TELEHEALTH

Start-Up and Resource Guide

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Telligen®
Health Information Technology
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gpTRAC
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Resource & Assistance Center

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Introduction

This start-up and resource guide was created in partnership between Telligen and gpTRAC, the Great Plains Telehealth Resource and Assistance Center. It is intended to provide an overview and framework for implementing telehealth in critical access hospitals and rural areas. It is also intended to point the reader to reliable and informative resources for learning about telehealth and the organizations that support the use of telehealth in various ways.

With many excellent organizations and resources available, we envisioned this guide as a starting point and way of directing the reader to the appropriate resource for his/her specific purpose. It could be used as a reference for new efforts, ongoing telehealth programs, or even included in orientation for new staff. It is the hope of Telligen and gpTRAC that this guide will especially assist those considering starting up a telehealth program in their facilities. Substantial research went into the development of this guidebook. Numerous resources are highlighted, including the American Telemedicine Association, gpTRAC, the Center for Telehealth and e-Health Law, the California Telehealth Resource Center (CTRC), who we would like to thank for their permission to use many of their toolkits and best practices in this guide. We would also like to thank staff members interviewed at several facilities in Iowa and Colorado who helped identify barriers and successes encountered in their journey of implementing telehealth. The following facilities were interviewed:

- Clarke County Hospital, Osceola, Iowa
- Yuma District Hospital, Yuma, Colorado
- Centura Health, Denver, Colorado
- Colorado Access, Denver, Colorado

The information and links in this guide are current as of the date of its publication. As with many other health and technology related topics, information and resources are constantly changing and evolving. It is possible that some resources will be updated or moved from the location specified in the links provided. However, we expect that most resources can still be located by contacting the organization associated with specific resource, should the information associated with the link not appear when clicked.

What is Telehealth?

Telehealth is the use of digital technologies to deliver medical care, health education, and public health services by connecting multiple users in separate locations. Telehealth encompasses a broad definition of technology-enabled health care services. Telehealth includes telemedicine (diagnosis and treatment of illness or injury – see detailed description below), and services such as assessment, monitoring, communications, prevention and education. It involves a broad range of telecommunications, health information, videoconferencing, and digital image technologies. The National Consortium of Telehealth Resource Centers finalized a Telehealth Definition Framework to help policy makers, practitioners, payers, and the public understand how to accurately discuss "telehealth" and its key components. The consortium consists of the twelve federally designated regional centers and two national telehealth resource centers (TRCs).

The full definition framework can be found here: http://www.telehealthresourcecenter.org/sites/main/files/file-attachments/telehealth_definintion_framework_for_trcs_1.pdf.

What is Telemedicine?

The American Telemedicine Association (ATA) defines telemedicine as the use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status. Telemedicine includes a growing variety of applications and services using two-way video, smart phones, wireless tools and other forms of telecommunications technology. Starting over forty years ago with demonstrations of hospitals extending care to patients in remote areas, the use of telemedicine has spread rapidly and is now becoming integrated into the ongoing operations of hospitals, specialty departments, home health agencies, private physician offices, as well as consumer's homes and workplaces.

Telemedicine is not a separate medical specialty. Products and services related to telemedicine are often part of a larger investment by health care institutions in either information technology or the delivery of clinical care. Even in the reimbursement fee structure, there is usually no distinction made between services provided on site and those provided through telemedicine and often no separate coding required for billing of remote services. ATA has historically considered telemedicine and telehealth to be interchangeable terms, encompassing a wide definition of remote healthcare. Patient consultations via video conferencing, transmission of still images, e-health including patient portals, remote monitoring of vital signs, continuing medical education, consumer-focused wireless applications and nursing call centers, among other applications, are all considered part of telemedicine and telehealth.

While the term telehealth is sometimes used to refer to a broader definition of remote healthcare that does not always involve clinical services, ATA uses the terms in the same way one would refer to medicine or health in the common vernacular. Telemedicine is closely allied with the term health information technology (HIT). However, HIT more commonly refers to electronic medical records and related information systems while telemedicine refers to the actual delivery of remote clinical services using technology.

The Dynamics of Telehealth

Telehealth clinical services (or telemedicine) are currently delivered in three major ways:

- Video conferencing, which is used for real-time patient-provider consultations, provider-to-provider discussions, and language translation services.
- Remote patient monitoring, in which electronic devices transmit patient health information to health care providers.

Store & forward technologies, which electronically transmit pre-recorded videos and digital images, such as X-rays, video clips and photos, between primary care providers and medical specialists. More information: http://cchpca.org/what-is-telehealth

Health education can also be delivered in a similar manner and includes a broad range of activities, such as classes, patient portals and online discussion forums for patients, and training programs for all levels of health professionals. These services can be live interactive video with multiple users communicating in real time, or pre-recorded on-demand video streaming that can be downloaded to computers or digital devices. Public health services include disaster management systems, which can expand the capacity of local emergency medical providers, and pandemic/epidemic public communications activities.

Telehealth technologies can be transmitted a number of different ways.

These include:

- Encrypted Internet connections.
- Major broadband networks, such as the California Resource Network which provides dedicated circuits for network users. These networks deliver secure, private data transmission, explicit quality of service, and prioritization of emergency medical communications. They allow all network users to connect with each other, and to connect with non-network users via the public Internet. These networks involve large numbers of users, and can be easily expanded to accommodate new users.
- High-speed telecommunications lines, which allow dedicated secure connections to other sites with similar connectivity.
- Private point-to-point broadband connections, which provide secure transmissions, but unlike broadband networks, connect specific facilities to one another.
- Patient monitoring centers, which receive transmissions from at-home and other remote measurement devices.
- Single-line telephone and video lines, which connect providers with patients at home.

Why Is Telehealth Important?

Telehealth technologies can help achieve health care's "triple aim", developed by the Institute for Healthcare Improvement, of improved patient outcomes and access to care, and cost savings to the health care system.

Telehealth provides valuable tools that can improve health outcomes and access to care, and make health care delivery systems more efficient and cost-effective. Telehealth can deliver important medical services where they are needed most, and remove barriers of time, distance, and provider scarcities. This includes remote, rural areas and medically underserved urban communities. For example:

- Since its inception in 2009, eEmergency (a service of Avera eCare, which supports 675 rural clinicians in the central US, including Iowa, Minnesota, Nebraska, North Dakota, South Dakota) has served more than 15,000 patients at 70 locations through two-way video interaction or transfer assistance. Because of eEmergency care, 2,001 patients who would have transferred were able to receive care in their own communities. Transfers avoided because of eEmergency have saved more than $15.8 million in transfer costs. http://www.avera.org/ecare/eemergency/
- 237,221,884 kilometers (147,402,844.886 miles) of patient travel was avoided by using Telemedicine per the Ontario Telemedicine Network (OTN) in their 2012-13 Annual Report. http://otn.ca/sites/default/files/otn-annual-report-2012-13.pdf
- The Carolina HealthCare system successfully reduced hospital readmissions for Advanced Heart Failure Patients using basic video conferencing and a peripheral stethoscope as part of their program to ensure patients living far from the hospital, necessitating significant travel for follow-up. During the 6 month pilot June through December 2013, 60 new patients were enrolled in the virtual clinic and 165 virtual encounters occurred. The 30-day all cause readmission rate at CMC-L has decreased from 19.39 % in 2010 to 9.82 % in 2013. http://www.americantelemed.org/about-telemedicine/telemedicine-case-studies/case-study-full-page/carolinas-healthcare-system-successfully-reducing-hospital-readmissions-for-advanced-heart-failure-patients#.VFlAM1eNPV4

Telehealth Studies of Interest

There are several studies that demonstrate the impact of telehealth. Some of them evaluate the impact of telehealth on lowering healthcare costs while others look at the business case for telehealth. In terms of the clinical impact of telehealth, there are many reports that highlight the clinical benefits of increased access to care, which telehealth can provide.

Positive Outcomes

The impact of telehealth technologies can be significant for patients and facilities. Here are examples of improvements in care and outcomes for patients, made possible through telehealth services:

- Efficacy of telemedicine for stroke
  - http://www.ncbi.nlm.nih.gov/pubmed/22400970

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- Beacon trial reduced readmissions of heart patients to 3% using home video conferences
  - http://medcitynews.com/2012/09/beacon-trial-reduced-readmits-of-heart-patients-to-3-using-home-video-conferences/
- A Multicenter Study of ICU Telemedicine Reengineering of Adult Critical Care
  - http://journal.publications.chestnet.org/article.aspx?articleid=1788059
- Impact of Tele-ICU on Patient Outcomes
  - http://www.ruralhealth.va.gov/docs/issue-briefs/Impact_of_Tele-ICU_on_Patient_Outcomes.pdf
- Comparing Virtual to Traditional Consults
  - http://www.biomedcentral.com/content/pdf/1472-6947-12-65.pdf
- Effects of Telepsychiatry on the Doctor-Patient Relationship
  - http://primarypsychiatry.com/effects-of-telepsychiatry-on-the-doctor-patient-relationship-communication-satisfaction-and-relevant-issues/
- Increasing Access to Chronic Disease Self-Management Programs in Rural and Remote Communities Using Telehealth
  - http://online.liebertpub.com/doi/pdfplus/10.1089/tmj.2012.0197
- Patient Story - Video (CTeL)
  - http://player.vimeo.com/video/41772681
- School-based Telehealth Program Summary
  - http://crhi.org/MY-Health-e-Schools/index.html

Note: *The inclusion of these links does not imply endorsement or recommendation of these products/services. These are being shared as examples of successful telehealth programs/services.*

Other Studies:

- Cost-Effectiveness of Hub-and-Spoke Telestroke Networks for the Management of Acute Ischemic Stroke From the Hospitals' Perspectives
  - http://circoutcomes.ahajournals.org/content/early/2012/12/04/CIRCOUTCOMES.112.967125.abstract?sid=32ed2d56-9130-47da-9816-6003392aca26
- Deloitte: Global eVisits to reach 100 million by year's end (from FierceHealthIT, 8/12/14)
  - http://www.fiercehealthit.com/story/deloitte-global-evisits-reach-100-million-years-end/2014-08-12
- eVisits: the 21st century house call
  - http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Technology-Media-Telecommunications/gx-tmt-2014prediction-evisits.pdf\
- The case for tele-emergency services: New research finds promise in tele-emergency system's ability to improve patient care
  - http://now.uiowa.edu/2014/01/case-tele-emergency-services

- The Promise of Connected Care in the United States
  - http://www.connectwithcare.org/wp-content/uploads/2014/06/EHLP-April-2014-Pg-3-5.pdf
- TeleStroke Units Serving as a Model of Care in Rural Areas: 10-Year Experience of the TeleMedical Project for Integrative Stroke Care
  - http://www.ncbi.nlm.nih.gov/pubmed/25147327
- Telemedicine gives patients an alternative
  - http://www.post-gazette.com/news/health/2014/08/12/Telemedicine-gives-patients-an-alternative/stories/201408120011
- The Promise of Telemedicine to Pare Health Costs
  - http://www.insurancejournal.com/news/national/2014/08/12/337343.htm
- Telemedicine in primary-care
  - http://www.clinicaladvisor.com/telemedicine-in-primary-care/article/365435/
- Extent of Telehealth Use in Rural and Urban Hospitals, April 2014
  - http://www.public-health.uiowa.edu/rupri/publications/policybriefs/2014/Telehealth%20Utilization.pdf

Getting Started

What Services Can Be Provided By Telemedicine?

Sometimes telemedicine is best understood in terms of the services provided and the mechanisms used to provide those services. Here are some examples. Keep in mind that this list grows annually:

- Primary care and specialist referral services may involve a primary care or allied health professional providing a consultation with a patient or a specialist assisting the primary care physician in rendering a diagnosis. This may involve the use of live interactive video or the use of store and forward transmission of diagnostic images, vital signs and/or video clips along with patient data for later review.
- Remote patient monitoring, including home telehealth, uses devices to remotely collect and send data to a home health agency or a remote diagnostic testing facility (RDTF) for interpretation. Such applications might include a specific vital sign, such as blood glucose or heart ECG or a variety of indicators for homebound patients. Such services can be used to supplement the use of visiting nurses.
- Consumer medical and health information includes the use of the Internet and wireless devices for consumers to obtain specialized health information and on-line discussion groups to provide peer-to-peer support.
- Medical education provides continuing medical education credits for health professionals and special medical education seminars for targeted groups in remote locations.

Practice Guidelines

It is important to view telehealth/telemedicine services in a manner similar to those provided in-person. It is a tool in the provision of quality care. The focus should always remain on how this will affect/benefit the patient. It is important not to impact the provider's practice in a negative manner. Telehealth should be smoothly incorporated, looking to the various standards, guidelines and professional practice policies.

American Telehealth Association (ATA) Standards & Guidelines

ATA has a number of practice guidelines for telemedicine which provide a critical foundation for the deployment of telemedicine services. Standards form the basis for uniform, quality patient care and safety, grounded in empirical research and clinical experience. The establishment of such standards also accelerates the adoption of telemedicine by payers, administrators and providers who are full partners with ATA in their development along with industry, government agencies, medical societies and other stakeholders.

The ATA website gives you access to a plethora of resources including standards, guidelines, learning center, telemedicine buyer's guide, liability insurance, videos and the latest news in telemedicine. It is free to register and log on to their on-demand learning center.

You can access it here: http://www.americantelemed.org/home

(The following was posted by: Jonathan Neufeld, PhD, HSPP, Clinical Director of the Upper Midwest Telehealth Resource Center, on Tuesday, July 22, 2014.)

The AMA Policy on Telemedicine

In June 2014, the American Medical Association released a policy report outlining its stance on the rapidly evolving world of telemedicine and remote care. The report, developed by the AMA's Council on Medical Service, affirms the AMA's previous stance that all types of medical services should be fairly compensated, whether delivered in person, by phone, or electronically. The report also addresses the establishment of practice guidelines and mentions existing position papers and case studies. The report can be accessed on the AMA's web site: http://www.ama-assn.org/ama/pub/news/news/2014/2014-06-11-policy-coverage-reimbursement-for-telemedicine.page (You will need a user name and password to access.)

The report provides the following summary of its position regarding telemedicine services:

> *Prior to delivering services via telemedicine, the Council believes a valid patient-physician relationship must be established, through at minimum a face-to-face examination, if a face-to-face encounter would otherwise be required in the provision of the same service not delivered via telemedicine. The face-to-face encounter could occur in person or virtually through real-time audio and video technology. Also, before a telemedicine service is provided, the physician or other health professional must notify the patient of cost-sharing responsibilities and limitations in drugs that can be prescribed via telemedicine. When a service is delivered using telemedicine, mechanisms to ensure continuity of care, follow-up care and referrals for emergency services must be in place.*

At first, the paragraph seems to imply that an in-person examination is being required in order to establish a valid patient-physician relationship. This has been the traditional meaning of the term "face-to-face." Reading further in the statement, however, one finds that the AMA has joined the growing consensus among healthcare providers in finding that a "face-to-face encounter could occur in person or virtually through real time audio and video technology.

The Federation of State Medical Boards (FSMB) recently took the same position in its recommendations regarding state board regulation of telemedicine.
http://www.fsmb.org/Media/Default/PDF/FSMB/Advocacy/FSMB_Telemedicine_Policy.pdf

These statements and others point to a sea change in how telemedicine is being conceptualized by regulators and other stakeholders. Though valid concerns remain about the appropriate application of various telehealth/telemedicine modalities, there can be no doubt that a growing consensus exists to support the idea that a properly conducted "virtual" examination can be entirely adequate to establish a valid patient-physician (or any "-clinician") relationship and support the provision of high quality, standards-compliant care for a wide variety of conditions and in a wide range of circumstances.

This change is likely to continue to the point that virtual care becomes commonplace, and we no longer ask if telemedicine is appropriate for this or that particular case, but rather provide both in-person and telemedicine modalities among our first-line treatments in many common situations.

(End post)

The following section has been adapted with permission from the California Telehealth Resource Center's (CRTC) Program Developer resource and serves as a summary of that document. It is a compendium of best practices developed from CTRC's 10 year experience developing telehealth programs and added to by a panel of telehealth experts from across the country.

California Telehealth Resource Center's Program Developer

Step One: Needs Analysis & Environmental Analysis

Best Practice: Assess and confirm your organizations readiness for telehealth.

It is costly, time consuming and challenging to start a telehealth program even though it may sound easy. Organizations that perform a formal assessment of readiness have the advantage of identifying potential problems and addressing them early. They also gain a lot of support for the project by engaging people early.

Lessons from the field…

- Be sure the program "matches the mission/vision".
- Buying equipment is not the first step.
- You need the proper authority to successfully move forward.
- Knowing and reporting the strengths, weaknesses, opportunities and threats (SWOT) of your organization will help build the case for your program.
- Bringing the major department heads into the process early allows for easier development and acceptance of the program.
- Identify appropriate leadership team members, and bring the team together early.

Best Practice: Perform A Needs Analysis

A needs analysis will help your organization to identify key unmet needs and will help you devise effective strategies and approaches to meet them. It will give you a clear understanding of the nature and scope of the unmet need, provide a sound foundation for planning, help you clarify objectives and shared expectations, improve coordination of services and resources and provide supporting structure for your program evaluation.

Lessons from the field…

- Determine the needs you wish to meet, and how you are going to meet them. Invite clinical staff to identify service needs at both host and remote sites at patient and provider sites.
- Ensure the needs analysis is data driven.
- Recognize that the needs analysis is inseparable from the program model and the business case. It lies at the heart of sound telehealth program planning.

Step Two: Define Services, Program Model and Technology Models

Research should be done prior to program model development, pertaining to the technological capabilities and costs of acquiring and maintaining the resources. You could face problems when resources that do not allow for optimal technology and the program is reduced or implemented at lower

quality as a result. What elements can be sacrificed if necessary? Prioritize components of the program by essential, would be helpful, and not necessary.

Have a clear understanding of the types of services you wish to deliver and the best and most appropriate telehealth program model for your particular organization. Identify which services you will target, which geographical regions you will serve, what form of telehealth modalities you will implement.

Best Practice: Develop preliminary goals and objects for service delivery

Measurable goals and objectives will assist in selecting equipment, developing staffing, evaluating performance, creating cost estimates…in every facet of program design and development.

Lessons from the field…..

- Prioritize your service options.
- Be mindful of the size and scale of the program you are creating. Stay focused on the success of your initial few sites. Start small to help guarantee success.
- Expect that technological capabilities and workflow will vary across sites and try to anticipate how to adapt to these differences.

Best Practice: Assure that the selected delivery model best suits your service goals and objectives

- Understand the various forms of telehealth currently in use and ensure your choice is suited to the particular specialty services you plan to provide.
- Familiarize yourself with the different types of telehealth and select the right kind(s) for your particular practice. A system that contains elements of each, can prove highly effective, particularly in the delivery of multi-disciplinary care.
- Create high quality, structured and layered training, and plan to provide it on an ongoing basis, at both host and remote sites.

Keep your model in line with your organization's vision, mission and strategic plan.

Best Practice: Plan to incorporate Health Information Technology (HIT)

The implementation of electronic medical records and other HIT is taking place at a rapid rate. Telehealth systems should be designed and structured to support health information exchange.

Lessons from the field…

- If your organization is not currently deploying HIT methods and practices, it soon will be expected to at some level. Be mindful of this.
- There are always serious network security and privacy issues and concerns related to HIT, so it is imperative your technical leadership and legal counsel are involved in this planning from the outset.
- Substantial seed funding opportunities are increasingly available to support HIT deployment and integration, often focused on the establishment of high speed (T1 and above) network infrastructure. This same network can form the backbone of your telehealth program.

Best Practice: Grow your champions

Many consider clinical and administrative champions to lead and sustain the development of your telehealth program vision as the most important factor for success. Champions must be true agents of change within your organization and in positions to garner top level organization attention to obtain financial, technical, personnel and other resources. They must be inspirational figures who play a key role in creating a professional and nurturing environment in which additional champions will be encouraged and develop.

Lessons from the field…

- Find champions who will enable you to achieve the level of change in attitudes and practice upon which a successful telehealth program depends.
- Ensure your champions are true agents of change, with the vision and passion to bring it about and instill it in others.
- Find equivalent champions at all participating network sites.
- Recognize that your champions are the primary advocates of your program, and that their success depends upon the full support and dedication of the entire team and the wider organization. Help them succeed.

Best Practice: Know your geographic area

It is important to understand the nature and norms of the locations you will be working with remotely. Service expectations can be quite different in different regions, as can medical services purchasing power, reimbursement options and access to other non-telehealth caregivers.

Lessons from the field…

- Go visit! There is simply no substitute for taking the time to visit your remote sites, meet your colleagues, and learn firsthand about their lives, patients, local opportunities, challenges and concerns.
- Keep communication between sites direct, clear and simple to avoid basic misunderstandings or clinical errors.
- Be aware that there may be important business and legal considerations to take into account when providing medical services over distance. This is especially true if a telehealth network is being planned that aims to provide service across state lines, or on a national basis.
- Know the ‘political geography’ of any region in which you wish to provide services. Understand the activities and interests of local providers, organizations and other local stakeholders. Their support of your program, and willingness to collaborate with you, may prove to be a deciding factor in creating a successful telehealth outreach program.

Step Three: Business Model Development

Costs, benefits, risks and opportunities need to be identified analyzed and consolidated into a comprehensive business case report as part of program development efforts.

Best Practice: Perform a market analysis and write a business case report

The business case for initial and ongoing resource investment needs to be developed, reviewed and approved. A market analysis to determine market demand for proposed services will assist in assuring sustainability.

Lessons from the field….

- Be sure you are clear about the effective demand for the services you are considering to provide. There can be great need for a particular specialty service in an area, but not necessarily the demand and/or purchasing power to obtain it.
- View grants as only short term 'seed funding'. Actively seek long term sustainability from the outset. The more telehealth is integrated into existing technology infrastructure and clinical workflows, the more likely it is to be widely adopted and sustained. Grants may be sought to support program expansion; however grants for telehealth are changing. There are not as many available that are "telehealth focused" grants. Currently more grants are now focused on issue or disease entities where telehealth is used as part of the solution proposed.
- Focus beyond the 'here and now' by incorporating growth into the business case report.
- Identify and develop your revenue opportunities and fiscal estimates
- Reimbursement is one of the most challenging areas in implementing sustainable telehealth programs. In the long run, programs require reliable and adequate revenue and reimbursement for clinical services. Programs need to look for opportunities to contract with payers, insurance companies and others to offer cost effective services.
- A sustainable program may require multiple revenue streams, e.g. hand in hand clinical and educational (CME) services. Ensure your program has a good patient payer mix.
- Learn from other telehealth practitioners about their reimbursement strategies and challenges. Understand general existing reimbursement methods and practices at host and remote sites. Base your program design on what already exists.
- Focus on delivery of services that are known to be sufficiently and reliably reimbursed.
- Rural health clinics and FQHCs have multiple revenue models available, and thorough research needs to be undertaken to identify the most appropriate for a particular service type.

Step Four: Development of Detailed Implementation Plan

Create a detailed programmatic and technical implementation plan. The most successful telehealth programs come as a result of careful and detailed planning and the deployment of well-considered, integrated and streamlined technologies.

Lessons from the field…

- Make sure your plan includes detailed information on timelines, deliverables and milestones, and detailed information on technical requirements and potential challenges.
- Submit your plan for review by senior leadership and key stakeholders, and invite feedback, comments and open discussion.
- View your plan as a dynamic and living resource, which should be updated periodically as your program grows and programmatic circumstances change.
- Recognize that unforeseen circumstances and factors may influence your initial or ongoing planning. Be flexible in your approach, and able to make quick and effective adjustments to operational schedules and programmatic elements as necessary.

Best Practice: Get the equipment right

Select the right equipment for your telehealth application and delivery mode. Video equipment, communication systems, medical devices and software applications are critical equipment components. Obtain good information and advice and learn as much as you can about functionality, features and interoperability. Keep in mind that the best equipment for your program might not necessarily be the most expensive.

Level of HIT capability, or planned capability, will impact the functionality of telehealth program (e.g. electronic transfer vs needing to manually transfer and enter patient data, etc.)

Lessons from the field….

- Identify trustworthy and knowledgeable sources to guide you in your equipment choices, and to provide ongoing support. Do extensive equipment comparison to identify the best equipment for your program.
- Assess whether there are differences in capability and connectivity to consider if multiple sites are involved.
- Clearly identify appropriate specifications for your devices, applications and all technical systems.
- Assess whether there are differences in capability and connectivity to consider if multiple sites are involved.
- Identify trustworthy and knowledgeable sources to guide you in your equipment choices, and to provide ongoing support. Do extensive equipment comparison to identify the best equipment for your program.
- Be mindful that technology advances quickly, and systems and applications will need upgrading, and monitor warranty renewals. There can be substantial costs involved. Be sure to budget.

- Test, test, test your equipment and connectivity before announcing or advertising your program. Continue to practice, train and test even after you are "up and running."

Best Practice: Plan for the seamless integration of telehealth into your operation

Telehealth activities should be designed to complement your standard practices and working methods, not complicate or interrupt them. Telehealth should be integrated alongside your face to face clinical activities. Telehealth examination rooms (both patient and provider sites) should be located in close proximity to the clinical staff.

Lessons from the field…

- Plan a workflow analysis to reveal how your program fits in with standard clinical practice. Discuss necessary changes with stakeholders.
- Think of the telehealth technology as just another tool for the delivery of normal services, with the only difference being that the patient isn't in the room.
- Keep it simple.

Best Practice: Know the Law

There are a wide range of legal and regulatory issues and requirements that must be understood and complied with when developing a telehealth program. Regulations and laws change frequently. Ensure your organization's legal counsel is fully informed of your plans well in advance of implementation to allow time for complete legal reviews.

Lessons from the field…

- Identify the current policies and regulations and determine the impact they may have on your program. Critical legal and regulatory areas to consider include licensure, credentialing, HIPAA and medication prescription.
- Consult with your legal counsel to consider any impacts on your organization and to ensure that you are aware of any new changes in laws and regulations.
- Realize that telehealth law is a rapidly changing area of law. Be sure your legal counsel stays closely in touch with your program expansion and development activities and plans.

Best Practice: Plan for the availability of strong IT support at all participating locations

Having ready access to trained and knowledgeable IT personnel and network support staff is critical to the effective running of your program. During consults or any clinical interaction taking place via the telehealth system, trained and efficient technical staff must be on hand to troubleshoot and make technical adjustments as necessary. Both equipment and network expertise is essential and staff must have appropriate authorizations to make network changes as needed. It is vital that an IT champion is identified and that the IT department is involved to provide authorization and approval of technical plans and strategies.

Lessons from the field…

- Identify an IT champion.
- Focus on introducing IT personnel at all sites to each other. The better they know one another, the smoother your technical troubleshooting will be.

- Ensure IT personnel are fully versed in your technologies, and are authorized to work directly with network systems and settings at an organizational level.
- Familiarize all IT staff in your and your partner organizations (either working directly with your program or not) with all the systems, applications and network needs. There can be wider IT system dependencies and knock-on effects of telehealth operations that may not be apparent to you or your team until it's too late.

Best Practice: Plan to appoint a dedicated telehealth program manager

No telehealth program will succeed without a dedicated, trained and efficient manger working in sync with your champions. This individual will help conceptualize and put into place all key operational and clinical elements of your program and will lay the foundation upon which all future development will based.

Lessons from the field…

- Appoint this individual at the very beginning of your program planning to help you design and to drive development.
- Scale this position to the size and scope of your program.
- View this individual as the 'eyes and ears' of your clinical and administrative champions. This individual should be directly responsible for all programmatic elements and the design of performance monitoring and evaluation strategies.

Best Practice: Plan for system redundancy for all critical system applications and network

Build redundancy (back up) into your telehealth architecture is a critical part of your program design. Knowing there is backup for critical technical systems and networks will go a long way in instilling confidence in your clinical staff as they undertake their telehealth activities.

Lessons from the field…

- Technology can be fickle. Realizing this in advance and planning appropriate back-up for all your mission-critical systems and applications is vital. Don't wait for your network to go down, without back-up, mid-consult.
- Don't forget to budget for this redundancy, and include it in your business case analysis and plans.
- If costs for redundancy are prohibitive, ensure process redundancies are well planned to cover any technical failures.

Best Practice: Plan for the development of protocols policies and procedures

Clinical and service protocols should be adapted to the telehealth environment yet , as much as possible, retain content of non-telehealth protocols.

Lessons from the field…

- Create protocols that are as close as possible to non-telehealth protocols. This will instill far greater comfort and confidence in your caregivers who will not feel they are doing something strange and unusual, and way out of line with their traditional practices.
- Follow standard, recognizable protocols which will lead to consistent clinical results that will be vital for your evaluations and program monitoring.

Step Five: Development of Performance Monitoring Plan

Build systems into your program to measure and analyze program performance. In the planning stage, determine assessment methods and evaluation and strategies, and build a plan to create routine and regular performance monitoring. Consider the need for formal evaluation of clinical services and operational or cost impacts.

Best Practice: Be sure to establish both short and long term performance goals

It is easy to focus only on the short term when initially implementing your telehealth program. This can be a mistake, as you must recognize that implementing fundamental practice change, as you are doing, takes time and does not happen overnight. Be sure to establish longer term goals as well, those that consider clinical, business and financial outcomes, several years into the future. Include those goals that move the program toward programmatic self-sustainability.

Lessons from the field…

- Long range strategic planning for a telehealth program should be carried out on an ongoing basis and should include the program's governing board.
- Plan to begin collecting vital program data from the very beginning of your program implementation.
- Determine and communicate your measures of success.
- Things take time. Be realistic in your setting of goals.

Best practice: Develop an evaluation and monitoring plan

Before you begin your implementation, determine how you will go about evaluating your program and monitoring its performance. Consider what you should monitor, how frequently and by what methods. Evaluation and monitoring should be shared with and agreed to by your network partners.

Lessons from the field…

- Monitor and evaluate all key elements of the program on a regular and ongoing basis.
- Include a range of topics in your plan, including service usage, patient and provider comfort level with particular technologies, devices and applications and cost savings analysis.
- Be sure to monitor and track ancillary or related services benefiting from your telehealth program activities, e.g. lab and blood tests performed at local clinics, staff and nursing employment etc.

Best Practice: Develop a Quality Improvement Process

A clearly stated quality improvement (QI) process is important to any telehealth program. It will assist you in identifying improvements, reacting to changes in circumstances, and assessing unexpected performance.

Lessons from the field…

- Document improvement structure and clarify all improvement activities in your QI process.
- Create a written document.
- Develop and share your QI process before implementing the program.

Step Six: Program Implementation

Best Practice: Apply known principles of successful telehealth room design. Create a convenient and effective care environment reminiscent of a traditional care environment.

The designated telehealth room should be user friendly, well equipped with reliable and appropriate technology, be comfortable for patients and apply basic principles of room design for videoconferencing applications.

Lessons from the field…

- Follow basic and standard rules for the design of your telehealth room. When designing your telehealth room space pay close attention to location, size, equipment, furniture placement, lighting acoustics and wall color.
- Plan carefully and discuss your design ideas with program colleagues and IT personnel.
- Remember to budget for necessary design/remodeling.
- Make sure that any licensing requirements are known and implemented.

Best Practice: Get the people right

Any program stands and falls by the people implementing it. In the case of telehealth, appointing and or hiring the right staff at both the patient and the provider sites and clearly defining their roles and responsibilities, is crucial. Whenever possible, dedicated staff should be hired who fully understand the program's outreach goals and ambitions. The provision of effective ongoing training and personnel development is immeasurably important. Realize that further telehealth champions can be grown from your staff to lead further growth and the development. Actively nurture them.

Lessons from the field…

- Identify a coordinator to oversee all daily operational activities of the program – scheduling, billing, technical operations etc. Ideally, this individual should be employed full-time on your program.
- Make sure all staff are technically savvy, knowledgeable about telehealth systems and applications, and are flexible and open to new clinical methods and approaches.
- Create an environment in which staff at both sites can work well together to create a seamless, comfortable, and reassuring clinical atmosphere for the patients.
- Share existent resources, hire additional dedicated personnel, or find staff through outsourcing activities for your program.
- Develop and implement a formal, comprehensive and standardized training regimen for all staff. Training must be ongoing and increase in scope and scale as your telehealth program expands.
- Training should also be adapted to target the skill level and scope of practice for all clinical staff expected to be involved.
- Nurture further telehealth 'champions', from all levels of your staff.

Best Practice: Provide easy to use administrative tools

It makes good sense to simplify tools and processes for scheduling, billing, program measurement and documentation.

Lessons from the field…

- Keep administrative systems and methods simple! Medical administration is often complex enough without the added challenge of operating over distance and in unfamiliar administrative environments.
- Ensure administrative staff is well trained and conversant in telehealth methods and practices.
- Carefully document all administrative processes and protocols.

Best Practice: Communicate regularly with your remote partners

The clinicians, nursing staff, presenter, schedulers and other staff at the site remote from you (whether you are a provider or a patient site) are the other half of your program. Ensure that both ends of the telehealth link are satisfied with the program's management, administration, billing systems, IT support, problem resolution, coordination, and quality improvement.

Lessons from the field…

- Consider bringing participating site personnel together quarterly or annually to discuss the program, air grievances and discuss and implement any changes necessary. This will enhance relationships and build support.
- Keep your communication channels open.
- Learn and move the program forward together.

Step Seven: Monitor and Improve

Best Practice: Implement your Quality Improvement Process

After assessing the initial performance of your program, taking into account service utilization, provider and patient satisfaction and other key factors, you should begin to implement the QI process you developed during the planning process.

Lessons from the field…

- Evaluate the strengths and weaknesses of your program on a regular basis.
- Implement new ideas, adjustments and solutions in an organized fashion.
- Ensuring constant quality improvement must be a part of regular operations.

Best Practice: Report regularly

Regularly monitoring your programs performance to identify trends and areas for improvement will allow the program to continuously improve and will provide the data necessary to determine if your program is achieving its objectives and to measure the programs impact in your organization and the community.

Lessons from the field….

- General service utilization reports and quality of service measurements are of primary importance.
- Evaluate your telehealth systems and applications in a clinically appropriate and user friendly manner.
- Undertake ongoing analysis of financial performance. This will form the basis of your business strategy as you move towards self-sustainability. Financial analysis should include evaluation of cost and benefits, coding issues, reimbursement, account receivables and network utilization.

Best Practice: Present your outcomes

In the ever expanding and increasingly mainstream field of telehealth, there is tremendous interest from around the country in program experiences and lessons learned. There are numerous opportunities to publish or present your finding and share these experiences with new and long established developers of telehealth program and the wider community. We learn more by teaching. Share what you have learned!

Lessons from the field…

- Present your outcomes and program developments in a public forum (published or by meeting presentation) at least once per year.
- Involve members of your telehealth team in these positive communication activities. This will help secure buy-in from your staff, and increase passion for the program.
- Join forums for networking purposes, and the sharing of experiences and lessons learned.
- Share outcomes and successes with non telehealth stakeholders and interested parties, the local communities in which you work, etc.

Telligen Interview Findings with Telehealth Stakeholders

August 2014

Findings from recent interviews with those who had implemented successful telehealth programs, or were interested in starting one, reinforce what is outlined in the best practices section above. (Participating hospitals listed on page 4.) When planning a program:

- Identify partners and get them involved in the planning early on. Leverage existing relationships and referral patterns when seeking commitment from other organizations that will need to be involved. Some programs realized too late that they could not secure providers to deliver the services they had hoped for. Having commitment early will avoid this. Include representation from all levels- administrators, providers, partner health systems, IT support, and payers. They will have valuable insights to offer.
- Conduct a needs assessment in collaboration with your partners, and make sure your telehealth program is structured to meet these needs. What would be most helpful to providers? Meeting these needs will help secure their buy-in and commitment to the program once it is up and running. Telehealth can expand later to provide other services.
- Align your telehealth strategy with your organizational strategy. This will allow for telehealth to be more easily integrated into existing organizational systems and processes, as well as create a path to sustainability.
- Visit other hospitals or facilities with telehealth programs in place. Get an idea of how the technology actually works in practice and how clinicians use it. This may be different from what uses of technology are promoted by vendors. Visits to hospitals will provide a real-world view of what functionalities are necessary and which are less essential to your telehealth program. It will also provide insight into what workarounds will be necessary if not all of your remote sites can support full functionality of the technology within their current IT infrastructure.
- Think about how telehealth services will be integrated into provider and organizational workflow. Establishing a successful program is not just about purchasing equipment. You will need to make sure clinicians understand and agree on how telehealth will support what they provide to patients in order to ensure they actually participate. They will need to be active in determining how the telehealth service can be integrated into their daily practice. Overlooking this essential step can result in the purchase of equipment that never gets used to its full potential.
- Remember that telehealth is not a separate service; it is another tool by which patient care can be provided.

And last but not least……

Celebrate Your Successes! Even the small ones as they will help to support you through the days when you have challenges!

Toolkits and information for program initiation:

American Telemedicine Association:

State Policy Toolkit: Improving Access to Covered Services for Telemedicine
http://www.americantelemed.org/docs/default-source/policy/ata-state-policy-toolkit.pdf

Great Plains TRAC Toolkit

Proven Practices and Models

As you create or expand your telehealth program, you may want to consider what others have done, and what the experts recommend for your stage in development. The gpTRAC Toolkit provides examples and illustrations that can help you find the right path—and avoid costly and time-consuming errors.

Clinical

Tools, guidelines, templates, forms and other guidance that we hope is helpful to you as you begin to develop your telemedicine activities.

- NEW! Overview: Key Issues in Specialty Consultation Telemedicine Services
  - http://www.gptrac.org/wp-content/uploads/2013/09/Brochure-Overview-of-Clinical-Services-2013Sept.pdf

    Multiple print copies can be made available by request
- Sample Process – Telemedicine Consultation – Consult Site
  - http://www.gptrac.org/wp-content/uploads/2011/10/Sample_Process-Telemedicine_Consultation-Consult_Site1.pdf
- RN Telepresenter Competency Check List
  - http://www.gptrac.org/wp-content/uploads/2012/01/RN-Telepresenter-Competency-Check-List.pdf
- Telehealth Nurse Presenter
  - http://www.gptrac.org/wp-content/uploads/2011/10/Telehealth_Nurse_Presenter_20111.pdf
- TM Patient Evaluation Form – U of MN
  - http://www.gptrac.org/wp-content/uploads/2011/10/TM_Patient_Evaluation_Form-UofMn1.pdf
- Video example of a patient consultation
  - http://www.youtube.com/watch?v=y5IB1BZGlnA&feature=plcp

Reimbursement

Reimbursement information from CMS (Medicare and Medicaid) and some other coverage providers can be found on here:

- Costs and Financial Support web page
  - http://www.gptrac.org/cost-benefits/from-startup-to-sustainability/

Education

Information, samples/templates, guidelines, presentation materials, training materials and other helpful information as you consider your distance education opportunities.

- Certificate of Attendance
  - http://www.gptrac.org/wp-content/uploads/2011/10/Certificate_of_Attendance1.pdf
- Continuing Education Evaluation – MTN
  - http://www.gptrac.org/wp-content/uploads/2011/10/Continuing_Education_Evaluation-MTN1.pdf
- Presentation Pointers
  - http://www.gptrac.org/wp-content/uploads/2011/10/Presentation_Pointers1.pdf
- Presenter Tips
  - http://www.gptrac.org/wp-content/uploads/2011/10/Presenter_Tips1.pdf
- Sample PowerPoint Presentation
  - http://www.gptrac.org/wp-content/uploads/2011/10/Sample_PowerPoint_Presentation1.pptx
- Sample Presentation Template
  - http://www.gptrac.org/wp-content/uploads/2011/10/Sample_Presentation_Template1.pptx
- Table Tent – Participants
  - http://www.gptrac.org/wp-content/uploads/2011/10/Table_Tent-Participants1.pdf

Operational and Administration

Tools to help you track your activities, develop job responsibilities, write organizational policies, plan program evaluations, and review other sample forms and documents.

- Operations Toolkit
  - http://www.telehealthresourcecenter.org/operations-tools
- Calculating Savings
  - http://www.gptrac.org/wp-content/uploads/2011/10/Calculating_Savings1.pdf
- Conduct a Meeting
  - http://www.gptrac.org/wp-content/uploads/2011/10/Conduct_a_Meeting1.pdf
- Etiquette
  - http://www.gptrac.org/wp-content/uploads/2011/10/Etiquette1.pdf
- Interview Questions – IT Director
  - http://www.gptrac.org/wp-content/uploads/2011/10/Interview_Questions-IT_Director1.pdf
- Job Description – PM&CC
  - http://www.gptrac.org/wp-content/uploads/2011/10/Job_Description-PMCC1.pdf
- Job Description – Site Coordinator
  - http://www.gptrac.org/wp-content/uploads/2011/10/Job_Description-Site_Coordinator1.pdf
- Job Interview
  - http://www.gptrac.org/wp-content/uploads/2011/10/Job_Interview1.pdf
- Sample Calendar of Events
  - http://www.gptrac.org/wp-content/uploads/2011/10/Sample_Calendar_of_Events1.pdf
- Sample Employee Newsletter Messages
  - http://www.gptrac.org/wp-content/uploads/2011/10/Sample_Employee_Newsletter_Messages1.pdf
- Sample Open House Announcement
  - http://www.gptrac.org/wp-content/uploads/2011/10/Sample_Open_House_Announcement1.pdf
- Video Event Hosting Tool
  - http://www.gptrac.org/wp-content/uploads/2011/10/Video_Event_Hosting_Tool1.pdf

Technical

Sample policies and trouble-shooting information.

- Sample Troubleshooting Guide
    - http://www.gptrac.org/wp-content/uploads/2011/10/Sample_Troubleshooting_Guide1.pdf
- Sample Troubleshooting Guide 2
    - http://www.gptrac.org/wp-content/uploads/2011/10/Sample_Troubleshooting_Guide_21.pdf

From Startup to Sustainability

When an organization considers implementing telehealth services, finance is often the first area of concern. Staff and equipment costs for these expanded functions may be considered overhead—part of the expense of providing care. Telehealth services can also help you generate income.

As you identify and develop your strategic plan for telehealth, look for ways to balance costs among different sources. Grants are often available for initial startup, and sometimes for program expansion; they are generally not reliable for long-term support. Think of grants as additional support.

Most telehealth services provided today are paid for through traditional fee-for-service reimbursement or through contracted services. While this certainly is not the complete story, and there are some services that are not covered under current regulations, the picture is changing rapidly. Because of the benefits made possible by telehealth, the changes being considered at both state and national levels are likely to be positive for both patients and providers.

Learn More

Find out if you are defined as a rural location

- "Am I Rural"
  - http://www.raconline.org/amirural
- HRSA – Rural Health Grants Eligibility Analyzer
  - http://datawarehouse.hrsa.gov/RuralAdvisor/RuralHealthAdvisor.aspx

Financial assistance and information

- gpTrac Grants Help Page
  - http://www.gptrac.org/resource-center/financial-resources-and-opportunities/
- gpTrac Financial Planning
  - http://www.gptrac.org/getting-started/supporting-telehealth-services/
- gpTrac Financial Overview
  - http://www.gptrac.org/wp-content/uploads/2011/10/Financial_Overview_0820111.pdf
- gpTRAC Region – Summary of Medicaid Reimbursement
  - http://www.gptrac.org/wp-content/uploads/2011/10/Regional_Medicaid_Reimbursement_Picture1.pdf
- gpTrac Standard Telehealth Grant Opportunities
  - http://www.gptrac.org/wp-content/uploads/2011/10/Telehealth_Grant_Opportunities1.pdf

Related Information

Links to various programs (federal, state and private) that detail their telehealth/telemedicine services coverage.

- CMS (Medicare) Telemedicine Reimbursement Information
  - http://www.cms.gov/MLNProducts/downloads/TelehealthSrvcsfctsht.pdf
- Minnesota Medical Assistance Program Professional Services Manual, Telemedicine (click "Telemedicine" in list of items)
  - http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=id_008926#P459_30998
- Wisconsin Medicaid Information (summary)
  - https://www.forwardhealth.wi.gov/kw/pdf/2006-58.pdf
- Wisconsin's On-line Handbook – Covered Telehealth Services
  - https://www.forwardhealth.wi.gov/WIPortal/Online%20Handbooks/Display/tabid/152/Default.aspx?ia=1&p=1&sa=50&s=2&c=61&nt=Telemedicine&adv=Y
- Medica (select Telehealth Services from the list of items)
  - https://provider.medica.com/C1/CoveragePolicies/Document%20Library/Telehealth_CP.pdf
- CTeL
  - http://ctel.org/

Note: The above links/information may have been updated. For the latest coverage and reimbursement information, please contact organizations/agencies/providers directly.

Telehealth Operations Module

Developed by: The Great Plains Telehealth Resource and Assistance Center (gpTrac) under a HRSA Office for the Advancement of Telehealth grant**,** July 1, 2010

This module will address topics related to how a telemedicine service is established or developed and operated. In particular, it will focus on medical specialty consultation services provided via telemedicine where a medical specialist in any of a variety of fields from allergy and asthma to urology is involved with examining, diagnosing and treating a patient at another geographic location.

Telemedicine is just one of several aspects of telehealth. If you are interested in home telehealth services, such as home monitoring, using telehealth technologies for distance learning or training, teleradiology, remote ICU services, telepharmacy, school based services or other types of services not listed here, you will need to consult other modules.

http://www.telehealthresourcecenter.org/operations-tools

California Telehealth Resource Center Toolkits

Developing a Telehealth Marketing Plan: A Step by Step Guide

- This guide assists in the development of a telemedicine program's marketing component. It provides a variety of tools geared to guide you through the critical elements of performing a market analysis and implementing promotional strategies and efforts
    - http://www.caltrc.org/knowledge-center/ctrc-publications/program-guides/developing-a-telehealth-marketing-plan-a-step-by-step-guide/

Telehealth Glossary

- The telehealth industry is rapidly evolving, as is the terminology being used to describe telemedicine and telehealth applications. This comprehensive glossary clarifies common telemedicine and eHealth terms
    - http://www.caltrc.org/knowledge-center/ctrc-publications/program-guides/telehealth-glossary/

Organizational Readiness Guide

- The Organization Readiness Guide assists you in the first step of developing a telemedicine program
- This guide provides easy-to-follow questionnaires that will walk you through describing your proposed program and determining if your organization is culturally ready to begin the program development process
    - http://www.caltrc.org/knowledge-center/ctrc-publications/program-guides/organizational-readiness-guide/

CTRC's Telehealth Program Developer Kit™

- The Program Developer Kit was being redesigned at press time. The previous version is currently available free of charge. Look for the new version to be released
  - http://www.caltrc.org/knowledge-center/ctrc-products/

Other Tools and Toolkits

A Guide to Telemedicine

Designing a Hospital-based Program; Illinois Hospital Association

- https://www.ihatoday.org/uploadDocs/1/telemedicineguide.pdf

HRSA Toolkit

- Part of the Rural Health IT Toolbox, this module provides an overview of telehealth with an emphasis on its application in a rural setting
  - http://www.hrsa.gov/healthit/toolbox/RuralHealthITtoolbox/Telehealth/

Telehealth/Telemedicine Product and Service Directory

Billing and Reimbursement

State Telehealth Laws and Reimbursement Policies

- http://telehealthpolicy.us/state-laws-and-reimbursement-policies

State Telemedicine Gaps Analysis: Coverage & Reimbursement

- http://www.americantelemed.org/docs/default-source/policy/50-state-telemedicine-gaps-analysis---coverage-and-reimbursement.pdf?sfvrsn=6

Telemedicine Reimbursement Guide

- The Telemedicine Reimbursement Guide (updated 2014), includes telehealth billing policies for public and private payers. This guide also discusses billing and reimbursement scenarios for FQHC's
  - http://www.caltrc.org/updated-telemedicine-reimbursement-guide/

Medicare Telehealth / Billing

- http://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/TelehealthSrvcsfctsht.pdf

CMS Telehealth Code Information

- Covered Medicare Telehealth Codes—updated 4/16/2014

- http://www.cms.gov/Medicare/Medicare-General-Information/Telehealth/Telehealth-Codes.html

Medicaid/Telemedicine

For purposes of Medicaid, telemedicine seeks to improve a patient's health by permitting two-way, real time interactive communication between the patient, and the physician or practitioner at the distant site. This electronic communication means the use of interactive telecommunications equipment that includes, at a minimum, audio and video equipment.

Telemedicine is viewed as a cost-effective alternative to the more traditional face-to-face way of providing medical care (e.g., face-to-face consultations or examinations between provider and patient) that states can choose to cover under Medicaid. This definition is modeled on Medicare's definition of telehealth services (42 CFR 410.78). Note that the federal Medicaid statute does not recognize telemedicine as a distinct service.

Telemedicine Terms (From the Medicaid section on the CMS website, www.cms.gov.)

- **Distant or Hub Site**
  - Site at which the physician or other licensed practitioner delivering the service is located at the time the service is provided via telecommunications system.
- **Originating or Spoke Site**
  - Location of the Medicaid patient at the time the service being furnished via a telecommunications system occurs
  - Telepresenters may be needed to facilitate the delivery of this service
- **Asynchronous or "Store and Forward"**
  - Transfer of data from one site to another through the use of a camera or similar device that records (stores) an image that is sent (forwarded) via telecommunication to another site for consultation
  - Asynchronous or "store and forward" applications would not be considered telemedicine but may be utilized to deliver services
- **Medical Codes**
  - States may select from a variety of HCPCS codes (T1014 and Q3014), CPT codes and modifiers (GT, U1-UD) in order to identify, track and reimburse for telemedicine services
- **Telehealth (or Telemonitoring)**
  - The use of telecommunications and information technology to provide access to health assessment, diagnosis, intervention, consultation, supervision and information across distance
  - Telehealth includes such technologies as telephones, facsimile machines, electronic mail systems, and remote patient monitoring devices, which are used to collect and transmit patient data for monitoring and interpretation
    - While they do not meet the Medicaid definition of telemedicine they are often considered under the broad umbrella of telehealth services (even though such technologies are not considered "telemedicine," they may be covered and

reimbursed as part of a Medicaid coverable service, such as laboratory service, x-ray service or physician services (under section 1905(a) of the Social Security Act)

- **Provider and Facility Guidelines**
  - Medicaid guidelines require all providers to practice within the scope of their State Practice Act
  - Some states have enacted legislation that requires providers using telemedicine technology across state lines to have a valid state license in the state where the patient is located
  - Any such requirements or restrictions placed by the state are binding under current Medicaid rules
- **Reimbursement for Telemedicine**
  - Reimbursement for Medicaid covered services, including those with telemedicine applications, must satisfy federal requirements of efficiency, economy and quality of care
  - States are encouraged to use the flexibility inherent in federal law to create innovative payment methodologies for services that incorporate telemedicine technology
    - For example, states may reimburse the physician or other licensed practitioner at the distant site and reimburse a facility fee to the originating site
  - States can also reimburse any additional costs such as technical support, transmission charges, and equipment
    - These add-on costs can be incorporated into the fee-for-service rates or separately reimbursed as an administrative cost by the state
    - If they are separately billed and reimbursed, the costs must be linked to a covered Medicaid service

State Flexibility in Covering/Reimbursing for Telemedicine Services and the Application of General Medicaid Requirements to Coverage of Telemedicine Services

Telemedicine is viewed as a cost-effective alternative to the more traditional face-to-face method of providing medical care (e.g., face-to-face consultations or examinations between provider and patient).

As such, states have the option/flexibility to determine whether (or not) to cover telemedicine; what types of telemedicine to cover; where in the state it can be covered; how it is provided/covered; what types of telemedicine practitioners/providers may be covered/reimbursed, as long as such practitioners/providers are "recognized" and qualified according to Medicaid statute/regulation; and how much to reimburse for telemedicine services, as long as such payments do not exceed Federal Upper Limits.

If the state decides to cover telemedicine, but does not cover certain practitioners/providers of telemedicine or its telemedicine coverage is limited to certain parts of the state, then the state is responsible for assuring access and covering face-to-face visits/examinations by these "recognized" practitioners/providers in those parts of the state where telemedicine is not available.

Therefore, the general Medicaid requirements of comparability, state-wideness and freedom of choice do **not** apply with regard to telemedicine services.

CMS Approach to Reviewing Telemedicine State Plan Amendments (SPA)

States are not required to submit a (separate) SPA for coverage or reimbursement of telemedicine services, if they decide to reimburse for telemedicine services the same way/amount that they pay for face-to-face services/visits/consultations.

- States must submit a (separate) reimbursement (attachment 4.19-B) SPA if they want to provide reimbursement for telemedicine services or components of telemedicine differently than is currently being reimbursed for face-to-face services
- States may submit a coverage SPA to better describe the telemedicine services they choose to cover, such as:
    - Covered providers/practitioners
    - Where services are provided
    - How the service is provided, etc.
- In this case, and in order to avoid unnecessary SPA submissions, it is recommended that a brief description of the framework of telemedicine be placed in an introductory section of the State Plan and then a reference made to telemedicine coverage in the applicable benefit sections of the State Plan
    - For example, in the physician section it might say that dermatology services can be delivered via telemedicine provided all state requirements related to telemedicine as described in the state plan are otherwise met

Medicaid Telehealth Information

- http://www.medicaid.gov/Medicaid-CHIP-Program-Information/By-Topics/Delivery-Systems/Telemedicine.html

State Coverage for Telehealth Services

- http://www.ncsl.org/research/health/state-coverage-for-telehealth-services.aspx

2014 State Telemedicine Legislation Tracking (as of 9/5/2014)

- http://www.americantelemed.org/docs/default-source/policy/state-telemedicine-policy-matrix.pdf?sfvrsn=58

Policy Considerations for Telehealth Start-Up

Licensing

Licensing can also be a problem for telehealth programs. Most states require physicians to be licensed to practice in the originating site's state. Therefore, with limited exceptions, telehealth consultations with a physician across state lines require licensing paperwork.

Related Resources

- Center for Telehealth and e-Health Law's Licensure Main Page
  - http://ctel.org/expertise/physican-licensure/
- Nurse Licensure Compact (NLC)
  - https://www.ncsbn.org/nlc.htm
- U.S. State Medical Licensure Boards (American Medical Association)
  - http://www.ama-assn.org/ama/pub/education-careers/becoming-physician/medical-licensure/state-medical-boards.page
- Federation of State Medical Boards (FSMB)
  - http://www.fsmb.org/licensure/
- U.S. State Nursing Licensure Board
  - https://www.ncsbn.org/42.htm
- State Telemedicine Gaps Analysis: Physician Practice Standards & Licensure
  - http://www.americantelemed.org/docs/default-source/policy/50-state-telemedicine-gaps-analysis--physician-practice-standards-licensure.pdf?sfvrsn=6

Prescribing issues related to telehealth

Telehealth encounters occur when the patient and provider are in two different locations. The provider is not physically there with the patient and they may never come into physical contact with each other.

A growing area of concern is the use of the Internet to provide diagnostic treatment services (including prescribing of medications) to patients, thereby increasing the likelihood of a physical encounter never taking place, as in the more traditional patient-provider relationship.

In 2008, the Ryan Haight Online Pharmacy Consumer Protection Act was passed by Congress, which prohibits dispensing controlled substances via the Internet without a “valid prescription.”

For a prescription to be valid, it must be issued for a legitimate medical purpose in the usual course of professional practice, meaning that, with limited exceptions, a doctor must conduct at least one medical evaluation of the patient in person or via telemedicine.

The Act provides a definition for the “practice of telemedicine,” which would allow prescribing to take place even if there was no physical encounter. The practice of telemedicine is defined as the practice of medicine by a practitioner who is at a location remote from the patient and is communicating with the patient or health professional treating the patient via a telecommunication system so long as the patient “is being treated by, and physically located in, a hospital or clinic” or “while the patient is being treated by, and in the physical presence of, a practitioner.”

The Drug Enforcement Agency (DEA) (http://www.dea.gov/index.shtml) is the federal agency responsible for enforcement of the Controlled Substance Act (CSA). Among its duties is overseeing the distribution of controlled substances over the Internet. The Ryan Haight Act of 2008 added to the CSA and placed under DEA jurisdiction (http://www.deadiversion.usdoj.gov/schedules/index.html)controlled substances prescribed via telemedicine.

In addition, the Act makes prescribing subject to state law. Therefore, states have had a great deal of influence in shaping how online prescribing takes place. These requirements vary, with some states taking a more conservative view on online prescribing than others. Restrictions may be placed on online prescribing itself, or how the state defines a provider-patient relationship.

For example, there have been cases of entities establishing a patient-provider relationship based solely on a questionnaire to prescribe. Many states prohibit this as the sole foundation of a patient-provider relationship. State medical boards have information (http://library.fsmb.org/ncip_resources.html) online regarding prescribing standards, laws and regulations.

The regulation of online prescribing can be a thorny issue, as described in this policy brief (http://www.americantelemed.org/docs/default-source/policy/the-challenge-of-regulating-internet-prescribing.pdf?sfvrsn=6) by Jonathan D. Linkous, CEO of the American Telemedicine Association.

For additional information and assistance on this issue, visit www.ctel.org.

Reimbursement

Today, not all telehealth costs are reimbursed. Medicare, which has to some extent set the standard, reimburses for telehealth services when the originating site (where the patient is) is in a Health Professional Shortage Area (HPSA) or in a county that is outside of any Metropolitan Statistical Area (MSA), defined by HRSA and the Census Bureau, respectively.

This originating site must be a medical facility and not the patient's home. Medical facilities include practitioners' offices, hospital, and rural health clinics. This reimbursement is not affected by the location from which the telehealth services are being delivered (the "distant" site). Medicare will only pay for "face-to-face", interactive video consultation services wherein the patient is present. That is, Medicare will cover telemedicine services that mimic normal face-to-face interactions between patients and their health care providers.

Medicare does cover store-and-forward applications, such as teleradiology and remote EKG applications, as they do not typically involve direct interactions with patients. Medicare does cover store-and-forward applications, such as teledermatology, in Alaska and Hawaii.

There is no single widely-accepted standard for private payers. Some insurance companies value the benefits of telehealth and will reimburse a wide variety of services. Others have yet to develop comprehensive reimbursement policies, and so payment for telehealth may require prior approval. Likewise, different states have various standards by which their Medicaid programs will reimburse for telehealth expenses. Check with the major insurance companies and the Medicaid program in the state

to get a clearer policy perspective on coverage.

Additional Resource

- http://ctel.org/expertise/reimbursement/

Credentialing (hospital-based)

Hospitals have a legal duty to evaluate the competency of physicians who administer health care services to their patients. In efforts to ensure that patients receive competent medical attention, physicians are required to undergo a process, which is known as credentialing.

Credentialing is the practice by which hospitals evaluate and verify the qualifications of their healthcare providers to ensure that each individual practitioner possess the necessary qualifications to provide medical services to patients. Once a practitioner is credentialed, the hospital will take further steps to assess the practitioner's competence in a specific area of patient care, through a process known as privileging.

Credentialing is founded on the principle that hospitals are responsible for ensuring the highest quality of care possible for their patients. In efforts to accomplish this goal, medical care facilities take steps to verify their health care provider's proficiency through the collection, verification and evaluation of data relevant to the practitioner's professional performance.

After the practitioner has met the credentialing requirements for the hospital, the practitioners expertise in a specific practice is further evaluated, this process is known as privileging. The process of credentialing and privileging occurs after a physician has already met the state's licensure requirements.

In most hospitals and health care facilities, physician credentialing takes place in two phases. During this initial phase the hospital verifies that the physician has completed medical training, is licensed to practice in the state where care is being administered, and has no pending medical violations on record.

However some hospitals require that their physicians undergo a second credentialing process, known as periodic credentialing, which allows hospitals to reassess the competency of their physicians. During this phase, hospitals have the opportunity to reevaluate a physicians' evolving medical history with the hospital.

After the credentialing process is completed, the hospital will assess the physician's competency in a certain medical practice area, like surgery or cardiology. Once the hospital has evaluated both the physician's medical practice history and the physician's competency in their intended field of practice, the physician is both credentialed and privileged.

Additional Resource

- http://ctel.org/expertise/credentialing-and-privileging/

What's On the Horizon for Telehealth

Physician Licensure

The Federation of State Medical Boards is developing a multi-state physician licensure compact. As states pass this, it will allow for an expedited licensing process for those physicians already in "good standing" in their home state. Many states are currently evaluating and considering introduction in their upcoming legislative sessions. More information at: http://www.fsmb.org/policy/advocacy-policy/interstate-model-proposed-medical-lic

Accountable Care Organizations (ACO)/ Patient Centered Medical Homes (PCMH)

In order to be successful, it is expected that ACOs and PCMHs will logically incorporate telehealth-related services and technologies to be more accessible and cost effective in their service delivery.

A summary description of these programs:

What's an ACO**?**

Accountable Care Organizations (ACOs) are groups of doctors, hospitals, and other health care providers, who come together voluntarily to give coordinated high quality care to their patients. The goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors. When an ACO succeeds both in delivering high-quality care and spending health care dollars more wisely, it will **share in the savings** it achieves for the program.

Published articles, research and evidence:

- http://www.aha.org/research/cor/content/ACO-Synthesis-Report.pdf (file will be saved to your computer)
- http://www.annualreviews.org/doi/abs/10.1146/annurev-publhealth-031811-124701

What's a PCMH?

The medical home is best described as a model or philosophy of primary care that is patient-centered, comprehensive, team-based, coordinated, accessible, and focused on quality and safety. It has become a widely accepted model for how primary care should be organized and delivered throughout the health care system, and is a philosophy of health care delivery that encourages providers and care teams to meet patients where they are, from the simplest to the most complex conditions. It is a place where patients are treated with respect, dignity, and compassion, and enable strong and trusting relationships with providers and staff. Above all, the medical home is not a final destination instead, it is a model for achieving primary care excellence so that care is received in the right place, at the right time, and in the manner that best suits a patient's needs.

Related published articles, research and evidence:

- Telemedicine and the patient-centered medical home:
  - http://www.ncbi.nlm.nih.gov/pubmed/24512158

- Peer Reviewed Resources:
  - http://www.pcpcc.org/resources
- PCPCC Primary Care Innovations Map
  - http://www.pcpcc.org/initiatives
- The Medical Home's Impact on Cost and Quality:
  - http://www.pcpcc.org/resource/medical-homes-impact-cost-quality

Direct to Consumer

A virtual visit (or e-visit) is a direct-to-consumer telehealth service that replaces in-person physician office visits for lower-acuity services such as episodic care for seasonal allergies and upper respiratory infections, behavioral health services, and routine follow-up for chronic diseases and prenatal care. Virtual visits are delivered through three technologies: “store and forward,” live consultations, and mobile health (mHealth).

- Store-and-forward services are asynchronous interactions between a provider and a patient. Unlike medical messaging or secure emails, virtual visits incorporate a standard set of clinically based questions to solicit the necessary information to make a diagnosis, offer treatment recommendations, and if appropriate, prescribe medication.
- Live consults allow for real-time interaction through videoconference between a patient and provider.
- mHealth technologies, depending on the platform, can be used to support both asynchronous and real-time virtual visits as well as provide access to health information, medical records, and scheduling services.

These options are growing significantly, focusing mainly on ease of access for patients, and reducing the cost of accessing care services. However, there are also concerns and discussion that has occurred around what should be considered "safe telemedicine" practices.

Questions include:

- Are these services conforming to the current standard of care for these diagnoses (for example--UTI, otitis media)?
- Do providers need to have an established patient relationship before seeing patients in this manner?
- Are providers able to prescribe medications as a result of these encounters?
- Are antibiotics being overprescribed as a result of these services?

Some examples include:

- http://www.teladoc.com/what-can-i-use-it-for/
- http://www.americanwell.com/
- http://www.wellpoint.com/
- http://www.carenamd.com/virtual-clinic
- https://www.mevisit.com/mevisit/resources/MPLC_Telehealth_FINAL.pdf

Mobile Health

Mobile health, often shortened to "mHealth", constitutes one of the most rapidly-growing fields in telehealth. Each month sees an upgrade in cell phone technology, software systems, and peripheral options in the market. Some product development is focused on patients' needs, while other areas are focused on the clinical setting.

Regulatory issues have not been clearly resolved, deployment and usage scenarios are still being worked out in many organizations, and there is a host of concerns around the privacy, security, and reliability of mobile healthcare devices. These constant changes mean that there is a lot to track and learn about in this field.

Learn More

- http://mhealthalliance.org/
- http://www.mhealthnews.com/
- http://en.wikipedia.org/wiki/MHealth
- http://www.telehealthtechnology.org/toolkits/mhealth
- http://www.pwc.com/gx/en/healthcare/mhealth/technology-trends.jhtml

Iowa-Specific Resources

Midwest Rural Telemedicine Consortium (MRTC)

Established in 1993 as a joint development program of Mercy Medical Center - Des Moines, and Mercy Medical Center - North Iowa, the membership of the Midwest Rural Telemedicine Consortium (MRTC) currently consists of 25 health care provider organizations. The MRTC is the largest telemedicine program in Iowa.

Learn More

- http://www.mercyhealthnetwork.com/mrtc/index.shtml

Iowa Rural Health Association

The Iowa Rural Health Association (IRHA) is a non-profit membership organization of individuals and organizations dedicated to ensuring optimal health for all Iowans, particularly those in rural areas. As the voice for rural health in the state, the IRHA brings attention to the issues that affect rural health providers and helps address those issues by providing educational opportunities, facilitating information sharing, and engaging in advocacy activities.

Learn More

- http://www.iaruralhealth.org/

Center for Telehealth and e-Health Law - Iowa

Those wishing to practice medicine in the state of Iowa currently need to obtain a full medical license. The Iowa State Code and the Iowa State Administrative Regulations are silent on the requirements for prescribing medication to a patient over the Internet. However, there was a brief mention of the term “physician-patient relationship,” which was noted in the Chapter 155A. Pharmacy/ subsection 155A.13B. Pharmacy Internet Sites, of the Iowa State Code.

Learn More

- http://ctel.org/iowa/

NEW: State Telemedicine Gaps Analysis From ATA (September 2014)

Recently released: Two critical state telemedicine policy reports which identify gaps in coverage and reimbursement, and in physician practice standards and licensure. These first-of-their-kind reports identify and compare state policies on a report card, assigning each state grades ranging from A-to-F based on telemedicine reimbursement and physician practice standards.

ATA has captured the complex policy landscape of 50 states with differing telemedicine policies, and translated the data into an easy-to-use format. Each state is graded based on telemedicine reimbursement policies as well as policies outlined by their respective state Medical Board.

Learn More

- http://www.americantelemed.org/policy/state-telemedicine-policy#.VBmkG1eOrHS

Examples of Telehealth Projects—Iowa

University of Iowa Telehealth Project

In June 2012, the University of Iowa and the UI Critical Access Hospital Network (http://www.uihealthcare.org/cah/) received a 7.7 million dollar Health Care Innovation Award from the Centers for Medicare and Medicaid Services to improve communication and care coordination with practitioners in rural Iowa counties. The University and Hospital Network are now using that funding to develop transitional care teams for rural patients with complex illnesses- and the use of telemedicine technology is a large part of their solution.

Learn More

- http://www.gptrac.org/university-of-iowa-telehealth-project/

Connecting Here and There—University of Iowa Newsletter, summer 2014

- http://medcom.uiowa.edu/medicine/connecting-here-and-there/

Facility-Specific Telehealth Projects

Clarke County Hospital - A New Quality of Care

Telemedicine is changing lives in rural Iowa. Thanks to cutting-edge technology and a forward-thinking staff, Clarke County Hospital is offering area residents nearly all of the specialist attention they need without a dreaded trip to the big city!

Learn More

- http://vimeo.com/71286667

Mercy Medical Center-North Iowa

Mercy Home Care is always looking for new ways to improve the quality of home care. A new patient monitoring program, called Health Buddy®, will enable Mercy Home Care patients to keep in daily touch with their healthcare provider. Health Buddy® is a small, wireless, easy-to-use, in-home communication tool that links information about the patient's condition to the healthcare provider - right from the comfort of patient's own home.

This special program is focusing on congestive heart failure patients and provided to Mercy Home Care patients as part of their Medicare benefit. All electronic health information is kept secure and confidential.

Learn More

- http://www.mercynorthiowa.com/telehealth-program

UnityPoint Health - Des Moines

UnityPoint Health - Des Moines was awarded an $8.3 million grant by the U.S. Department of Commerce Broadband Technology Opportunities Program (BTOP) to upgrade and improve broadband technology. UnityPoint Health - Des Moines sought this grant to increase access to and improve the quality of health care for many Iowans.

About Rural Iowa Telehealth Initiative

This program was established to deliver affordable health care and education to Iowans living in rural and, often, the most medically under-served communities. The Telehealth Initiative will increase broadband service and technology in these communities to ensure public safety workers, residents and health care professionals have access to information and the best training and tools available. The Telehealth Initiative will also assist rural Iowa communities with their ongoing economic development efforts.

Telemedicine Partners

- **Clarke County Hospital in Osceola**
  - http://www.clarkehosp.org/
- **Greene County Medical Center in Jefferson**
  - http://www.gcmchealth.com/
- **Grundy County Memorial Hospital in Grundy Center**
  - http://www.unitypoint.org/grundycounty/default.aspx
- **Guthrie County Hospital in Guthrie Center**
  - http://guthriecountyhospital.org/
- **Unity Point Health in Des Moines**
  - https://www.unitypoint.org/desmoines/telemedicine.aspx

Telehealth Policy Resources - Iowa

National Conference of State Legislatures

http://www.ncsl.org/research/health/state-coverage-for-telehealth-services.aspx

Telehealth Psychiatric Services: Improved Access in Iowa

http://www.iowapsych.org/Pages/TelehealthinIowa.aspx

National Telehealth Policy Resource Center

Iowa contracts with Magellan Health Services to manage the Iowa Plan for Behavioral Health. The delivery of psychiatric evaluation and medication management via webcam/video/audio to Iowa Plan Medicaid members is available through the Iowa Plan.

Members must consent to using telehealth. Members must have an in-person intake at the provider's location, where the option of telehealth is discussed.

Source: Iowa Plan for Behavioral Community Reinvestment. Magellan of Iowa. (accessed Nov. 8, 2013).

Learn More

- http://www.magellanofiowa.com/for-providers-ia/community-reinvestment.aspx

State Telehealth Laws and Reimbursement Policies

- http://telehealthpolicy.us/state-laws-and-reimbursement-policies

Key Websites

Federal Rural Health Grant Opportunities

- http://www.idph.state.ia.us/search/search.aspx?q=federal+rural+health&x=0&y=0

  File will be saved to your computer

- The Health Resources & Services Administration (HRSA) administers a number of grant programs to support rural health care delivery. HRSA's Federal Office of Rural Health Policy (ORHP) serves as the focal point for rural health activities within the U.S. Department of Health and Human Services (DHHS)
  - HRSA has developed a webpage specifically for providing technical assistance for potential applications (http://www.hrsa.gov/grants/apply/index.html)
  - Please bookmark this site for your own reference and promote it with potential applicants you are working with in your state
  - The portal includes slide presentations and recorded webinars for more detailed information on specific topics. This portal provides information about:
    - HRSA funding opportunities

        - Information on how to register in the various systems needed to submit an application
        - Details of opportunities and submission process (grants.gov)
        - Tips for writing a strong application
        - An explanation of the HRSA application review process (a great way to learn about the review process is to become a reviewer
            - Please sign up and encourage others to participate

- HRSA
    - www.hrsa.gov
- Office of Rural Health Policy
    - www.ruralhealth.hrsa.gov
- Technical Assistance
    - http://www.hrsa.gov/grants/apply/index.html
- Rural Eligibility
    - http://datawarehouse.hrsa.gov/RuralAdvisor/RuralHealthAdvisor.aspx

Flex Program

The Medicare Rural Hospital Flexibility (Flex) Program was authorized by section 4201 of the Balanced Budget Act of 1997 (BBA), Public Law 105-33. The Flex program provides funding to States for the designation of critical access hospitals (CAHs) in rural communities. Critical Access Hospital designation allows the hospital to be reimbursed on a reasonable cost basis for inpatient and outpatient services (including lab and qualifying ambulance services) provided to Medicare patients.

Grant Opportunities

- http://www.hrsa.gov/grants/index.html

Iowa Department of Public Health Funding Opportunities

- http://idph.state.ia.us/IdphGBP/IdphGBP.aspx

Medically Underserved Areas/Populations (MUAs & MUPs) and Countywide Health Professional Shortage Areas (HPSAs)

This map displays Medically Underserved Areas & Populations (MUAs & MUPs) as well as Health Professional Shortage Areas (HPSAs) in Iowa designated as of May 23, 2014 by the US Department of Health & Human Services – HRSA Data Warehouse. The HPSAs displayed in Iowa are for Primary Medical Care only and include only instances where the entire county has been assigned with a HPSA designation. These areas are symbolized on the map by a 10% simple hatch. The MUA/MUP's are shown at 3 different levels of geography including by Census Tract, Minor Civil Division (MCD) and countywide coverage. These areas are displayed on the map with the color solar yellow.

In addition, the Acute Care & Critical Access Hospitals identified by CMS as of April 24, 2014 are indicated on the map. The Acute Care Hospitals are symbolized with a blue cross, while the Critical Access Hospitals are shown with a red cross. The state, county and MCD boundaries are a component of the 2014 TIGER shapefiles as released by the United States Census Bureau. The World Street Map basemap which includes underlying geography such as places, roadways, shaded relief and hydrography is a 2013 product of ESRI.

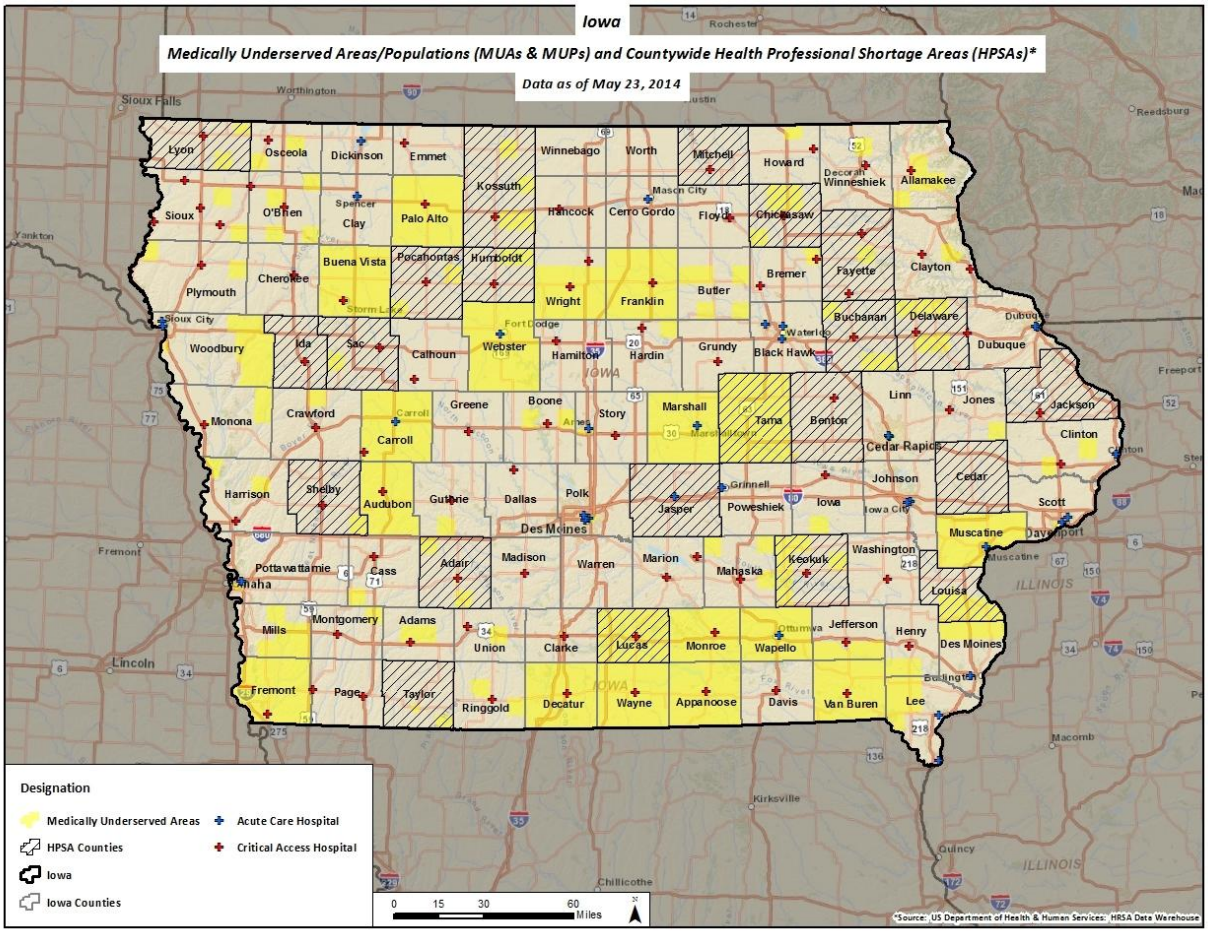
Why is geography important in telehealth?

Geographic data are used to identify underserved populations in both urban and rural areas. One of the fundamental challenges with geographic data is that it is constantly changing, and health disparities vary widely across rural and urban areas. With the help of geographic data, we are able to view data associated with these populations at different levels of granularity (Census Tract, Minor Civil Division, county etc.) Boundaries and populations are in constant flux and agencies such as the United States Census Bureau must account for this in their ongoing data collection efforts. These maps provide the ability to identify areas of need for telehealth services and foster the development of partnerships within provider networks.

Geography is also fundamental in understanding the current legal aspects of telemedicine. One of the main challenges with implementation of telemedicine is that the majority of states have different rules and regulations governing physician licensure. Interstate commerce across state lines is common in many areas of the country and many population centers are located in close proximity to state boundaries. Geographic Information Systems (GIS) allow us to visualize such trends on a map in an effort to understand the impacts of legislation in different communities. Multiple data layers, such as those displayed in the Iowa map can be utilized to evaluate population trends and assist in future telehealth program decisions.

Data Sources

- HPSA source
  - http://hpsafind.hrsa.gov/HPSASearch.aspx
- MUA/MUP source
  - http://muafind.hrsa.gov/index.aspx
- Census Bureau source
  - https://www.census.gov/geo/maps-data/data/tiger-line.html



Iowa Resources

Iowa e-Health

Iowa e-Health is a collaborative effort in Iowa encompassing EHR/Health IT Adoption, the Iowa Health Information Network (IHIN) and, the healthcare consumer. The IHIN is Iowa's statewide health information exchange. It is a public and private collaboration - led by the Iowa Department of Public Health - to improve health care quality, safety, and efficiency through the use of health information technology (health IT).

Learn More

- http://www.iowaehealth.org/patient/overview/what-is-iowa-ehealth/

Telligen

Implementing electronic health records along with addressing meaningful use criteria can pose challenges for hospitals and clinics. Telligen's Health Information Technology Regional Extension Center understands these challenges and is available to help.

Telligen HITREC is one of a select group of organizations throughout the U.S. designated as having the experience and capacity necessary to assist hospitals and health care providers with the task of meaningfully using certified EHRs. Selected by the Office of the National Coordinator for Health Information Technology, Telligen serves clinics, and critical access and rural hospitals in Iowa. Telligen offers expert resources, education, tools, and support and guidance to hospitals and clinics to understand and meet meaningful use criteria.

Learn More

If you are an Iowa critical access hospital needing assistance with telehealth, please contact IowaHITREC@telligen.com, call 800-373-2964, or visit http://www.telligenhitrec.com/. Other Telligen contacts: Susan Brown 515-440-8215; sbrown@telligen.com.

gpTRAC

The Great Plains Telehealth Resource & Assistance Center (www.gptrac.org) serves as a resource for telehealth information, program development and implementation. Primarily, gpTRAC provides guidance to healthcare providers, facilities and organizations just beginning their telehealth programs and those looking to add or expand telehealth-related services.

This resource center serves the states of North Dakota, South Dakota, Minnesota, Iowa, Wisconsin and Nebraska, but is also connected to a network of telehealth resource centers around the country.

Learn More

- gptrac@umn.edu
- 888-239-7092

Resources

Funding Opportunities for Telehealth

- HRSA rural health grant programs fund rural hospitals, health centers and local clinics.
  - http://www.hrsa.gov/ruralhealth/grants/index.html
- Active Grants for HRSA Program(s): Telehealth Network Grant Program (H2A)—data current as of August 14, 2014
  - http://ersrs.hrsa.gov/ReportServer/Pages/ReportViewer.aspx?/HGDW_Reports/FindGrants/GRANT_FIND&ACTIVITY=H2A&rs:Format=HTML4.0

SBIR/STTR Solicitation Available: On January 17th, NIH, CDC, FDA, and ACF issued PHS 2014-02 Funding Opportunity Announcement (PA-14-071) for Small Business Innovation Research Grants (SBIR) along with a funding announcement for the Small Technology Transfer Research (STTR) program. The funding announcements invite U.S. small business concerns to submit SBIR and STTR grant applications Read Full Solicitation:

- http://grants.nih.gov/grants/funding/sbirsttr1/2014-2_SBIR-STTR-topics.pdf

- **Award Ceiling:** $150,000 Phase 1; $1,000,000 Phase 2
- **Due:** APRIL 5, AUGUST 5, AND DECEMBER 5, 2014,

  MAY 7, SEPTEMBER 7, 2014 AND JANUARY 7, 2015 FOR AIDS/AIDS-RELATED RESEARCH

Ongoing Funding Opportunities (Applications Accepted Year Round)

The Hearst Foundations: http://www.hearstfdn.org/

The Hearst Foundations assist leading regional hospitals, medical centers and specialized medical institutions providing access to high-quality healthcare for low-income populations. In response to the shortage of healthcare professionals necessary to meet the country's evolving needs, the Foundations also fund programs designed to enhance skills and increase the number of practitioners and educators across roles in healthcare.

Because the Foundations seek to use their funds to create a broad and enduring impact on the nation's health, support for medical research and the development of young investigators is also considered.

- How to Apply
  - http://www.hearstfdn.org/funding-priorities/process/

Ongoing Funding and Grant Portal Pages

- Grants Office Directory Portal
  - http://www.grantsoffice.info/
- Health Resources and Services Administration (HRSA), US Department of Health and Human Services
  - http://www.hrsa.gov/grants/index.html
- Utilizing Health Information Technology (IT) to Improve Health Care Quality (R18)
  - http://www.healthitgrants.info/GrantDetails.aspx?Grant=23395
- USDA Distance Learning and Telemedicine Program
  - http://www.rurdev.usda.gov/utp_dlt.html
- Rural Assistance Center Funding Searches
  - http://www.raconline.org/rural-monitor/rac-funding-searches-funding-sources/

Financial Resources and Opportunities

Some organizations have designed their telehealth initiatives to meet the criteria for available grants. We recommend developing a telehealth proposal based on your organization's goals and needs, and then finding grants and other funding sources that are aligned with your purposes. Several resources are available to assist you in locating grant opportunities—starting with gpTRAC.

Learn More

http://www.gptrac.org/resource-center/financial-resources-and-opportunities/

- Grant Spy
  - http://www.grantspy.com/
- Rural Assistance Center Online
  - http://www.raconline.org/funding
- The Foundation Center
  - http://www.foundationcenter.org/
- Norris Consulting Group
  - http://www.norrisconsultinggroup.com/

USDA Distance Learning and Telemedicine Program (DLT) Resources (specific to reimbursement of network connectivity costs)

- 2014 Grant Application Guide
  - http://www.rurdev.usda.gov/SupportDocuments/2014-DLT-App-Guide.pdf
- Updated 2014 Grant Toolkit
  - http://www.rurdev.usda.gov/SupportDocuments/2014-DLT-Grant-Toolkit-Fillable.pdf
- Updated 2014 Budget Worksheets
  - http://www.rurdev.usda.gov/SupportDocuments/DLT_2014_BudgetWorksheets.xlsx
- Important Bulletin for All DLT Applicants Concerning Cloud Services
  - http://www.rurdev.usda.gov/SupportDocuments/utp_DLTApplicantBulletinCloudServices.pdf
- 2014 DLT Grant Notice of Funding Availability
  - http://www.gpo.gov/fdsys/pkg/FR-2014-05-22/pdf/2014-11700.pdf
- Federal Register correction of electronic deadline date for 2014 DLT NOFA
  - http://www.gpo.gov/fdsys/pkg/FR-2014-05-30/pdf/2014-12548.pdf
- Index of DLT Award Summaries
  - http://www.rurdev.usda.gov/UTP_DLTAwardsIndex.html
- Standard DLT Grant Agreement Document
  - http://www.rurdev.usda.gov/SupportDocuments/DLTGrantAgreement.doc
- Distance Learning and Telemedicine Related Links
  - http://www.rurdev.usda.gov/UTP_DLTLinks.html
- Distance Learning and Telemedicine Program (DLT) Resources
  - http://www.rurdev.usda.gov/utp_dltresources.html

Resource Listing

- American Telemedicine Association
    - One of ATA's driving missions is to educate government about telemedicine to improve public support for telehealth services
    - As the voice of telemedicine, ATA is recognized throughout the world as the primary authority about telemedicine, and actively works with Congress, the administration and other governmental bodies to eliminate barriers to the use of telemedicine
    - http://www.americantelemed.org/#'
- The Center for Connected Health Policy (CCHP)
    - anonprofit, nonpartisan organization working to maximize telehealth' s ability to improve health outcomes, care delivery, and cost effectiveness
    - http://cchpca.org/about-cchp
- Telehealth Resource Centers
    - Located regionally and most resources are free
    - http://www.telehealthresourcecenter.org/
- National Telehealth Policy Resource Center
    - www.telehealthpolicy.us
- National Telehealth Technology Assessment Resource Center
    - www.telehealthtechnology.org

Regional Telehealth Resource Centers (RTRCs)

- California Telehealth Resource Center (CA)
    - www.caltrc.org
- Great Plains Telehealth Resource and Assistance Center (ND, SD, MN, IA, WI, NE)
    - www.gptrac.org
- Heartland Telehealth Resource Center (KS, MO, OK)
    - www.heartlandtrc.org
- Mid-Atlantic Telehealth Resource Center (VA, WV, KY, MD, DE, NC, PA, DC)
    - www.matrc.org
- NorthEast Telehealth Resource Center (CT, MA, ME, NH, NY, RI, VT)
    - www.netrc.org
- Northwest Regional Telehealth Resource Center (MT, WA, AK, OR, ID, UT, WY)
    - www.nrtrc.org
- Pacific Basin Telehealth Resource Center (HI, Pacific Basin)
    - www.pbtrc.org
- South Central Telehealth Resource Center (AR, MS, TN)

  - www.learntelehealth.org
- Southeast Telehealth Resource Center (GA, SC, FL, AL)
  - www.setrc.us
- Southwest Telehealth Resource Center (AZ, CO, NM, NV, UT)
  - www.southwesttrc.org
- TexLa Telehealth Resource Center (TX, LA)
  - www.texlatrc.org
- Upper Midwest Telehealth Resource Center (IN, IL, MI, OH)
  - www.umtrc.org
- Arizona Telemedicine Program: Papers, Books, Book Chapters and Abstracts
  - http://www.telemedicine.arizona.edu/publications/date
- Midwest Rural Telemedicine Consortium (MRTC)
  - http://www.mercyhealthnetwork.com/mrtc/index.shtml
- Access to Rural Health Care – A Literature Review and New Synthesis
  - http://www.rupri.org/Forms/HealthPanel_Access_August2014.pdf
- Telemedicine Information Exchange
  - The TIE is a comprehensive, international, quality-filtered resource for information about telemedicine, telehealth, and telemedicine/telehealth related activities
  - http://www.tmhguide.org/site/epage/93994_871.htm
- Telehealth Optimization Initiative, Summary of Focus Group Methodology and Responses
  - http://www.caltrc.org/wp-content/uploads/2013/10/09-0184-final_web_ctec_focus_group_summary_design.pdf
- Strategies for Incorporating Telehealth-based Care Coordination and Management Solutions into Programs to Integrate Care for Dual Eligibles (Issue Brief)
  - http://www.techandaging.org/Dual_Eligibles_Issue_Brief.pdf
- Patient Provider Telehealth Network – using telehealth to improve chronic disease management: Case Study Report
  - http://www.healthit.gov/sites/default/files/pdf/RCCHCandPHS_CaseStudy.pdf
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