

Evidence-Based Tele-Emergency Network Grant Program

LEARNING EXPERIENCES FROM GRANTEES



Wabash Valley RURAL TELEHEALTH NETWORK HealthCare

Overview

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- 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

EB TNGP Grantee	Service Area	Setting*	Patient Population
Avera Health eCare	lowa, Kansas,	22 Rural EDs	Diverse patient
Services	Minnesota, Nebraska,		population
	North Dakota, South		
	Dakota		
St. Vincent Healthcare	Montana	11 Rural EDs	Diverse patient
			population
Union Hospital	West Central Indiana &	6 Rural EDs	Neurology, behavioral
	East Central Illinois		health, and trauma
University of California at	Northern California	16 Rural EDs	Pediatric emergency
Davis			and critical care
University of Kentucky	Eastern Kentucky	7 Rural EDs	Diverse patient
			population
University of Virginia	Virginia	4 Rural EDs	Stroke
University of Virginia	virginia	4 Kural EDS	Stroke

*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
- 6. Cost information.

	Variable name	Brief variable definition	
	Grantee's name	Enter a random ID of EB-TNGP grantee organization.	
	Hospital's name	Enter a random ID of rural partner hospital where patient sought care.	
	Coder	Identify the person entering the data into the performance tool.	
1	Patient ID (optional, for internal use only)	This is an optional field and should be used for internal purposes only to help hospitals link data elements for the same patient that might have been obtained from different sources. To protect patients' confidentiality, the patient ID should not be shared with anyone outside the health care system. The hospital should keep a crosswalk between patient IDs and	
		case IDs in a secure location.	
2	ED visit arrival time	Enter the time the patient checked into the ED or arrived by ambulance.	
3	ED visit arrival day of week	Enter the day of the week the patient checked into the ED or arrived by ambulance.	
4	ED exam start time	Enter the time the patient was first examined by a clinician.	
6	ED visit departure time ED visit departure day of	Enter the time the patient left the ED. Enter the day of the week the patient left the ED.	
7	ED discharge disposition	Enter the patient's discharge status.	
8	Other disposition – specify	Specify the discharge disposition for discharge disposition coded as 'other'	
9	Tele-ED consultation	Identify whether the patient received tele-ED consultation during the ED visit.	
10	Tele-ED consultation start time	Enter the time the tele-ED consultation started. Tele-ED consultation start time is defined as "the time when the tele-ED service videoconference between the hub/specialist physician and the rural ED was started."	
11	Tele-ED consultation end time	Enter the time the tele-ED consultation ended. Tele-ED consultation end time is defined as "the time when tele-ED video consultation ended."	
12	Tele-ED technical success	Indicate whether tele-ED technology was administered successfully. Successful administration means that voice and video quality were sufficient to complete the consultation	
13	Averted local admission	Indicate whether the tele-ED consultation averted local admission (for tele- ED patients only).	
14	Averted transfer	Indicate whether the tele-ED consultation averted inpatient transfer (for tele-ED patients only).	
15	Transfer mode of transportation	Enter the mode of transportation to the receiving inpatient facility to which the tele-ED patient was taken (for transfer patients only).	
16	Transfer distance	Enter the distance (in miles) to the receiving inpatient facility (for transfer patients only).	
17	Age	Select the patient's age category.	
18	Sex	Select the patient's sex.	
19	Ethnisity	Select the patient's athricity	
20	Posson for visit	Indicate the main reason for the nationt's visit	
22	Reason for visit - other specify	Specify the reason for patients' visits coded as other.	
23	Principal diagnosis	Indicate the principal ICD-10 code for the ED visit.	
24	Chest pain symptoms	Indicate if the patient had symptoms of chest pain.	
25	Acute myocardial infarction	Indicate if the patient had acute myocardial infarction.	
26	Stroke	Indicate if the patient had a stroke.	
27	Severe sepsis or septic shock	Indicate if the patient had severe sepsis or septic shock.	
28	Emergency severity index	Select the patient's emergency severity index (ESI) level.	
29	Fibrinolytic administered	Indicate if the patient received fibrinolytic therapy.	
30	Fibrinolytic administration time	Enter the time the patient received fibrinolytic therapy (for patients who are eligible for fibrinolytic therapy only).	
31	ECG performed	Indicate if the patient received an electrocardiogram (ECG).	
32	ECG time	Enter the time the patient received an ECG.	
33	Aspirin received	Indicate if the patient had aspirin within 24 hours of ED arrival or before El transfer.	
34	Head CT scan ordered Head CT scan time	Enter the time the patient received a C1.	
36	Head CT interpretation time	Enter the time a CT was interpreted.	
37	Stroke Symptom – time last known well	Enter the time that the patient was last known to be without the signs and symptoms of the current stroke.	
38	Stroke Symptom – last known well day of week	Enter the day of the week that the patient was last known well.	
39	tPA initiated	Indicate if the patient received tPA.	
40	tPA initiation time	Enter the time the patient received tPA treatment.	

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-EE 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



Equipment at the rural sites



View of provider from rural iPad





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
- <u>No</u> extra service fees for rural communities to utilize the service



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



Locations

HCARE SCL Health

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

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- 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

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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.





A DIVISION OF JNI HOSPITAL





Indiana State University



Map Legend

HRSA Data

Rural Health Clinics

Mental Health Clinics

Medically Underserved Areas/Populations

Medically Underserved Area

Medically Underserved Population

Health Professional Shortage Area

Critical Access Hospitals ★ Consulting Specialty

Hospital

States Counties

Gov

(Primary Care)

Geographical Area

Population Group

Single County



Wabash Valley RURAL TELEHEALTH NETWORK

First things first...

Listen to our partners



Correlate the need



Assess the feasibility

Wabash Valley RURAL TELEHEALTH NETWORK

WVRTN EB-TNGP Experience





Wabash Valley RURAL TELEHEALTH NETWORK

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

Wabash Valley RURAL TELEHEALTH NETWORK

Total Time Spent in ED (Minutes)



Wabash Valley RURAL TELEHEALTH NETWORK

Emergency Department Provider Assessment



^a: t test between telebehavioral and teleneurology providers.

 $^{\,\mathrm{b}}$: $\chi 2$ test between telebehavioral and teleneurology providers.

Lack of influence of telehealth visit: 24% affirmative for Telebehavioral

Wabash Valley RURAL TELEHEALTH NETWORK

Emergency Department Provider Assessment



^a: t test between telebehavioral and teleneurology providers.

^b : xbetween telebehavioral and teleneurology providers.

Wabash Valley RURAL TELEHEALTH NETWORK

www.RuralTelenet.org

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		Rural Patient Care go Center for Family Mee To dot to next the discussion of the total to the total total total to dot to chart to the total total total Read more	es High-Toch at Clay City licine C/M with the device have no between at the C/M with the device have no dedices.
The Network	About Us	Virtual Vi	sitation
Members of the Wabash Valley Rural Teleheatth Network are part of an association that better enables members to bring speciatly healthcare to	The Web Telebase Tele	hash Valley Rural th Network has a of advancing rural rough education, or. and atoon.	Visit a hospitalized patient from the comfort of your home via a secure video network. Learn how to Connect

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.

Read more.

Wabash Valley







HRSA





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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 = 4/4Y2 = 7/7Y3 = 9/9





UK-AppalachianTele-Emergency Network (UK-ATEN)















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

UKHealthCare



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



Opioid-related ED, 2014

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.

Abbreviation: ED, emergency department

Source: Agency for Healthcare Research and Quality (AHRQ), Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), HCUP Fast Stats, Opioid-Related Hospital Use (<u>http://www.hcup-us.ahrq.gov/faststats/landing.jsp</u>) based on the HCUP Nationwide Emergency Department Sample (NEDS) and the HCUP State Emergency Department Databases (SEDD)