Evidence-Based Tele-Emergency Network Grant Program

LEARNING EXPERIENCES FROM GRANTEES
Overview

- Program Description
- T-Part Tool Overview
- St. Vincent Healthcare
- Wabash Valley Rural Telehealth Network
- University of Kentucky HealthCare
Evidence-Based Tele-Emergency Network Grant Program

HRSA-14-138 | Office of Rural Health Policy
Application Accepted: 05/16/2014 to 06/19/2014
Projected Award Date: 09/01/2014
Estimated Award Amount: $1,600,000.00 to fund 4 awards
### Tele-Emergency Performance Assessment Reporting (T-PART) Tool

<table>
<thead>
<tr>
<th>EB TNGP Grantee</th>
<th>Service Area</th>
<th>Setting*</th>
<th>Patient Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avera Health eCare Services</td>
<td>Iowa, Kansas, Minnesota, Nebraska, North Dakota, South Dakota</td>
<td>22 Rural EDs</td>
<td>Diverse patient population</td>
</tr>
<tr>
<td>St. Vincent Healthcare</td>
<td>Montana</td>
<td>11 Rural EDs</td>
<td>Diverse patient population</td>
</tr>
<tr>
<td>Union Hospital</td>
<td>West Central Indiana &amp; East Central Illinois</td>
<td>6 Rural EDs</td>
<td>Neurology, behavioral health, and trauma</td>
</tr>
<tr>
<td>University of California at Davis</td>
<td>Northern California</td>
<td>16 Rural EDs</td>
<td>Pediatric emergency and critical care</td>
</tr>
<tr>
<td>University of Kentucky</td>
<td>Eastern Kentucky</td>
<td>7 Rural EDs</td>
<td>Diverse patient population</td>
</tr>
<tr>
<td>University of Virginia</td>
<td>Virginia</td>
<td>4 Rural EDs</td>
<td>Stroke</td>
</tr>
</tbody>
</table>

*Number of rural EDs implemented as of 7-1-2016
T-Part: 49 visit-level variables

1. ED arrival and discharge information;
2. Tele-ED services information;
3. Transfer information;
4. Patient information;
5. Treatment information; and
Tele-Emergency Services

Providing sustainable Tele-Emergency services to rural Montana
Services Currently Provided

• Consults from specialty providers at St. Vincent Healthcare to rural emergency departments. The following specialty providers are available for video consultation:
  – Board-certified ER physicians
  – Hospitalist Neurologists
  – 24/7 Pediatric Intensivists
  – Neonatologists *Coming Soon!*

James Bentler, MD  
SVH ED Medical Director

James Richards, MD  
Hospitalist Neurologist

Menard Barruga, MD  
Pediatric Intensivist
A Glimpse at Results

- Average length of Tele-ED visit (start of visit to SVH physician closing EHR encounter)
  - 1 hour
- Average time between rural ED check-in to start of Tele-ED visit (how long it takes between arriving at a local ER to receiving a Tele-ED consultation)
  - 1 hour 30 minutes

- Top 2 chief complaints resulting in Tele-ED visits
  - Burn
  - Stroke Symptoms
Method of Delivery

Tools Needed

- Apple iPad Air 2
- Internet

Benefits

- Minimal expense for equipment
- Small & simple to operate
- Low cost to maintain

Challenges

- Internet quality assessment
- OS/app updates
Network Assessment Tool

Starting Telemedicine Over Internet

St. Vincent Healthcare’s Tele-Emergency program launched in 2015 to provide emergency consultations to rural facilities using simple and affordable technology, including the internet. If you are thinking of using internet to launch telemedicine services, there are plenty of things to keep in mind before beginning.

Step One: Conduct a Pre-Visit Assessment

• Connect with IT person at site
• Conduct bandwidth testing
• Have the ISP for site conduct bandwidth testing and report average and peak usage
• Collect the external IP address for the network that will be used for connection
• Have the site IT verify that all required firewall port changes are made
• If planning to use a mobile device, download a network analysis tool (Speed Test, iNetTools, Wifi Analyzer)

Step Two: Conduct an On-Site Assessment

• Perform bandwidth testing using a wired connection and a wireless one
• Use iNetTools on a mobile device to test response times via Ping
• Use iNetTools on mobile device to perform a trace route
• Use Wifi Analyzer to verify connection
• Collect these details on the connection (default gateway, DNS server, external IP, SSID, IP assigned to device, subnet mask, data sent, data received)
• Utilizing the program that will be providing the connection, monitor a connection for FPS for a minimum of 10 minutes and ensure they remain an average of 25+
Sustainability

- Choice of billing for services vs. contract fees
- Makes very few changes to provider workflows
- Maintenance of equipment is affordable & uncomplicated
- No extra service fees for rural communities to utilize the service

Salvatore Buonaiuto, MD
Pediatric Intensivist
Providing mock consultation to rural community for training
Locations

All sites interested in the Tele-Emergency service can request an on-site mock code for an interactive look at how the program could meet the needs of the community.

- Butte, MT — St. James Healthcare
- Colstrip, MT — Colstrip Medical Center
- Deer Lodge, MT — Deer Lodge Medical Center
- Dillon, MT — Barrett Hospital
- Ennis, MT — Madison Valley Medical Center
- Forsyth, MT — Rosebud Healthcare
- Hardin, MT — Big Horn Memorial Hospital
- Lewistown, MT — Central Montana Medical Center
- Malta, MT — Phillips County Hospital
- Sheridan, MT — Ruby Valley Healthcare
- Sidney, MT Coming Soon! — Sidney Health Center
- Whitefish, MT — North Valley Hospital
- Miles City, MT Coming Soon! — Holy Rosary Healthcare
Contact Information

• Eric Pollard – Director of Virtual Health
  – eric.pollard@sclhs.net

• Stacy Thompson, RN, BSN – Clinical Nurse Coordinator
  – stacy.thompson@sclhs.net

• Martha Nikides – Grant Program Lead
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Made possible by grant number G01RH27870 from the Office of Rural Health Policy Office for the Office of Rural Health Policy, Health Resources and Services Administration bureau, DPHHS.
Can we insert a map here?

Map Legend

HRSA Data
- Federally Qualified Health Centers
- Hospital
- Rural Health Clinic
- Mental Health Clinic
- Critical Access Hospitals
- Consulting Specialty
- Wages
- Counties
- Medically Underserved Areas/Populations
- Governor
- Medically Underserved Area
- Medically Underserved Population
- Health Professional Shortage Area (Primary Care)

Geographic Area
- Population Group
- Single County

Wabash Valley
RURAL TELEHEALTH NETWORK

HRSA Grant Number: G01RH27871
First things first…

- Listen to our partners
- Correlate the need
- Assess the feasibility

Wabash Valley
RURAL TELEHEALTH NETWORK

HRSA Grant Number: G01RH27871
WVRTN EB-TNGP Experience

Integrated Processes

Project Management Basics

Clinical Work flow

Existing Referral Patterns

Quality Performance

Wabash Valley
RURAL TELEHEALTH NETWORK

HRSA Grant Number: G01RH27871
Collaborative team research to:

- Facilitate optimal patient health outcomes
- Improve emergency care providers telehealth competency
- Help sustain rural healthcare facilities
- Discover where costs may be neutralized or reduced
- Share data, outcomes, and dissemination opportunities with other national sites via HRSA collaborative agreement and activities
- Inform rural health policy & CMS reimbursement
## Total Time Spent in ED (Minutes)

<table>
<thead>
<tr>
<th></th>
<th>Mean ± SD (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triage to Discharge from ED</td>
<td>287.5 ± 147.9 (42)</td>
</tr>
<tr>
<td>Telehealth Visit</td>
<td>33.0 ± 26.0 (54)</td>
</tr>
</tbody>
</table>

4 hours 15 minutes

HRSA Grant Number: G01RH27871
## Emergency Department Provider Assessment

### Telebehavioral Health (% Respondents)

<table>
<thead>
<tr>
<th>1: Highly Improbable to 5: Extremely Probable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Mean ± SD (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intent to Transfer prior to telehealth consultation</td>
<td>21.8</td>
<td>18.2</td>
<td>36.4</td>
<td>10.9</td>
<td>12.7</td>
<td>2.75 ± 1.28 (55)</td>
</tr>
</tbody>
</table>

40% 23.6%

* t test between telebehavioral and teleneurology providers.
* χ² test between telebehavioral and teleneurology providers.
Lack of influence of telehealth visit: 24% affirmative for Telebehavioral

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Wabash Valley
RURAL TELEHEALTH NETWORK

HRSA Grant Number: G01RH27871
## Emergency Department Provider Assessment

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<tbody>
<tr>
<td>Telehealth influenced patient disposition / transfer</td>
<td>9.1</td>
<td>7.3</td>
<td>21.8</td>
<td>40.0</td>
<td>21.8</td>
<td>3.58 ± 1.12 (55)</td>
</tr>
</tbody>
</table>

16.4%  
61.8%

*: t test between telebehavioral and teleneurology providers.  
*: χ² between telebehavioral and teleneurology providers.  

Wabash Valley  
RURAL TELEHEALTH NETWORK  

HRSA Grant Number: G01RH27871
www.RuralTelenet.org

Grant to Support Rural Emergency Care Effort

Indiana State University is partnering with Union Hospital and the Wabash Valley Rural Tele-health Network on a project to improve access to emergency services in rural areas.

The Health Resources and Services Administration has awarded the hospital a $1.2 million grant for the project. The grant is one of only five of its kind in the country.

The grant will support the implementation and evaluation of broad-scale tele-health networks to deliver 24-hour emergency department consultation services to rural providers without emergency care specialists.

While the grant emphasizes expanding access to needed services for rural patients, it also seeks to implement a systematic data collection and analysis strategy to create an evidence base for assessing the effectiveness of tele-Emergency care for patients, providers and payers.

Stephanie Laws, MSN, RN
Project Director
slaws@uhhg.org

812-238-7479
The UK Appalachian Tele-Emergency Network (UK-ATEN)
Goals of the UK-ATEN

1. Assist with **emergent care** when requested

2. Improve coordination and better **tailor the arrangements with the patients’ need**

3. **Actively** Assist: Outpatient F/U, ED-ED transfer, direct admit, keeping patient at rural facility

4. Study the differences in **costs of care, travel related expenses, patient/provider satisfaction** between the traditional referral methods and telemedicine referrals
Evidence-Based Tele-Emergency Network Grant Program (HRSA-14-138)

**Hub:** Dept of EM at UK (27 attending EM boarded physicians, including Peds EM, EMS, Ultrasound) also involving Peds Critical Care

**Spokes:** Recruited 18 “rural” hospitals in central, southern and eastern KY to participate

- 6 CAH

**Study design:** Cluster Randomized Design 9 *intervention* and 9 *control* based on distance, number of referrals, CAH status

**Network Development:** Incremental implementation

- Y1 = 4/4
- Y2 = 7/7
- Y3 = 9/9
UK-Appalachian Tele-Emergency Network (UK-ATEN)

- University of Kentucky Chandler Medical Center (UK-ATEN Hub)
- Rural Non-Critical Access Hospital (UK-ATEN Spoke)
- Rural Critical Access Hospital (UK-ATEN Spoke)

Control Site

Intervention Site
Proposed Flow of Patients from Rural EDs to UK Chandler Facilities

Goal: Through Tele-Emergency Consultation ↑A and D while ↓B and C
Recent results of the UK-ATEN

Last 8 months

- 36% of referrals went home from the outside hospital (saved minimum of 2796 patient/family travel miles)
- Small number (5%) were able to be kept at the outside hospital when the original request was to transfer (specific example, fragility pelvic fx)
- 20% of transfers were direct admits instead of ED to ED transfers

**Bottomline:** in over half, we changed the management and objectively improved the disposition for of the patients that were evaluated by telemedicine
Summary

The UK-ATEN project is a common sense use of tele-emergency medicine

Collaboration with providers in rural EDs
- Assisting with emergent care
- Coordinating the proper disposition of patients
  - Outpatient (referral to clinic)
  - ED to ED transfers when appropriate
  - ED to Inpatient transfer (direct admit)
- Telehealth support to keep patients local

We are studying the costs and patient/provider satisfaction associated with the traditional and tele-emergency consultation routes
Indiana ED Visits due to Opioid Abuse

**Footnote**
Inpatient ED visits: the number of persons who were treated in the emergency department for opioid abuse and admitted as an inpatient.
Outpatient ED visits: the number of persons who were treated in the emergency department for opioid abuse and released from the hospital.
Total ED visits: the total number of persons treated in the emergency department for opioid abuse.
Opioid overdose (including heroin poisoning) is identified using the ICD codes recommended by the Centers for Disease Control and used by the Indiana State Department of Health for this topic.

*Source: IHA Inpatient and Outpatient Studies*
The national rate of opioid-related ED visits increased 99.4 percent, from 89.1 per 100,000 population in 2005 to 177.7 per 100,000 population in 2014.