Telehealth Resource Guide

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Introduction

For the past several decades, advances in technology have enabled innovative programs to use telehealth and telemedicine to deliver care to underserved and rural areas. With the rapid diffusion of health information technology, wider expansion of these programs is possible. There are now many opportunities to leverage telehealth and telemedicine to increase access to preventive and specialty care, address health disparities affecting vulnerable populations, and save costs. For rural and underserved areas, telehealth can reduce transportation costs and increase efficiency due to shared health professional staffing.

State and territorial public health agencies can be leaders or partners in initiatives that promote telehealth and telemedicine. This guide is a resource for state and territorial health officials to enhance their telehealth efforts. It includes information gathered through an environmental scan of the published literature and web, as well as individual calls with states about their promising telehealth initiatives to gather lessons learned and emerging best practices.

What Are Telehealth and Telemedicine?

The terms ‘telehealth’ and ‘telemedicine’ are often used interchangeably, but they technically have different definitions. HRSA defines telehealth as “the use of technology to deliver healthcare, health information, or health education at a distance.” In contrast, telemedicine is the “use of medical information exchanged from one site to another via electronic communications to improve a patient’s clinical health status.” Thus, telemedicine refers to traditional clinical diagnosis and monitoring that is delivered with technological assistance, while telehealth encompasses a broader array of services and uses, including health education.2,3

The distinction between telehealth and telemedicine is important because the difference in definitions can impact related initiatives. In particular, limited definitions in state legislation can limit the scope of services offered and reimbursed in a state. For example, some states have limited telehealth reimbursement to live video, excluding other applications. For more information on reimbursement, see the section on Telehealth Costs, Funding, and Reimbursement.

For the purposes of this guide, ASTHO will use the term ‘telehealth’ because it encompasses a broader array of services and is now more commonly used.

Telehealth Applications

Telehealth can be used in a number of different applications and contexts. Common telehealth applications include:

- Dentistry.
- Counseling.
- Physical and occupational therapy.
- Home health.
- Chronic disease monitoring and management.
- Disaster management.
- Consumer and professional continuing education.4
Telehealth can be located in many different settings where individuals live, learn, work, and play:

- Medical centers (e.g., hospitals, outpatient settings, community health centers).
- Homes.
- Schools.
- Workplaces.
- Community centers and organizations that provide social services.

There are four types of telehealth applications: live videoconferencing, remote patient monitoring (RPM), store-and-forward, and mobile health (mHealth).

- Live video (conferencing, synchronous) is a live, two-way interaction between an individual and provider using a videoconference, telephone, or a home health monitoring device.
- Store-and-forward (asynchronous) is the transmission of data, images, sound, or video (i.e., recorded health history) from one care site to another for evaluation, typically by a specialist, who then reviews or performs a service. This service provides access to data after it has been collected rather than a real-time live video.
- RPM is the collection of personal health and medical data that is transferred to a remote provider for monitoring. This service enables a provider to continue to track a patient’s status once they are released home or to another care setting.
- mHealth uses mobile communication devices, such as cell phones and tablets, to deliver healthcare and public health practice, as well as education. mHealth applications vary from targeted text messages (e.g., Text4Baby) to smartphone applications to wider alerts about outbreaks or recent events. 

**Demonstrating the Benefits of Telehealth**

Studies of telemedicine and telehealth have demonstrated that they can save costs, improve quality of care, and increase patient acceptance of telemedicine. A systematic review found that telehealth has demonstrated effectiveness for specific uses with some types of patients, such as:

- Remote patient monitoring for patients with chronic conditions.
- Communication and counseling for patients with chronic conditions.
- Psychotherapy as part of behavioral health.

The literature is vast and varied with many different studies, however additional research is needed for specific topics such as maternal and child health and other innovations. The following are resources that summarize the evidence base:

- The Center for Connected Health Policy: Cost Effectiveness Research Catalogue.

**Glossary**

Major telehealth terms were defined in the previous section. Glossaries for telehealth terms include the South Central Telehealth Resource Center’s Interactive Telehealth Glossary and another hosted by the
**American Telemedicine Association**. A select few additional terms from the Interactive Telehealth Glossary have been included below.

- **Broadband**: A high-speed, continuous service connection allowing large amounts of information to be conveyed quickly, such as data, graphic files, or video.
- **Electronic Data Interchange**: The sending and receiving of data directly between trading partners without paper or human intervention.
- **Encryption**: A system of encoding data on a webpage or e-mail such that the information can only be retrieved and decoded by the person or computer system authorized to access it.
- **Health Information Technology**: The comprehensive management of health information and its secure exchange among consumers, providers, government and quality entities, and insurers.
- **HIPAA**: An acronym for the Health Insurance Portability and Accountability Act of 1996. Under this legislation, the Office for Civil Rights enforces the HIPAA Privacy Rule, which protects the privacy of individually identifiable health information; the HIPAA Security Rule, which sets national standards for the security of electronic protected health information; and the confidentiality provisions of the Patient Safety Rule, which protect identifiable information being used to analyze patient safety events and improve patient safety.
- **Hub and Spoke**: A network design in which larger “hub” sites facilitate the movement of data via broadband to smaller “spoke” sites.

**Telehealth Use in States**

**How State Health Departments Are Working with Telehealth**

Most state public health agencies are working on telehealth initiatives, however the level of engagement and focus varies. Some lead telehealth efforts broadly for the state or work closely on a select number of programs. In other states, the state Medicaid agency or state office of rural health manages the telehealth initiatives. The remaining states are working with their professional boards or external coalitions to provide input and support on telehealth activities.

Despite telehealth initiatives often being housed in other departments or agencies beyond public health, state public health agencies can have major role in developing telehealth programs or policies. They can convene stakeholders and partners to foster discussions and strategic planning on telehealth. They may also provide input and expertise on how to best reach rural or underserved populations, as well as the best practices for prevention and public health interventions. Additionally, they can look internally to their own programs, such as chronic disease management or screenings, to see if any could benefit from using telehealth.

**Telehealth Legislation**

A state’s laws, regulations, and Medicaid program policies on telehealth, telemedicine, and other health-related topics can have significant impact on the feasibility of telehealth programs. As noted earlier, how states define telehealth or telemedicine in legislation affects the reimbursement and coverage of services. Further, some states put specific restrictions within the definitions of telehealth, often limiting the term to “live” or “interactive,” which can limit reimbursement of store-and-forward and RPM programs.
As a field, telehealth is growing and policies dedicated to coverage and reimbursement are evolving. A majority of states introduced telehealth-related legislation in 2016 legislative sessions. Based on current information, the following is a snapshot of telehealth legislation and policies across states.

- **Telehealth/Telemedicine Parity Laws**: These laws require private payers in a state to reimburse for telehealth services the same way they would for an in-person service. As of January 2016, 29 states have telemedicine parity laws for private insurance.9

- **Medicare Coverage**: Medicare restricts telehealth services to rural or underserved areas, and the types of covered services in these instances. Medicare does not have telehealth parity.10

- **Medicaid Coverage**: As of January 2016, 48 state programs have some type of coverage for telemedicine.11
  - Forty-seven state programs offer some type of live video reimbursement in their Medicaid program as of March 2016.12 Reimbursement policies can range from limited case management services for specific conditions to live video in a wide variety of medical specialties.13
  - At least nine states’ Medicaid programs reimburse for store-and-forward delivered services.14
  - An increasing number of states are covering RPM in their Medicaid programs, with 16 states having some form of reimbursement.15

- **State Employee Health Plans**: As of January 2016, 26 states have some type of coverage for telehealth under one or more state employee health plans.16

Professional licensure portability and practice standards are other types of telehealth-related legislation and policies, and often pose challenges for healthcare providers considering telehealth adoption. In general, state medical boards adopt standards of practice for healthcare delivery within a state. They have the authority to impose new specifications for telemedicine delivery or update current standards with telehealth language. Another consideration for state medical boards is whether they require a patient to have an initial examination conducted in-person and physician-patient relationship to be established in-person.17 Licensure portability is defined as “the ability for healthcare providers to practice out-of-state using one license,” which has ramifications for telehealth because patients can connect with providers in other states.18 In July 2016, the National Conference of State Legislatures (NCSL) released a brief on telehealth licensing that explains these issues in more detail.

Several organizations track and monitor national and state telehealth-related legislation and provide resources summarizing current policies. For more information on state legislation, visit:

- **Center for Connected Health Policy (CCHP)**. As the National Telehealth Policy Resource Center, CCHP tracks both state and national legislation related to state laws and reimbursement policies, Medicare and Medicaid policies, and privacy regulations. Particular resources of note:
  - Online interactive map of state telehealth-related legislation.
- **American Telemedicine Association (ATA)**. ATA’s State Policy Resource Center produces reports that identify and compare state policies via report cards, assigning each state grades based on telemedicine reimbursement and physician practice standards. Particular resources of note:
- NCSL hosts an online library that tracks state bills and develops resources for state legislators and staff about different policy topics. Particular resources of note:
  - State Coverage for Telehealth Services Webpage.
  - Telehealth Policy Trends and Considerations report, released in December 2015.
- Health Affairs, with support from the Robert Wood Johnson Foundation, published a health policy brief on telehealth parity laws at the national and state levels, released in August 2016.

For information on telehealth policy related to Medicare, see:
- CMS: Telehealth webpage and report from the Medicare Learning Network.
- HRSA: Medicare Telehealth Payment Eligibility Analyzer.

Telehealth Costs, Funding, and Reimbursement

Telehealth programs require funds to support the technology infrastructure (e.g., storage servers, mobile units or carts with LCD screens and specialty tools such as cameras), bandwidth and internet connections, staffing, and training. To support costs, telehealth programs supported through public health agencies typically rely on grant funding, including private and public funders. State budgets may also provide general funding for coordinated telehealth efforts and offices. Several states have leveraged federal workforce grants through HRSA and other opportunities to create specific programs.

The dependence on grant programs to fund specific telehealth programs is a substantial challenge to sustainability because state funds are often limited to support these type of activities. Medicaid and private coverage for services are also crucial to sustainability, though variations in Medicaid expansion can be a challenge for delivering care to underserved and rural populations.

With telehealth parity laws and Medicaid coverage, telehealth services can be reimbursed in a variety of ways, including fee-for-service and value-based payments. However, telehealth services can also include other fees, such as originating site facility fees. These fees vary across states. For more information on funding and reimbursement, see ATA’s report on Coverage and Reimbursement.

State Examples and Mini-Case Studies

Several states have shared their telehealth experiences with ASTHO, including challenges and lessons learned. Multiple themes emerged across these mini-case studies. In particular, state telehealth policies regarding reimbursement (e.g., lack of parity legislation) and scope of practice can hinder telehealth and limit the sustainability of initiatives, which are often grant-funded. Several states have found success by forming networks or other collaborations with private and public sector organizations to promote telehealth. These collaborations can help advance telehealth because they engage different stakeholders and convene disparate activities across a state. Further, several states see telehealth as a tool to be applied to address barriers to access and a way to expand established programs. Specific details about each state’s telehealth activities are provided below.
| Program Description | The Alabama Department of Public Health (ADPH) began pursuing telehealth activities several years ago, building on its long-time technical expertise with video production and distance learning for the public health workforce. In 2015, it started the Public Health Telemedicine Network, which now has 15 sites and six telehealth healthcare provider partners. Access to healthcare in Alabama is a major challenge, particularly in rural communities. To increase access to care, ADPH envisioned each county health department having a telehealth clinic and serving as an origination site for virtually all healthcare encounters. With in-house video production, videoconferencing, and IT expertise, ADPH decided to purchase telehealth cart components and build custom carts, generating significant savings for the department. The carts are identical and can be used for videoconferencing staff trainings and meetings, as well as telehealth encounters. Videoconferences and telehealth encounters are encrypted and HIPAA-compliant. Each telehealth cart includes a computer, HD pan, tilt and zoom video camera, codec, two 24” monitors, 3M Bluetooth stethoscope, and JedMed handheld examination camera with three lenses (general viewing, dermatology and otoscope). Medical AIDS Outreach of Alabama was the first telehealth collaborating partner; other partners now include the University of Alabama at Birmingham School of Medicine, Alabama Coalition Against Rape, Cahaba Medical Care, AIDS Alabama, and Veterans Administration. |
| Challenges Encountered | Alabama’s challenges with telehealth activities include inadequate broadband telecommunications at 23 of the 67 county health departments. Additionally, the lack of reimbursement for telehealth services is a financial barrier. Currently, there is no parity legislation in Alabama. Although Blue Cross and Blue Shield of Alabama recently adopted reimbursement for telehealth, it is limited to five conditions: cardiology, dermatology, infectious diseases, behavioral health, and neurologic diseases, including stroke. These reimbursement challenges have resulted in Alabama’s telehealth initiatives relying on grant funding, which is often earmarked for infrastructure improvements and equipment, not operational expenses. |
| Lessons Learned and Promising Practices | ADPH’s expertise in distance learning and related educational technologies was a major facilitator for this initiative. This capacity enabled ADPH to build its own carts, saving several thousands of dollars and allowing it to maximize grant funding to buy more carts. ADPH also aligned its telehealth initiative with community health assessments, which helped it understand the major barriers to accessing care—primarily transportation—that telehealth seeks to address. This alignment also allows the department to help promote telehealth’s benefits. |
The state and county health departments’ organization has been another facilitator for the program. Alabama has centralized county public health departments, so all employees working at the local sites are state employees. This structure strengthens working relationships between local employees and those working in the central office on new initiatives.

**Emerging Opportunities and Next Steps**

The ADPH telehealth program’s mission is to use state-of-the-art technology to aggressively address the social determinants of health barriers that inhibit routine and specialty care. By establishing telehealth clinics at all county health departments, ADPH will be positioned to collaborate with medical and educational institutions, safety net providers, and other healthcare providers to ensure that underserved populations throughout Alabama have the best possible access to care.

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**ALASKA**

**Program Description**

Alaska has been a national leader in telehealth, particularly with increasing access to care for tribal populations. In the late nineties, the Alaska Native Tribal Health Consortium created the [Alaska Federal Health Care Network Access Network (AFHCAN)](https://www.afhc.net). This network included member organizations ranging from tribal entities, the Veterans Administration, Department of Defense, U.S. Coast Guard, and Alaska Division of Public Health (AKDPH). These organizations have more than 200 healthcare sites across the state. This infrastructure allows the program to deliver care to regional primary care sites and a wide variety of specialty services. It also works with Alaska’s robust [Community Health Aide program](https://www.dphhs.alaska.gov/services/communityhealthaide), which certifies Alaska Native people as community health aides and practitioners, dental health aides, and behavioral health aides.

AFHCAN uses both live videoconferencing and store-and-forward technologies. It also uses a hub-and-spoke model in which patients are seen at a local clinic, referred via telehealth to a regional center, and referred to the central Anchorage hospital if more complex care is needed. AFHCAN programs now have 1,500 providers engaged with 200 rural health centers and 43,000 yearly telehealth visits.

AKDPH helped coordinate the Alaska Telehealth Advisory Council (ATAC) in the late 1990s, during the same time that AFHCAN was developing its infrastructure. In 1999, ATAC established principles for developing telemedicine in the state: (1) Any entity that becomes engaged in statewide telehealth in Alaska should ensure equal access, when financially realistic, to all Alaskans who would benefit from this technology; (2) All entities participating in telehealth must assure that their systems meet interconnectivity and interoperability standards and participate in the coordination of other telehealth efforts in the State of Alaska; (3) All telehealth applications should be acceptable to both the patient and the provider and be easy to use; (4) All entities that participate in telehealth
must demonstrate their financial viability for the long-term, including the provision of professional capacity and development and training as an ongoing component of operating expenses; (5) All participants in telehealth in Alaska should engage in a needs assessment and evaluation of services. This infrastructure helped promote telehealth and provide a framework for how activities should develop.

In addition to the people served in the tribal system, some patients with private insurance or Medicaid use telehealth, though this is less developed than the tribal system. Still, ATA rated Alaska the highest in the nation for Medicaid operations in its yearly state profiles because its program covers telemedicine when providers use interactive audio-video, store-and-forward, RPM, email, fax, or audio conferencing for some services.

In terms of payment and reimbursement, Alaska is still fee-for-service based. For telehealth, Alaska pays the origination site and facilitator fee for the behavioral health program.

| Challenges Encountered | Sustainable funding for partnerships can be a challenge for these types of initiatives. ATAC concluded its activities in the early 2000s because its funding ran out. Another barrier to telehealth adoption in nontribal health systems is the lack of interoperability between different systems, as well as policy barriers, specifically payment disparities between public and private coverage and lack of licensure reciprocity between Alaska and other states. |
| Lessons Learned and Promising Practices | Leveraging existing infrastructure and workforce development, in the case of the tribal health system and Community Health Aide program, contributed to the telehealth program’s success. ATAC also provided a solid framework and shared vision for telehealth activities in the state. |
| Emerging Opportunities and Next Steps | In the spring of 2016, the Alaska governor signed legislation that directs the Alaska Department of Health and Social Services to adopt regulations that reform the telehealth program, including “expanding the use of telehealth for primary care, behavioral health, and urgent care.” The department is also required to “identify the areas of the state where improvements in access to telehealth would be most effective in reducing the costs of medical assistance and improving access to healthcare services for medical assistance recipients” and “make efforts to improve access to telehealth for recipients in those locations.” The bill also allows the department to work with the tribal health system (e.g., ANTHC) to improve access to telehealth services, and instructs it to develop a business registry to assess telehealth activities in the state. To help accomplish these tasks, AKDPH is considering reestablishing ATAC and potentially creating a state coordinator or dedicated office of telehealth, which AKDPH and the Medicaid agency would share. |
**Program Description**

The California Department of Public Health (CDPH) has two strong telehealth initiatives within its [Genetic Disease Screening Program](#) and [Virtual Dental Home System of Care](#) program.

The Genetic Disease Screening Program is 30 years old and added telehealth functionality in 2007. By law, all pregnant women in California must be offered screening for certain birth defects. However, in certain rural areas, there are no licensed genetic counselors nearby.

To increase access to genetic counseling services, telegenetic services using videoconferencing allows pregnant women to consult with a genetic counselor in a state-approved prenatal diagnosis center (PDC), mimicking a face-to-face encounter. The pregnant woman can then continue relevant services with a local perinatologist if their fetus has a high risk of having a birth defect. To ensure the quality of care delivery, the program created quality standards for PDCs using telegenetics, and offers this service only in areas where there are geographic shortages of genetic counseling services (e.g., no PDC within 120 miles round trip from another PDC). Further, to evaluate the provision of telegenetic services, the program fielded a patient satisfaction survey to assess the quality of services delivered.

CDPH piloted the Virtual Dental Home program in 2010 using funding from a HRSA workforce grant. In partnership with the University of the Pacific, the program is a community-based oral health delivery system through which individuals receive preventive and simple therapeutic dental services in settings where they also receive educational, social, or general health services (e.g., HeadStart programs). Allied dental professionals (e.g., registered dental hygienists in alternative practice, registered dental hygienists working in public health programs, and registered dental assistants in extended functions) provide services onsite and use telehealth software to document services and share health records with supervising dentists, who then review each patient record and recommend follow-up care or referrals if needed. Using the telehealth technology, the dentists are able to review patient records in between appointments during the day or after office hours. To determine the pilot’s success, the California team distributed an evaluation survey to children, parents, and school administrators. Overall, more than 80 percent of children and parents were very satisfied or satisfied with the care delivered, and 96 percent of the administrators were very satisfied or satisfied with the program.

**Challenges Encountered**

Two challenges for the Genetic Disease Screening Program were the different facilities’ wireless capabilities and occasional telehealth server outages. With outages, clinic staff had to create workaround processes, such as speaking by phone, to ensure that clients were served and did not have to...
Another challenge was providing multilingual services, particularly as the number of Spanish-speaking Californians increased.

One initial challenge for the Virtual Dental Home program was gaining acceptance from dentists and their professional groups about the scope of work and oversight of the allied dental professionals in the pilot as they were practicing outside of the dental clinic with remote oversight by a dentist. With education and inclusion in reviewing the program sites, the team was able to gather support from the dental association, which became one of the program’s major strengths in the pilot’s later stages. Another challenge was finding physical locations to store and safeguard program materials at the different sites, including schools. The California team worked with school administrators and other site managers to identify proper space for storage in each location.

Lessons Learned and Promising Practices

The California team noted that it is important to establish clear quality standards to ensure a level playing field for all centers and satisfactory care for all mothers who receive services.

Training for both allied dental professionals and dentists was essential to the Virtual Dental Home program’s success. This training helped the allied dental professionals and dentists understand workflow and how to address different situations. Engaging with the dental association also increased the dental professionals’ acceptance of the program.

Emerging Opportunities and Next Steps

Over time, the Genetic Disease Screening Program has reevaluated its geographic distance requirement. The minimum distance to the next genetic counseling center is now 90 miles round trip. The program will also continue to evaluate the telegenetics policy annually to ensure that it is removing major geographic barriers to accessing genetic counseling services. Another area that the team is watching closely to both ensure the access to and quality of care is the number of genetic counselors who are licensed in California but are located in other states and providing genetic counseling services to California residents via telehealth.

In 2015, the California legislature passed the California Dental Practice Act, which adopts the allied dental professionals’ broader duties and allows the pilot to be expanded to additional locations. The California team is currently considering the best way to roll out the implementation of these programs. It is also working on including value-based payment incentives rather than a completely fee-for-service model in this program.

GEORGIA

Program Description

The Georgia Department of Public Health’s (GADPH) Office of Telehealth and Telemedicine, in partnership with local county health departments, has created a number of telehealth and telemedicine programs to improve health access, address workforce shortages, and reduce health disparities.
across its large, rural state. Early telemedicine efforts related to public health began 20 years ago in the Southeast Health District. In July 2011, a statewide assessment and planning process identified these telemedicine efforts as a growth opportunity, and they became a strategic priority for GADPH.

Leveraging grant funding from state, federal, and private sources, GADPH obtained telemedicine carts, each equipped with a stethoscope, otoscope, and general exam camera, which it deploys in local public health settings to connect clients to public health and healthcare services via videoconference. Currently, 157 out of the 159 counties in the state have access to telehealth through the health departments, with the remaining installations scheduled for completion this fall.

Telemedicine projects include a high-risk obstetrics clinic that allows clients to consult with a remote maternal fetal medicine specialist and participate in a centering pregnancy intervention, children’s medical services (e.g., developmental and genetics, endocrinology, nephrology, neurosurgery, pulmonology, and sickle cell), and infectious disease specialists focused on HIV/AIDS. The infectious disease program allows mobile presentation of the client from their home, community setting, or local health department, and connects them with a GADPH infectious disease specialist. This network also connects the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) services with breastfeeding support, nutrition education, and staff training and development. Another pilot program focuses on teledermatology. GADPH also manages several school-based telemedicine programs, including a school-based dental clinic (teledentistry) and a behavioral health clinic. Further, GADPH uses the carts and technology capacity for emergency response training, public health training, and distance learning. This provides a positive return on investment because transportation costs for centralized trainings are very expensive.

To maintain these telemedicine programs, GADPH used partnership agreements to build a network of Georgia-licensed providers for different kinds of services. GADPH then connects clients to practitioners in their local communities. These services are not intended to replace the primary care providers who already serve in rural communities. Instead, the program functions as a referral service to connect Georgians with the specialized care they need that may not exist in their community. If there is a gap, or a local provider is unable to continue providing telemedicine services, GADPH reaches out to partners, such as other healthcare systems or the Georgia Partnership for Telehealth.

At the state level, GADPH works with planning and steering committees on its telehealth programs, and reports progress to the governor every quarter. Various state agencies participate in the planning meetings, including the
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<th><strong>Georgia Department of Community Health (Medicaid), Department of Education, and Department of Juvenile Justice.</strong></th>
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<td><strong>Challenges Encountered</strong></td>
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<td>Funding and sustainability have been major challenges for GADPH’s telehealth and telemedicine programs. Georgia has been very successful in leveraging CDC, HRSA, and WIC grant opportunities to provide start-up funding for the technology’s upfront costs, but sustainability can be a challenge without dedicated and continued funding for maintenance and staffing. Communication between GADPH and the state Medicaid agency is essential to facilitate reimbursement for presentation and appropriate billing codes for public programs.</td>
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<td><strong>Lessons Learned and Promising Practices</strong></td>
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<td>According to Georgia, it is important to build on existing capacity and maximize the utility of the telemedicine carts. GADPH and its partners focused on community needs, and leveraged telehealth and telemedicine as tools to enhance existing programs. Additionally, GADPH said it stayed on track by focusing resources where it was truly needed and keeping a specific and feasible scope of work and defining programs to ensure the sustainability and quality of programs delivered.</td>
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<td>It was also helpful that Georgia’s state network hub (e.g., infrastructure) is not located in Atlanta, but in a federally designated rural county. This location allows the state to greatly subsidize the costs of the network circuits using Universal Service Administrative Company funds.</td>
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<td>GADPH also promoted the utility of telemedicine with policymakers. During the 2016 legislative session, the Office of Telehealth and Telemedicine received a line item in the state budget for the first time.</td>
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<td><strong>Emerging Opportunities and Next Steps</strong></td>
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<td>With many programs and pilots ongoing, GADPH wants to sustain current efforts, as well as identify additional needs and opportunities for partnership with other state agencies. GADPH’s vision is that local public health settings can be a hub for all state government telehealth activities and serve as gateways to connect clients with different health or social services to improve population health.</td>
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<th><strong>HAWAII</strong></th>
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<td><strong>Program Description</strong></td>
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<td>Hawaii has a number of telehealth initiatives that aim to increase access to care for underserved populations and improve health outcomes. These projects include the Hawaii Stroke Network, Hawaii Emergency Services for Children, genetic counseling, medically fragile home monitoring, Home Outreach Program and E-health (HOPE), and a medical-legal partnership. Hawaii has also been working with Project ECHO on behavioral health and endocrinology to provide connect local Hawaiian clinicians with specialists in these topics via weekly virtual clinics.</td>
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<tr>
<td>The Hawaii Stroke Network, funded by a Hawaii State Department of Health (HDOH) grant, saw that emergency departments could use telehealth to</td>
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access neurologists for help determining whether to provide a clot-busting medication, tissue plasminogen activator (tPA), after the onset of a stroke. Historically, Hawaii had been below average for implementing these best practices. The network created a workflow that integrates telehealth to allow emergency departments to contact the Queen’s Medical Center, where a neurologist examines the patient’s CT scan and decides whether the patient should receive tPA. An EHR note is sent to the local medical record, and the patient either stays at the local hospital or is transferred to Queen’s.

HOPE uses telehealth to prevent 30-day readmissions for high-risk dialysis patients through the implementation of home telehealth with nurse oversight. The program is funded by a federal grant and is free to patients. Early outcomes have found that it reduces costs by 50 percent using the telehealth nurse overnight.

| Challenges Encountered | Hawaii passed legislation in 2014 creating parity in reimbursement of telehealth services with face-to-face services. However, the legislation initially required a treating healthcare provider to accompany a patient during the telehealth visit. This was a barrier to uptake for three reasons: (1) It increased the provider’s workload at the patient’s site; (2) remote and rural areas often lack specialists, which is why telehealth is necessary in the first place; and (3) it limited the settings in which telehealth could be delivered, such as homes or nonmedical locations, such as schools. In addition, Medicaid imposes restrictions on covered services, places frequency limits on some covered telemedicine services, and is limited to origination sites located in rural areas. Furthermore, Medicaid only covers interactive audio-video options, not the full scope of telemedicine models. Finally, access to broadband and highly trained staff can be a challenge in Hawaii. |
| Lessons Learned and Promising Practices | The importance of engaging multiple partners and developing strategic plans to support telehealth initiatives to improve the quality of care and patient and provider satisfaction were lessons identified by the Hawaii team. Engaging partners also allowed the Hawaii’s telegenetics program to offset technology and training costs. Beyond program-specific lessons learned, HDOH found that the state must provide leadership and facilitate state goals via a champion, such as the state health official. The Hawaii team noted that it was insufficient to rely on the private healthcare system to assemble a robust telehealth system for the state because statewide programs incentives to encourage uptake, as well as a regulatory body to enforce parity and other regulations. Another key component of leadership is active enforcement and surveillance to ensure parity for reimbursement and identify barriers to adoption. |
| Emerging Opportunities and Next Steps | In April 2016, the Hawaii State Legislature passed legislation that repeals the accompanying healthcare provider requirement for reimbursement, allows Medicaid reimbursement for telehealth services, permits a doctor-patient relationship to be established via telehealth, and revises the definition of |
telehealth. This legislation represents a significant opportunity for HDOH and Medicaid to collaborate to create new standards for telehealth and bring stakeholders together to form new telehealth programs.

### SOUTH CAROLINA

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| The South Carolina Department of Health and Human Services (SCDHHS), the state Medicaid agency, has worked with telehealth in a number of ways. In July 2014, it implemented an [OB-GYN telemedicine demonstration project](#) to enhance prenatal care via telemedicine technologies in at least four counties that demonstrated a lack of adequate OB-GYN resources.\(^\text{24}\) The initiative involves working collaboratively with local family practice physicians and providing maternal fetal medicine teleconsultations to regional obstetrical providers. Components of the intervention include using telemedicine as a tool to connect underserved counties with more specialized services and facilitate regular communication across health systems and stakeholders. An ongoing South Carolina initiative, the Low-Country Healthy Start program, provides care management. Most recently, a pilot project began providing prenatal care visits to mothers’ homes directly via telemedicine.\(^\text{25}\) 

Another program is a collaboration between the South Carolina Department of Mental Health and South Carolina Hospital Association to develop a statewide telepsychiatry network for all South Carolina hospitals with operating emergency departments. The collaboration has received more than $10 million dollars in funding from the Duke Endowment to support this work.\(^\text{26}\) A study evaluating this project found that of the 9,066 patients with one telepsychiatry visit between March 2009 and June 2013, the telepsychiatry group was more likely to receive 30-day and 90-day outpatient follow ups than matched controls. Those receiving telepsychiatry were 11 percent less likely to be admitted to the hospital at the index emergency department, with cost savings of $2,336 for in-patient costs, but no difference in 30-day total healthcare costs.\(^\text{27}\) 

South Carolina built on these successful programs with the development of the [South Carolina Telehealth Alliance](#) (SCTA), a statewide collaboration of health systems, non-profit organizations, and government agencies that joined forces to expand telehealth services. SCTA receives its strategic direction from an advisory council comprised of personnel from area health education centers, the Greenville Health System, Palmetto Health-USC Medical Group, Department of Mental Health, Palmetto Care Connections, and Medical University of South Carolina. In total, these organizations serve South Carolina consumers from more than 180 connected sites, with consultation to the home and inpatient and outpatient clinical sites. They offer services related to mental health, telestroke, and education for providers statewide. Nontraditional care settings include schools, correctional facilities, and nursing homes. Additionally, SCTA provides home |
monitoring for chronic conditions and 24/7 monitoring of intensive care patients.

SCTA serves statewide telehealth stakeholders by providing guidance, assisting with strategic development, and advising on technology and standards to develop an open-access network that gives residents access to quality healthcare while effectively managing the cost of providing care.

<table>
<thead>
<tr>
<th>Challenges Encountered</th>
<th>The state has yet to enact parity legislation, which is a major barrier to telehealth uptake.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lessons Learned and Promising Practices</td>
<td>One lesson from South Carolina’s experience is that pilot programs demonstrate telehealth’s value which can then be leveraged for additional funding or program support. Another crucial lesson is the importance of collaboration across partners and health systems, which was facilitated by developing shared strategies and mission within SCTA.</td>
</tr>
<tr>
<td>EmergingOpportunities and Next Steps</td>
<td>South Carolina plans to continue supporting SCTA, which is considering expanding its reach with additional sites and services.</td>
</tr>
</tbody>
</table>

**VIRGINIA**

| Program Description | The Virginia Department of Health (VDH) and its State Office of Rural Health provided initial start-up funding for the Virginia Telehealth Network (VTN), and now offers it ongoing technical assistance and Board representation. VTN is a small nonprofit that provides support and technical assistance outreach to local health districts and other healthcare organizations that are using telehealth to improve population health. It was established in 2002 as a volunteer consortium of professionals from across Virginia who were dedicated to advancing telehealth. VTN promotes standards in three areas: business (e.g., common operating agreements, facilitating sharing of resources, and streamlined reimbursement processes), operations (e.g., standardized templates or clinical formats to ensure care quality), and technical issues (e.g., hardware and software compatibility and connectivity). In the past two years, VDH has ramped up its telehealth-related work and deployed a needs assessment to understand how telehealth services were provided across Virginia. The goal of the assessment was to understand how these activities could evolve in the future. Based on its findings, VDH determined that local health districts were very interested in telehealth, but there was wide variation in capacity and current telehealth services. Moving forward, VDH hopes to serve as a hub for telehealth activities by supporting collaboration and providing technical assistance as a subject matter expert. |
| Challenges Encountered | Funding is one challenge for Virginia’s telehealth activities, particularly because many local health districts’ programs are funded through grants that have limited terms. In general, state policies are supportive of telehealth, but some barriers remain. For example, there is only parity for telemedicine rather than telehealth, which limits some more innovative |
| **Lessons Learned and Promising Practices** | One important lesson that VDH learned was the importance of understanding the current telehealth landscape by deploying a needs assessment. By serving as a convener and technical expert, VDH can also support telehealth activities across the state. In addition, providing expertise to legislators and other policy decisionmakers can help promote telehealth. VDH also noted the importance of leveraging resources on telehealth to inform state programs, including its regional telehealth center. |
| **Emerging Opportunities and Next Steps** | VDH will continue convening health system partners and other stakeholders to support telehealth activities. It also plans to increase awareness and support for telehealth by convening state officials and working with Medicaid colleagues to encourage telehealth-friendly policies. |

**Resources for State and Territorial Health Officials**

**General Information**

The environmental scan identified several organizations that have significant resources related to telehealth, including:

- **HRSA’s Office for the Advancement of Telehealth** in the Federal Office of Rural Health Policy.
- **Office of the National Coordinator for Health Information Technology.**
- **Center for Connected Health Policy.**
- **American Telemedicine Association.**
- **Rural Health Information Hub.**

**Project ECHO (Extension for Community Healthcare Outcomes)**

Created in 2003, the [ECHO model](#) provides specialized medical knowledge to local clinicians by connecting them with specialist teams at academic medical centers via weekly virtual clinics, known as teleECHO clinics. The model began with a focus on hepatitis C treatment and now has expanded to multiple diseases and specialties. Project ECHO does not provide direct clinical care, but serves as a resource and training tool for clinicians.

**National and Regional Telehealth Resource Centers**

The United States has 14 [Telehealth Resource Centers](#) (TRCs): 12 regional centers (RTCs) and two national centers. They comprise the [Consortium of Telehealth Resource Centers](#), which collaborates and develops national resources on telehealth-related policy. The Office for the Advancement of Telehealth funds the RTCs to serve specific regions and states.

The [National Telehealth Policy Resource Center](#), coordinated by the Center for Connected Health Policy, monitors state and federal legislation, identifies barriers to telehealth use, and provides policy technical assistance to the regional efforts. The center works in close collaboration with the [National Telehealth Technology Assessment Resource Center](#) (TTAC), which aims to inform consumers about telehealth.
technology. TTAC produces toolkits and technological assessments of different technologies to allow users to learn how they work and assess their applicability to telehealth initiatives.

TRCs stand ready to assist those who are interested in creating telehealth initiatives. For example, in June 2016, the Northeast Telehealth Resource Center published “Telehealth for Rural Health: Regional Updates and Model Programs,” an update that summarizes state legislation activities, innovative telehealth applications, and other activities. For more information about TRC resources, see Table 1.

Table 1: National and Regional Telehealth Resource Centers

<table>
<thead>
<tr>
<th>Resource Center</th>
<th>National or State(s)</th>
<th>Website</th>
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<tbody>
<tr>
<td>National Telehealth Policy Resource Center</td>
<td>Nationwide</td>
<td><a href="https://www.telehealthpolicy.us/">https://www.telehealthpolicy.us/</a></td>
</tr>
<tr>
<td>National Telehealth Technology Assessment Resource Center</td>
<td>Nationwide</td>
<td><a href="http://www.telehealthtechnology.org">www.telehealthtechnology.org</a></td>
</tr>
<tr>
<td>California Telehealth Resource Center</td>
<td>CA</td>
<td><a href="http://www.caltrc.org">www.caltrc.org</a></td>
</tr>
<tr>
<td>Great Plains Telehealth Resource and Assistance Center</td>
<td>IA, MN, NE, ND, SD, WI</td>
<td><a href="http://www.gptrac.org">www.gptrac.org</a></td>
</tr>
<tr>
<td>Heartland Telehealth Resource Center</td>
<td>KS, OK, MO</td>
<td><a href="http://www.heartlandtrc.org">www.heartlandtrc.org</a></td>
</tr>
<tr>
<td>Mid-Atlantic Telehealth Resource Center</td>
<td>DC, DE, KY, MD, NC, PA, VA, WV</td>
<td><a href="http://www.matrc.org">www.matrc.org</a></td>
</tr>
<tr>
<td>Northeast Telehealth Resource Center</td>
<td>CT, MA, ME, NH, NY, RI, VT</td>
<td><a href="http://www.netrc.org">www.netrc.org</a></td>
</tr>
<tr>
<td>Northwest Regional Telehealth Resource Center</td>
<td>AK, ID, MT, OR, UT, WA, WY</td>
<td><a href="http://www.nrtrc.org">www.nrtrc.org</a></td>
</tr>
<tr>
<td>Pacific Basin Telehealth Resource Center</td>
<td>HI, Pacific Basin</td>
<td><a href="http://www.pbtrc.org">www.pbtrc.org</a></td>
</tr>
<tr>
<td>South Central Telehealth Resource Center</td>
<td>AR, MS, TN</td>
<td><a href="http://www.learntelehealth.org">www.learntelehealth.org</a></td>
</tr>
<tr>
<td>Southeastern Telehealth Resource Center</td>
<td>AL, FL, GA, SC</td>
<td><a href="http://www.setrc.us">www.setrc.us</a></td>
</tr>
<tr>
<td>Southwest Telehealth Resource Center</td>
<td>AZ, CO, NM, NV, UT</td>
<td><a href="http://www.southwesttrc.org">www.southwesttrc.org</a></td>
</tr>
<tr>
<td>TexLa Telehealth Resource Center</td>
<td>LA, TX</td>
<td><a href="http://www.texlatrc.org">www.texlatrc.org</a></td>
</tr>
<tr>
<td>Upper Midwest Telehealth Resource Center</td>
<td>IN, IL, MI, OH</td>
<td><a href="http://www.umtrc.org">www.umtrc.org</a></td>
</tr>
</tbody>
</table>

Conclusion

Telehealth is a promising strategy to improve access and health outcomes for rural and underserved populations. This resource guide highlights telehealth-related resources that state health departments or other organizations can use to create or further refine telehealth initiatives. In addition, firsthand
experiences from different states described in this guide help inform readers about common challenges and lessons learned when undertaking telehealth activities.

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