Arizona Rural EMS Advanced Telemedicine Demonstration Initiative (AzREADI)

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Purpose

- To develop a telemedical infrastructure that places rural EMS agencies at the cutting edge of medical care.
- To connect rural EMS providers with board certified EM physicians in real-time utilizing two-way video communication.
- To demonstrate a sustainable model of rural EMS care by providing EMS medical direction at the time of patient care to assist BLS & ALS providers in the evaluation and triage of patients in rural communities.
Partners

- Arizona Center for Rural Health - Mel & Enid Zuckerman College of Public Health
- Arizona Emergency Medicine Research Center
- General Devices
- FirstNet / AT&T
- Arizona Telemedicine Program
- HRSA Federal Office of Rural Health Policy
- Sonoita-Elgin Fire District
- Rio Rico Fire and Medical District
- Banner Health / University Medical Center Tucson
- AZ Department of Health Services
Southern Arizona
FirstNet / AT&T

AT&T First Responder Network Authority

- Priority 5G network backed by congress post 9/11 to ensure high priority broadband communication capability for first responders, EMS, Fire, and Police

- Dependable cellular service with excellent plans/rates inclusive of the hardware needed to support this type of service in the field (i.e. – phones, iPads, satellite kits, rapid deployment kits, cases, temporary towers to boost service in remote areas, etc)
  - 24/7 live support with remote dispatching capability
Real time connection to emergency medicine physicians

Patients (and their vitals) are connected with board certified EM physicians in real-time

- Fully HIPAA compliant
- 24/7 Support
- Ability to transmit vitals & 12-Lead EKG via Bluetooth from EMS providers to OLMD
- Works across various operating platforms (iOS & Android)
Project Goals

Primary Goal: Right Patient, Right Destination via the Right Transport Modality

- When it's safe to transport patients with chest pain via BLS units, this leaves an ALS unit in district to respond to the next call.

- When it's safe to transport patients via ALS ground, rather than by air, both patient and provider save money.
Sonoita Elgin Fire District

- SEFD focused on innovative approaches into the management of rural chest pain patients.
- EMS crews contacted OLMD for every non-traumatic chest pain call.
- OLMD responds to crew via secure, live video conferencing through e-Bridge tele-health application
- EMS Transport decision is made (BLS, ALS, HEMS)
- EMS provider & OLMD submit REDCap survey at the end of each call for data collection & quality improvement
Chest Pain Calls

Baseline Data
(09/09/2019 – 09/09/2020)
- Chest Pain: 21%
- Other calls: 79%

Post Implementation
(09/10/2020 – 12/5/2021)
- Chest Pain: 11%
- Other Calls: 89%
In Patients with Chest Pain - EMS Call Volume & Transport Statistics

- e-Bridge Calls: 63% (Pre-AzREADI) = 0%
- BLS Transport: 5.6% (Pre-AzREADI) = 11%
- ALS Transport: 48.6% (Pre-AzREADI) = 42%
- Air Transport: 17% (Post-AzREADI) = 24%
- Patient Refusals: 25% (Post-AzREADI) = 22%
EMS total out of service times for chest pain calls

- Baseline 122 minutes
- AzREADI 91 minutes
Data Summary

- Program effectively implemented; more than 50% of patients with chest pain received care from a telemedicine EMS Physician
- Program resulted in small, non-significant changes in mode of transport and time on scene
Barriers & Lessons Learned

• Engaged and unengaged users

• Ongoing training and technological user interface challenges

• Rural EMS agency electronic medical record systems difficult to access and navigate

• Physician availability
Cost

- **Infrastructure**
  - Software: ~$15,000/year
  - Hardware: phones and iPads relatively affordable
  - Connectivity: (FirstNet / AT&T) ~ $40/month per unit

- **Physician Hours**
  - 24/7 on-call pay for OLMD ~ $0-300 / day

- **EMS Agency Cost** - potential for lost transport revenue: need to be a treat and refer agency with the state / ET3 program to cover cost of devices and recover transport cost
Sustainability

- Enhanced communications
- Opportunity to provide additional services
- Improved Preparedness
- Community Partnership
Questions & Comments
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