Rural Texas Pediatric Tele-Connectivity Resource Program

House Bill 1697

85th Legislature, Regular Session, 2017

Health and Human Services Commission

December 2020

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Executive Summary

This is the second biennial report to the Governor and the Legislature on the implementation of House Bill (H.B.) 1697, 85th Legislature, Regular Session, 2017 (Government Code, Chapter 541), which established a Pediatric Tele-Connectivity Resource Program for Rural Texas. The purpose of the program is to award grants to nonurban healthcare facilities for the implementation of telemedicine services that connect these rural healthcare facilities to pediatric specialists and pediatric subspecialists who provide telemedicine services.

In the 2018-19 biennium, the Texas Health and Human Services Commission (HHSC) used existing resources to explore the potential benefits of telemedicine to support rural pediatric healthcare needs. The H.B. 1697 Workgroup (workgroup) of over 30 stakeholders convened on November 16, 2017 and met regularly.

In spring 2018, the workgroup determined that conducting a pediatric telemedicine pilot at one or two selected regional hospitals would best inform HHSC on the program's operational requirements and demonstrate the feasibility of the grant program. Pilot implementation was completed in fall 2019 at one site, utilizing stakeholder resources, and the pilot project continues to date.

The 86th Legislature[1] appropriated $5 million in state and federal funding for the biennium for the grant program. HHSC initiated development of the grant program, including a reassessment of the interest in telemedicine service delivery amongst rural Texas hospitals.

This report addresses the outcome of the pilot project, rural hospital survey results on delivery of teleservices, and HHSC's progress on implementation of the grant program.

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[1] 2020-21 General Appropriations Act, House Bill 1, 86th Legislature, Regular Session, 2019 (Article II, HHSC, Rider 94).

1. Introduction

H.B. 1697 directed HHSC to establish and administer a pediatric telemedicine grant program to enable nonurban healthcare facilities to obtain pediatric telemedicine services. The purpose of the grant program is to provide financial assistance to enable eligible, nonurban healthcare facilities to connect with pediatric specialists who provide telemedicine services and to cover related expenses, including necessary equipment.

Funds were not appropriated for this grant program in the 2018-19 biennium. HHSC sought alternative funding options and collaborated with stakeholders in the development and implementation of this program. As allowed by the bill, HHSC established a workgroup to assist with the development and implementation of the grant program. HHSC collaborated with the workgroup to develop the telemedicine pilot program at Navarro Regional Hospital in Corsicana, and the Pediatric Tele-Connectivity Resource Program for Rural Texas, discussed in this report.

The 86th Legislature appropriated $5 million for implementation of the grant program for the 2020-21 biennium. With continued stakeholder collaboration, HHSC developed and released a Request for Applications for the Pediatric Tele-Connectivity Resource Program for Rural Texas, proposed program rules, and continued the pilot project at Navarro Regional Hospital.

H.B. 1697 also requires HHSC to submit a report to the Governor and to the Legislature by December 1 of each even-numbered year that addresses grant program activities. HHSC must report on:

- activities of the program;
- any grant recipients; and
- results and outcomes of any grants awarded.

This report highlights some rural providers' perception of and experience with telemedicine, and activities completed by HHSC and the workgroup to support the pilot program and development of the grant program.

2. Background

Texas is a large and diverse state. Although 92 percent of Texans reside in metropolitan areas, a considerable number of the state's counties are sparsely populated. Nearly three million Texans (8 percent) live in these rural areas, comprising more than the total population of 14 U.S. states. Rural areas of the state are challenged by a lack of available medical professionals and services, resulting in many children, families, and individuals being underserved by the available medical systems. According to current data, Texas has the second highest number of Health Professional Shortage Areas (HPSA) in the nation, with over 450 geographic areas receiving this designation.[2] Finding efficient, patient-centered approaches to deliver high quality healthcare services to underserved rural regions is a critical issue for Texas.

Rural Texas communities have been challenged in recent years by the declining availability of services connected to hospitals. When hospitals close, rural communities lose access to inpatient and emergency care, as well as preventive and specialty services, as local physicians may relocate out of the impacted region. The Texas Organization of Rural & Community Hospitals (TORCH) notes 27 rural hospital closures occurred in 22 Texas rural communities between January 2010 and October 2020. Of these closures, one hospital closed three times and three hospitals closed twice. Only two communities have seen their hospitals reopen, four now have only an emergency room and clinic but no inpatient service, four have a clinic but no emergency services, and 12 have no hospital, emergency, or clinic services. TORCH also noted that, of the 157 rural hospitals currently in Texas, only 65 deliver babies on a non-emergency basis and some of those hospitals are considering halting OB/GYN services due to financial losses.

Many factors combined to cause these closures and decline in available services, including lower rates of private insurance in rural communities, loss of population, lower average incomes, higher numbers of uninsured individuals, and declining

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[2] HRSA.gov, https://data.hrsa.gov/topics/health-workforce/shortage-areas, August 10, 2020

perceptions about rural hospital quality. Evolving Medicare and Medicaid payment and service delivery models may also play a role.[3]

What Constitutes a Rural Hospital?

There are many definitions of "rural" and of "rural hospitals" by various state and federal agencies as well as programs within those agencies. For purposes of this report, the definition of a "rural hospital" under the Texas Medicaid program is used:

> A hospital located in a county with 60,000 or fewer persons according to the 2010 U.S. Census; or, a hospital designated by Medicare as a Critical Access Hospital (CAH), Sole Community Hospital (SCH), or a Rural Referral Center (RRC) that is not located in a Metropolitan Statistical Area (MSA); or, a hospital that (a) has 100 or fewer beds (b) is designated by Medicare as a CAH, an SCH, or an RRC, and (c) is located in an MSA.[4]

H.B. 1697 further limited the pediatric telemedicine grant program to a "nonurban health care facility" defined as a hospital licensed under Chapter 241, Health and Safety Code, or other licensed health care facility in this state that is located in a rural area as defined by Section 845.002, Insurance Code:

- a county with a population of 50,000 or less;
- an area that is not delineated as an urbanized area by the United States Bureau of the Census; or
- any other area designated as rural by a rule adopted by the Texas Department of Insurance commissioner, subject to Section 845.003.

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[3] Wishner J, Solleveid P, Rudowitz R, Paradise J, and Antonisse L. A look at Rural Hospital Closures and Implications for Access to Care: Three Case Studies. Kaiser Family Foundation, July 7, 2016: https://www.kff.org/report-section/a-look-at-rural-hospital-closures-and-implications-for-access-to-care-three-case-studies-issue-brief/ (Accessed October 22, 2018).
[4] 2020-2021 General Appropriations Act, H.B. 1, 86th Legislature (Article II, HHSC, Rider 11). The rural hospitals are also commonly referred to by HHSC as "Rider 38" hospitals, which is a carryover term from a previous definition of rural hospitals that was found in the 2014-15 General Appropriations Act, S.B. 1, 83rd Legislature, Regular Session, 2013 (Article II, HHSC, Rider 38).

Telemedicine Initiatives

Telemedicine services, defined as remote healthcare services delivered by a physician or health care provider under delegation and supervision of a physician, as well as telehealth services, defined as remote healthcare services delivered by a non-physician healthcare provider, have been solutions adopted by Texas policy makers to improve access to care in rural Texas. The 86th Legislature, Regular Session, 2019, enacted two bills to expand the delivery and reimbursement of telemedicine, telehealth, and home telemonitoring:

- S.B. 670 eliminates the requirement for a patient site presenter, or health professional located with a client at a telemedicine patient site, to be present during a telemedicine service rendered to a client in a school-based setting[5]; prohibits Medicaid managed care organizations (MCOs) from denying reimbursement for a healthcare service or procedure delivered as a telemedicine medical service or telehealth service solely because the service or procedure was not delivered through an in-person consultation; prohibits MCOs from limiting, denying, or reducing reimbursement for a covered health care service delivered as a telemedicine or telehealth service based on the health care provider's choice of platform for providing the service; and authorizes HHSC to reimburse Federally Qualified Health Centers for the patient site facility fee and distant site practitioner fee for covered telemedicine medical services and telehealth services delivered by a health care provider to a Medicaid recipient.
- H.B. 1063 requires HHSC to provide Medicaid reimbursement for home telemonitoring services to pediatric persons who are diagnosed with end-stage solid organ disease; have received an organ transplant; or require mechanical ventilation.

Prior to the enactment of S.B. 670, MCOs were only required to reimburse for telemedicine and telehealth services as outlined in the Texas Medicaid Provider Procedures Manual (TMPPM). Telemedicine services in the TMPPM are limited to evaluation and management services, psychiatric diagnostic evaluations, end-stage renal disease services, inpatient telehealth consultation, and medication management; whereas telehealth services in the TMPPM are limited to evaluation and management services, psychiatric diagnostic evaluations, medical nutritional

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[5] Texas Government Code §531.0217(c-4)(4)

counseling, occupational therapies, speech therapies, and specialized skills training. This legislation enhances access to telemedicine and telehealth services by requiring MCOs to consider reimbursement for all Medicaid covered services that are effectively delivered remotely.

3. H.B. 1697 Implementation

H.B. 1697 Workgroup

In fall 2016, HHSC convened a stakeholder workgroup to assist in the development and implementation of the grant program. The workgroup assisted HHSC by:

- providing provider and MCO perspectives of telemedicine;
- identifying possible funding sources, program costs, telemedicine equipment needs, facility eligibility criteria, and provider enrollment processes and procedures; and
- recommending HHSC facilitate telemedicine pilot programs for neonatal intensive care units (NICU) in two select nonurban healthcare facilities to demonstrate the need, effectiveness, and benefits of telemedicine in rural areas of the state.

The workgroup initially convened November 16, 2017, and met on five additional occasions. Membership included representatives from key stakeholders including Children's Health System of Texas (CHST), Children's Hospital Association of Texas, the University of Texas Virtual Health Network (UT-VHN)/University of Texas Medical Branch (UTMB), the Texas e-Health Alliance, Superior Health Plan, Texas Tech Health Sciences Center and several other pediatric, medical, and rural/community health focused organizations. A complete membership list is provided as Appendix A.

Pilot Program Update

In collaboration with the UT-VHN, CHST, other medical organizations, and related non-profit organizations, the workgroup established the Collaborative Rural Texas Pediatric Telemedicine Pilot Project (pilot). HHSC coordinates pilot program activities and reports progress to the Governor and the Legislature.

Following a thorough selection process described in the 2018 report, one pilot site, Navarro Regional Hospital in Corsicana (Navarro) joined the TeleNICU pilot project. Navarro, with 570 births and 162 licensed beds in 2016, is above average in size for a rural hospital and should provide sufficient scale to serve as an effective TeleNICU pilot site. At the time of site selection, Navarro did not participate in any telemedicine services but had an in-house information technology team and supported a full electronic health records (EHR) system.

UT-VHN and CHST in Dallas partnered to provide planning and training for the pilot, while working with physicians at UT Southwestern to provide the care. Using funding made available by UT Systems, the UT-VHN provided the on-site equipment necessary to support the pilot at Navarro.

Pilot Initiation

After a series of planning meetings, Navarro Regional, Children's Health and UTMB entered into a contract for the pilot project in March 2019. The equipment necessary for the teleconnectivity pilot project was installed in May 2019, and the participants at Navarro received extensive training on the use of the system and the equipment.

Since the installation of the equipment, the partners have worked together on educational opportunities for the staff of Navarro. Topic-specific virtual education sessions were provided upon request and monthly meetings with the Navarro Clinical Program Champion continue. While there has not yet been a need for a formal patient consult, the program continues to provide 24/7 support to a Level 4 neonatologist, access to the Children's LIVE – resource library, and ongoing education opportunities to the hospital. Most critically, the project has built a strong relationship between the neonatology team at CHST and the staff at Navarro. This support structure empowered community providers with the confidence to care for higher acuity patients, keeping families closer to home.

Pilot Implementation Challenges

There were two main challenges in the implementation of the pilot. First, the information technology (IT) staff at the hospital was already carrying a heavy workload, and this pilot added to the challenge. When technical issues arose, the teams had to wait until there was availability to address the issues beyond the normal workload.

Second, the act of credentialing the necessary providers with the hospital was a time-consuming process, taking several months to complete. As discussed in the 2018 report, there are required administrative processes which may prevent similar projects from timely adoption.

Summary of Rural Hospital Re-survey

In December 2019, HHSC re-surveyed rural hospitals to gather additional information about the use of telemedicine services in rural Texas hospitals, including barriers to providing or using such services, and interest in future use of these services. This information was used to guide development of the Pediatric Tele-Connectivity Resource Program for Rural Texas.

TORCH assisted HHSC in disseminating the survey link to its members. The survey initially opened on November 25, 2019 and closed on December 16, 2019. Due to a low response rate, HHSC re-opened the survey from January 16, 2020 through January 24, 2020. Participation was voluntary and had no impact on rural hospital eligibility for any Texas state healthcare programs.

HHSC received a 32 percent response rate (46 of 144 TORCH member hospitals) to a 12-question survey. The first half of the survey asked respondents if their facility delivered infants and if they provided telemedicine services. The survey provided the opportunity for respondents to identify barriers (from a list of previously identified barriers) to providing or receiving telemedicine services. Respondents were also asked to identify what modalities they used, if they documented care directions or orders and prescriptions made by the healthcare practitioner for a telemedicine visit, and if telemedicine visit information integrated with an electronic medical record (EMR). The second half of the survey focused on assessing past attempts at providing telemedicine services, interest in providing such service in the future, and identification of any assistance needed to be able to provide telemedicine services.

Approximately 37 percent of respondents reported not providing or receiving telemedicine services, and approximately 24 percent reported providing these services to both adults and children. Approximately 35 percent reported providing telemedicine services to adult patients only while 4.3 percent reported serving only children. In response to whether the facility had ever attempted to set up to provide or receive telemedicine services, 13 percent responded "yes," 26 percent responded "no," and 61 percent responded they are already setup to provide or receive telemedicine services.

In response to a question about what would enable the facility to provide or receive telemedicine services, most respondents (54.3 percent) indicated they are set up to provide or receive telemedicine services, while 43.4 percent noted *"funding for telemedicine equipment,"* and (32.6 percent) noted *"funding to pay for the services*

of a distant provider." Others identified receiving assistance in configuring their EMR to support telemedicine visits, locating the necessary distant telemedicine providers, and a *"better articulated reimbursement structure for telemedicine services"* (30.4 percent).

Respondents also noted "payer reimbursement policies were unclear" (39.1 percent), "volume of telemedicine services did not support costs" (39.1 percent), "lack of interoperability with other equipment of EMRs" (32.6 percent), and "payers did not offer reimbursements for the services" (32.6 percent) as barriers to providing telemedicine.

For a more detailed summary of the survey responses, please see Appendix E.

Development of the Pediatric Tele-Connectivity Resource Program for Rural Texas

With a $5 million appropriation for the 2020-21 biennium, HHSC began development of the Pediatric Tele-Connectivity Resource Program for Rural Texas (Pedi Tele-Conn) in early fall 2019. HHSC determined the Pedi Tele-Conn program should also include rules and initiated development of both components simultaneously.

HHSC prepared and released a Request for Applications (RFA) in July 2020, with the intention of making multiple grant awards through this solicitation by early November 2020. Funding was to be awarded in three phases with grant recipients receiving 50 percent of the grant award upon contract execution, an additional 25 percent of the grant award after an initial report due at six months from the date of contract execution, and the final 25 percent of the grant award after the second progress report due at nine months from the date of contract execution. Grant recipients were required to report and demonstrate progress to receive the second and third funding amounts. The RFA was posted for 30 days, extended for an additional seven days, and the grant funding period for this program was set for approximately November 1, 2020 through August 31, 2021.

Due to a low number of applicants and stakeholder request for an additional extension, HHSC revised the funding strategy to accommodate a shorter timeline and reposted the RFA in early November 2020, offering interested non-urban healthcare facilities another opportunity to apply. At the time this report was being finalized, the RFA remained active.

To ensure the mission and objectives of the Pedi Tele-Conn program are met, HHSC detailed in the RFA all eligibility requirements specified in the legislation, as well as others identified by telemedicine experts. These include specific staffing requirements, specific technical requirements, and commitment to providing the same standard of care as in-person visits, including patient privacy and provider scope of practice. If requested by HHSC, review of their commitment to participate in any educational telemedicine training or access training materials was also included.

HHSC has continued to keep the workgroup informed on the progress of the rules and program development, while maintaining necessary confidentiality for the project procurement.

Project rules are expected to be published for public comment in mid-2021.

4. Conclusion

The workgroup's initiation of the pilot was possible due to the active participation of the stakeholders who collaborated with HHSC. The development of the pilot provides a strong framework of technical specifications, the data needed for both site selection and outcome measurement, and the policy framework to help govern the program going forward. The pilot also provides the opportunity to capture real-time data on the impact of implementation on the rural hospitals, tertiary facilities, and the patients they serve.

Resurvey results indicate continued support of telemedicine, but rural hospitals continue to identify considerations about launching or implementing a program. Most responding hospitals indicate they are set up but are not actually providing the services.

The Pedi Tele-Conn program is intended to provide rural hospitals with funding to establish and implement a telemedicine program. The RFA was initially posted in July 2020 for 30 days and received only one application. Stakeholders requested additional time to respond to the RFA, due to the COVID-19 public health emergency. At the time of development of this report, HHSC was revising documents and timelines to repost this RFA to offer eligible participants another opportunity to apply.

List of Acronyms

Acronym	Full Name
CAH	Critical Access Hospital
CHST	Children's Health System of Texas
CMS	Centers for Medicare and Medicaid Services
EHR	Electronic Health Records
EMR	Electronic Medical Record
HIPAA	Health Insurance Portability and Accountability Act of 1996
HHSC	Texas Health and Human Services Commission
HPSA	Health Professional Shortage Area
MSA	Metropolitan Statistical Area
NICU	Neonatal Intensive Care Unit
Pedi Tele-Conn	Pediatric Tele-Connectivity Resource Program for Rural Texas
RRC	Rural Referral Center
SCH	Sole Community Hospital
TORCH	Texas Organization of Rural and Community Hospitals
TTUHSC RCH	Texas Tech University Health Sciences Center's Institute for Rural and Community Health
UTMB	The University of Texas Medical Branch in Galveston
UT-VHN	The University of Texas System Virtual Health Network

Appendix A. H.B. 1697 Workgroup Membership List

Organization	Participant
Children's Health System of TX (CHST)	Michaela Bernacchio Kristin Carlton Jill Epperson Julie Hall-Barrow Michael Herrington Joy Hicks Matt Moore Tamara Perry
TX e-Health Alliance (TeHA)	Nora Belcher
The University of Texas Medical Branch (UTMB)	Mari Robinson
TX Association of Community Health Centers (TACHC)	Mary Allen Daniel Diaz Mimi Garcia
TX Hospital Association (THA)	Jennifer Banda Sara Gonzalez
TX Association of Health Plans (TAHP)	Jason Baxter
TX Medical Association (TMA)	Helen Davis Sophie Jerwick
Superior Health Plan	Tracy Rico Ken James Dr. Brendle Glomb Malinda Buratti
Children's Hospital Association of TX (CHAT)	Stacy Wilson
TX Pediatric Society (TPS)	Clayton Travis
TX Tech University HSC (TTUHSC)	Becky Jones
TX Organization of Rural & Community Hospitals (TORCH)	Don McBeath John Henderson
UT Health Science Center-Houston (UTHSC-H) The School of Biomedical Informatics	Dr. Tiffany Champagne-Langabeer
HHSC	Jimmy Blanton Morgan Goldstein Erin McManus Deanna Naranjo Sasha Robey Adriana Rhames Mary Townsend

Appendix B. H.B. 1697 Technical Specifications

Introduction

The Pediatric Tele-Connectivity Resource Program for Rural Texas was established by House Bill 1697 in the 85th Legislative Session. Per the Legislation, the purpose of the program is to "establish a pediatric tele-connectivity resource program for rural Texas to award grants to nonurban health care facilities to connect the facilities with pediatric specialists and pediatric subspecialists who provide telemedicine medical services." This guide will provide direction to applicants for these grants, particularly in the area of technical requirements.

A few main principles form the reasoning behind these requirements. First and foremost, the goal of these grants is to create and manage access to specialty services for pediatric patients across the state. There are far too few local specialty physicians to address the needs of all the children of Texas, and telehealth gives the opportunity to reach those vulnerable populations that live in areas without services. Secondly, this access most be provided in an efficient manner that still allows for the high quality of care demanded in the treatment of our children. The necessity of this is obvious, as to reach the largest number of patients, funds must be distributed in a fiscally responsible way. To enable a vast and effective network, all technology must be able to meet minimum specifications and communications standards. The technology must work to link the maximum number of partners, not build silos within customized systems by creating barriers to cross communication and cross utilization.

The impact for potential good is enormous if funds are used appropriately and partners can work together for true impact. Given this, please ensure that all applications conform to the standards listed below.

General Standard

Videoconferencing systems rely on a large collection of standards for everything from displaying video to establishing connectivity with an endpoint across the globe. The vast majority of features implemented by videoconferencing systems have a corresponding standard. Not all available systems support all of the standards in the same way, resulting in some proprietary implementations of features that can make interoperability a problem. It is imperative that any system used within a funding request be capable of interoperability with other telemedicine equipment. This may be accomplished by ensuring that all industry accepted standards are met. One of the main standards-issuing bodies in this field is the International Telecommunication Union, which releases a set of standards in the ITU Telecommunications Standards Sector (ITU-T). Many of the video standards, including the G. and H. standards, are created by this group.

In addition to the above, it is also critical that interoperability of any proposed purchased or otherwise utilized system be feasible as well as possible. In this vein, system licensing/connection/use fees should be minimal or non-existent, and any system that does not meet these criteria will not be considered for funding.

Technology Specifications

The following set of minimum specifications will ensure quality images, sound, and connectivity during a telemedicine visit all while maintaining HIPAA compliance in a two-way video conference.

Video Teleconferencing Unit

In this section, the term Video Teleconferencing Unit (VTC) refers to the method of communication and can refer to both software and hardware-based systems. VTC, also known as a Coder-Decoder (CODEC), refers to a hardware or software device used to provide audio/video connectivity for a telemedicine service.

VTC Unit

- Technical staff shall use either hardware and/or software based VTC Units for telemedicine.

Video Conferencing Protocols

- Technical staff shall use Direct Dialing as the preferred method for call connection.
- Technical staff shall use H.323 or Session Initiated Protocol (SIP) as the preferred method of connection.

Encoding Formats

- Technical staff shall use one of the following H.323 audio CODECs: G711, G722, G729, G729a.
- Technical staff shall use one of the following H.323 video CODECs: H.261, H.263, H.264, H.265.

High Definition Resolution

- Technical staff shall ensure that endpoints are capable of transmission and reception of a minimum of Full HD (1920x1080 pixels) video resolution. If this level of video resolution is not possible due to technology limitations and is not necessary for the proposed care model, technical staff may request an exemption for a lower video resolution standard.
- Technical staff shall ensure that all associated medical peripheral equipment that supports transmission of video information are capable of the above video requirements.

Encryption

- All communications must be encrypted to ensure HIPAA compliance.
- Technical staff shall ensure that Transport Layer Security (TLS) or Internet Protocol Security (IPsec) is used to encrypt the signaling component.
- Technical staff shall ensure that Advanced Encryption Standard (AES) 128 or 256-bit compatibility is used to encrypt all audio and video streams.
- Technical staff shall ensure that endpoints used for telemedicine only allow encrypted calls over the Internet. All unencrypted calls should be automatically rejected.
- Any recording of the session must be stored using encryption and managed as part of the patient's medical record, if any recording is made.

Indicators

- Technical staff shall ensure that endpoints confirm encryption of conference call, typically confirmed with a closed hasp lock (🔒) indicator.

Call Rates

- Technical staff shall ensure a minimum quality of service

Far End Camera Control

- When applicable, technical staff shall ensure the use of Far End Camera Control (FECC) compliant systems, to allow for remote camera control.
- Technical staff shall follow ITU H.281 or SIP RFC 4573 for standard compatibility.

Proprietary or Closed Systems

- Technical staff shall avoid the use of VTC systems that do not adhere to the standards listed in this manual.
- Technical staff shall avoid the use of systems that adhere to the recommended protocols but are not configured to communicate with other VHN system devices.
- Technical staff shall ensure that VTC systems can communicate with all other standards based VTC systems on other outside networks.

Call Requirements

- Technical staff shall ensure that video teleconferencing (VTC) units, located at the telemedicine healthcare sites, are set to manually answer calls to prevent systems from dialing in and viewing patient areas without their consent. If an issue arises that makes manually answering calls impossible, technical staff may seek and exemption from this requirement as long as systems are in place to address HIPAA requirements.
- Technical staff shall ensure that the VTC unit with built-in multipoint calls are set to be manually answered and/or reject any incoming calls.

Displays

- Technical staff shall ensure minimal resolution of 1080p for all telemedicine displays/screens.
- Technical staff shall ensure that all display in a clinical/hospital setting meet FDA requirements for medical grade electronics.
- Technical staff shall ensure that proper size of displays for telemedicine services using the following formula to calculate adequate display size: Measure the maximum distance from the screen to the patient and divide by three. (Typically a 32" display is sufficient for most telemedicine carts)
- Technical staff shall ensure that all displays are properly and securely mounted following ADA rules. Displays mounted below 80" may only protrude up to 4" at most from the wall, unless an object (i.e. furniture, bench, etc.) is placed underneath the display.

General Telemedicine Equipment

Medical Peripheral Devices

- Technical staff shall ensure that all medical peripheral devices, including medical cameras, such as video ophthalmoscopes and dermatoscope, adhere to FDA guidelines.
- Technical staff shall ensure that all devices possess proper sterilization instructions provided as per the manufacturer recommendations and that proper sterilization has occurred prior to use with a patient.
- Technical staff shall ensure that all operational instructions provided by the manufacturer are properly followed when using telemedicine equipment.

Telemedicine Carts

- Technical staff shall ensure that each telemedicine cart is medical grade, designed, and equipped with appropriate medical peripherals to provide a proper patient evaluation.
- Technical staff shall ensure that all equipment is properly and securely mounted to the cart to avoid dislodgement and connection issues.
- Technical staff shall ensure that all cabling is secured and not creating a trip hazard.

Multipoint Control Unit

- Technical staff shall be aware that the use of Multipoint Control Unit (MCU) presents a possible security risk as it allows third parties to monitor medical consultations, thus resulting in HIPAA violation.
- Technical staff shall ensure that the use of an MCU to connect to 2 or more sites is strictly limited for a specific need (i.e. multiple providers sharing data).
- Technical staff shall follow proper point-to-point connection guidelines, in the event that a MCU is necessary.

Personal Computer Standards

These standards apply to the Personal Computers (PCs) used by the providers to connect with the patients and provide care.

- Technical staff shall ensure that Personal Computers (PCs) used for video conferencing must adhere to certain minimum specifications to maintain a HD quality image.
- Technical staff shall refer to the following minimum standards and requirements for proper delivery of telemedicine services:
  - CPU's – i5 or i7 from Intel with quad core processors, ≥ 2.2GHZ CPU speed
  - 8GB RAM
  - 256GB SSD
  - Analog audio input and output
  - 4 USB I/O ports (minimum)
  - Digital video output – DVI, HDMI or DisplayPort (HDMI is preferred)
  - DirectX 9.0 or higher
  - 512Mb video RAM

Testing

- Technical staff shall test the connection prior to use by medical staff.

Environmental

- Technical staff shall ensure that the environment used for telemedicine has appropriate lighting and sound control to ensure the patient may be properly observed and that that each site can clearly understand audio transmissions.

Network Connection

- Technical staff shall ensure presence of adequate Ethernet connection capable of full duplex, 100Mbs connectivity.
- Technical staff shall ensure adequate network connection speeds of a minimum of 1.5 Mbps two-way data streams and no more than 3% packet loss with 10 ms latency.
- Technical staff share ensure adequate firewall rules are in place to allow aforementioned protocols for access to video conferencing appliances, including H.460.18 or H460.19 standards.

Equipment Failure

- Technical staff shall refer to the Troubleshooting and Technical Support section of this document for technical issues.
- Technical staff shall contact designated organizational support team for all technical related issues within their internal designated Service Level Agreement, which must be established and followed. To be considered for funding, any Service Level Agreement must have fees and charges that are reasonable.
- Technical staff shall contact designated telehealth network technical representatives any for scheduled or unscheduled extended outages. A plan must be in place regarding potential outages, and any equipment failure must be addressed within 48 hrs.

Connection Times

Staff is responsible for executing proper connection times based on clinical program guidelines.

Appendix C. Collaborative Rural Texas Pediatric Telemedicine Pilot Program Reporting Requirements

Hospitals participating in the *Collaborative Rural Texas Pediatric Telemedicine Pilot Project* will be required to report specific information about their encounters utilizing equipment and services supplied through the participating pediatric specialty telemedicine provider.

The measures to be collected are provided below. A follow up meeting with University of Texas Medical Branch / Children's Health System of Texas staff will be scheduled to discuss any questions or concerns.

1. Number of consults
2. Specialty (NICU/ER) (for this pilot NICU)
3. Diagnoses
   a. Did the diagnoses change?
4. Outcome Retention or Transport
   a. Transport to Children's
   b. Transport to Non-Children's Facility
5. Discharge home
6. Transported to Later
   a. Transport to Children's/other pilot site
   b. Transport to Non-Children's Facility/or other pilot
7. Length of Stay
8. Intent to Transfer
   a. Did this change after consultation?
9. Mode of transportation
   a. by ground, air etc.

Appendix D. UT System Virtual Health Network

THE UNIVERSITY OF TEXAS VIRTUAL HEALTH NETWORK (UT-VHN)

Purpose:

In response to the ever present need for high quality and efficient health care, in 2016, The University of Texas System began leveraging its lengthy history as one largest providers of telemedicine in the state to develop and implement a Virtual Health Network (UT-VHN). Upon successful completion of this ambitious project, Texas will have the initial structure to create a true statewide network for the provision of medical services in all areas of the state.

What is the Virtual Health Network?

The UT-VHN will connect all UT System Health Science Centers and Medical Schools to create a model for coordinated care delivery using telemedicine and telehealth technologies. This will enable UT System to will provide coordinated outbound and inbound support for current telemedicine & telehealth services, conduct research and data analytics, expand outreach to satellite partners, provide distance education, and use telehealth tools to manage population health.
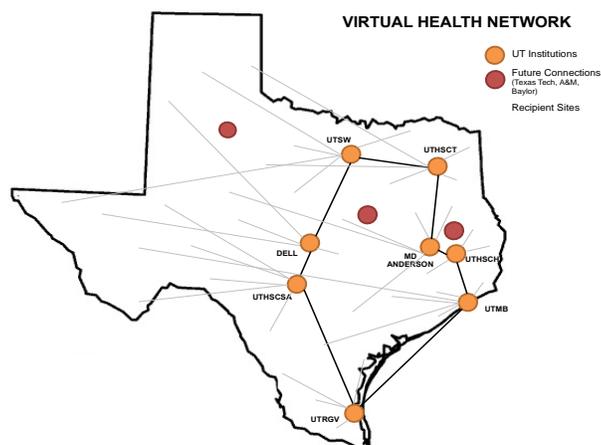
How will the UT-VHN be implemented?

There are three major phases of the project.

- Phase 1: Discover and Define - Institutional Focus *(Completed)*
    - ‣ This phase will center on an assessment of the current landscape of each institution's telehealth initiatives with a focus on culminating/enabling each institution to enhance its own capabilities.
- Phase 2: Introduce and Demonstrate – System Focus (*In Progress*)
    - ‣ This phase focuses on the creation of the video connectivity platform which will allow communication between all the medicals sites, as well as the necessary documentation and scheduling support for the project.

Initial clinical roll out projects have begun and will continue to be identified as well, and initiated as resources are available.

- Phase 3: Full Deployment – Statewide Focus *(Future Goal)*
  - ▸ This phase reflects a growth strategy whereby institutions experiment with expanding a full range of clinical services across a variety of settings such as schools, work sites, community health centers, community mental health centers, and even in the patients' homes. If feasible, other academic centers may be introduced into the network with the goal of establishing a robust statewide network.

What is the potential impact?

To meet the medical needs of Texans across the state, it is imperative that all available resources for care reach as far and as wide as technology and quality standards will allow. If successful, University of Texas medical institutions and its partners will be able to cast a wide net of service across rural, urban, and underserved areas, truly bridging the gap in care access.

Appendix E. Survey Questions and Full Summary

This survey was originally sent by TORCH to its 144-member hospitals on 11/25/19. The survey then closed on 12/17/19. Due to a low number of responses, it was re-opened and re-sent by TORCH to its members on 1/16/20. The final closing date occurred on 1/24/20.

Total number of non-duplicative responses: 46 of 144 hospitals (32% response rate).

Question 1: Please provide your contact information:

Map of respondent locations with hospital names can be found here: https://drive.google.com/open?id=1_GmPHJXjeTuV9_QN0QGTMHhwLPcKQ3xS&usp=sharing

Note: Click on pins to see hospital/provider names.

Question 2: Does your facility deliver infants?

- 41.3% of respondents said their facilities deliver infants. The number of infants delivered (per year) at these facilities range from 50 to 1000, with an average of nearly 307 deliveries/year.

Question 3: Do you provide telemedicine services?

- 56.5% of respondents stated their facilities provide telemedicine services.

Question 4: Indicate any barriers to providing or receiving telemedicine services you have identified (check all that apply).

- Payer reimbursement policies were unclear (39.1%)
- Volume of telemedicine services did not support costs (39.1%)
- Lack of interoperability with other equipment of EMRs (32.6%)
- Payers did not offer reimbursement for the services (32.6%)
- Use of proprietary software or platforms (28.2%)
- Unable to obtain telemedicine equipment (26%)
- Unable to locate distant site provider who offers needed services (26%)
- Difficulties in contracting with distant site provider (26%)
- Lack of access to broadband/bandwidth needed to support telemedicine (21.7%)
- Unable to configure EMR to support telemedicine visits (19.5%)

- Internal telecommunication infrastructure upgrades were needed (19.5%)
- Difficulties with credentialing distant site provider staff (19.5%)
- No barriers identified (19.5%)
- Unable to obtain needed technical assistance (13%)

"Other" responses fell into the following categories

- Funding

  ‣ Need for funding for equipment, set up, and continuation of services
  ‣ Excessive costs of familiar, distant site providers
  ‣ Belief that costs aren't worth providing services for low numbers/infrequent use in rural areas
  ‣ Unclear rules on reimbursement

- Physician reluctance

  ‣ Distrust and lack of interest in technology
  ‣ Need for physician buy-in
  ‣ View transferring patients as easier
  ‣ Lack of knowledge/experience regarding use for pediatric patients
  ‣ Hospitals sometimes contract with providers in one area for affordability, but transfer to another area for patient convenience, this can create double-work for physicians.

- Providers

  ‣ Lack confidence in finding provider to trust to do services
  ‣ Difficulty finding providers who can provide right balance of access

- Internal IT and management bandwidth
- "Texas needs to replicate the system put in place by Georgia over a decade ago."

Question 5: If you do provide or receive telemedicine services, what modalities do you use for the services?

- Synchronous audio-visual technology (50%)
- I do not provide or receive telemedicine services (39.1%)
- A combination of synchronous and asynchronous technologies (10.8%)
- Store-and-forward technologies, like sharing photographs, videos, or messages through a patient portal (0%)

Question 6: If you do provide or receive telemedicine services, does your telemedicine visit data, including notes, care directions, or orders and prescriptions made by the healthcare practitioner, integrate with your EMR?

- Yes (21.7%)
- No (39.1%)
- I do not provide or receive telemedicine services (39.1%)

Question 7: If you are not currently set up to provide or receive telemedicine services, have you ever attempted to set up to provide these services?

- Yes (13%)
- No (26%)
- We are currently set up to provide or receive telemedicine services (60.8%)

Question 8: If you are not currently set up to provide or receive telemedicine services, please explain what would enable you to provide or receive them (check all that apply).

- We are currently set up to provide or receive telemedicine services (54.3%)
- Funding for telemedicine equipment (43.4%)
- Funding to pay for services of a distant site provider (32.6%)
- Receiving funding or assistance in configuring your EMR to support telemedicine visits (32.6%)
- Better articulated reimbursement structure for telemedicine services (30.4%)
- Locating a distant site provider who offers needed services (28.2%)
- Receiving funding or assistance with telecommunication infrastructure upgrades (26%)
- Most comprehensive reimbursement structure for telemedicine services (23.9%)
- Obtaining needed technical assistance, including on selecting the most appropriate software or platform to meet your business needs (21.7%)
- Assistance contracting with a distant site provider (13%)
- Assistance with credentialing distant site provider (10.8%)

Other:

- "We use Telemedicine for Teleneurology and for Psychiatric coverage for our outpatient behavior health program. To expand to other areas, needs checked for expansion."
- "Much improvement could be made through all of the options above to make telemedicine a more useful option for consultation and patient care. The value of telemedicine is not fully realized due to these barriers."
- "Need to do this. Just have focused on other priorities."
- Physician buy-in

Question 9: If you are currently set up to provide or receive telemedicine services, approximately how many telemedicine visits does your facility provide per month?

- We are not currently set up to provide telemedicine services (41.3%)
- 0 (2.1%)
- 1 – 5 (15.2%)
- 6 – 10 (13%)
- 11 – 15 (0%)
- 16 – 20 (8.6%)
- More than 20 (19.5%)

Question 10: If you provide or receive telemedicine services, do you provide them to pediatric patients, adult patients, or both?

- We do not provide or receive telemedicine services (36.9%)
- Pediatric patients only (4.3%)
- Adult patients only (34.7%)
- Both (23.9%)

Question 11: How interested are you in setting up to provide or receive pediatric telemedicine services?

- Not at all interested (10.8%)
- Somewhat interested, but would want to further research this option (58.6%)
- Very interested (21.7%)
- We are already set up to provide or receive pediatric telemedicine services. (8.6%)

If very or somewhat interested, what would enable you to provide or receive pediatric telemedicine services?

- Resources

  - Financial resources and partners/capital for equipment and infrastructure
  - Additional equipment, provider, cost effective per use fee, reimbursement structure to support
  - Have it, but it is too costly to keep so will likely stop
  - Capital for equipment and infrastructure
  - Specific service offerings for pediatrics and reimbursement models that make it feasible to maintain patients at a rural facility via telemedicine
  - We would like to improve the pediatric services we offer by being able to contract with more local and familiar providers, as well as our own clinical providers, who are dependent on reimbursement.

- Physicians

  - Buy in by pediatricians and OB providers
  - Need to discuss with local physicians and assess our clinical capability of serving the pediatric population
  - Pediatricians who are interested in utilizing the services for patients

- Demand

  - Would have to justify based on demand

Question 12: Are you familiar with the new neonatal and maternal designation standards of SB 749 (86th Legislature, 2019, Regular Session)?

- Yes (47.8%)
- No (52.1%)