



TEXAS TECH UNIVERSITY
HEALTH SCIENCES CENTER™

F. Marie Hall Institute for
Rural and Community Health

Next Generation 9-1-1 Telemedicine Medical Services Pilot Project

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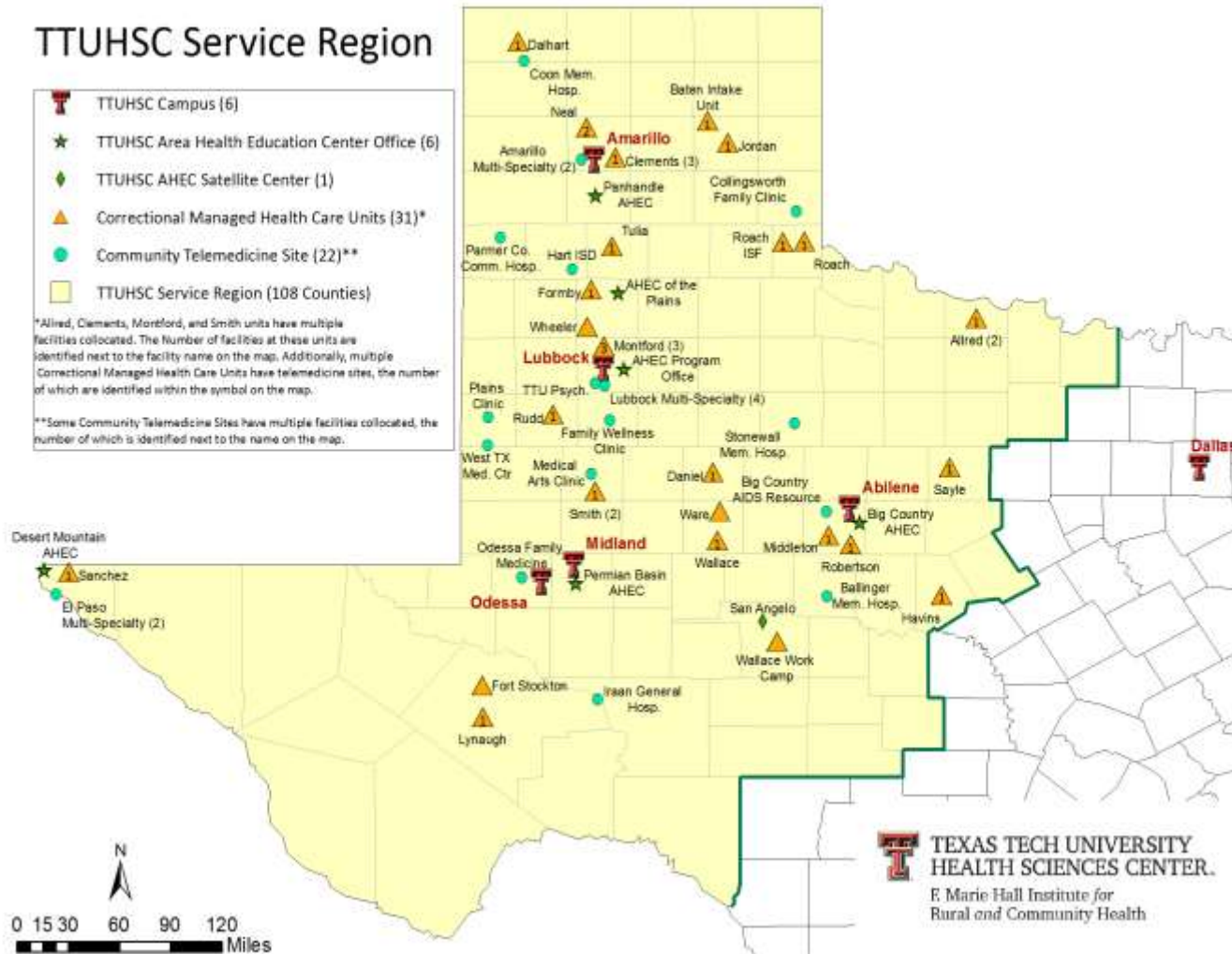
The F. Marie Hall Institute for Rural and Community Health exists to work in collaboration with the people of West Texas for the advancement of health through imaginative and scholarly research, innovative use of technology, comprehensive education and outreach.





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TTUHSC Service Region





Overview of Rural America Health

- About 10% of physicians practice in rural areas – despite that one-quarter of the population lives in these areas
- There is a major shortage of mental health professionals – 20% of nonmetropolitan counties lack mental health services vs. 5% in metropolitan counties
- Although about one-third of the motor vehicle accidents occur in rural areas, two-thirds result in death
- Cardiovascular disease, hypertension, stroke, and Diabetes are higher
- Abuse of alcohol and smokeless tobacco is a major problem
- Americans who experience a health emergency, but are more than 30 minutes from the nearest hospital have a 46% mortality rate compared to 21% for those that live less than 30 minutes away

- The suicide rate among men is higher than in urban areas
- Rural residents less likely to have employer-provided health care coverage
- Death and serious injury accidents account for 60% of total rural accidents vs. only 48% for urban
- Access to care – rural residents have greater transportation difficulties reaching health care providers, often traveling great distances to reach a provider
- Rural residents tend to be older and poorer
- EMS response times average 18 minutes in rural areas vs. 10 minutes in urban areas

<http://www.ruralhealthweb.org/go/left/about-rural-health>
<http://sph.tamhsc.edu/srhrc/docs/rhp2020-volume-1.pdf>



West Texas Access to Care

- 27 Texas counties have no physicians - 21 are located in West Texas
- 6 counties in West Texas only have Nurse Practitioners
- 14 Texas counties have no physicians, physicians assistants or nurse practitioners - 11 are located in West Texas
- 26 Texas counties have no Pharmacist - 23 are located in West Texas
- 32 counties in West Texas have no hospital



- Lubbock is the only burn center between Dallas and Albuquerque
- Difficult to recruit and retain personnel
- Population is more likely to be poorer, sicker, and uninsured
- There is an increased rate of fatalities and injuries due to the nature of the workforce
- 75% of the region is more than 90 miles from a trauma center making access to care difficult
- Large geographic area - 131,459 sq. miles, which is larger than New York, New England, and the District of Columbia combined

<https://innovations.ahrq.gov/perspectives/challenges-facing-rural-health-care>
<https://www.dshs.state.tx.us/chs/hprc/health.shtm>



Medical Care and Facilities

Texas

- Acute Care Hospitals-585
- Critical Access Care Hospitals-80
- Rural Health Clinics-291
- Psychiatric Hospitals-61

Texas Department of Agriculture
Texas Association of Rural Health Clinics
DSHS Department of Health Statistics
<https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/Downloads/rhclistbyprovidername.pdf>

West Texas

- Acute Care Hospitals-120
- Critical Access Care Hospitals -50
- Rural Health Clinics-99
- Psychiatric Hospitals-11
- Counties with no hospital-32/108





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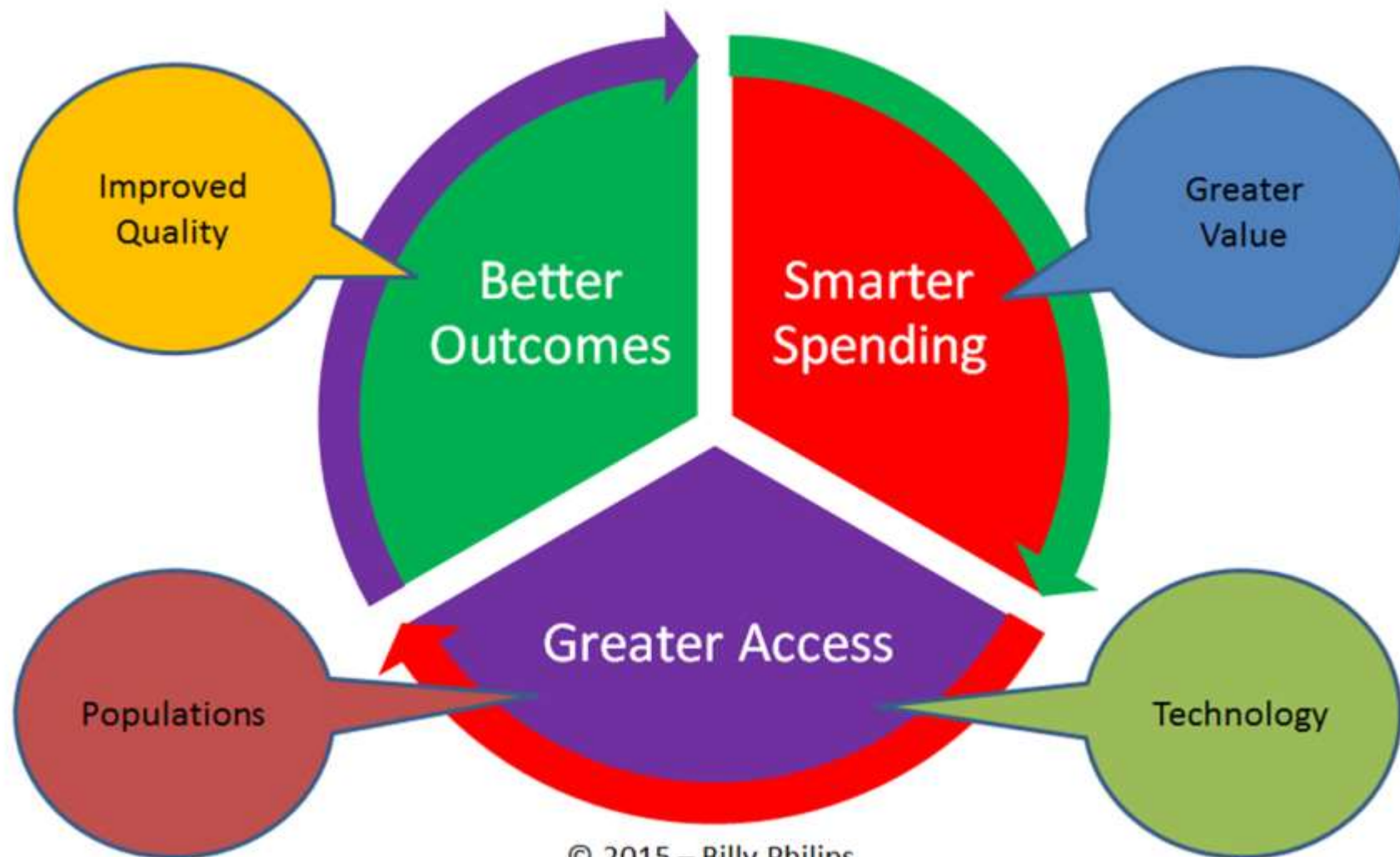
**El Cuarto de
Emergencia
esta Cerrado Llame
Al 911
O valla Al Hospital
Mas Cercano**

**Emergency Room Is
Closed!**

**Please Call 911
Or Go To The
Nearest Hospital!**



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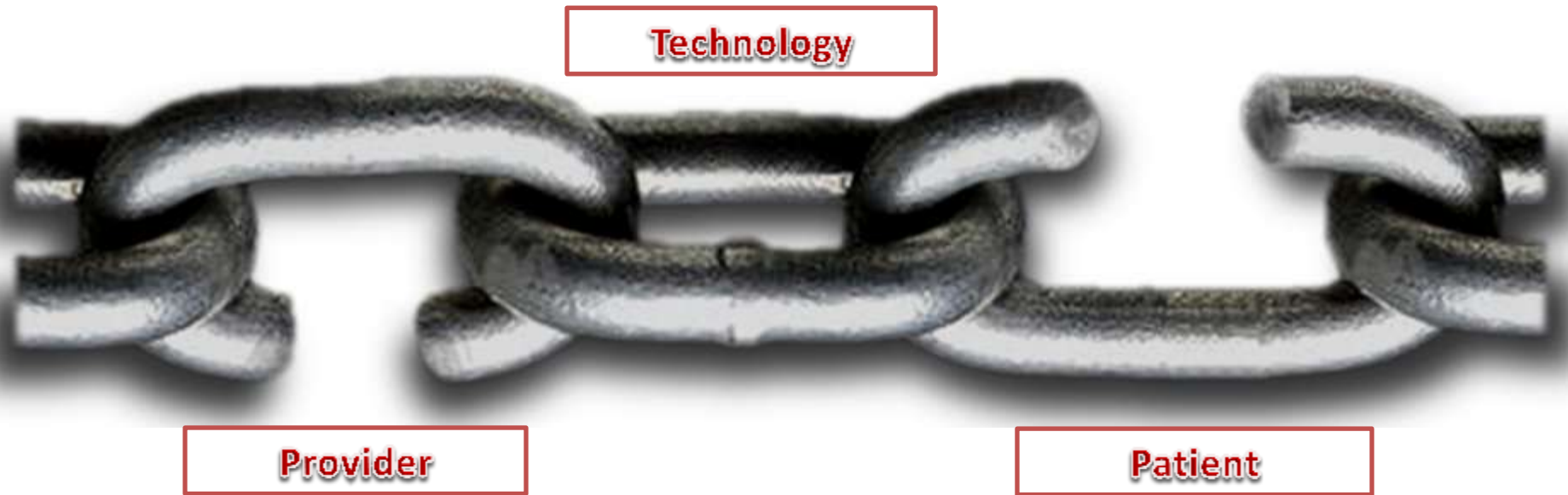


What is Telemedicine?

- The American Telemedicine Association formally defines it as: the use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status.
 - It may include videoconferencing, transmission of images, e-health, m-health, patient portals, remote monitoring of clinical information, etc.
 - It has evolved to telehealth to incorporate health education, prevention and anticipatory guidance that does not always involve clinical services.
 - Telemedicine includes a growing variety of applications and services using two-way video, email, smart phones, wireless tools, and other forms of telecommunications technology.
-
- It is not a separate medical specialty!
 - It is a tool.



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If we can dream it –
we can do it!



/34/ Space Medicine and Telemedicine





Telemedicine at TTUHSC

- Telemedicine began at Texas Tech University Health Sciences Center in 1989, originally designed to connect the four campuses of the Health Sciences Center in Lubbock, Amarillo, Odessa, and El Paso
- Telemedicine eventually expanded for the purposes of connecting the main Lubbock campus to distant rural sites for the purpose of medical consultations, with the first tele-consultation conducted in 1990 between Alpine, TX and Lubbock
- Between 1990 and 1993 TTUHSC developed “TeleDoc™”, a single portable integrated package that provides the opportunity for live interactive video consultations
- Since 1994, approximately 90,000 tele-consultations have been conducted at TTUHSC
- Today, the TTUHSC Telemedicine Program continues to bridge the barriers in the 108-county service area of West Texas through new projects and innovations to expand telemedicine into our most rural areas





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TexLa Telehealth Resource Center

- 1 of 15 telehealth resource centers in the nation
- Federally funded program designed to provide technical assistance and resources to new and existing telehealth programs throughout Texas and Louisiana
- Assists in expansion of telehealth capacity and usage in Texas and Louisiana to improve health care access, quality, and outcomes



Frontiers in Telemedicine Lab

- One-of-a-kind training program specific to telemedicine presenting, clinical procedures, technology, and business
- Focuses on competency-based learning to set the standard of telemedicine training
- Provides 18 hours of CE credit





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Emergency Medical Care



Texas

- There are 776 Emergency Medical Services in Texas
- EMS is not a statutory mandated service in Texas
- Texas providers are either volunteer, private or municipal
- Texas has 288 Trauma Level I, II, III, and IV Trauma Facilities
- There are 17 Trauma I facilities in Texas
- Provider capability in rural Texas averages to 1 responding agency for every 6,333 people or 1 agency per 422 sq. miles

<https://www.dshs.state.tx.us/emstraumasystems/etrahosp.shtm#/>

DSHS EMS/Trauma Office of Compliance

West Texas

- There are 171 Emergency Medical Services in West Texas
- There are 3 counties in West Texas with no EMS Provider
- Some West Texas counties have no Paramedic and others may have only an Emergency Medical Technician
- There are a total of 82 Trauma Level I, II, III, and IV Facilities in West Texas
- The two Trauma I facilities are located in Lubbock and El Paso
- Lubbock is the only burn unit in 108 county region

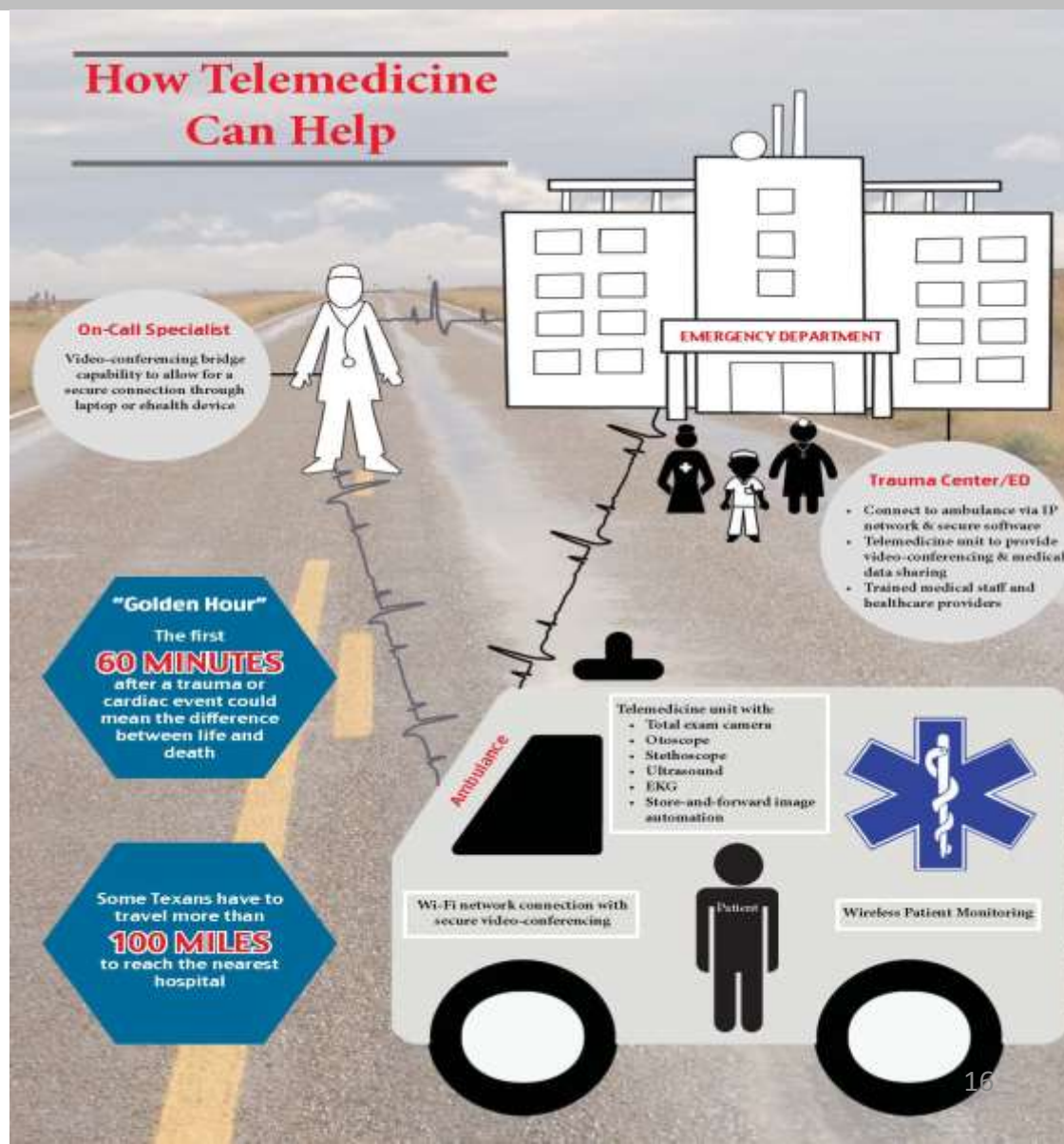
“If you’re going to have a heart attack, you better be first.”

<https://www.texastribune.org/2010/01/05/little-trauma-care-in-rural-texas/>



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Pre-Hospital Care Telemedicine





Opportunities

- Potential opportunities include
 - Improved patient care:
 - Bring injured patient and physician together as quickly as possible
 - Contributes to providing the right treatment at the right time
 - Well-trained, well-equipped, and availability of access are essential to emergency care at the point of injury
 - Better Information:
 - Allows data regarding patient's symptoms, presentation, and state of mind to be seen by physician to better plan an effective treatment plan
 - Improved Care Communications:
 - An integrated EMS telemedicine system would result in more collaborative practice between EMS and treating hospitals
 - Potential Costs savings:
 - Savings could be seen as patients are directed to more appropriate treatment facilities without further screening in hospital EDs, reducing ambulance transfers and hospital bills



Recent Telemedicine and EMS Integration Projects

- Liberty County EMS first used the DREAMS (Disaster Relief and Emergency Medical Systems) EMS telemedicine system in 2000. Recently, in 2015, Liberty County EMS and Houston Methodist San Jacinto Hospital are utilizing “LifeBot®” telemedicine technology for EMS providers in Texas, allowing ambulances to connect through live data, video, and audio streams with emergency room physicians while still at the scene of an accident or in route to a hospital.
- Georgia has recently started a program under a “hub and spoke” model to use telemedicine-equipped ambulances to facilitate remote diagnoses of patients in rural areas to relieve the burden on rural hospital emergency rooms.
- In Michigan, a partnership between St. Joseph Mercy Oakland Hospital and the Bloomfield Township Fire Department resulted in 57 firefighters and paramedics being trained on the use of telemedicine to connect with emergency room doctors to allow for care to begin sooner, or reduce costs by determining that the patient does not need to go to the hospital for the treatment required.
- In Pennsylvania, Allegheny Health Network, based in Pittsburgh, has launched a pilot project using iPads to allow EMS providers to connect patients directly to an emergency room physician, who can talk to the patient and observe physical symptoms, as opposed to second-hand reporting of symptoms by the paramedic on the emergency call.



House Bill 479

- Amended Chapter 771 of the Health and Safety Code relating to create a pilot project to provide emergency telemedicine medical services in rural areas of Texas.
- Texas Tech University Health Sciences Center and its Area Health Education Center (West Texas AHEC) were tasked with assisting the Texas Commission on State Emergency Communications (CSEC) to establish the pilot project by:
 - Designing criteria and protocols for the telemedicine medical service and related instruction and provide the oversight necessary to conduct the pilot project
 - Defining criteria to determine when telemedicine medical services that provide instructions for emergency medical services, emergency prehospital care, and trauma care should be transferred to an emergency medical resource center for intervention
 - Collecting the data necessary to evaluate the project
- Participation within the project will include both trauma facilities and emergency medical services providers in rural areas.
 - Rural area is defined as a county with a population of 50,000 or less, or a large, isolated, and sparsely populated area of a county with a population of more than 50,000



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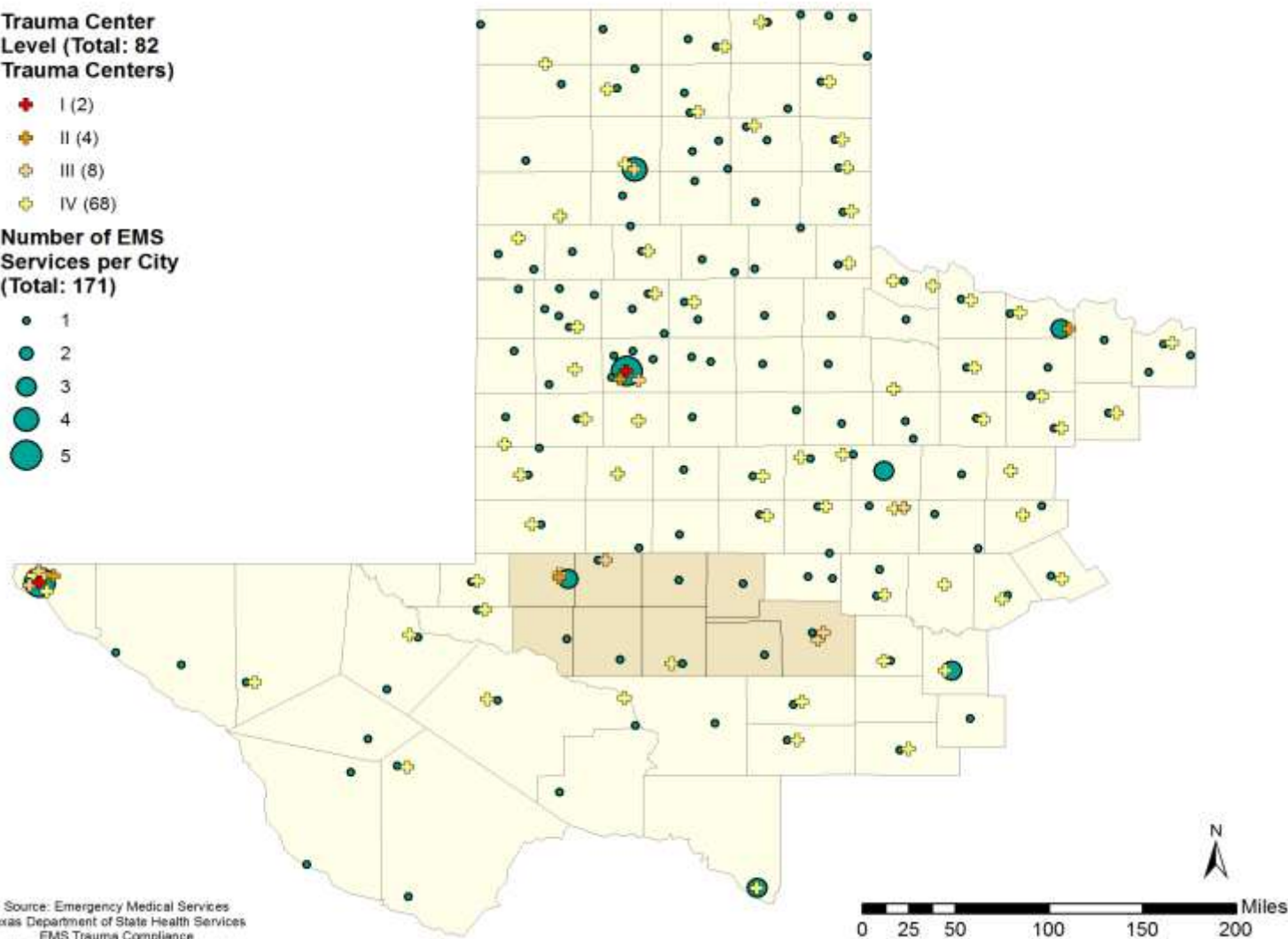
EMS Services and Trauma Centers in West Texas

**Trauma Center
Level (Total: 82
Trauma Centers)**

- ✚ I (2)
- ✚ II (4)
- ✚ III (8)
- ✚ IV (68)

**Number of EMS
Services per City
(Total: 171)**

- 1
- 2
- 3
- 4
- 5



Source: Emergency Medical Services
Texas Department of State Health Services
EMS Trauma Compliance



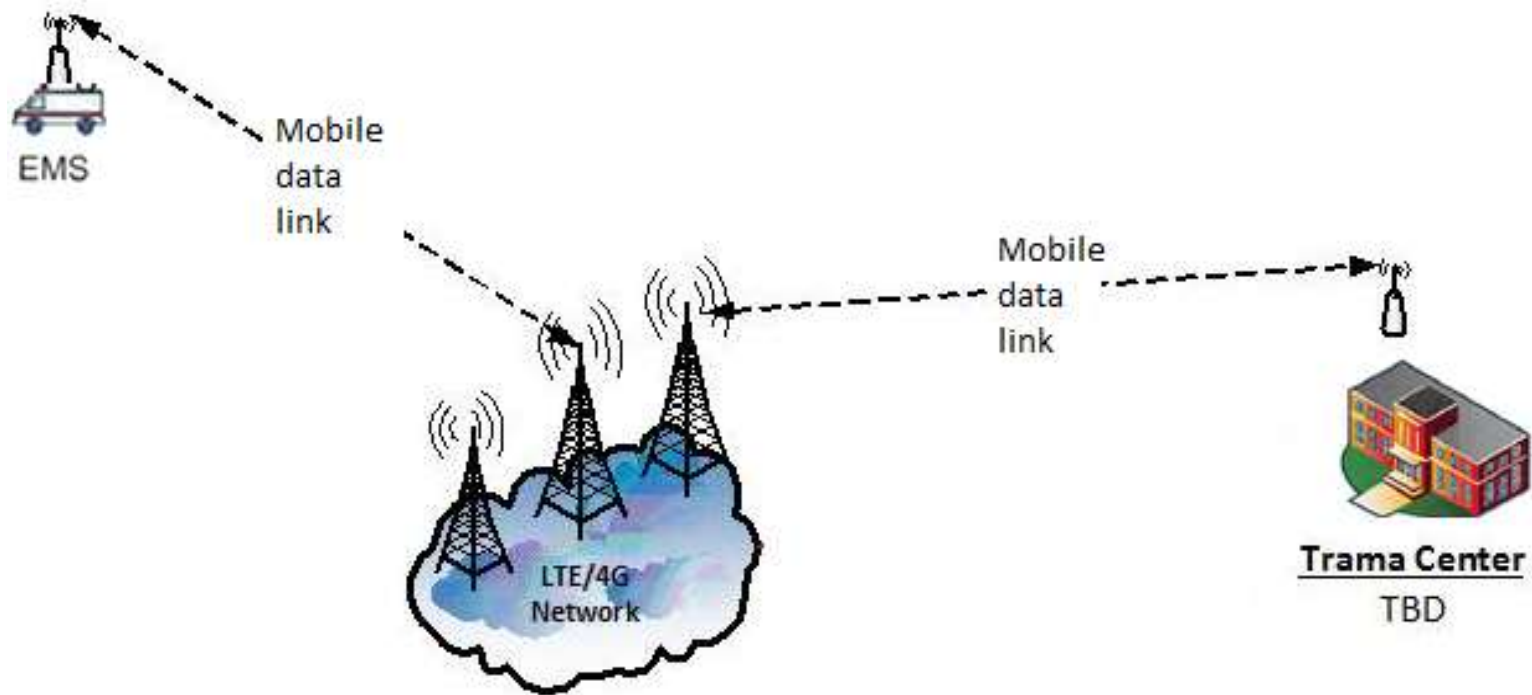
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HB479 Proposed Counties



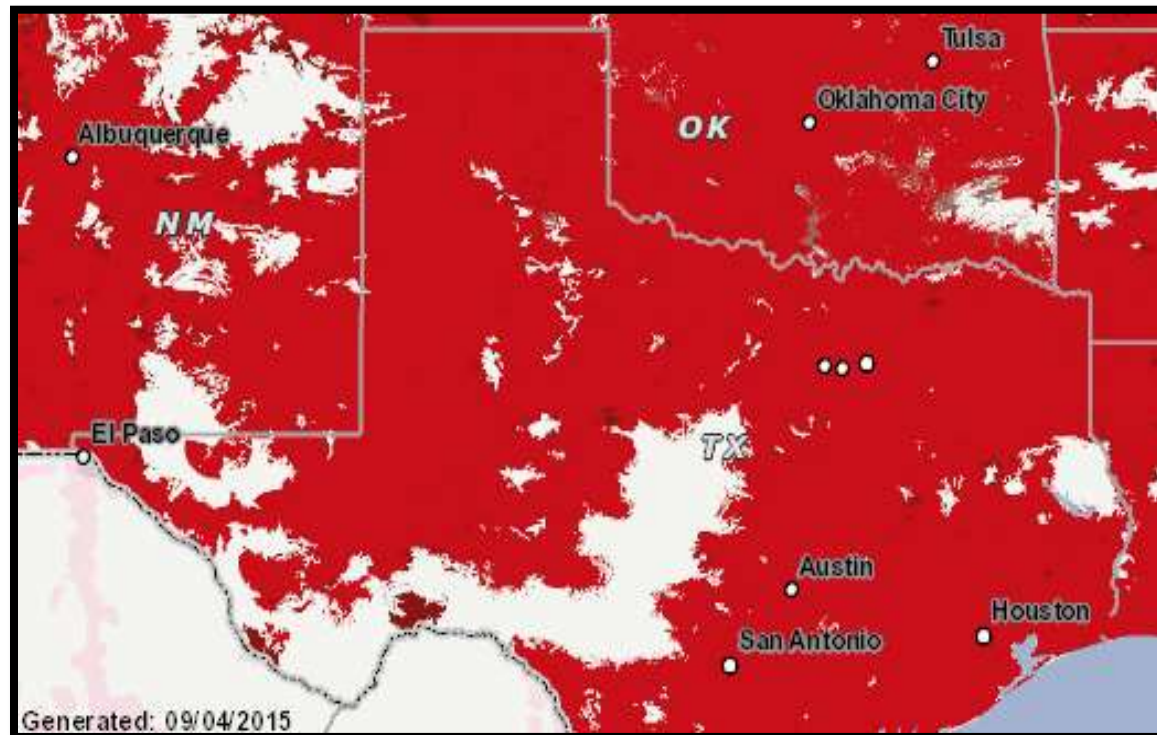


Telemedicine Connection





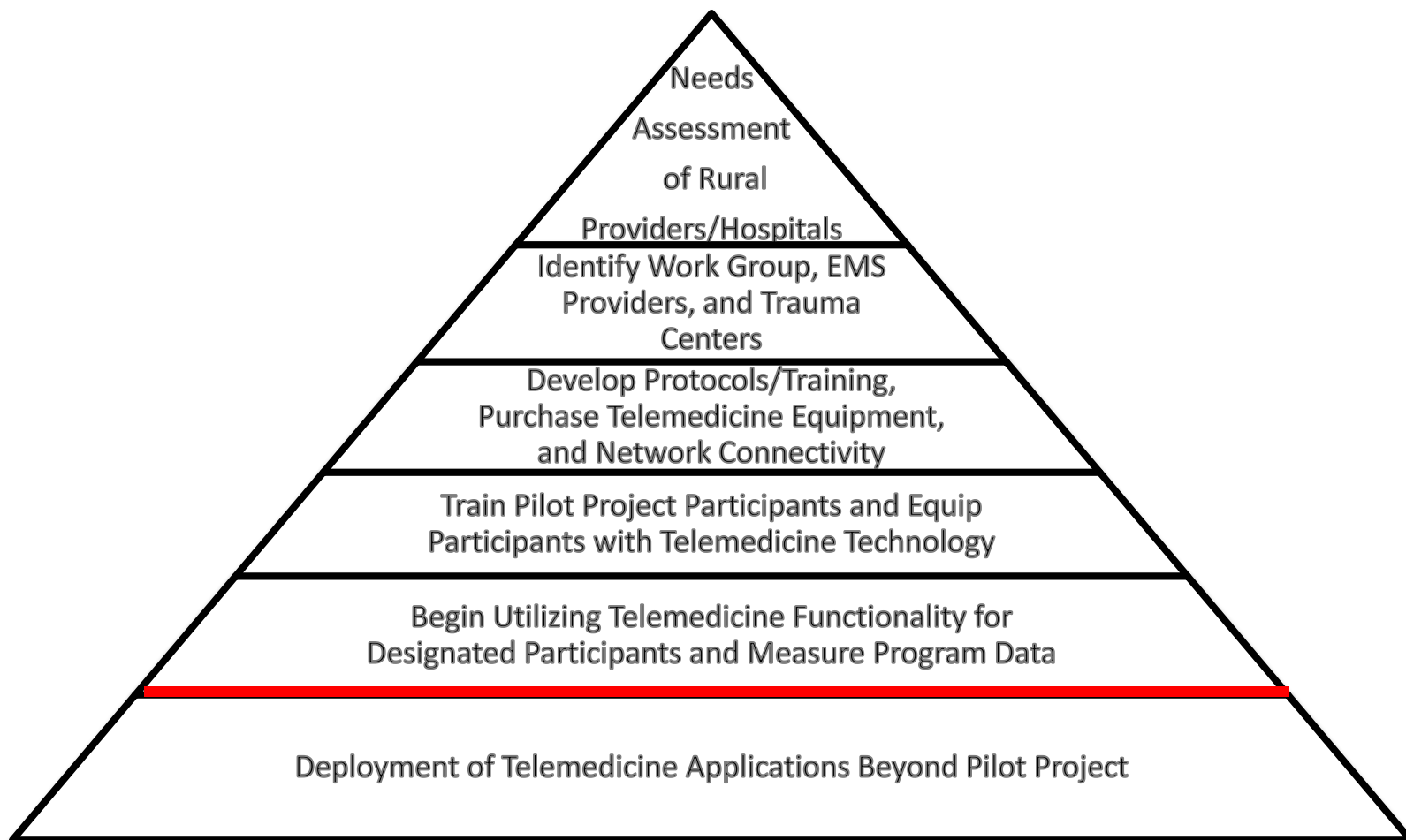
4G/LTE Coverage in West Texas



Verizon 4G/LTE Coverage Map (available at <http://www.verizonwireless.com/landingpages/better-matters/>)



Project Implementation





Contact Information

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