A photograph of an Arizona desert landscape featuring numerous saguaro cacti of various sizes scattered across a rocky, brownish terrain under a clear blue sky. The cacti are the central focus, with some in the foreground and others in the distance. The overall scene is bright and sunny.

# 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.

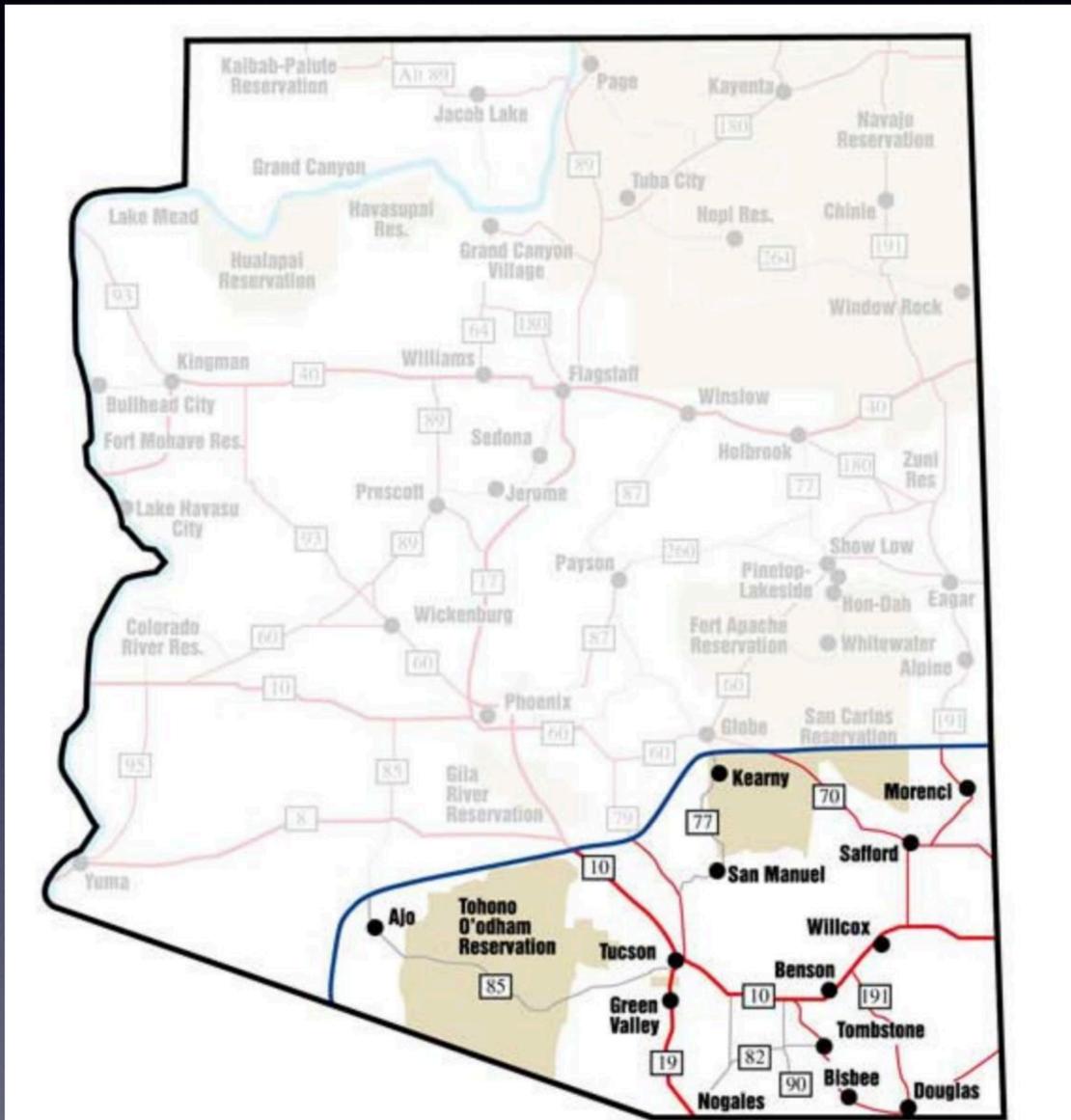
# Partners

- 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



Arizona Emergency Medicine  
Research Center

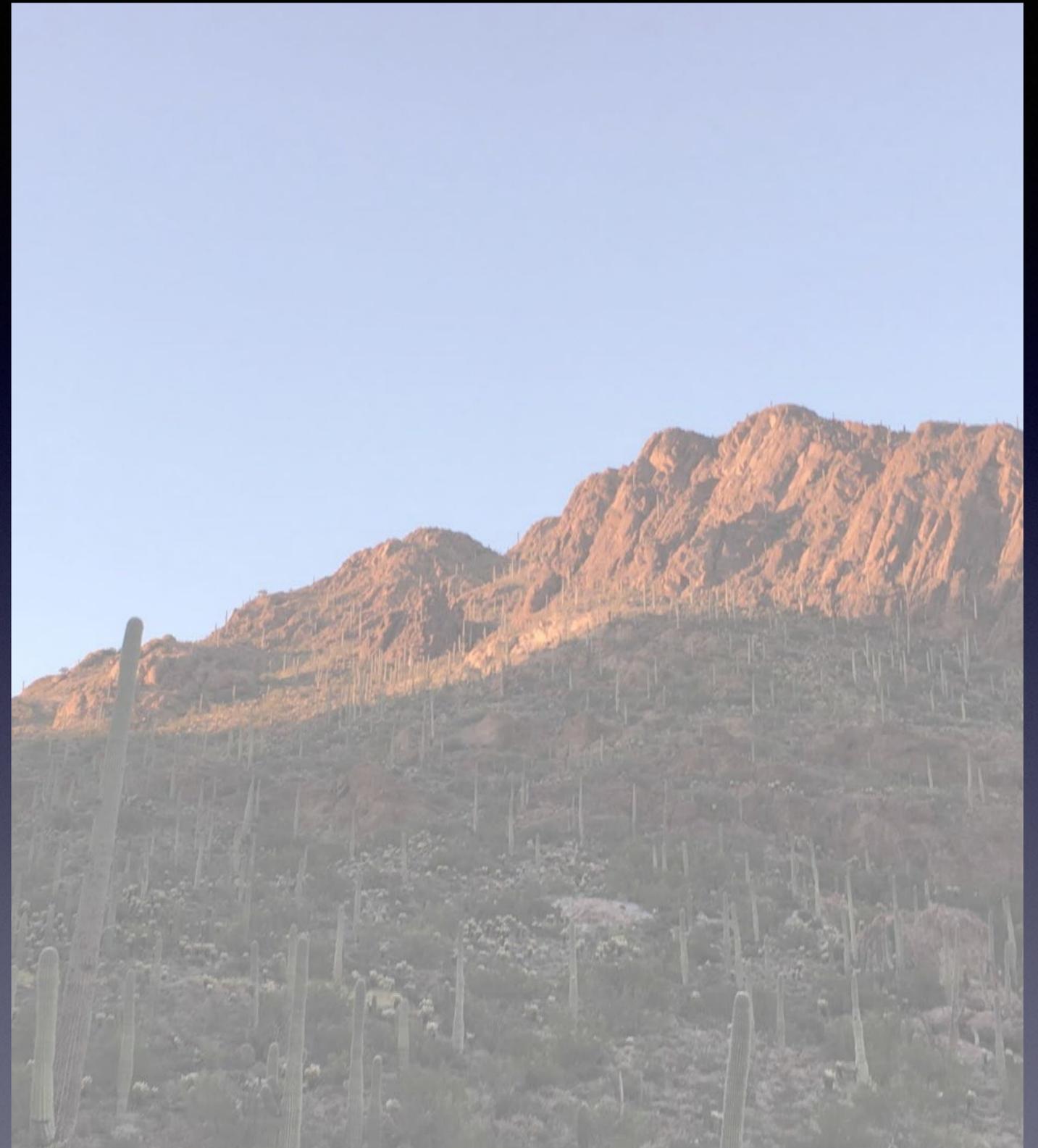
# Southern Arizona



# 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

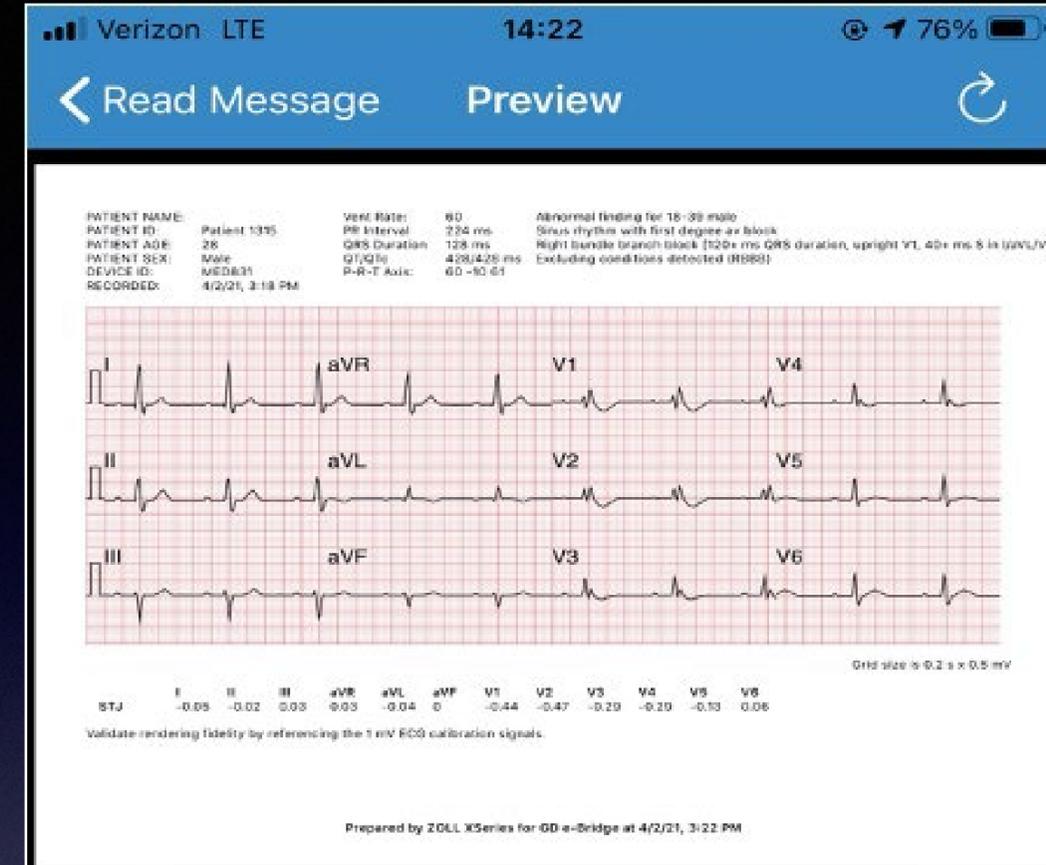
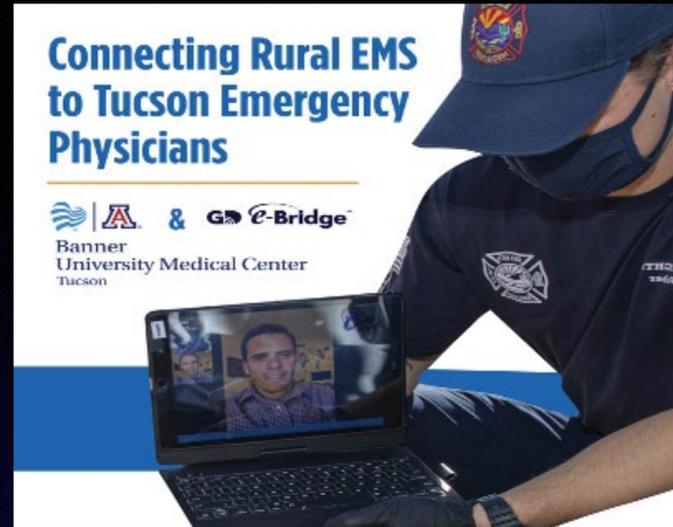




# Real time connection to emergency medicine physicians

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)



PATIENT NAME: Patient 1315		Manual Vitals					
PATIENT ID: 28		BP	SPO2	Pulse	Temp	RR	ETCO2
PATIENT AGE: 28		Recorded					
PATIENT SEX: Male							
2021-04-02 22:18:08		125/82 mmHg	94 %	80 bpm	N/A	0 bpm	N/A
2021-04-02 22:19:39		N/A	N/A	150 bpm	N/A	0 bpm	N/A
2021-04-02 22:17:29		125/82 mmHg	97 %	148 bpm	N/A	N/A	N/A
2021-04-02 22:17:26		125/82 mmHg	97 %	148 bpm	N/A	N/A	N/A

# Project Goals

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

- When its safe transport patients with chest pain via BLS units, this leaves an ALS unit in district to respond to the next call
- When its safe to transport patients via ALS ground, rather than by air, both patient and provider save money.



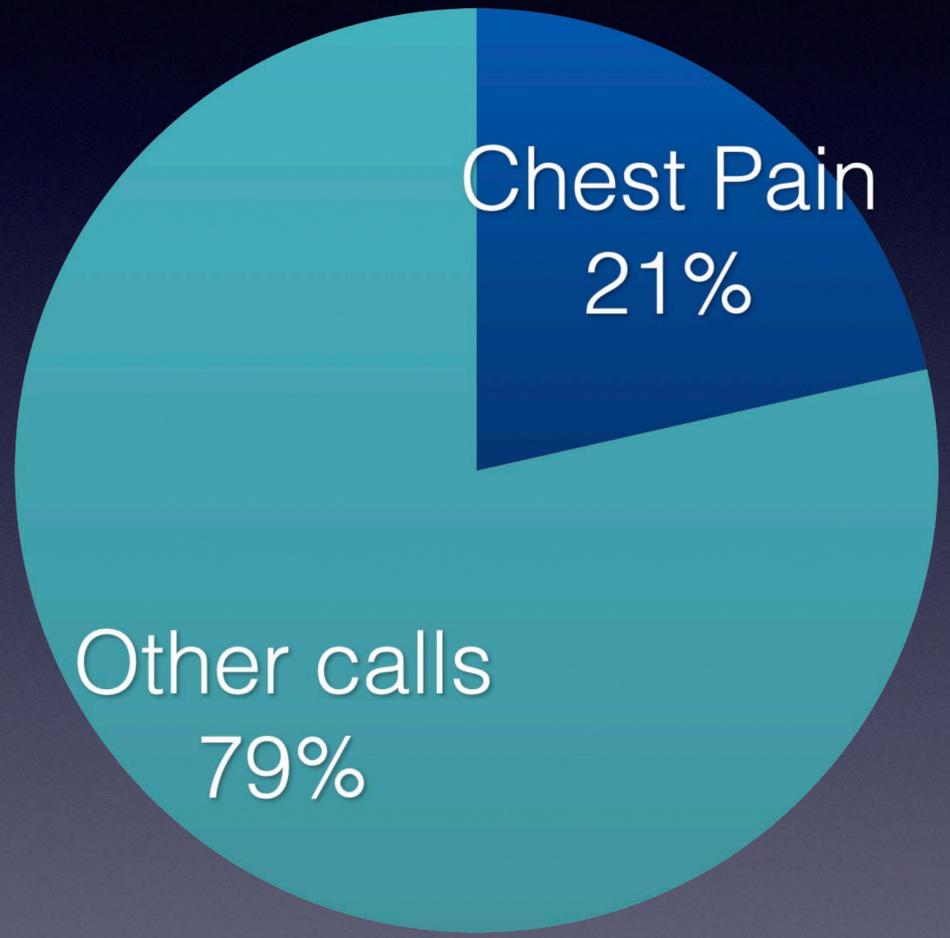


# Sonoita Elgin Fire District

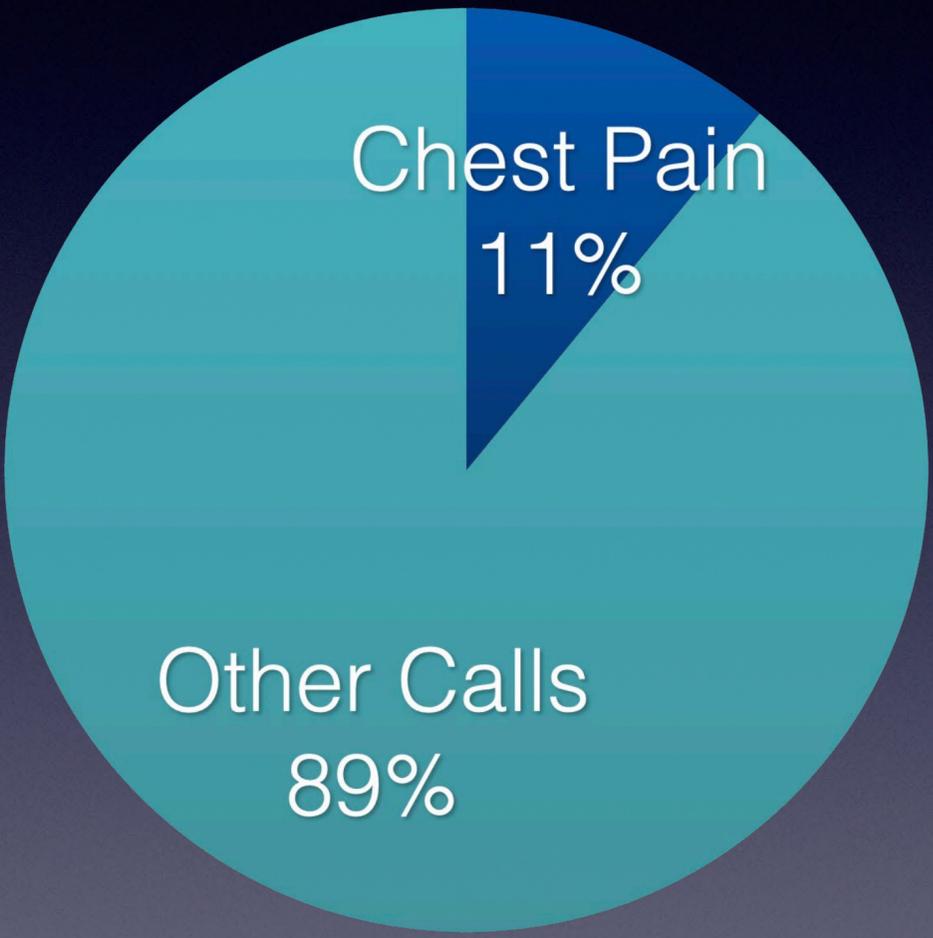
- SEFD focused on innovative approaches into the management of rural chest pain patients.
- EMS crews contacted OLMD for every non-traumatic chest pain call.
- OLMD responds to crew via secure, live video conferencing through e-Bridge tele-health application
- EMS Transport decision is made (BLS, ALS,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



# Chest Pain Calls

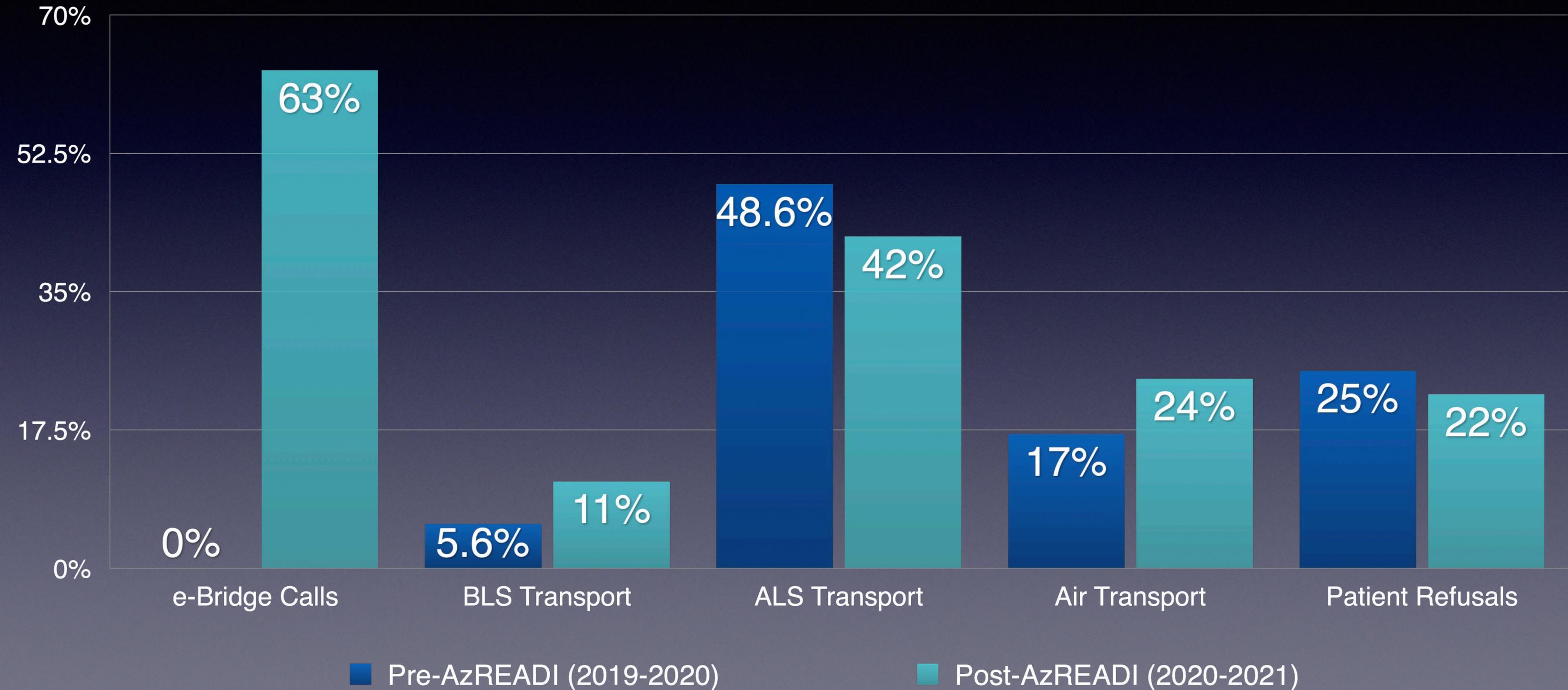


Baseline Data  
(09/09/2019 – 09/09/2020)



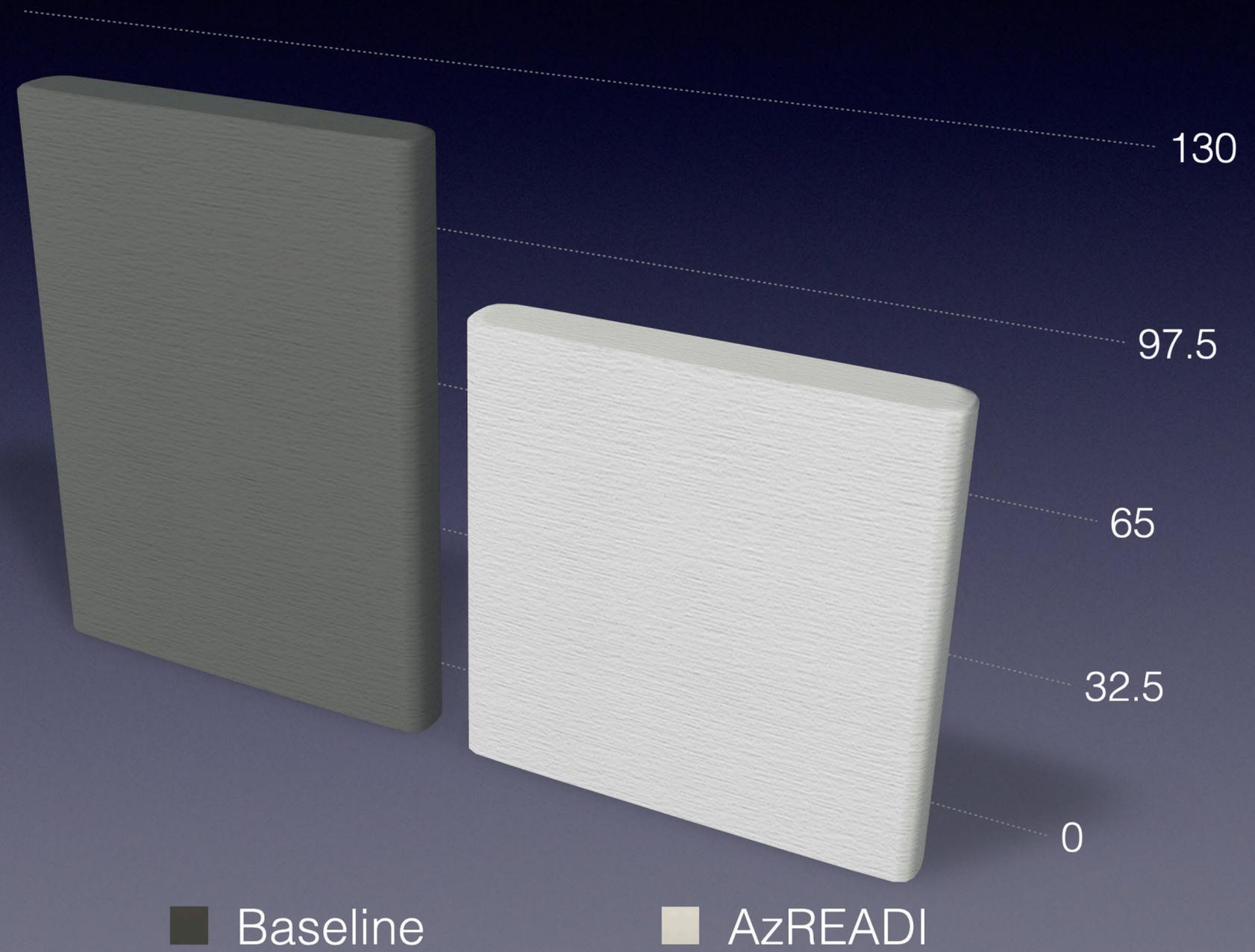
Post Implementation  
(09/10/2020 – 12/5/2021)

# In Patients with Chest Pain - EMS Call Volume & Transport Statistics



# 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**



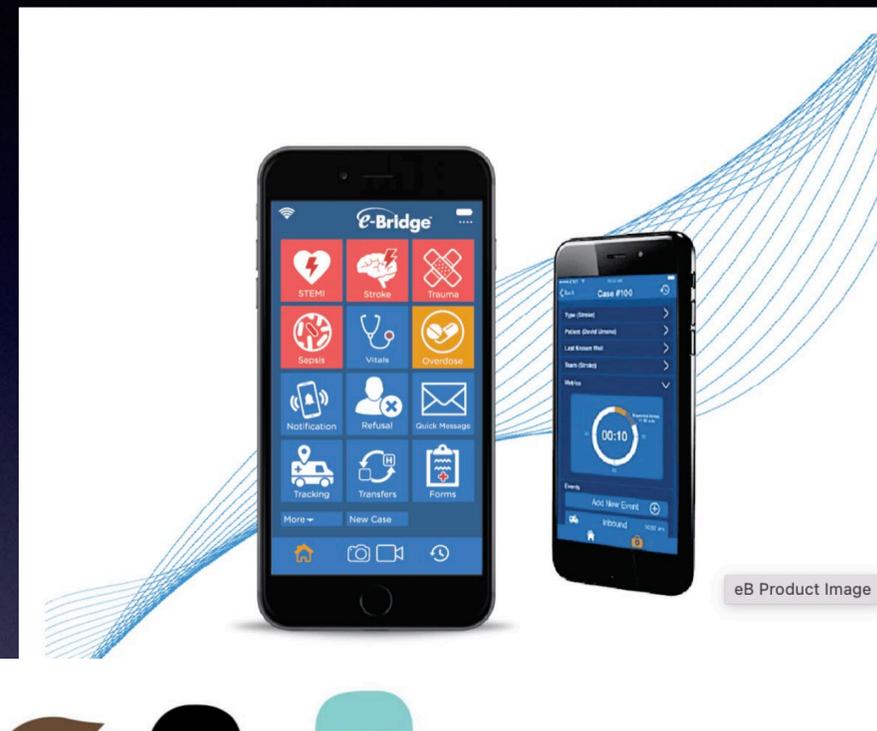
# Barriers & Lessons Learned

- 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 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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The University of Arizona  
College of Medicine - Department of Emergency Medicine

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