes of Treatment for Hepatitis C Virus Infection by Primary Care Providers*, 364:2199-207, June 1, 2011.

¹⁹ International Journal of Telemedicine and Applications, *Evaluation of the Effect of Consultant Characteristics on Telemedicine Diagnosis and Treatment*, 2011, May 4 2011.

²⁰ Journal of the American Medical Association, *Hospital Mortality, Length of Stay, and Preventable Complication Among Critically Ill Patients Before and After Tele-ICU Reengineering of Critical Care Processes*, 305 (21), June 1, 2011.

²¹ Telemedicine and e-Health, *Provider Satisfaction and Patient Outcomes Associated with a Statewide Prison Telemedicine Program in Louisiana*, 16(4):472-479, May 2010.

²² New England Journal of Medicine, *Outcomes of Treatment for Hepatitis C Virus Infection by Primary Care Providers*, 364:2199-207, June 1, 2011.

²³ Ibid.

²⁴ International Journal of Telemedicine and Applications, *Evaluation of the Effect of Consultant Characteristics on Telemedicine Diagnosis and Treatment*, 2011, May 4 2011.

The study followed providers across a range of specialties²⁵ as they interacted with remote patients via video conferencing. The study found that tele-ICU encounters frequently resulted in a change in the patient's diagnoses and/or treatment plan, or the institution of new treatment options, suggesting the level of care for these patients was upgraded as a result of access to geographically remote care.²⁶ Another study published in the *Journal of the American Medical Association*, found that the implementation of a tele-ICU was associated with reduced odds of mortality and hospital length of stay, as well as with changes in best practice adherence and lower rates of preventable complications.²⁷ The study concluded that implementing telemedicine-based practices improved outcomes even in an academic medical center that was well staffed with intensivists and had proven best practice programs in place.²⁸

Twelve states, covering over 106 million Americans, have legislated mandates for the reimbursement of telemedicine.^{29, 30} Most state laws that require reimbursement cover medical services provided through real-time interactions between a patient and a health care provider located at a distant site via multimedia such as live videoconference. Commonly available technologies such as telephone, e-mail and Skype are generally not accepted as media for reimbursable telemedicine services. A theme that most state laws have in common is that payers may not create barriers to care or reimbursement solely because the care is being provided via telemedicine. Thirty-five states offer some level of telemedicine reimbursement through Medicaid.³¹ Many other states have developed telemedicine programs in response to clinical needs, even in the absence of reimbursement.

Georgia's approach to implementing telemedicine is notable. Georgia's statewide telemedicine program is overseen by the Georgia Partnership for Telehealth, a charitable nonprofit corporation funded through public and private sources.^{32, 33} Its goal is to allow all Georgians to have access to specialty consultations without having to travel more than 30 miles from their homes. The program includes centralized scheduling of specialist consultants using a website that tracks open appointment times for panel specialists across the state, so that consultations can be requested and scheduled more efficiently. The program had over 25,000 patient encounters in 2010 and is expected to double in 2011. More than 175 specialists and health care providers currently

²⁵ Specialties in the study included OB/GYN, genetic counseling, psychiatry and psychology, nutrition, dermatology, primary care, and pharmacy.

²⁶ International Journal of Telemedicine and Applications, *Evaluation of the Effect of Consultant Characteristics on Telemedicine Diagnosis and Treatment*, 2011, 4.1

²⁷ Journal of the American Medical Association, *Hospital Mortality, Length of Stay, and Preventable Complication Among Critically Ill Patients Before and After Tele-ICU Reengineering of Critical Care Processes*, 305 (21), June 1, 2011.

²⁸ Ibid.

²⁹ American Telemedicine Association, *State Legislation for Telehealth-Provided Covered Services*. Available at: <http://www.americantelemed.org/files/public/Meetings/PolicySummit2011/StateMandate.pdf> (2011). Those states are (with the year of enactment in parenthesis): California (1996), Colorado (2001), Georgia (2006), Hawaii (1999), Kentucky (2000), Louisiana (1995), Maine (2009), New Hampshire (2009), Oklahoma (1997), Oregon (2009), Texas (1997), and Virginia (2010).

³⁰ See [Appendix A](#) for an overview of each state's approach to licensing. Comprehensive profiles of selected states' initiatives are included in [Appendix B](#).

³¹ The northwest Regional Telehealth Resource Center. *Telemedicine Reimbursement: An Overview of Medicare and Medicaid*, 2010. Available at: http://www.nrtrc.org/wp-content/uploads/Medicare_Medicaid_Reimbursement_C_Britain1.pdf.

³² Georgia Partnership for Telehealth, *Our Mission*, July 2011. Available at: <http://www.gatelehealth.org/index.php/about/our-mission/>.

³³ Georgia Partnership for Telehealth, *About GPT*, July 2011. Available at: <http://www.gatelehealth.org/index.php/about/about-gpt/>.

participate, representing over 40 specialties. Georgia's prison system makes heavy use of the technology; officials say it saves the department over 30 percent in medical costs.³⁴

The University of Virginia's Office of Telemedicine recently received a grant from the U.S. Health Resources and Services Administration to serve as a Mid-Atlantic Telehealth Resource Center covering the District of Columbia and six states: Virginia, Delaware, Kentucky, Maryland, North Carolina and West Virginia. A 2010 Virginia law requires all health insurers, health care subscription plans, and health maintenance organizations (HMOs) to offer coverage for telemedicine services.³⁵ Payers may not discriminate with regards to reimbursement levels, premium payments, or other aspects of coverage on the basis that a service is being provided via telemedicine.

Telemedicine Task Force Recommendations

In general, existing telemedicine initiatives throughout Maryland are fragmented.³⁶ Oversight of the functions that support rendering care at a distance using licensed providers and health information technology rests within several state agencies: the Maryland Board of Physicians, MHCC, MIEMSS, and the Department of Health and Mental Hygiene (DHMH) Office of Health Care Quality.

Some of the advisory group participants felt that to facilitate further development of telemedicine in Maryland and improve the coordination between existing telemedicine initiatives and state regulatory agencies the state should consider several options: 1) designate a state entity to be a lead agency with regard to telemedicine; 2) create a telemedicine Advisory Council that consists of public and private representatives; or 3) designate a not-for-profit private entity that would provide expert guidance to telemedicine providers. Essential functions of the oversight and coordination process or network should include mitigating barriers to telemedicine adoption and monitoring and coordinating grant opportunities.

The advisory groups were comprised of a broad range of stakeholders such as payers, providers, consumers, and businesses. The recommendations are based on a lengthy deliberation process by the advisory groups, research conducted by a consultant, and information provided from various individuals from the stakeholder community in Maryland and in other states. Each advisory group developed recommendations.

Finance and Business Model Advisory Group

- *State-regulated payers should reimburse for telemedicine services*

The Finance and Business Model Advisory Group (advisory group) of the Task Force included a diverse group of stakeholders from organizations such as MedChi, the Maryland State Medical Society (MedChi), the Maryland Hospital Association, and the American Telemedicine Association (ATA), as well as payers and providers.³⁷ The advisory group agreed that the state-regulated

³⁴ Georgia Partnership for Telehealth, Available at: <http://www.gatelehealth.org/>.

³⁵ § 38.2-3418.16 Code of Virginia. *Coverage for Telemedicine Services*. Available at: <http://lis.virginia.gov/cgi-bin/legp604.exe?101+ful+CHAP0222>.

³⁶ See [Appendix C](#): Environmental Scan of Telemedicine Initiatives in Maryland.

³⁷ For a complete list of participants see [Acknowledgements](#).

payers (payers)³⁸ should reimburse for telemedicine services. The advisory group deliberated on an appropriate reimbursement model that payers could adopt for telemedicine.

The advisory group reviewed approaches to pay for medical services provided via telemedicine being implemented by states, federal programs, and private payers. It found a number of initiatives underway, and while there is some overlap, they are largely fragmented. The ATA indicated that virtually all of the twelve states currently requiring reimbursement for telemedicine broadly mandate payers to reimburse for services provided via telemedicine identical to reimbursement for face-to-face encounters. Overall, many states are moving to eliminate barriers to reimbursement for telemedicine; for example, the *California Telehealth Act of 2011* was signed into law in October 2011 and designed to further reduce barriers to the growth of telemedicine services in California. In 1996, California passed legislation mandating reimbursement for telemedicine services. The legislation recognized telemedicine as a legitimate means to deliver health care services and established that no payer can limit the setting where services are provided.³⁹

Medicare's incremental approach to reimbursing for telemedicine was reviewed as a potential model for provider reimbursement in Maryland. Medicare pays for telemedicine services on a fee-for-service basis under limited circumstances; while under managed care, no restrictions exist on the care Medicare beneficiaries may receive.⁴⁰ Characteristics of the Medicare fee-for-service model include:

- Reimbursement for limited professional services only;
- Limitations of the distant site practitioners eligible for reimbursement;⁴¹
- Distant site practitioners are paid 80 percent of the appropriate Medicare Physician Fee Schedule amount while originating sites receive a small fee, billed separately; and
- Originating sites⁴² must be located in a rural Health Professional Shortage Area (HPSA) or in a county outside of a Metropolitan Statistical Area.

The advisory group expressed strong concern about the limited provider types eligible for reimbursement under Medicare, and the limitation to services delivered in rural HPSAs, particularly emergency medical service providers.

Currently, reimbursement for telemedicine varies by payers. United Healthcare and Aetna are conducting telemedicine pilot programs in a number of states. One program, for example, offers

³⁸ State-regulated payers are insurers, nonprofit health services plans, or any other person that provides health benefit plans subject to regulation by the State. Self-insured health care plans and government plans are exempt from State insurance regulation under the Employee Retirement Security Act of 1974 (ERISA). State mandated health insurance benefits affect around 25 percent of insured in Maryland residents. Additional information is available from the U.S. Department of Labor at: <http://www.dol.gov/dol/topic/health-plans/erisa.htm>.

³⁹ California Assembly Bill 415 - 2011-2012 Regular Session. *California Telehealth Act*. Available at: <http://e-lobbyist.com/gaits/text/354075>.

⁴⁰ Centers for Medicare and Medicaid Services, *Telehealth Services: Rural Health Fact Sheet*. Available at: <http://www.nrtrc.org/wp-content/uploads/CMS-Telehealth-Srvcs-Fact-Sheet-March-2011.pdf> (July 2009).

⁴¹ Distant site eligible practitioners include physicians, nurse practitioners, physician assistants, nurse midwives, clinical nurse specialists, and registered dietitians or nutrition professionals. Clinical psychologists and clinical social workers cannot bill for psychotherapy services that include medical evaluation and management services under Medicare.

⁴² The originating site is the location of an eligible Medicare beneficiary at the time the service being furnished via telemedicine occurs and can include physician offices, hospitals, rural health centers, federally qualified health centers, hospital-based renal dialysis centers, skilled nursing facilities, and community mental health centers. Other originating sites, including the home, are not allowed at this time.

online access to physicians contracted with the payer as a benefit to certain self-insured plans.⁴³ In 2011, CareFirst Blue Cross Blue Shield revised its medical policies across the mid-Atlantic region, including Maryland, to comply with Virginia's new law and adopted reimbursement for telemedicine. CareFirst BlueCross BlueShield had previously provided \$3 million as seed money to support the growth of the tele-ICU (remote, electronic monitoring of critically ill patients in ICUs) technology in Maryland.

Maryland Medicaid fee-for-service presently reimburses for telemental health services through a pilot program. The Mental Hygiene Administration formed a Maryland Medicaid Telepsychiatry Regulations workgroup in the fall of 2007. The workgroup was composed of participants from Core Service Agencies, University of Maryland, Mental Hygiene Administration, State Office of Rural Health, Sheppard Pratt Health System, and Correctional Mental Health Services. The goal of the workgroup was to reach consensus on a draft telepsychiatry regulation for telemental health services to Medicaid recipients and resulted in COMAR 10.21.30, *Telemental Health Services*. The advisory group recommends that Medicaid's program continue as currently envisioned, with the flexibility to broaden its scope of reimbursable telemedicine services in the future. Additionally, it was suggested that over the next year Maryland Medicaid more fully consider the financial impact of supporting telemedicine and propose a reasonable adoption strategy relating to telemedicine services.

The advisory group agreed that payers should reimburse for telemedicine services in the same way as an in-person encounter is reimbursed today. The consensus was that payers should not exclude a service for coverage solely because the service is provided through telemedicine or based on the location of the patient, such as rural or urban.⁴⁴ The advisory group concluded that medical necessity and standards of care could be applied to telemedicine as they are applied to face-to-face services. Advisory group members felt that payers should make determinations on the appropriateness of telemedicine services prospectively and retrospectively through utilization review as is done with face-to-face services.

The advisory group considered the level of reimbursement relative to a face-to-face visit. Several members of the advisory group pointed out that some commercial payers are paying the distance site the same fee as they would have paid a provider delivering an in-person service plus also paying an administrative fee to the originating site. The sum of the fees results in a total fee that is larger than the fee paid for an in-person service. Medicare fee levels for telemedicine service are set so that the sum of the payment to the distance site (roughly 80% of the in-person service) and the administrative fee to the originating site are roughly equivalent to the total payment for a face-to-face visit. In general, higher payments for telemedicine could discourage support by payers and employers. The majority of the advisory group believed that the distant provider should receive the same payment as would have been paid for a face-to-face visit. Others noted that a fee for the originating site is needed to support the adoption of the technology. Most advisory group members supported the concept of parity in payment at the distance site and an administrative fee for the

⁴³ United Healthcare, presentation to the Telemedicine Task Force Finance and Business Models Advisory Group, September 7, 2011.

⁴⁴ The Clinical Advisory Group developed a set of clinical scenarios which are intended to illustrate the impact telemedicine can have on ordinary citizens. See [Appendix D](#) for clinical scenarios.

originating site if that site was a provider’s facility. The advisory group saw merit in conducting a study to compare resource use telemedicine services and equivalent in-person services.

Technology Solutions and Standards Advisory Group

- *Establish a centralized telemedicine network built on existing industry standards*

The Technology Solutions and Standards Advisory Group (advisory group) had broad stakeholder participation and included representatives from payers, providers, technology vendors, and the ATA.⁴⁵ The advisory group considered a statewide telemedicine infrastructure as well as standards around technology deployed by telemedicine networks connecting to a centralized infrastructure.

Participants of the advisory group noted that telemedicine networks in Maryland are fairly disparate and are not readily capable of interoperating with other networks. The advisory group agreed that connecting telemedicine networks would increase provider availability to consult on care delivery and better enable the availability of medical services in remote areas of the state. The advisory group concluded that a centralized telemedicine network is needed to support all medical services and allow existing networks to connect with other networks. A centralized telemedicine network can be envisioned similar to a switchboard in early telephone networks — it allows endpoints to be connected to one another in a standards-based way.⁴⁶ Such a network would also enable patients with time critical conditions such as acute stroke, heart attack, and trauma, to receive immediate access to a specialty consultant at a designated trauma or specialty center.

The advisory group concluded that a provider directory service that identifies providers available to consult on care at the point of delivery should be included in a centralized telemedicine network. In general, a provider directory service is a sophisticated database that maintains a list of providers participating in a telemedicine network and includes information about the types of capabilities that each endpoint or gateway possesses. The provider directory could also support real-time scheduling and availability of providers, which could assist with emergent use cases, as well as accelerate the time involved with specialty consultations. Including a provider directory service in a centralized telemedicine network would allow participants to be easily identified.

The advisory group deduced that identifying existing standards for networks that choose to connect to a centralized telemedicine network is essential.⁴⁷ A shared infrastructure that supports existing standards would likely foster the development of telemedicine in hospitals, clinics, and provider offices. A centralized telemedicine network would serve as the bridge to videoconferencing connections. The advisory group viewed the state designated health information exchange as an organization well-suited for developing a centralized telemedicine network and believed that technology to support telemedicine should be incorporated into the health information exchange. The advisory group believed a role for the centralized telemedicine network should be to collaborate with a lead state or regional agency and actively monitor for funding opportunities that connecting networks could pursue.

The advisory group noted that widespread adoption of telemedicine is hindered in areas, often rural, where access to reliable high-speed broadband service does not exist. Such services are

⁴⁵ For a complete list of participants, see Acknowledgements.

⁴⁶ See [Appendix E](#) for the Maryland Telemedicine Network diagram.

⁴⁷ See [Appendix F](#) for ATA Core Technology Standards.

required to support use cases which involve high-resolution video and diagnostic-quality images. Issues related to broadband access are under consideration by the Rural Maryland Broadband Coordination Board, which was established during the 2006 Maryland General Assembly session. The Rural Maryland Broadband Coordination Board is responsible for coordinating efforts to deploy broadband infrastructure in rural and underserved areas and for reviewing and approving all disbursements from the Broadband Assistance Fund, which is administered by the Department of Business and Economic Development. The Maryland Broadband Cooperative is also addressing some of the challenges related to broadband services and is focused on advancing broadband access across Maryland's rural communities.⁴⁸

Clinical Advisory Group

- *Implement changes in licensure, credentialing, and privileging of providers to facilitate the adoption of telemedicine*

The Clinical Advisory Group (advisory group) consisted of a wide-range of stakeholders including representatives from MedChi, MIEMSS, University of Maryland Shock Trauma, the Maryland Rural Health Association, and Federally Qualified Health Centers as well as providers.⁴⁹ The advisory group addressed leading challenges related to expanding the practice of telemedicine in Maryland.⁵⁰

The advisory group agreed with the definition of telemedicine in the Maryland Board of Physicians COMAR 10.32.05, and proposed modifying the definition as follows to include images: *“Telemedicine” means the practice of medicine from a distance, in which intervention and treatment decisions and recommendations are based on clinical data, documents, [images], and information transmitted through telecommunications systems.*⁵¹ The advisory group agreed that audio-only telephone, e-mail messages, and facsimile transmissions are not appropriate items to include in the definition, and it may be best to specifically note these mediums as exclusions.⁵²

The advisory group identified the need for the continued development of evidence-based clinical standards and guidelines for telemedicine regarding care quality and documentation. The ATA is developing standards for a variety of telemedicine use cases, including diabetic retinopathy, telerehabilitation, telemental health, teledermatology, and telepathology.⁵³ The advisory group concluded that ATA standards should be considered for adoption into the practice of telemedicine in Maryland.

The advisory group noted challenges around credentialing, privileging and licensing. With regards to hospital-based care, federal and state regulations have traditionally required telemedicine providers be credentialed and privileged at the facilities on both ends of a telemedicine encounter:

⁴⁸ See [Appendix G](#) for a map of the Maryland Broadband Cooperative Network.

⁴⁹ For a complete list of participants, see Acknowledgements.

⁵⁰ The advisory group developed a set of clinical scenarios, which are intended to illustrate the impact telemedicine can have on ordinary citizens; they may be found in Appendix D.

⁵¹ Annotated Code of Maryland. Title 10 Department of Health and Mental Hygiene Subtitle 32 Board of Physicians Chapter 05 Telemedicine. Authority: Health Occupations Article, §14-205, 14-301, 14-601, and 14-602. Note, images does not appear in the definition and was added with brackets for illustration purposes.

⁵² See [Appendix H](#): Glossary.

⁵³ American Telemedicine Association, *Telemedicine Standards and Guidelines*. Available at: <http://www.americantelemed.org/i4a/pages/index.cfm?pageid=3311>.

the originating site, where the patient is located, as well as the remote site, where the provider is located.

The advisory group recommends aligning Maryland regulations with the Centers for Medicare and Medicaid Services (CMS) credentialing requirements, which were revised in May 2011.⁵⁴ The new CMS regulations allow a streamlined credentialing and privileging process at the originating facility providing that the originating facility enters into a written agreement with the remote facility. Through this written agreement, the originating-site hospital must ensure that the medical staff's credentialing and privileging processes and standards at the distant-site comply with the CMS standards. Once the written agreement is in place, the originating facility can rely on credentialing and privileging decisions made by the remote facility rather than conduct its own fact-finding process.

The Joint Commission, which accredits and certifies hospitals, intends to change its standards regarding telemedicine to conform to the new CMS credentialing requirements. There is an outstanding question whether Maryland's credentialing and privileging regulations need to be updated to accommodate the time-saving CMS process.⁵⁵ Presumably, the regulation requirements can be met via the written agreement between the originating and remote hospitals but an advisory opinion from the Attorney General of the DHMH would be useful to clarify this point.

States are also beginning to address licensing challenges related to telemedicine. The advisory group identified the rigorous requirements of individual states for licensing physicians as a barrier to telemedicine services that are provided across state borders. The advisory group recommended that the Maryland Board of Physicians consider changes in their laws and regulations to lessen the challenges faced by physicians who provide or would like to provide telemedicine services in Maryland. The advisory group agreed that options to mitigate these challenges include issuing medical licenses to out-of-state physicians that are limited to providing telemedicine services, establishing reciprocity agreements with other states either directly or through a multi-state compact, and supporting federal licensure for physicians who provide telemedicine services in multiple states. Changes in existing law and regulation are not immediately required to advance telemedicine in Maryland.

Some participants of the advisory group suggested establishing a demonstration project at MIEMSS to improve access to specialty center consultation for patients with time critical conditions such as acute stroke, heart attack and trauma. The pilot program could reside in the 24/7 emergency medical resource communications center at MIEMSS to test the feasibility of providing immediate access to specialty consultants for patients with time critical conditions. Such a pilot would enable physicians in hospitals across the state to have immediate access to specialist at designated trauma and specialty centers. The specialist would be able to provide expert advice on therapeutic interventions, the need to transfer, or the feasibility and safety of managing the patient locally.

⁵⁴ Department of Health and Human Services, Centers for Medicare and Medicaid Services 42 CFR Parts 482 and 485. Available at: <http://www.gpo.gov/fdsys/pkg/FR-2011-05-05/pdf/2011-10875.pdf>.

⁵⁵ The Code of Maryland Regulations (COMAR) stipulates that a hospital must establish a written protocol for its credentialing process for any physician who shall admit or treat patients in the hospital. COMAR § 10.07.01.24(C)(4) (2011) As part of this process, the hospital must collect, verify, review, and document the relevant professional experience of prospective providers, including their: a) education; b) clinical training; and c) licensure, employment, and malpractice history. COMAR § 10.07.01.24(C)(4)(a-h) (2011). COMAR also requires that all hospitals establish a formal written process to grant delineated clinical privileges. § 10.07.01.24(D) (2011).

Potential benefits of the pilot would include a reduction in unnecessary and costly transfers to tertiary care facilities, faster access to emergency intervention and improved patient outcomes. A demonstration project might yield information around broadly deploying telemedicine that could be applied to a statewide telemedicine initiative.

Conclusions and Next Steps

Provider shortages and growing transportation costs pose significant barriers to access of health services. The Association of American Medical Colleges predicts a national physician shortage of 91,000 by the year 2020 and 125,000 by the year 2025.⁵⁶ Telemedicine where the patient and provider are connected through real-time audio and video technology offers an alternative to the traditional method of care delivery. Maryland, like several states, is exploring opportunities to expand the delivery of health care services utilizing information and communication technologies to enable the diagnosis, consultation, treatment, education, care management, and self-management of patients at a distance from health care providers.⁵⁷ Telemedicine can remove barriers of distance and time, reduce health disparities, and drive efficiencies in the delivery system. Broad adoption of telemedicine offers the possibility to more efficiently connect consumers with the providers and the care they need. Many representatives on the advisory groups believe expanded use of telemedicine increases access to timely and appropriate care, thereby reducing total health care costs.

The adoption of telemedicine in Maryland is limited and uneven. Existing networks that support telemedicine are generally configured to support a limited set of services and often reimbursement is inadequate or not available. The lack of viable networks and uncertain reimbursement are significant barriers to broad adoption of telemedicine. The Leadership Committee believes building a viable technical infrastructure is essential and without an interoperable infrastructure, adoption will continue to be slow.

Telemedicine has been shown to save health costs, such as reducing hospital emergency room visits and ambulance use. The most recent and comprehensive assessment of telemedicine's economic value was conducted for California, focused on how telemedicine saves money for their Medicaid program, called Medi-Cal. It concluded that telemedicine used for "home monitoring for chronic diseases [such as] heart failure and diabetes ... has the potential to produce savings to the Medi-Cal program of as much as several hundred million dollars annually." It reported a 42 percent reduction in costs related to heart failure care and a 9 percent reduction in costs related to diabetes care.⁵⁸

As previously noted, thirty-six other states include some telemedicine coverage in their Medicaid plans and twelve states prohibit health plans offered in their states from discriminating against telemedicine-provided covered services. For the most part, the value of telemedicine may be more

⁵⁶ Association of American Medical Colleges Center for Workforce Studies, *Physician Shortages to Worsen without Increases in Residency Training*, June 2011. Available at: <https://www.aamc.org/download/150612/data/md-shortage.pdf>.

⁵⁷ California Assembly Bill 415 - 2011-2012 Regular Session. *California Telehealth Act*. Available at: <http://e-lobbyist.com/gaits/text/354075>.

⁵⁸ Blue Sky Consulting Group, *Fiscal Impact of AB 415: Potential Cost Savings from Expansion of Telehealth*, September 2011. Available at: http://www.connectedhealthca.org/sites/default/files/Fiscal%20Impact%20of%20AB%20415%20Potential%20Cost%20Savings%20from%20Expansion%20of%20Telehealth_0.pdf.

evident with a shift to value-based payment and service innovations, such as medical homes and accountable care organizations.

Approaches to Implementation

Payment policies for telemedicine services are in their infancy. Determining when telemedicine services are medically necessary and clinically equivalent to face-to-face services remains a significant challenge in setting payment. To support adoption of telemedicine, payments must accurately reflect the cost of delivery for providers and the effectiveness of the treatments must be proven to payers and patients. Payment must be sufficient to cover actual costs, but should not favor telemedicine over face-to-face services.

More information is needed on the costs of telemedicine before payment levels should be guaranteed relative to face-to-face visits. Some payers reimburse telemedicine services on par with face-to-face care due to the current low levels of adoption of telemedicine. Payers might favor reimbursing for telemedicine services the same as face-to-face services because modifying the claims adjudication software to distinguish telemedicine services from face-to-face services is more expensive, given the low volume of telemedicine claims. This perspective will likely change if telemedicine becomes a popular medium for delivering care. The appropriateness of new forms of reimbursement, such as bundling payments around a single episode of care or permitting telemedicine when delivered by an accountable care organization recognized by the payer, may prove attractive for providers and payers.

Payers are responsible for assessing medical necessity of clinical services. Often, payers use private review agents coupled with evidence gathered by impartial nationally-recognized standard setting organizations. Further work needs to be done to demonstrate clinical equivalence between telemedicine and face-to-face care. Although the ATA has developed several guidelines, their role as an advocate for telemedicine makes it less than an ideal standard-setting entity.

The strategy for diffusing telemedicine must align with requirements in the Patient Protection and ACA. A key element in the ACA is the requirement that all benefit plans sold beginning in 2014, other than plans in place in 2010 (grandfathered plans), must be based upon essential health benefits (EHBs) as defined by the Department of Health and Human Services (HHS). Premium subsidies are available to individuals with incomes below 400 percent of the federal poverty level that purchase individual insurance coverage through health benefit exchanges. ACA requires the state to pay the additional subsidy costs associated with any state-mandated benefit that is not included in the EHBs determined by HHS. If Maryland mandates use of telemedicine and this requirement is not defined as an EHB, Maryland would be responsible to pay the portion of the insurance subsidy attributable to telemedicine costs.

The federal government is expected to release draft regulations governing EHBs after the 2012 legislative session. A report from the Institute of Medicine (IOM) to HHS on EHBs may foreshadow definitions of EHBs. The IOM recommended that the HHS model EHBs after typical insurance products offered in small group insurance benefits package today. The recommendation by the IOM to benchmark the EHBs on typical small group benefits reflects growing sensitivity about costs. Any additional mandates, including telemedicine, must be balanced against possible added liabilities for the state.

One approach to implement telemedicine is to focus on developing the infrastructure and permit payers to support telemedicine, but not mandate use in 2012. A second approach would be to

direct the Maryland Insurance Administration, in consultation with MHCC, to adopt regulations on the use of telemedicine for particular services when appropriate guidelines exist or are being developed. As reported earlier, the ATA has developed guidelines for the following clinical services:

- Teledermatology;
- Telepathology;
- Telehome Health Care;
- Telemental Health;
- Telerehabilitation; and
- Telehealth for Diabetic Retinopathy.

Little evidence exists to suggest that adoption of telemedicine increases health care costs. Aligning prices of telemedicine equitably with face-to-face care will help ensure that the service is used appropriately and does not lead to a surge in utilization, often the unintended consequence of mandate legislation.

Positioning Maryland for the fast changing needs of health care delivery is a goal of the analysis and recommendations. The information in this report will help guide policy leaders as they consider expanding telemedicine. The Task Force began its work with some uncertainty about an appropriate model for telemedicine. However, after nearly six months of work, the members of the Task Force are optimistic over what they consider to be a sound model for expanding telemedicine in Maryland.

Acknowledgements

MHCC and MIEMSS recognize the contribution made to this report by the wide range of stakeholders that participated on the advisory groups. More than 77 representatives participated in the work effort. The high level of enthusiasm among the participants regarding the potential benefits in care delivery using telemedicine is laudable. The MHCC and MIEMSS thank David Finney of Audacious Inquiry for his assistance in completing the work associated with Telemedicine Task Force report. Special thanks are given to the following individuals for their participation in the advisory groups.

Financial and Business Model Advisory Group Participants

Ben Steffen, *Chair*
Maryland Health Care Commission

Clarence Brewton
MedStar Health System

Michelle Clark
Maryland Rural Health Association

Tom Dowdell
Western Maryland Health System

Cynthia Fleig
United Healthcare

Mary Fuska
Children's National Medical Center

John Hamper
CareFirst BlueCross BlueShield

Timothy Jones
Children's National Medical Center

Traci La Valle
Maryland Hospital Association

Robert Lyles
LifeStream Health Center

Mary Mastrandrea
ValueOptions

Matthew Palmer
Consumer

Elizabeth Raitz-Cowboy
Aetna

Gene Ransom
MedChi, The State Medical Society

H. Neal Reynolds
University of Maryland School of Medicine/
R Adams Cowley Shock Trauma

Valerie Shearer Overton
Maryland Hospital Association

Adam Weinstein
Shore Health System

Jennifer Witten
American Health and Stroke Association

Grace Zaczek
Department of Health and Mental Hygiene

Teresa Zent
Legislative Consultant

Technology Solutions and Standards Advisory Group Participants

David Sharp, *Chair*
Maryland Health Care Commission

Scott Afzal
Audacious Inquiry, LLC

Lee Barrett
Electronic Healthcare Network Accreditation
Commission

Gary Capistrant
American Telemedicine Association

Bill Day
InTouch Health

Marc Delacroix
MedStar

Brian Grady
University of Maryland

David Horrocks
Chesapeake Regional Information System for Our
Patients

Timothy Jones
Children's National Medical Center

Kenneth Karpay
Karpay diem LLC

Simon King
Medvision, LLC

Katherine Klosek
Office of Governor O'Malley, Governor's Delivery Unit

Lisa Lyons
Allegany County Health Department

John Malloy
Zypher Technology

Steve Mandel
Johns Hopkins Hospital and School of Medicine

Arumani Manisundaram
Adventist Health Care, Inc.

Mary Mastrandrea
ValueOptions

Mary McKenna
University of Maryland Medical Center

Ron Moser
Electronic Healthcare Network Accreditation
Commission

Alex Nason
Johns Hopkins Medicine Interactive

Diana Nolte
Worcester County Health Department

Adelline Ntatin
Department of Health and Mental Hygiene

Robert Perrone
Anne Arundel Health Department

David Quirke
Frederick Memorial Healthcare System

Audrey Regan
Department of Health and Mental Hygiene

Molly Reyna
Children's National Medical Center

H. Neal Reynolds
University of Maryland School of Medicine/
R Adams Cowley Shock Trauma

Rachel Schaaf
Maryland Hospital Association

Barney Stern
University of Maryland School of Medicine

Maury Weinstein
System Source

Jennifer Witten
American Health and Stroke Association

Grace Zaczek
Department of Health and Mental Hygiene

Clinical Advisory Group Participants

Robert R. Bass, *Chair*
Maryland Institute for Emergency Medical Services
Systems

Saliann Alborn
Community Health Integrated Partnership

Eric Aldrich
Howard County General Hospital

Anna Aycock
Maryland Institute for Emergency Medical Services
Systems

Claudia Baquet
University of Maryland School of Medicine

Ivor Berkowitz
The Johns Hopkins Hospital

Lori Brewster
Wicomico County Health Department

Gary Capistrant
American Telemedicine Association

Michelle Clark
Maryland Rural Health Association

Richard Colgan
University of Maryland School of Medicine

Jenifer Fahey
University of Maryland Medical Center

Michael Franklin
Atlantic General Hospital

Frank Genova
Kaiser Permanente, Mid-Atlantic Permanente
Medical Group, P.C.

Barbara Goff
Maryland Institute for Emergency Medical Services
Systems

Brian Grady
University of Maryland Medical Center

Fremont Magee
Office of the Attorney General

Stephen Michaels,
St. Mary's Hospital

Marek Mirski
Johns Hopkins Medical Institutions

Peggy Naleppa
Peninsula Regional Medical Center

Mimi Novello
Franklin Square Hospital Center

Laura Pimentel
American College of Emergency Physicians

Alexandra Podolny
University of Maryland Center for Health and
Homeland Security

Virginia Rowthorn
University of Maryland Francis King Carey School of
Law

H. Neal Reynolds
University of Maryland School of Medicine/
R Adams Cowley Shock Trauma

Amjad Riar
Governor's Commission on Asian Pacific American
Affairs

Nayan Shah
Shah Associates, MD, LLC

Barney Stern
University of Maryland Medical Center

Earl Stoddard
University of Maryland Center for Health &
Homeland Security

Tricia Thompson Handel
Maryland Board of Physicians

Elizabeth Vaidya
Department of Health and Mental Hygiene

Jo M. Wilson
Western Maryland Health System

Jennifer Witten
American Heart and Stroke Association

Dan Winn
CareFirst BlueCross BlueShield

Marc Zubrow
Christiana Care Health System

Grace Zaczek
Department of Health and Mental Hygiene

Appendix A: Telemedicine Licensure Overview by State^{59,60}

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
AL	No	Yes - Statute 1999; requires limited license, a license by endorsement, or full medical license. AL may grant a special purpose license allowing practitioners licensed in other states to practice across state lines	Limits special license to states that have reciprocal legislation permitting AL physicians to cross their state lines. (AL Code 34-24-51; 55; 70); reciprocity: 34-24-73 through 74; Licensure: 34-24-500 through 507
AK	Yes	No	(AK Stat. 08.64.170; 200)
AZ	No	M – Yes - Title 36. Ch 36 <i>Telemedicine</i> 3601-3603: (NOT FSMB): need to obtain a limited pro bono registration, locum tenens registration, or full medical license. Specific statute requiring telemedicine practitioners to obtain consent from the patient or the patient's healthcare decision maker before providing services	M - (AZ Rev. Stat. 36-3601-3603)
		O - See above	O - (AZ Rev. Stat. 32-1858)
AR	Yes - Statute, 1997	No	(AR Stat. Ann. 17-95-206)
CA	M - Yes - legislation passed in 1996 authorized a system of registration for physicians seeking to practice across state lines into CA. The Board has not adopted rules to implement this registration and thus a full and unrestricted license is required.	No	M - (CA Bus. & Prof. Code 2290.5)
	O - Yes	No	O - (CA Bus. & Prof. Code 2052.5)
CO	Yes – Statute, 1998	No	(CO Rev. Stat. 12-36-129, 12-36-106, 10-16-123) Colorado Licensure Statute permits limited licensure for physicians licensed to practice medicine in another state if they are associated with the Shriners Hospital

⁵⁹ The information contained in this table was provided by the Federation of State Medical Boards and is available online at: http://www.fsmb.org/pdf/GRPOL_Telemedicine_Licensure.pdf. The information was last updated 07/28/2011. This table is not intended as a comprehensive statement of the law.

⁶⁰ M = Medical Board licensure requirements; O = Osteopathic Board licensure requirements

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
CT	Yes – Statute; need to obtain a temporary or full medical license	No	(CT Gen. Stat. 20-9)
DE	Yes - Need to obtain a temporary, institutional or full medical license	No	(24 DE Code 1702, 1703) A person fully certified, licensed, or otherwise authorized to practice medicine in another state of the United States who briefly renders emergency medical treatment or briefly provides critical medical service at the specific lawful direction of a medical institution or federal agency that assumes full responsibility for the treatment or service
DC	Yes - Need to obtain a temporary, limited or full medical license	No	(D.C. Code 2-3305.1) Reciprocity and Endorsement: 3-1205.07
FL	M - Yes - Statute, 2000	No	M - (FL Stat. 458.327) (a) Other duly licensed health care practitioners acting within their scope of practice authorized by statute. (b) Any physician lawfully licensed in another state or territory or foreign country, when meeting duly licensed physicians of this state in consultation. (c) Commissioned medical officers of the Armed Forces of the United States and of the Public Health Service of the United States while on active duty and while acting within the scope of their military or public health responsibilities. (d) Any person while actually serving without salary or professional fees on the resident medical staff of a hospital in this state, subject to the provisions of s. 458.321. (e) Any person furnishing medical assistance in case of an emergency.
	O - Yes	No	No
GA	Yes - Statute, 1998; need to obtain a temporary, teacher's license, institutional, special volunteer or full medical license	No	(O.C.G.A. 43-34-31.1)
GU	No	Yes - Not FSMB model, but allows for special licensing	10 GCA Sec. 12207
HI	Yes – Statute, 1997; need to obtain a limited, temporary, educational teaching or full medical license	No	Fully licensed out-of-state physician may practice in consultation with physician licensed in HI. Any direct physician-to-patient practice requires full & unrestricted license. Position reaffirmed on 3-10-00. (HI Rev. Stat. 453-2)

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
ID	Yes - Need to obtain temporary, volunteer or full license — does provide for an Endorsement License (Not FSMB model)	No	54-1811 Licensure by Endorsement. IDAPA 22.01.01.053 An applicant, in good standing with no restrictions upon or actions taken against his license to practice medicine and surgery in a state, territory or district of the United States or Canada is eligible for licensure by endorsement to practice medicine in Idaho. An applicant with any disciplinary action, whether past, pending, public or confidential, by any board of medicine, licensing authority, medical society, professional society, hospital, medical school or institution staff in any state, territory, district or country is not eligible for licensure by endorsement. An applicant ineligible for licensure by endorsement may make a full and complete application pursuant to the requirements of Sections 050, 051 or 052. Effective Date (5-8-09)
IL	Yes – Statute, 1998	No	(225 ILCS 60-49.)
IN	Yes – Statute, 1998; need to obtain a probationary, provisional, temporary medical permit, temporary fellowship permit, or full medical license	No	(Ind. Code Ann. 25-22.5-1-1.1)
IA	Yes	No	(IA Code 147.2 (1996)) On August 20, 2010 an ad hoc committee was convened to study the 1996 policy statement and determine what is needed to make it more relevant to the continually expanding use of “telemedicine” by physicians.
KS	Yes - Need to obtain an exempt, temporary, postgraduate, special permit, institutional, or full medical license	No	(KS Adm. Rules 100-26-1)
KY	Yes - Statute; need to obtain a limited institutional practice, fellowship training, special faculty, temporary, or full medical license	No	(KY Rev. Stat. 311.560)
LA	No	Yes - Not FSMB model; allows for reciprocity licensing and telemedicine licensing/permit	(LA Rev. Stat. 37:1271 and) LAC 46:XLV.353 Qualifications for Medical Licensure by Reciprocity §1276.1. Telemedicine License
ME	M - Yes - Statute In Nov. 2002, a policy was adopted stating that physicians providing care and/or treatment to patients in Maine must be licensed in Maine	No	M - (32 ME Rev. Stat. 3270)
	O - Yes	No	No

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
MD	No	Yes - Not FSMB model, but allows for an exception	<p>MD Health Occupations Code Ann. § 14-302</p> <p>Subject to the rules, regulations, and orders, the following individuals may practice medicine without a license:- (1) A medical student or an individual in a postgraduate medical training program that is approved, while doing the assigned duties at any office of a licensed physician, hospital, clinic, or similar facility; (2) A physician licensed by and residing in another jurisdiction, while engaging in consultation with a physician licensed in this State; (3) A physician employed in the service of the federal government while performing the duties incident to that employment; (4) A physician who resides in and is authorized to practice medicine by any state adjoining this State and whose practice extends into this State, if: (i) The physician does not have an office or other regularly appointed place in this State to meet patients; and (ii) The same privileges are extended to licensed physicians of this State by the adjoining state; and (5) An individual while under the supervision of a licensed physician who has specialty training in psychiatry, and whose specialty training in psychiatry, if the individual submits an application on or before October 1, 1993, and either: (i) 1. Has a master's degree from an accredited college or university; and 2. Has completed a graduate program accepted by the Board of Physicians in a behavioral science that includes 1,000 hours of supervised clinical psychotherapy experience; or (ii) 1. Has a baccalaureate degree from an accredited college or university; and 2. Has 4,000 hours of supervised clinical experience that is approved.</p> <p>MD Administrative Regulation: COMAR 10.32.05.02</p> <p>A. In this chapter, the following terms have the meanings indicated.</p> <p>B. Terms Defined.</p> <p>(1) Consultative Service. (a) "Consultative service" means a service provided by a physician for the sole purpose of offering an expert opinion or advising the treating physician about an individual patient. (b) "Consultative service" does not include: (i) Decisions that direct patient care; or (ii) Interpretation of images, tracings, or specimens on a regular basis. (2) "Face-to-face" means within each other's sight and presence.</p> <p>Md. Administrative Regulation: COMAR 10.32.05.03</p> <p>03 Licensure. Except as specified in <i>Health Occupations Article, § 14-302</i>, Annotated Code of Maryland, an individual shall be a licensed Maryland physician in order to practice telemedicine if one or both of the following occurs: A. The individual practicing telemedicine is physically located in Maryland; B. The patient is in Maryland.</p>

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
MA	Yes – Statute; need to obtain a limited, restricted, temporary, or full medical license	No	(MA Ann. Laws Ch. 112, 6)
MI	M - Yes – Statute; need to obtain a limited, temporary, special volunteer or full medical license	No	M - (MSA 14.15 (17011))
	O - Yes	No	No
MN	No	Yes - Statute – SB 3026, 2006; requires physicians providing telemedicine services to patient in MN to register	(MN Stat. 147.032) – Interstate Practice of Medicine (2002 SB 3026)
MS	Yes - Must obtain a limited, temporary, special volunteer or full medical license	No	(MS Code Ann. 73-25-34) § 73-25-21. Licensees from other states or Canada may be granted license without examination; affiliation with boards of medical examiners. The State Board of Medical Licensure (SBML) may grant license to practice medicine without examination as to learning to graduates in medicine or osteopathic medicine who hold license to practice medicine from another state, provided the requirements in such state are equal to those required by the SBML; and it is further provided that the state board of medical licensure may affiliate with and recognize for the purpose of waiving examination diplomats of the national board of medical examiners, or the national board of examiners for osteopathic physicians and surgeons in granting license to practice medicine in Mississippi.
MO	No	Yes - Not FSMB model; physicians are granted permission to practice medicine through the state's licensure exception	(334.010 Rev. Stat. MO) Unauthorized practice of medicine and surgery prohibited--practice of medicine across state lines, definition 1. It shall be unlawful for any person not now a registered physician within the meaning of the law to practice medicine or surgery in any of its departments, to engage in the practice of medicine across state lines or to profess to cure and attempt to treat the sick and others afflicted with bodily or mental infirmities, or engage in the practice of midwifery in this state, except as herein provided.
MT	No	Yes - Statute 1999; provides a temporary, specialized, telemedicine or full license	(MT Code Ann. 37-3-342 thru 349) Rules adopted Oct 2000. See also 37-3-103; 301;306
NE	Yes – Statute, 1998; need to obtain a locum tenens, temporary educational, visiting faculty, or full medical license	No	(R.R.S. Neb. 71-1, 102) 38-2025 Medicine and Surgery Practice Act

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
NV	No	M - Yes - Statute 2001; obtain special volunteer, locum tenens, restricted, temporary, or full medical license. Grants a special purpose license to practitioners who are fully licensed in another state to practice telemedicine in NV	M - (NV. Rev. Stat. Ann. 630.020, 630.160, 630.261)
	No	O - Yes	No
NH	No	Yes - Exceptions. Not FSMB model. Can obtain a temporary training, special, courtesy or full medical license	<p>329.12 VI. A special licenses containing conditions, limitations, or restrictions, including licenses limited to specific periods of time in accordance with rules adopted under RSA 329:9, VIII may be issued.</p> <p>VII. A courtesy licenses authorizing the practice of medicine under limited conditions as defined may be issued. Courtesy licenses shall not exceed 100 days and shall be limited in location. All applicants shall hold an active, unrestricted license in another state and meet the same character qualifications as other licensees.</p> <p>VIII. A license authorizing the practice of medicine limited to administrative medicine for physicians whose practice does not include the provision of clinical services to patients may be issued.</p>

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
NJ	Yes - Need to obtain a full medical license	No	<p>45:9-6; 45:9-21. Certain Persons and Practices Exempted from Operation of Chapter</p> <p>The prohibitory provisions of this chapter shall not apply to the following:</p> <p>a. A commissioned surgeon or physician of the regular United States Army, Navy, or Marine hospital service while so commissioned and actively engaged in the performance of his official duties. This exemption shall not apply to reserve officers of the United States Army, Navy or Marine Corps, or to any officer of the National Guard of any state or of the United States;</p> <p>b. A lawfully qualified physician or surgeon of another state taking charge temporarily, on written permission, of the practice of a lawfully qualified physician or surgeon of this State during his absence from the State, upon written request for permission so to do. Before such permission is granted and before any person may enter upon such practice he must submit proof that he can fulfill the requirements demanded in the other sections of this article relating to applicants for admission by examination or endorsement from another state. Such permission may be granted for a period of not less than two weeks nor more than four months upon payment of a fee of \$50. Permissions may be for further periods of two weeks to four months but not to exceed in the aggregate one year;</p> <p>c. A physician or surgeon of another state of the United States and duly authorized under the laws thereof to practice medicine or surgery therein, if such practitioner does not open an office or place for the practice of his profession in this State;</p> <p>d. A person while actually serving as a member of the resident medical staff of any legally incorporated charitable or municipal hospital or asylum approved. Hereafter such exemption of any such resident physician shall not apply with respect to any individual after he shall have served as a resident physician for a total period of five years.</p>
NM	No	M - Yes - Statute 2001; need to obtain a full medical license, a license by endorsement, a temporary license, or a public service license.	M - (NM Stat. Ann. 61-6-20) Rules 16.10.2.11 61-6-11.1 Telemedicine License

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
NY	Yes - Statute; need to obtain limited or full medical license.	No	(NYCLS Educ. 6522)
NC	Yes - Statute 1997, 2001 (SB 118); need to obtain a resident's training, limited volunteer, special purpose, medical school faculty or full medical license.	No	(NC Gen. Stat. 90-18) -Board does provide for an expedited license if eligibility requirements are met
ND	Yes - Statute 1999; need to obtain a full medical license; physicians licensed in other states may temporarily practice in ND without first obtaining a license in four limited circumstances. Licensure by endorsement also available.	No	(ND Cent. Code 43-17-34) 1. As a member of an organ harvest team; 2. On board an air ambulance and as a part of its treatment team; 3. To provide one-time consultation or teaching assistance for a period of not more than twenty-four hours; or 4. To provide consultation or teaching assistance previously approved for charitable organizations.
OH	No	Yes - Not FSMB model; can be granted licensure through the state's exception statute: by obtaining a limited pro bono registration, locum tenens registration, or full medical license	(ORC Ann. 4731.41) § 4731.29. Admission of persons licensed in another state, by national board or by Canada (A) When a person licensed to practice medicine and surgery or osteopathic medicine and surgery by the licensing department of another state, a diplomat of the National Board of Medical Examiners or the National Board of Examiners for Osteopathic Physicians and Surgeons, or a licentiate of the Medical Council of Canada wishes to remove to this state to practice, the person shall file an application with the state medical board. A certificate may be issued to practice medicine and surgery or osteopathic medicine and surgery without requiring the applicant to submit to examination, provided the applicant submits evidence satisfactory of meeting the same age, moral character, and educational requirements individuals must meet under sections 4731.08, 4731.09, 4731.091 [4731.09.1], and 4731.14 of the Revised Code and, if applicable, demonstrates proficiency in spoken English in accordance with division (E) of this section.
OK	M - Yes - Need to obtain a temporary, special, special training, special volunteer or full medical license.	No	M - (OK Stat. Title 36 § 6802) 493.3. Licensure by Endorsement – Temporary and Special Licensure
OR	Yes - Statute, 1999; same requirements as full & unrestricted license per rules, August 2000)	No	(1999 OR Laws 549 (SB 600)) 677.135 to 677.141 Rules 847-025-000 to 847-025-0060
PA	M - Yes – Rules; need to obtain an interim limited, graduate, institutional, temporary, extraterritorial, or full medical license	No	M - (63 P.S. 422.10)

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
RI	Yes – Rules; need a limited license for postgraduate training or a full medical license.	No	No
SC	Yes - 1997 board position; Full medical license.	No	(SC Code Ann. 40-47-20 (36)(e))
SD	No	Yes - Full medical license (consultation exception)	(SD Codified Laws 36-4-41) ARSD 20:47:03:04 36-4-41. Practice of medicine or osteopathy in South Dakota while located outside of state. Any nonresident physician or osteopath who, while located outside this state, provides diagnostic or treatment services through electronic means to a patient located in this state under a contract with a health care provider licensed under Title 36, a clinic located in this state that provides health services, a health maintenance organization, a preferred provider organization, or a health care facility licensed under chapter 34-12, is engaged in the practice of medicine or osteopathy in this state. Consultation between a nonresident physician or osteopath and a licensee under this chapter is governed by § 36-2-9. SL 1995, ch 212; SL 2002, ch 175, § 2. 36-2-9. Consulting practitioners from other states exempt. Nothing contained in this chapter shall be construed to apply to any licensed person practicing any of the healing arts outside of this state when in actual consultation with a licensed practitioner of the healing arts in this state.
TN	No	M - Yes - Rule 1998; full medical license or a special telemedicine license	M - Rule 0880-2-.16 (TN Code Ann. § 63-6-201)
	No	O - Yes - Rule 2000	O - (TN Code 1050-2-17)

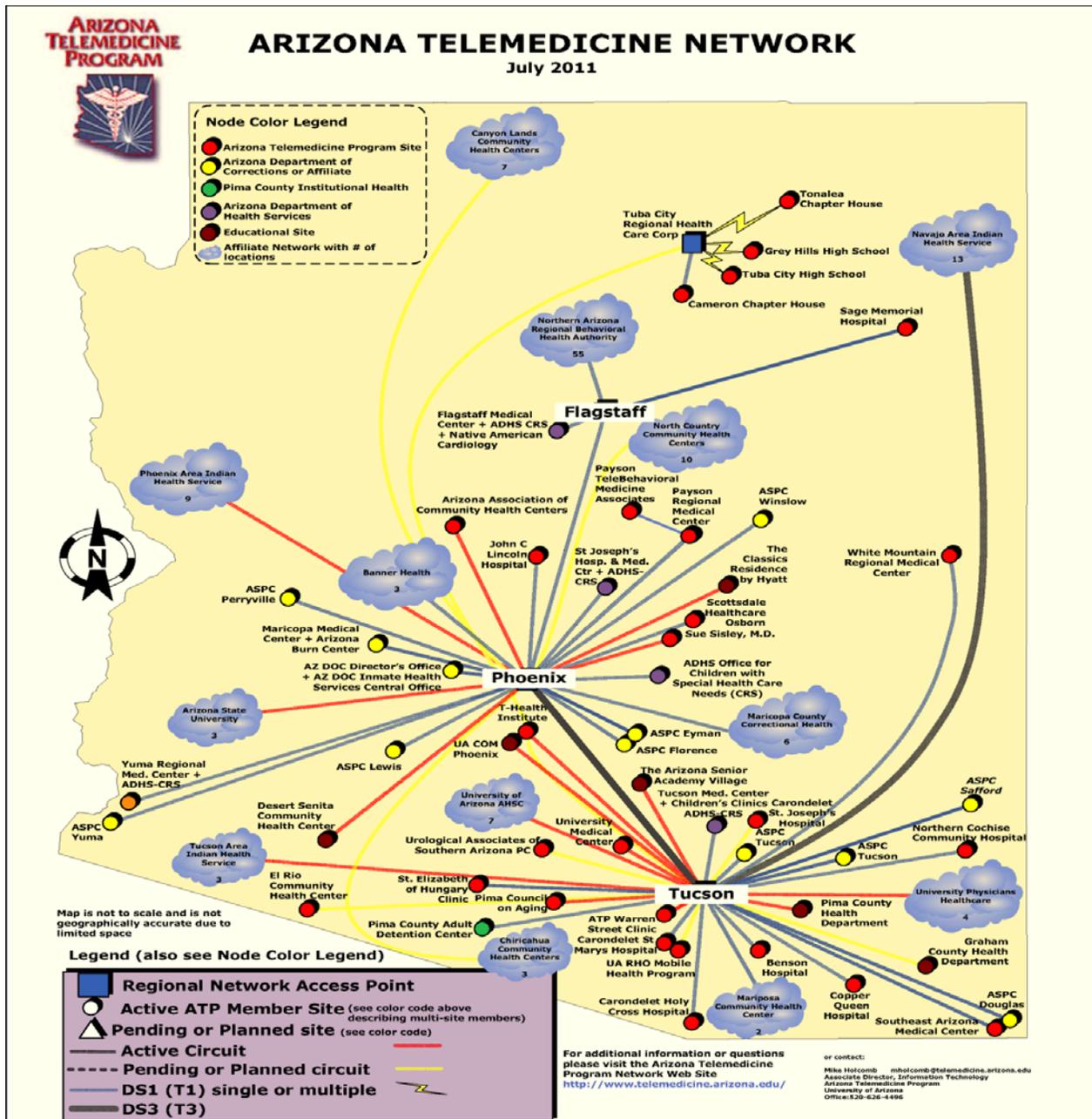
State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
TX	No	Yes - Statute 1997	<p>(22 TX Adm. Code 174.1 thru 174.12) New rule adopted 4-27-03 that includes Use of the Internet in Medical Practice.</p> <p>Effective 10/17/10: §172.12. Telemedicine License 22 TAC 174.5. <i>Notice to Patients</i></p> <p>(a) Privacy Practices.</p> <p>(1) Physicians that communicate with patients by electronic communications other than telephone or facsimile must provide patients with written notification of the physicians' privacy practices prior to evaluation or treatment. In addition, a good faith effort must be made to obtain the patient's written acknowledgement, including by e-mail, of the notice.</p> <p>(2) The notice of privacy practices shall include language that is consistent with federal standards under 45 CFR Parts 160 and 164 relating to privacy of individually identifiable health information.</p> <p>(b) Limitations of Telemedicine. Physicians who use telemedicine medical services must, prior to providing services, give their patients notice regarding telemedicine medical services, including the risks and benefits of being treated via telemedicine, how to receive follow-up care or assistance in the event of an adverse reaction to the treatment or in the event of an inability to communicate as a result of a technological or equipment failure. A signed and dated notice, including an electronic acknowledgement, by the patient establishes a presumption of notice.</p> <p>(c) Necessity of In-Person Evaluation. When, for whatever reason, the telemedicine modality in use for a particular patient encounter is unable to provide all pertinent clinical information that a health care provider exercising ordinary skill and care would deem reasonably necessary for the practice of medicine at an acceptable level of safety and quality in the context of that particular medical encounter, then the distant site provider must make this known to the patient prior to the conclusion of the live telemedicine encounter and advise and counsel the patient prior to the conclusion of the live telemedicine encounter regarding the need for the patient to obtain an additional in-person medical evaluation reasonably able to meet the patient's needs.</p> <p>(d) Complaints to the Board. Physicians that use telemedicine medical services must provide notice of how patients may file a complaint with the Board on the physician's website or with informed consent materials provided to patients prior to rendering telemedicine medical services. Written content and method of the notice must be consistent with §178.3 of this title (relating to Complaint Procedure Notification).</p>

State	Requires Full and Unrestricted License	Other Licensure Options	Miscellaneous Action (Statute or Rule Citation)
UT	M - Yes - Statute 1998; however, exempts practitioners licensed in other states from the full licensure requirement, allowing them to practice medicine in UT for a limited duration of time for a specific event	No	M - (UT Code Ann. 58-31b-102)
	O - Yes	No	No
VT	M - Yes - Statute; full medical license	No	M - (26 V.S.A. 1314)
	O - Yes	No	No
VA	Yes - Statute; need full medical license, temporary medical license or volunteer medical license	No	(VA Code Ann. 54.1-2929)
WA	M - Yes - No person may practice or represent himself or herself as practicing medicine without first having a valid license to do so. 18.71.030 Exemptions: The practice of medicine by any practitioner licensed by another state or territory in which he or she resides, provided that such practitioner shall not open an office or appoint a place of meeting patients or receiving calls within this state.	No	M - (Rev. Code WA 18.71.021)
	O - Yes	No	No
WV	M - Yes - need a special, volunteer or full medical license	No	M - (W.V. Code 30-3-10)
	O - Yes	No	No
WI	Yes - Full Medical License	No	(WI Stat. 448.03)
WY	Yes - Rules; need to obtain a temporary, restricted, emeritus, volunteer, or full medical license. Exception to allow practitioners licensed in other states to practice without compensation.	No	WCWR 024-052-001 "Practicing medicine" does not apply to: (D) Any individual residing in and licensed to practice medicine in another state or country called into this state for consultation by a physician licensed to practice medicine in this state; Wyo. Stat. § 33-26-301 License required

Appendix B: Select Profiles of State Telemedicine Initiatives

Arizona

Arizona's Telemedicine Program, created by an act of the state legislature in 1996, was one of the first in the nation. The program is operated by the University of Arizona. The university designed the telecommunications system in a configuration that minimized telecommunications charges, installed all of the telecommunications equipment, and operates the entire network. The network spans the entire state and is linked to other telecommunication networks in Arizona.⁶¹



⁶¹ Arizona Telemedicine Program, July 2011 *Arizona Telemedicine Network*. Available at: <http://www.telemedicine.arizona.edu/network.cfm>.

The program offers clinical, educational and administrative services, as well as research supporting the end-to-end assessment of telemedicine—from video imaging, networks, picture archiving and communication systems to end-user equipment and appliances. The program charges a membership fee to participating providers on a sliding scale based upon services desired. One example of a clinical use case that has matured within the program, the Arizona Diabetes Virtual Center of Excellence (ADVICE), is a comprehensive program for diabetes prevention, assessment, and management. ADVICE offers a range of services, from training and education to tele-consultation with specialists.

The program also serves as an information clearinghouse and resource center for telemedicine in the state. A key responsibility is the oversight of grants applications. Participants in the Arizona Telemedicine Program, along with members of affiliated programs, have successfully competed for grants and contracts totaling over \$14 million.⁶² Of note, the program centralized the application process for rebates from the federal Universal Service Fund's Rural Health Care Program, which helps rural health care providers acquire telecommunications and Internet services. To date, Arizona providers have received over \$2,600,000 in rebates to support telemedicine.⁶³

Georgia

Georgia's statewide telemedicine program is overseen by the Georgia Partnership for Telehealth, a charitable nonprofit corporation funded through public and private sources.^{64, 65} It is based on the Open Access Network, a web of access points formed by leveraging existing telemedicine programs in the state and creating access points at additional locations. The project's goal is to allow all Georgians to have access to specialty consultations without having to travel more than 30 miles from their homes. The program includes centralized scheduling of specialist consultants using a website that tracks open appointment times for panel specialists across the state, so that consults can be requested and scheduled more efficiently. The program had over 25,000 patient encounters in 2010 and is expected to double in 2011. More than 175 specialists and health care providers currently participate, representing over 40 specialties. Georgia's prison system makes heavy use of the technology; officials say it saves the department over 30 percent in medical costs.⁶⁶

Telemedicine legislation in Georgia includes the Coverdell-Murphy Act of 2008, which required the state to establish a network of primary and "remote" stroke treatment centers, and O.C.G.A. § 33-24-56.4 (2011), which defines telemedicine and mandates reimbursement for telemedicine visits by private insurers.^{67, 68} O.C.G.A. § 33-24-56.4 states, "It is the intent of the General Assembly to mitigate geographic discrimination in the delivery of health care by recognizing the application of

⁶² Weinstein, Ronald S, July 2011. Arizona Telemedicine, *Telemedicine Economics*. Available at: http://www.telemedicine.arizona.edu/program/Telemed_newsltr_Smr041.pdf.

⁶³ Universal Service Administrative Company. Available at: <http://www.usac.org/rhc/>. For detailed information on eligible geographic areas in Maryland see: <http://usac.org/rhc/tools/rhcdB/Rural/2005/search.asp>.

⁶⁴ Georgia Partnership for Telehealth, July 2011. *Our Mission*. Available at: <http://www.gatelehealth.org/index.php/about/our-mission/>.

⁶⁵ Georgia Partnership for Telehealth, July 2011. *About GPT*. Available at: <http://www.gatelehealth.org/index.php/about/about-gpt/>.

⁶⁶ Georgia Partnership for Telehealth, July 2011. Available at: <http://www.gatelehealth.org/>.

⁶⁷ Georgia SB 549 (2008) amending O.C.G.A. § 31-11-110 (2011)

⁶⁸ O.C.G.A. § 33-24-56.4 (2011)

and payment for covered medical care provided by means of telemedicine.”⁶⁹ Providers are required to be fully licensed in the state of Georgia in order to participate in telemedicine.

Maine

Maine's telemedicine efforts are led by Maine Telemedicine Services (MTS), a not-for profit agency associated with the Regional Medical Center of Lubec. It partners with smaller networks throughout the state, such as the Eastern Maine Health Care Systems Telehealth Network and the MaineHealth eICU VitalNetwork, as well as state governmental entities such as the Departments of Health and Human Services and Corrections. The network includes over 300 facilities throughout the state.⁷⁰ It uses video conferencing for multiple purposes, including administrative, educational, social service and clinical telemedicine. In addition to live video conferencing, all video units within the network have the capability of running PowerPoint, VHS and DVD presentations to other sites.

MTS is spearheading a number of innovative projects to explore and expand the use of telemedicine. These include mental health and psychiatry efforts, expanding telemedicine access among correctional and youth correctional facilities in the state, judicial videoconferencing, telepharmacy, home telehealth care (especially mental health care for elders with depression and anxiety), island health care (connecting residents of remote islands along the coast to specialists), video relay (American Sign Language) interpreting services, health care education for doctors and nurses (such as Grand Rounds CME), state telemedicine infrastructure development, and helping other states plan telemedicine programs statewide.⁷¹ Working collaboratively, MTS, state government and other health care leaders are attempting to build an environment in Maine that is broadly conducive to telemedicine, including favorable reimbursement and regulations.

In January 2010, the state adopted Maine Revised Statute Title 24-A §4316 requiring private insurers to reimburse services provided via telemedicine. It specifies that an insurance payer must cover services that would be reimbursed if they were provided in person, and that patient cost-sharing for telemedicine services cannot be higher than it would be for the same service in person. Maine's Medicaid program, MaineCare, has covered telemedicine services since 2000, and telemedicine is well recognized in the current Maine State Health Plan. The Governor's Office and the Maine Health Access Foundation, an independent charitable corporation that has provided over \$40 million in grants and program support, have been critical partners to the MTS in the expansion of telemedicine across Maine.

New Mexico

New Mexico has been piloting telemedicine initiatives for nearly a decade.⁷² The University of New Mexico's Project Extension for Community Health care Outcomes (ECHO) program, which hosted the hepatitis C study described in the Literature Review section of this report, encourages collaboration between specialists and rural providers to enable patients to receive specialized health care from professionals in their own communities. The project enables videoconference

⁶⁹ Ibid.

⁷⁰ Maine Telemedicine Services, *About*, July 2009. Available at: <http://mainetelemedicine.org/index.php/about/>.

⁷¹ Maine Telemedicine Services, *Recent and Current Healthways/MTS Initiatives*, July 2011. Available at: <http://mainetelemedicine.org/index.php/new/current-mts-projects/>.

⁷² University of New Mexico School of Medicine Project ECHO *About Us*, July 2011. Available at: http://echo.unm.edu/about_us.shtml.

sessions for local primary care providers and specialists from the University of New Mexico. The rural providers can present their patients' cases and receive treatment advice from the specialists. According to Project ECHO, "for providers, co-management of the often lengthy and involved treatments brings added depth and technical competencies and reduces professional isolation. With continued involvement providers become highly skilled in the treatment of these chronic and complex diseases, thus creating a center of excellence in their community."⁷³

The New Mexico Telehealth Act,⁷⁴ encourages health care providers to utilize telemedicine services to better serve rural areas. However, there is no current mandate to provide coverage or reimbursement for these services. "The delivery of health care via telehealth is recognized and encouraged as a safe, practical and necessary practice in New Mexico. No health care provider or operator of an originating site shall be disciplined for or discouraged from participating in telehealth pursuant to the New Mexico Telehealth Act."⁷⁵ Members of the state's legislature are currently seeking to pass a new law mandating that private insurers reimburse for telemedicine in the state; currently Medicaid covers some telemedicine services. New Mexico Medicaid policy requires that an eligible provider be with the patient at the originating site during a telemedicine-enabled session. Services rendered by the originating-site provider are covered to the same extent as when the service is provided through a traditional, face-to-face meeting. Physicians who are licensed with the New Mexico Medical Board do not require additional special licensing to provide telemedicine services within the state.

A special telemedicine license is available to out-of-state physicians who wish to treat customers in New Mexico via telemedicine. When the originating site is in New Mexico and the distant site is outside New Mexico, the provider at the distant-site must be licensed for telemedicine to the extent required by New Mexico state law and regulation. In situations where the patient is receiving care on a Native American reservation, the distant-site provider must meet federal requirements for providing services to Indian health service facilities or tribal contract facilities.

Virginia

Telemedicine efforts in Virginia are led by the Virginia Telehealth Network (VTN) and the University of Virginia's Office of Telemedicine. UVA's Office of Telemedicine has facilitated visits with thousands of patients and providers in 32 different specialties since 1993.⁷⁶ It also provides distance learning for health care professionals. Recently, VTN has adopted a broader view of telemedicine in the larger context of e-health, including the transfer of images, ability to share electronic health records, provide consultations, information on disaster readiness, clinical research, providing for health education applications, and integrating electronic health records (EHRs) and telemedicine within its purview. The University of Virginia recently received a grant from the U.S. Health Resources and Services Administration to serve as a Mid-Atlantic Telehealth Resource Center covering the District of Columbia and six states: Virginia, Delaware, Kentucky, Maryland, North Carolina and West Virginia.

⁷³ University of New Mexico School of Medicine Project ECHO July 2011. *Working to Bring Specialty Healthcare to All People*, Available at: <http://echo.unm.edu/>.

⁷⁴ New Mexico Code § 24-25 (2009)

⁷⁵ New Mexico Code § 24-25-4 (2009)

⁷⁶ University of Virginia Office of Telemedicine, *Patients*, July 2011. Available at: <http://www.healthsystem.virginia.edu/pub/office-of-telemedicine/office-of-telemedicine/patients.html>.

These two organizations have partnered to form the Rural Health Care Pilot Project; in April 2011 they released a Request for Proposal for the Virginia Acute Stroke Telehealth (VAST) network. The vision for VAST is to design and implement a robust, secure, and sustainable telemedicine network that has sufficient scalable, high capacity-links communicating from the hubs to the cloud. The goal is to support health care applications of the end-to-end networks to allow for seamless and dynamic routing of data. Leaders intend for the VAST pilot program to produce a viable stroke model that can be implemented statewide.⁷⁷

Virginia Medicaid has reimbursed for some telemedicine services since 1995; a 2010 law requires all health insurers, health care subscription plans, and HMOs to offer coverage for telemedicine services.⁷⁸ Payers may not discriminate with regards to reimbursement levels, premium payments, etc. on the basis that a service is being provided via telemedicine. According to the law, reimbursable services include the use of interactive audio, video, or other electronic media for the purpose of diagnosis, consultation, or treatment.⁷⁹ Providers are required to be fully licensed in the Commonwealth of Virginia in order to participate in telemedicine. Virginia is in the process of selecting an organization to implement its statewide health information exchange (HIE), and it is requiring the incumbent to offer plans for synergy with the state's telemedicine initiatives. In order to comply with Virginia's telemedicine law, CareFirst BlueCross BlueShield, Maryland's largest commercial insurer has revised its medical policies on telemedicine across its mid-Atlantic coverage area, including Maryland.

While many states are implementing telemedicine programs and related legislation, the approaches have varied and are often homegrown in response to local needs. Still, principles for best practices and effective strategies are emerging. Most current state laws that require reimbursement for telemedicine are similar to Virginia's — they cover medical services provided synchronously via multimedia such as live video conferencing. Asynchronous or "store-and-forward" applications of technology—where, for instance, a video of a patient might be recorded and sent to a psychiatrist at a remote location for review later — are not reimbursable under current state laws. Commonly available technologies, such as e-mail and Skype are generally not accepted as media for reimbursable telemedicine services. Broadly, this approach is consistent with Medicare's policies for reimbursement, although Medicare fee-for-service requirements include geographic and service limitations (Medicare's approach is described later in this report). An important principle that most of the state laws have in common is that insurers may not create barriers to care or reimbursement solely because the care is being provided via telemedicine.

⁷⁷ Virginia Telehealth Network, *Virginia Acute Stroke Telehealth (VAST) Network*, July 2011. Available at: <http://ehealthvirginia.org/strokenetwork2.html>.

⁷⁸ § 38.2-3418.16 Code of Virginia. *Coverage for Telemedicine Services*. Available at: <http://lis.virginia.gov/cgi-bin/legp604.exe?101+ful+CHAP0222>.

⁷⁹ Ibid.

Appendix C: Environmental Scan of Telemedicine Initiatives in Maryland⁸⁰

Count	Project	Lead partner / Other partners	Date	Funding	Services	Technology	Barriers
1	Western Maryland Regional Medical Center	Western Maryland Regional Medical Center with Washington Hospital Center ; UM Cancer Center; Sheppard Pratt	Jan 2000	Absorbed Cost: \$18,000	Cardiology, Mental Health, EMS, Radiology	Desktop, interactive video	Reimbursement, inoperability, provider licensing
2	TeleBehavioral Services	Sheppard Pratt Health System with Worcester and Wicomico County Health Departments; Atlantic General Health Center	January 2005 - Present	Local funding. Some federal funding in the past through HRSA, USDA	Mental health diagnostics, medication management	Interactive video	Accessibility of broadband vendor in rural locations; provider licensing; staffing
3	Radiology Integrated Web Based PACS	Western Maryland Health System with Frostburg Medical Center	2005 - 2010 (Project complete)	Private nonprofit funding with some patient payers Annual: \$500,000	EMS, General Medicine, Radiology; Diagnostics and Imaging	Web based software	Funding
4	MAPSS Perinatal Telemedicine Project	University of Maryland School of Medicine/DHMH MCH with MAPSS/ St. Mary's Hospital, local health departments	2005 - Present	State (DHMH) grants. No third-party payer.	Provides patient management in OB/GYN and perinatal genetic counseling	Interactive video	Reimbursement of Medicaid; network security and time delays; expansion plans to other rural areas; provider licensing

⁸⁰ In 2010 the Maryland Rural Health Association was sub-contracted to inventory telemedicine projects in Maryland via an environmental scan (scan). The scan targeted 95 facilities including all Maryland acute care hospitals, Federally Qualified Health Centers, individual departments within the University of Maryland Medical System, the Johns Hopkins Health System and MedStar Health, as well as local health departments, state correctional institutions, and projects within the Maryland Department of Health and Mental Hygiene. Of this group, 30 facilities representing 53 different clinical sites responded. In addition, 12 of the 95 facilities reported having no involvement in telemedicine of any kind. In August 2011, the MHCC surveyed hospitals and included the results within the table. More information about the Maryland Rural Health Association and the scan is available online at: http://mdruralhealth.org/maryland_telehealth_survey.html.

Count	Project	Lead partner / Other partners	Date	Funding	Services	Technology	Barriers
5	Maryland Tele-psychiatry Network Includes sites of Pathways, Inc in SMC; Garrett LHD; Dorchester County Wellness Center; Maple Shade Youth and Family Services; Kent County's A. F. Whitsitt Center; Caroline Mental Health Clinic	Midshore Mental Health Systems With University of Maryland School of Medicine Department of Psychiatry; DHMH Mental Hygiene Admin.; Garrett County CSA; St. Mary's County (SMC) Dept. of Human Services	May 2008 Started delivering services Dec 2008 - Present	Federal (73%) and State (27%) grants Annual Funding: \$180,000 New COMAR 10.21.30 will reimburse Medicaid once CMS approves for some eligible sites	Provides mental health diagnostic and patient management	Interactive video	Firewalls to local health depts.; redundancy; reimbursement is partially getting solved but billing process (rates and codes) needs to get CMS approval for Medicaid federal match
6	Remote Access in Otolaryngology	Johns Hopkins Medicine with Johns Hopkins International	Sep 2008 - Sep 2009 (Project complete)	Private, non-profit funding; no third-party payer	Otolaryngology imaging, patient management, diagnostic services	Desktop software and robotics	Reimbursement and resources for remote access in receiving services
7	Verizon Emergency Department Robot Project	Johns Hopkins Medicine With Howard County General Hospital	Jan - Dec 2009 (Project complete)	Verizon Foundation Grant (Private) Project: \$125,000	Neurology and linguistic translation	Interactive video and robotics	Firewalls, interoperability, and reimbursement
8	Good Samaritan Hospital's National Burn Reconstruction	Good Samaritan Hospital/National Burn Reconstruction Center; U.S. Army Institute of Surgical Research Burn Center (San Antonio, TX)	2009 (Project complete)	Verizon Foundation Grant (Private) and Northrop Grumman Electrical Systems Project: 25K start up	Videoconferencing allowed plastic surgeon to visit with burn surgeons with and without patient interaction.	Desktop software and interactive video	Securing private connections
9	Maryland eCare	Maryland e-care (Hub at Christiania Hospital in Wilmington, DE) Atlantic General, Calvert Memorial, Union, St. Mary's hospitals; Civista Medical Center; Washington County Health System	Jun 2009 - Present	Partial grant from Maryland CareFirst; individual hospitals; no third party payer	Clinical critical care patient management and monitoring for Intensive Care Unit patients. Diagnostics, imaging, monitoring	Desktop software, interactive video, and web-based software	N/A

Count	Project	Lead partner / Other partners	Date	Funding	Services	Technology	Barriers
10	Pediatric Diagnostic Telemedicine Program	St. Mary's Hospital with Children's National Medical Center in Washington, D.C.	Jul 2009 - Present	Blended funding Annual Cost: \$20,000 Some reimbursement	Pediatric cardiology and neurology services via diagnostic and imaging	Desktop and web-based software	Time delays, Funding
11	Maryland Telehome Care Network	University of Maryland School of Medicine; Garrett Co. Health Department; Chesapeake-Potomac Home Health Agency (delivery sites) Eastern Shore AHEC; Western Maryland AHEC (implementation partners)	Oct 2009 - Present	Initial Pilot supported by Cigarette Restitution Fund Other Tobacco Related Diseases in partnership with Garrett County Health Department Home Health Agency Federal grants (1M)(NIH/ARRA funds)	Chronic disease management plans would like to expand the network to other rural areas of the state.	Interactive video, handheld wireless monitoring devices	Last Mile; Reimbursement of Private Payers; State Leadership
12	Bridge to Hope	Mid Shore Mental Health Systems in partnership with Allegany County Health Department	Dec 2009 - Present	\$40,000 state Maryland Community Health Resources Commission	Mental Health and Addictions Treatment	Interactive video	Interoperability of Equipment and firewalls of Health Dept.
13	Pediatric Critical Care	Johns Hopkins Medicine with Howard County Hospital	2009 - Present	Private (\$5,000 Annually)	Pediatric Emergency Medicine	Patient Management with video and web based software	Reimbursement and physician utilization, last mile
14	Telehomecare for Community Dwelling African Americans	Johns Hopkins School of Nursing with Johns Hopkins Congestive Heart Failure Clinic	Apr 2010 - Present	Federal NIH grant. No reimbursement; Annual cost: \$100,000	Cardiology and chronic disease management; diagnostic, imaging, patient management	Intel HealthGuide Tele-monitoring/ Tele-homecare Device	Financial planning; Tele-connectivity, low computer literacy amongst some patients
15	University of Maryland Greenebaum Cancer Center (UMGCC) Telemedicine Program	University of Maryland Medical System Greenebaum Cancer Center	Apr 2010	Grants. Professional fees, where applicable. No reimbursement; Annual Cost: \$200,000	Cardiology, Emergency, mental health, neurology, OB/GYN, Genetic Counseling, Critical Care monitoring	Desktop, wireless, interactive video, robotics, web-based	Security, time delay

Count	Project	Lead partner / Other partners	Date	Funding	Services	Technology	Barriers
16	Assistive Technology Research Center at NRH	National Rehabilitation Hospital (Washington, D.C.) provides services in the DC/Baltimore region (Medstar)	Fall 2010	Federal grant (100%) No Reimbursement Annual: \$150,000	Mental health, therapy-speech language pathology; patient monitoring	Desktop software	Financial, staff, technology, reimbursement
17	Dermatlas-consult.org	Johns Hopkins Division of Pediatric Dermatology	Current	Looking for funding pending negotiations with some third party payers	Dermatology consults	Consultation to Primary Care Providers with web-based software	Physician utilization; reimbursement of Medicaid and private payers
18	Maryland Telestroke	University of Maryland Medical System and Johns Hopkins Medicine	2011	Private, nonprofit funding; party payer	Neurology diagnostic, imaging, and patient monitoring	Web-based, handheld wireless monitoring devices, video	Licensing of providers and ongoing funding
19	Internal Telemedicine Initiative	Holy Cross Hospital	Current	Internally funded	Diagnostic (including radiology and dermatology) emergency (including stroke), imaging (planned), patient remote monitoring (planned)	Desktop software, interactive video, web-based software	None provided
20	Internal Tele-Psych Initiative	Doctors Community Hospital	Current	Internally funded	Psychiatry	Interactive video, web-based software	None provided
21	Internal Telehealth Initiative	Carroll Hospital Center	Current	Internally funded	Patient home/ remote monitoring, stroke	Handheld wireless monitoring devices	None provided
22	ICU management of critically ill patients in an urban underserved hospital	Bon Secours Hospital of Baltimore and R Adams Cowley Shock Trauma Center	2004 - Present	Federal start up grant	Remote management of critically ill patients when staff is off site	Semi-autonomous, remote controlled mobile device with interactive video	Payment for physician services

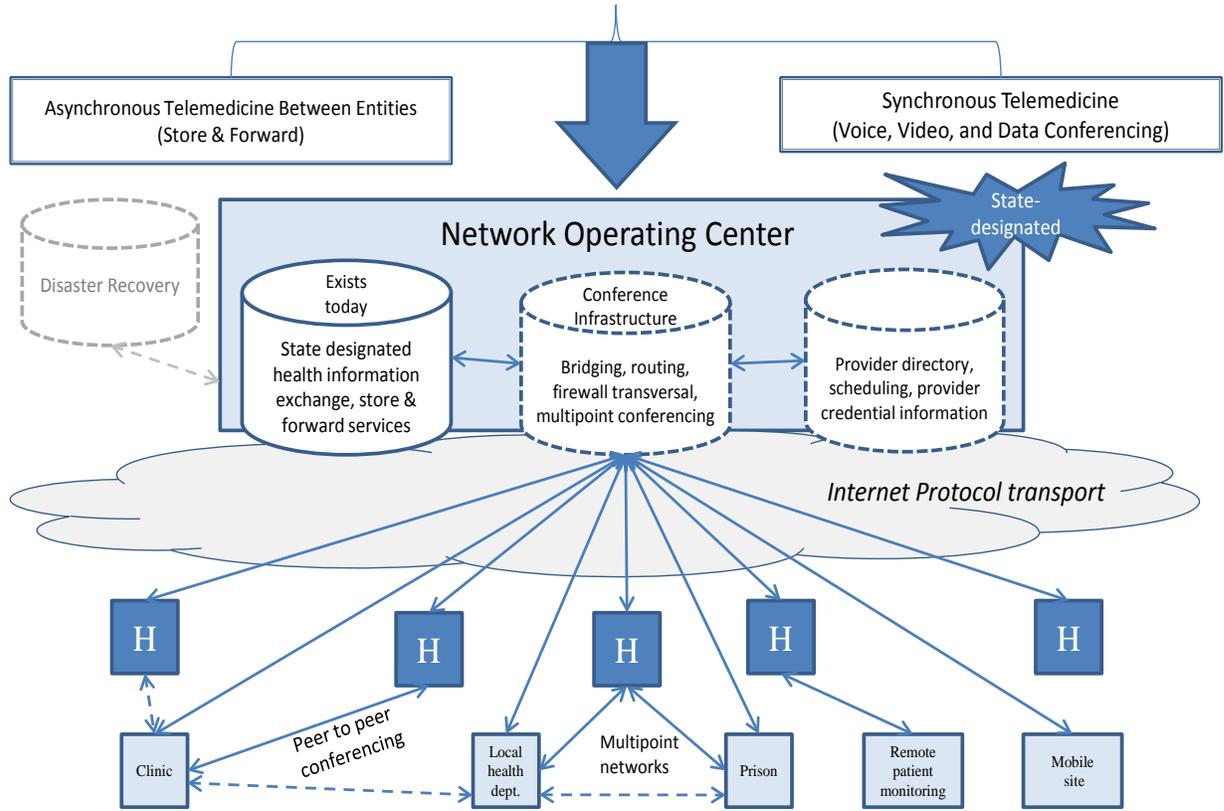
Appendix D: Clinical Scenarios from the Clinical Advisory Group⁸¹

1. Mary M. is a 28 year-old working mother from the Eastern Shore who experienced increasing difficulty caring for her newborn baby while suffering from extreme feelings of inadequacy and guilt. She became increasingly depressed and sought care from her primary care physician. Psychiatrists are relatively scarce in Mary's area. Through a telemedicine consultation set up by her physician in his office, Mary was diagnosed by a psychiatrist in Baltimore with post-partum depression and prescribed an antidepressant and scheduled for continued counseling through the local mental health center. As she steadily improved, the psychiatrist continued to monitor Mary and her care through periodic telemedicine consultations. Mary did not have to travel the long distance required to receive the care of the psychiatrist, and she was able to continue to care for child and continue working.
2. John P. is a 57 year-old diabetic with hypertension who experienced the onset of right-sided weakness and difficulty speaking. His symptoms resolved, and then returned several times over the next two hours, so he called 911 and he was transported to a community hospital that was 10 minutes from his suburban home. At the hospital, he was quickly assessed by the triage nurse and taken for a CT scan. The emergency physician made a diagnosis of acute stroke, and had several questions about the CT scan results and the best management of John's condition given the several hours of delay before diagnosis. Because time was of the essence and there was no neurologist available at the hospital, via a telemedicine link, a neurologist at one of the academic centers in Maryland reviewed the CT scan, observed and interviewed the patient, and discussed the case with the emergency physician. It was then decided to treat John P. with fibrinolytics. John P. experienced an excellent neurologic recovery and has received follow-up care that has reduced the threat of another stroke.
3. Sarah G. is a 45 year-old Baltimore City resident with a number of medical problems, including hypertension and diabetes. She has been admitted to the hospital and was seen in the emergency department multiple times a year in the past to control both her diabetes and hypertension. After her most recent admission, she was enrolled in a new program that provided her with additional patient education and a home health nurse who made regular visits initially. Once her condition was stabilized, home health personnel continued to monitor Sarah through a telemedicine link to her home. They were able to monitor her blood pressure and blood sugars three times a week and reduce the number of follow-up visits as her condition continued to improve. Sarah has continued to see her primary care physician, has not required any further hospital admissions or emergency department visits in the past 18 months, and is feeling much better.

⁸¹ The Clinical Advisory Group developed a set of clinical scenarios which are intended to illustrate the impact telemedicine can have on ordinary citizens.

Appendix E: Statewide Telemedicine Network Architecture

Maryland Statewide Telemedicine Network: Conceptual Architecture



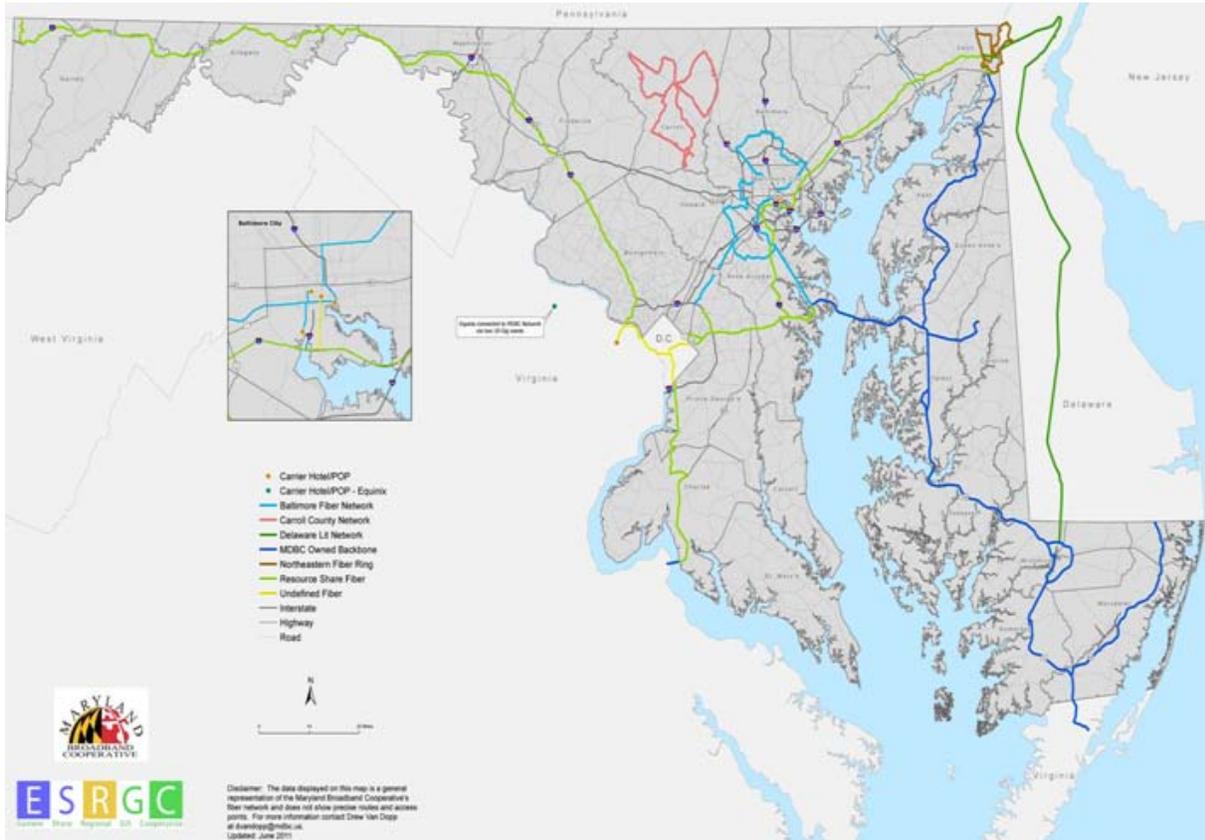
Appendix F: Core Technology Standards

The American Telemedicine Association has published core technology standards which may be used as a guide by organizations selecting and implementing telemedicine technology:

1. Organizations shall ensure that equipment sufficient to support diagnostic needs is available and functioning properly at the time of clinical encounters.
2. Organizations shall have strategies in place to address the environmental elements of care necessary for the safe use of telehealth equipment.
3. Organizations shall comply with all relevant safety laws, regulations, and codes for technology and technical safety.
4. Organizations shall have infection control policies and procedures in place for the use of telehealth equipment and patient peripherals that comply with organizational, legal, and regulatory requirements.
5. Organizations providing telehealth services shall have policies and procedures in place to comply with local legislated and regulatory rules for protection of patient health information and to ensure the physical security of telehealth equipment and the electronic security of data.
6. Organizations shall have appropriate redundant systems in place that ensure availability of the network for critical connectivity.
7. Organizations shall have appropriate redundant clinical video and exam equipment for critical clinical encounters and clinical functions.
8. Organizations shall meet required published technical standards for safety and efficacy for devices that interact with patients or are integral to the diagnostic capabilities of the practitioner when and where applicable.
9. Organizations providing telehealth services shall have processes in place to ensure the safety and effectiveness of equipment through on-going maintenance.⁸²

⁸² American Telemedicine Association, September 2007. *Core Standards for Telemedicine Operations*. Available at: http://www.americantelemed.org/files/public/standards/CoreStandards_withCOVER.pdf.

Appendix G: Maryland Broadband Cooperative Network 2011⁸³



⁸³ Maryland Broadband Map. Available at: <http://www.mdbroadbandmap.org/Map.aspx>.

Appendix H: Glossary

Telemedicine:

As currently defined in COMAR 10.32.05: the practice of medicine from a distance, in which intervention and treatment decision and recommendations are based on clinical data, documents, and information transmitted through telecommunications systems.

Telehealth:

Often used as a synonym for telemedicine, and also includes non-clinical practices such as continuing medical education and nursing call centers (American Telemedicine Association). The use of telecommunication techniques for the purpose of providing telemedicine, medical education, and health education over a distance.

Telecare:

Telecare is a term given to offering remote care of elderly and vulnerable people, providing the care and reassurance needed to allow them to remain living in their own homes. Continuous, automatic and remote monitoring to manage the risks associated with independent living (American Telemedicine Association).

Telelearning:

A telelearning system facilitates the provision of education and training services to health care professionals or patients. It is typically a room-based videoconferencing system with some additional attachments, such as a scanner, VCR, a document camera or a computer (American Telemedicine Association).

Telementoring:

The use of audio, video, and other telecommunications and electronic information processing technologies to provide individual guidance or direction. An example of this help may involve a consultant aiding a distant clinician in a new medical procedure (American Telemedicine Association).

Telemonitoring:

The process of using audio, video, and other telecommunications and electronic information processing technologies to monitor the health status of a patient from a distance (American Telemedicine Association).

Telepresence:

The method of using robotic and other instruments that permit a clinician to perform a procedure at a remote location by manipulating devices and receiving feedback or sensory information that contributes to a sense of being present at the remote site and allows a satisfactory degree of technical achievement. For example, this term could be applied to a surgeon using lasers or dental hand pieces and receiving pressure similar to that created by touching a patient, so that it seems as though the patient is actually present, permitting a satisfactory degree of dexterity (American Telemedicine Association).

