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
Two Projects

SEFD - Management of CP Patients
Goal: Improve Resource Utilization
• EMS calls for all patients with CC
• Physician provides expert services

RRFD - Telemedical Treat & Refer
Goal: Provide urgent care services
• EMS Identifies patient
• Physician screens call
• Connects to telemedicine services
SEFD’s focused on innovative approaches into the management of rural chest pain patients.

EMS crews contact 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.
Project Goals

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

• When it's safe to transport patients with CP via BLS units leaving an ALS unit in your district to respond to the next call.

• When it's safe to transport patients by ALS ground rather than by air to save $$. 
Real time connection to emergency medicine physicians

Patients (and their vitals) are connected with board certified EM physicians in real-time
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%
Chest pain calls by gender

- Baseline: 62% Male, 38% Female
- AzREADI: 49% Male, 51% Female
In Patients with Chest Pain - EMS Call Volume & Transport Statistics

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Pre-AzREADI (2019-2020)</th>
<th>Post-AzREADI (2020-2021)</th>
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</thead>
<tbody>
<tr>
<td>e-Bridge Calls</td>
<td>63%</td>
<td>48.6%</td>
</tr>
<tr>
<td>BLS Transport</td>
<td>0%</td>
<td>5.6%</td>
</tr>
<tr>
<td>ALS Transport</td>
<td>42%</td>
<td>11%</td>
</tr>
<tr>
<td>Air Transport</td>
<td>17%</td>
<td>24%</td>
</tr>
<tr>
<td>Patient Refusals</td>
<td>25%</td>
<td>22%</td>
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</tbody>
</table>
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 CP received care from a tele-medicine EMS Physician

Program resulted in small, non-significant changes in mode of transport and time on scene
What Do The End Users Think
Provider Focus Groups

Positives:

• EMS personnel felt relieved of some strain regarding difficult transport decisions

• Less pushback from patients on treatment and transport decisions.

• Received enhanced and prompt support in comparison to conventional medical direction.
Provider Focus Groups

Negative:

- Some instances occurred where EMS initiated a call that was not picked up or returned within protocol time limit
- Connectivity issues
- Lack of durability in the iPads used compared to other technological hardware in EMS
Overall Focus Group Feedback

EMS Provider Comments on AzREADI Pilot

- **Effect on Direct Patient Interactions**: 5 Positive, 2 Neutral, 3 Negative
- **Transport**: 7 Positive, 4 Neutral, 2 Negative
- **Connection and Technology**: 3 Positive, 7 Neutral, 1 Negative
- **Protocol**: 10 Positive, 3 Neutral, 1 Negative
- **Communication with hospital**: 2 Positive, 2 Neutral, 2 Negative

**Topic Of Comment**

- **Positive**
- **Neutral**
- **Negative**
Cost & Sustainability

• Cost
  • Infrastructure
    • Software: $15,000/year
    • Hardware: phones and iPads relatively affordable
    • Connectivity: approx. $40/month per unit
  • Physician Hours
    • On call pay $0-300 / day
  • EMS Agency:
    • Lost revenue
Sustainability

These programs need to generate some revenue to be sustainable

• EMS Agency Cost - lost transport revenue
  • Need treat and refer / ET3 program to cover cost of devices

• Hospital Costs - Infrastructure
  • Enhanced communications
  • Opportunity to provide services

• Physician Costs:
  • Physician on call availability
Treat & Refer or ET3

- Arizona Health Care Cost Containment System (AHCCCS aka Medicaid)
- Create a Treat and Refer (T&R) program to address situations where patients are assessed but not transported to a hospital emergency department.
- EMS agencies recognized under this program will have the opportunity to seek cost recovery in the form of billing AHCCCS
- Medicare selected ET3 participants will also be eligible for reimbursement for services offered to AHCCCS eligible members.
Hospital Sales Pitch

Pay 15,000 for what?

• You Get:
  • Enhanced communication
  • Opportunity to offer telemedicine services
  • Improved preparedness
  • Community partnership
Physician Costs

No good solution

• Hospital supported
• CPT codes for physicians
• Portion of EMS agency transport dedicated to medical direction
• Poison control / dispatch center model
• Portion of telemedicine visit charge
Unanticipated Barriers

- Rural EMS agency electronic medical records very difficult to access due to availability of staff at the fire districts and use of low budget EMS PCR systems.
- Engaged and unengaged users
- COVID
Questions vs Comments