



## ***Division of Public Health Services***

*Office of the Assistant Director*

*Public Health Preparedness Services*

*Bureau of Emergency Medical Services and Trauma System*

150 N. 18<sup>th</sup> Avenue, Suite 540  
Phoenix, Arizona 85007  
(602) 364-3150 / 1-800-200-8523  
(602) 364-3568 FAX

DOUGLAS A. DUCEY, GOVERNOR  
CARA M. CHRIST, MD, DIRECTOR

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### **TRAUMA AND EMS PERFORMANCE IMPROVEMENT (TEPI)**

#### **STANDING COMMITTEE**

**Date:** March 17, 2016 - **Time:** 9:00 AM

**Location:** 150 N. 18<sup>th</sup> Ave., Conference Rooms 215 A&B

**Conference Call:** 1-877-820-7831 - **Code:** 450908#

**iLinc URL:** <https://azdhsems.ilinc.com/join/xcphsxt>

*You must register prior to the meeting to join the web conference session.*

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#### **AGENDA**

- I. Call to Order - Chris Salvino, MD, Chair
- II. Roll Call – Donna Meyer (25 Members, 13 required for quorum)
- III. Chairman’s Report - Chris Salvino, MD, Chair
  - a. Attendance report (Attachment III.a.)
- IV. Bureau Report - Rogelio Martinez, MPH
  - a. Stroke Report update
  - b. Trauma Registry update
- V. Discussion and Action Items
  - a. Discuss, amend, and approve TEPI meeting minutes of November 19, 2015 (Attachment V.a.)
  - b. Discuss, amend, and approve AZ-PIERS Data Quality, Completeness, and Timeliness workgroup report - Robert Corbell and Paul Dabrowski (Attachment V.b.)
- VI. Progress Reports
  - a. EMS Registry Users Group (EMSRUG) - Robert Corbell
  - b. Trauma Registry Users Group (TRUG) - Melissa Moyer
  - c. Trauma Program Manager Workshops - Noreen Adlin

*Persons with disabilities may request reasonable accommodations such as a sign language interpreter, by contacting Donna Meyer, Program Project Specialist II, 602-364-3158; State TDD Number 1-800-367-8939; or Voice Relay Number 711. Request should be made as early as possible to allow time to arrange accommodations.*

*“Health and Wellness for all Arizonans”*

- d. Registry Data In Action
  - i. AZ-PIERS - Anne Vossbrink
  - ii. ASTR - Mary Benkert
  - iii. Quarter Reports – Vatsal Chikani (Attachment VI.d iii a, VI.d iii b)

VII. Agenda Items for Next Meeting

- VIII. Call to the Public: A public body may make an open call to the public during a public meeting, subject to reasonable time, place and manner restrictions, to allow individuals to address the public body on any issue within the jurisdiction of the public body. At the conclusion of an open call to the public, individual members of the public body may respond to criticism made by those who have addressed the public body, may ask staff to review a matter, or may ask that a matter be put on a future agenda. Members of the public body shall not discuss or take legal action on matters raised during an open call to the public unless the matters are properly noticed for discussion and legal action. A.R.S. § 38-431.01 (G).

Members of the public body may present a brief summary of current events. Members of the public body shall not propose, discuss, deliberate, or take legal action on matters raised during a summary of current events unless the matters are properly noticed for discussion and legal action.

IX. Summary of Current Events

- a. Frontline on the Home front: Equipping First Responders to Assist Veterans in Crisis  
April 21, 2016 - Presented by the Arizona Coalition for Military Families – Desert Willow Conference Center
- b. EMS Odyssey 2016 – June 8 – 10, 2016 – Dessert Willow Conference Center, Phoenix, AZ – [www.aems.org](http://www.aems.org)
- c. Trauma Conference International – July 14 – 15, 2016 – Hotel Coronado, Coronado, CA  
<http://traumacon.org/>
- d. 27<sup>th</sup> Annual Southwest Trauma Conference, Presented by the University of Arizona and Banner- University Medical Center August 4 – 5, 2016 – JW Marriott Starr Pass, Tucson

- X. Next Meetings: July 21, 2016 @ 9:00 AM in Rooms 215A&B, 150 N. 18<sup>th</sup> Ave.  
November 17, 2016 @ 9:00 AM in Rooms 215A&B, 150 N. 18<sup>th</sup> Ave.

XI. Adjourn

*Persons with disabilities may request reasonable accommodations such as a sign language interpreter, by contacting Donna Meyer, Program Project Specialist II, 602-364-3158; State TDD Number 1-800-367-8939; or Voice Relay Number 711. Request should be made as early as possible to allow time to arrange accommodations.*

*“Health and Wellness for all Arizonans”*

# Committee Attendance Report

## Trauma & EMS Performance Improvement Committee

		Present	Tele	Absent
Bill Ashland	Vice Chair/State Designated Level I Trau			
	3/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Brian Bowling	Air Ambulance Premier EMS Agency Qu			
	7/17/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chris Salvino	Chair (STAB Liaison)			
	3/20/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Dale Woolridge	Injury Researcher			
	3/20/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	7/16/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Danielle Stello	Pre-hospital EMS Coordinator (NAEMS/			
	3/20/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Darlene Herlinger	Pre-hospital EMS Coordinator (SAEMS/			
	3/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Eric Merrill	Ground Ambulance or First Responder P			
	3/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Trauma & EMS Performance Improvement Committee

		Present	Tele	Absent
Eric Merrill	Ground Ambulance or First Responder P			
	11/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gail Bradley	Medical Direction Commission (MDC) Li			
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Garth Gemar	EMS Medical Director of a Premier EMS			
	3/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heather Miller	Western Arizona Council of Emergency			
	7/16/2015	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jeffrey Schaff	ACS Verified Level I Trauma Program M			
	7/16/2015	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Jill McAdoo	Ground Ambulance or First Responder P			
	3/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Josh Gaither	EMS Researcher (AEMRC)			
	3/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mary McDonald	Pre-hospital EMS Coordinator (SAEMS/			
	3/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	11/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Melissa Moyer	Representative of the Trauma Registry			
	3/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/17/2014	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	11/20/2014	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	3/19/2015	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	7/16/2015	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**rauma & EMS Performance Improvement Committee**

Present Tele Absent

Melissa Moyer	Representative of the Trauma Registry			
11/19/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Michelle Guadnola	State Designated Level I Trauma Center			
3/20/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7/17/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/20/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3/19/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/16/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/19/2015		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pam Noland	State Designated Level IV Trauma Center			
3/20/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7/17/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11/20/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3/19/2015		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7/16/2015		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11/19/2015		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Pamela Goslar	IPAC Representative			
3/20/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/17/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/20/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3/19/2015		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7/16/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/19/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Paul Dabrowski	Trauma Surgeon			
3/20/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/17/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11/20/2014		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3/19/2015		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7/16/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/19/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ralph Zane Kelley	State Designated Level II or III Trauma Center			
3/19/2015		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7/16/2015		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11/19/2015		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rebecca Haro	EMS Council Liaison			
3/20/2014		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7/17/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/20/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3/19/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/16/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/19/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Robert Corbell	EMS Registry Group Member			
3/20/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/17/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11/20/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3/19/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/16/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/19/2015		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Robert Djergaian	Rehabilitation Specialist			
3/20/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**rauma & EMS Performance Improvement Committee**

Present Tele Absent

Robert Djergaian	Rehabilitation Specialist			
7/17/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11/20/2014		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3/19/2015		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7/16/2015		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11/19/2015		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Summer Magoteaux	Pediatric Representative (MD or RN)			
3/20/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/17/2014		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11/20/2014		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3/19/2015		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7/16/2015		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11/19/2015		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tiffany Strever	State Designated Level I Trauma Center			
3/20/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/17/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11/20/2014		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3/19/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7/16/2015		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11/19/2015		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**TRAUMA AND EMS PERFORMANCE IMPROVEMENT (TEPI)  
STANDING COMMITTEE**

**Date:** November 19, 2015 **Time:** 9:00 A.M.

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**Meeting Minutes Draft**

- I. Call to Order – Paul Dabrowski, MD, called the meeting to order at 9:14 AM.
- II. Roll Call – 25 Members, 13 required for quorum. A quorum was present.

Members Present:

Bill Ashland*	Melissa Moyer
Brian Bowling	Michelle Guadnola*
Eric Merrill	Pamela Goslar*
Gail Bradley, MD	Paul Dabrowski, MD
Garth Gemar, MD	Rebecca Haro
Heather Miller	Robert Djergaian, MD*
Jeffrey Schaff	Tiffany Strever
Jill McAdoo	Summer Magoteaux*
Josh Gaither, MD	
Mary McDonald	

Members Absent:

Chris Salvino, MD  
Dale Woolridge, MD  
Danielle Stello  
Darlene Herlinger  
Pam Noland  
Ralph Zane Kelly, MD\*  
Robert Corbell

\* indicates member participated telephonically

- III. Chairman’s Report – Paul Dabrowski, MD
  - a. Attendance report
  - b. Welcomed new members Heather Miller and Jeffrey Schaff
  - c. 2015 year in review and 2016 goals – Rogelio Martinez, MPH. Two goals were noted: Convene a Medical Directors workgroup and a real-time information workgroup.
- IV. Bureau Report – Rogelio Martinez, MPH
  - a. Web registry trauma transition
- V. Discussion and Action Items
  - a. Discuss, amend, and approve TEPI meeting minutes of July 16, 2015. Rebecca Haro made the motion to approve the minutes, Gail Bradley, MD, seconded the motion. **Motion carries** and the minutes were approved as presented.
  - b. Discuss AZ-PIERS and Hospital Discharge Database linkage and potential research questions – Robyn Blust
  - c. Discuss and present AZ-PIERS Stroke Report – Anne Vossbrink
- VI. Progress Reports
  - a. EMS Data Quality and Data Completeness Workgroup – Paul Dabrowski, MD
  - b. EMS Registry Users Group (EMSRUG) - Anne Vossbrink

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*“Health and Wellness for all Arizonans”*

- c. Trauma Registry Users Group (TRUG) – Melissa Moyer
  - d. Trauma Program Manager Workshops – Lori Waas
  - e. Registry Data In Action
    - i. AZ-PIERS - Anne Vossbrink
    - ii. ASTR - Mary Benkert
- VI. Agenda Items for Next Meeting: Potential research ideas for data sets
- VII. Call to the Public: None presented
- VIII. Summary of Current Events
- a. AFDA – Laughlin, Nevada – January 12- 14, 2016 -  
<http://www.azfiredistricts.org/conferences/>
  - b. Arizona Trauma Association Presents: Game Day Sunday, - February 7, 2016  
<http://www.aztracc.org/tackletrauma5k/>
  - c. Trauma Conference International – July 14 – 15, 2016 – Hotel Coronado, Coronado, CA  
<http://traumacon.org/>
- IX. Next Meeting: March 17, 2016 @ 9:00 AM at 150 N. 18<sup>th</sup> Avenue, Room 215A & 215B
- X. Adjournment – 10:28 AM

Approved by TEPI  
Date:

*Persons with disabilities may request reasonable accommodations such as a sign language interpreter, by contacting Donna Meyer, Administrative Assistant III, 602-364-3158; State TDD Number 1-800-367-8939; or Voice Relay Number 711. Request should be made as early as possible to allow time to arrange accommodations.*

*“Health and Wellness for all Arizonans”*

# VISITORS PLEASE SIGN IN

Trauma and EMS Performance Improvement (TEPI) - November 19, 2015 @ 9:00 am

	Name (PLEASE PRINT)	Organization & Position
1	Sandy Daggard	Banner Sironwood / BGFHC Pre Hosp
2	Kimberly Boehm	AZDHS - BEMS
3	TODD JARAMILLO	AZDHS - BEMS
4	Robyn Blust	AZDHS - BEMS
5	RYAN HEROLD	MESA FIRE
6	Mike Minor	BUMC
7	Nicholas Knoll	BUMC
8	Mary Burkert	EMS Trauma Registry Mgr
9	Anne Vossbrink	EM St Trauma Registry
10	Melissa Miller	Trauma Registrar
11	Franco Castro-Marin	Harbor Health
12	Tiffany Straver	TPM Abruzzo West
13	Heather Miller	Kingman Regional Medical Ctr.
14	Chris Thompson	GRMC
15	Anna Alonzo	AZDHS - Chronic Disease
16	Kori Wass	CRMC TPM
17	Beate Pfingstlin	Honor Health JCL

# VISITORS PLEASE SIGN IN

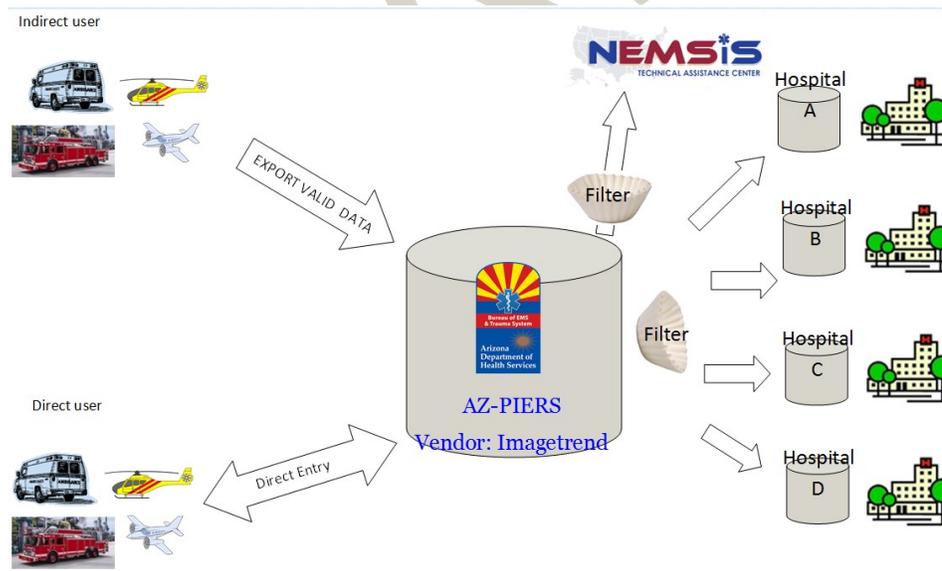
Trauma and EMS Performance Improvement (TEPI) - November 19, 2015 @ 9:00 am

	Name (PLEASE PRINT)	Organization & Position
18	David Vu	AZDHS- BEMS
19	David Vu	BEMSA
20	Lori Moxon/Kennedy	DU-John c Lincoln PU
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22		
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**ARIZONA DEPARTMENT OF HEALTH SERVICES**  
**BUREAU OF EMERGENCY MEDICAL SERVICES AND TRAUMA SYSTEM**



**Trauma and EMS Performance Improvement**



**Data Quality, Completeness, Timeliness Workgroup Report**  
**Arizona Prehospital Information EMS Registry System**

## Workgroup Goal:

To develop measures for data quality, completeness, and timeliness for the Arizona Prehospital Information & Emergency Medical Services Registry System (AZ-PIERS).

## Issue Background:

Current AZ-PIERS participants were requesting reports to be more informative. As a result of data quality issues, proper benchmarking was unable to occur among EMS agencies. Previous Bureau efforts of submitted run reports, validation scores, and ad hoc data quality reports did not achieve their intended goal.

## Core Measures:

These proposed measures should serve as a foundation for optimizing data quality and completeness. Thresholds and measures are subject to change through the recommendations made by the Trauma and EMS Performance Improvement committee. The proposed measures are: **Quality, Completeness, and Timeliness.**

**Quality Measures** - Data quality issues can be shown through the number of warnings received or the total validation score. Validation rules can be created on a national, state, or local level to remind providers to select pertinent information about a patient.

An example is if a provider selects a Primary Impression of Out of Hospital Cardiac Arrest. This will trigger the software to ask about resuscitation attempts and return of spontaneous circulation.

Quality Measure	Direct User	Indirect User OR Vendor
Warning* avoidance	NA	$\frac{\text{Total warnings received}}{\text{Total records attempted}}$
Mean validation scores	$\frac{\text{Sum of validation scores for all records}}{\text{Total records submitted}}$	$\frac{\text{Sum of validation scores for all records}}{\text{Total records submitted}}$
Median validation score	The middle number in a sorted list of numbers	The middle number in a sorted list of numbers

\*Warnings - A warning occurs if a data quality issue is found (e.g. Patient is transported and destination code is missing/blank).

**Completeness Measures** - The number of record submitted compared to the number of records attempted is an important completeness measure. Which data elements are used in a record can be logically analyzed and compared with similar type of runs to understand thorough documentation.

An example is a vendor that is mapping all of their EMS agency’s “STEMI Yes or No?,” to “Not Applicable.” It is rare to find an EMS agency that has never responded to a STEMI call.

Completeness Measure	Direct User	Indirect User OR Vendor
Submission success	NA	$\frac{\text{Total records submitted}}{\text{Total records attempted}}$
Verification of record submission	Total number of calls	Total number of calls
Data Element assessment	See Appendix A	See Appendix A

**Timeliness Measures** - Timeliness of record submission reduces the workload to find and fix data quality errors for EMS agencies, meet the national standard, enhance information exchange with hospitals, and optimize patient care.

**Transfer Dataset** - A minimal set of data elements can ensure the hand-off to emergency department staff will benefit the patient, and can be done quickly without putting excessive burden on providers.

Timeliness Measure	Direct User	Indirect User OR Vendor
Submission Frequency OR Lag Time	$\frac{\sum \text{Initial upload of the ePCR - Back in service time}}{\text{Total number of records}}$	$\frac{\sum \text{Initial upload of the ePCR - Back in service time}}{\text{Total number of records}}$
Transfer Dataset	See Appendix B	See Appendix B

**Workgroup Recommendations:**

- Adopt the proposed data quality measures,
- Adopt the proposed data completeness measures,
- Adopt the proposed data timeliness measures,
- Empower participating EMS agencies to appoint a permanent data manager responsible for data quality, submission, and participation in AZ-PIERS who regularly attends the EMS Registry User’s Group,
- The Bureau should communicate any updates to both EMS agencies and vendors on issues that affect data quality or submission,
- Encourage EMS agencies and receiving hospitals to find the best method to exchange prehospital information,
- Consider the solutions and processes that would allow EMS agencies and vendors to meet goals,
- Establish and support the frequency of the proposed feedback mechanisms.

**We would like to acknowledge the efforts of the Data Quality and Completeness workgroup who were responsible for preparing this resource:**

**Co-Chair:** Robert Corbell, EMT-P Northwest Fire Department  
 Paul Dabrowski, MD Banner University Medical Center—Phoenix Campus

**EMS Agencies**

ABC Ambulance	Eric West
American Medical Response	James Cunningham Jim Roeder Joe Gibson Mark Olieman
Bullhead City Fire Department	Steve Duncan
Chandler Fire, Health, and Medical	Val Gale
Gilbert Fire Department	Heather McKinnon
Glendale Fire Department	Gary Benson
Golder Ranch Fire District	Kristina Van Aken
Goodyear Fire Department	Russ Branden Steve Mann
Lifeline Ambulance	Scott Keilman
Maricopa Fire Department	Cindy Inskeep
Mesa Fire	Bill Daniel Larissa Dvorak
Native Air	Brian Bowling, BS, FP-C
Peoria Fire Department	Jim Bratcher
PHI Air Medical	Louise Sandoval
Phoenix Fire Department	Larry Contreras Lisa Jones, BS William Hughes
Rio Verde Fire District	Eric Merrill, EMT-P
Scottsdale Fire Department	Joseph Early
North County Fire & Medical District	Rebecca Haro, NREMT-P
Sun Lakes Fire District	Chris Barden
Surprise Fire Department	Jesus Rivera
Tempe Fire Department	Darrell Duty Monique Lind
Tucson Fire Department	Mary McDonald, RN, BSN

**Hospitals**

Banner Desert Medical Center	Mickey Kovach, RN
Banner - University Medical Center Phoenix	Sarah Latham, RN, BSN
Chandler Regional Medical Center	Brandon Hestand, RN
Deer Valley Medical Center	Tracy Moroney, RN, BSN
John C. Lincoln—North Mountain	Melissa Moyer, CSTR
Kingman Regional Medical Center	Heather Miller, RN, BSN
Lake Havasu Regional Medical Center	Danielle Stello, RN
St. Joseph’s Hospital and Medical Center	Michelle Guadnola, RN, MHA Pamela Goslar. PhD
Abrazo West Campus	Tiffany Strever, BSN, CEN, FAEN

**Vendors**

ESO Solutions	Allen Johnson Russ Steele
FireHouse Software	Darrell Hagans
ImageTrend	Amy Holmes Chris Patera Jason Bonham Kashif Khan
Meds	Robyn Hughes
Medusa Medical	Wes Lowenberg
Sansio	Russ Kurhajetz
Zoll	Ben Barnett

**Regional Representatives**

AEMS	Tom Cole Toni Gross, MD, MPH Tracey Schlosser, RN, BHCL
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## Appendix A: Sample Data Completeness Report

NEMSIS code	Data Element	EMS Agency/ Vendor Completion Rate*	State Completion Rate*	State Goal*
eCrew.02	Crew member response role	80%	80%	90%
eDispatch.01	Complaint reported by dispatch	70%	70%	75%
eDisposition.12	Incident/patient disposition	80%	95%	100%
eDisposition.02	Destination/Transferred to, code	80%	95%	100%
eDisposition.20	Reason for choosing destination	70%	95%	100%
eDisposition.21	Type of destination	80%	80%	90%
eResponse.05	Type of service requested	70%	90%	100%
eResponse.23	Response mode to scene	80%	80%	90%
eSituation.11	Provider's primary impression	80%	90%	100%
eTimes.03	Unit notified by dispatch date/time	70%	80%	90%
eTimes.05	Unit en route date/time	80%	90%	100%
eTimes.06	Unit arrived on scene date/time	80%	90%	100%
eTimes.07	Arrived at patient date/time	70%	90%	100%
eTime.12	Destination patient transfer of care date/time	80%	90%	100%
eTimes.13	Unit back in Service Date/Time	80%	90%	100%
eVitals.06	Systolic blood pressure	70%	90%	100%
eVitals.07	Diastolic blood pressure	80%	90%	100%
eVitals.10	Heart rate	80%	90%	100%
eVitals.12	Pulse oximetry	70%	90%	100%
eVitals.14	Respiratory rate	80%	90%	100%
eVitals.26	Level of Responsiveness	70%	90%	100%

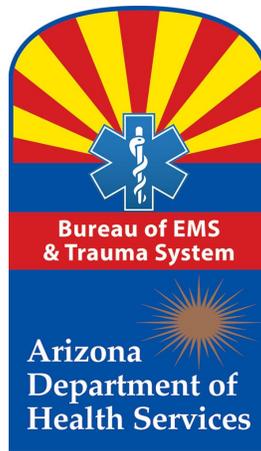
\* Contains fictitious data.

## Appendix B: Proposed Timeliness and Transfer Dataset

EMS Agency/ Vendor Lag Time	Statewide Lag Time	Statewide Goal
1.5 hrs	.25 hrs	.2 hours

NEMESIS code	Data Element Name	Vendor Completion Rate*	State Completion Rate*	State Goal*
ePatient.03	First Name	98%	89%	90%
ePatient.02	Last Name	98%	89%	90%
ePatient.15 OR ePatient.17	Age OR Date of Birth	98%	85%	90%
ePatient.13	Gender	98%	95%	98%
eExam.01	Estimated Weight	98%	95%	98%
ePatient.05	Patient's Home Address	62%	75%	85%
eNarrative.01	Narrative	80%	98%	98%
eHistory.12	Current Medication	80%	85%	90%
eHistory.06	Medication Allergies	80%	85%	90%
eExam.03	Date/Time Assessments	80%	85%	90%
eVitals.01	Date/Time Vitals	80%	85%	90%
eMedications.01	Date/Time Medications Given	80%	85%	90%
eProcedures.01	Date/Time Procedures	80%	85%	90%
eDisposition.02	Destination Code	80%	85%	100%

\* Contains fictitious data.



**ARIZONA DEPARTMENT OF HEALTH SERVICES  
BUREAU OF EMERGENCY MEDICAL SERVICES AND TRAUMA SYSTEM**

**LEVEL I TRAUMA CENTERS  
PERFORMANCE IMPROVEMENT MEASURES:  
ARIZONA STATE TRAUMA REGISTRY 2014**

**Prepared by:  
Vatsal Chikani, MPH  
Mary Benkert  
Robyn Blust, MPH  
Rogelio Martinez, MPH**

**Data and Quality Assurance Section**

**Individual Report No. 16-1-L1**

## **Purpose:**

The purpose of this report is to provide Arizona's Level I Trauma Centers with their individual patient demographics benchmarked against the aggregate.

This analysis will help the designated trauma centers understand their patients and target their prevention programs to the proper populations.

## **Measures:**

The [Arizona State Trauma Registry 2014](#) (ASTR) queried cases with an "Emergency Department (ED) or Hospital Arrival Date" (D1\_04) of January 1, 2014, to December 31, 2014. The following measures were compared:

### 1. Patient Demographics

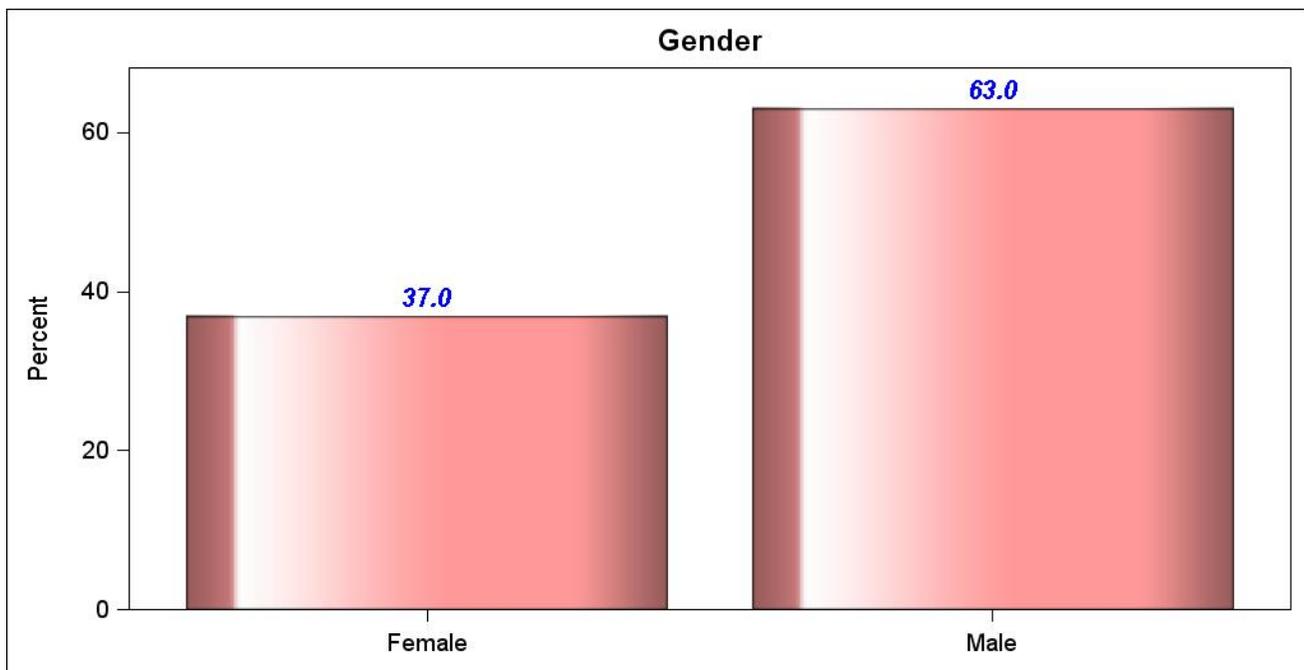
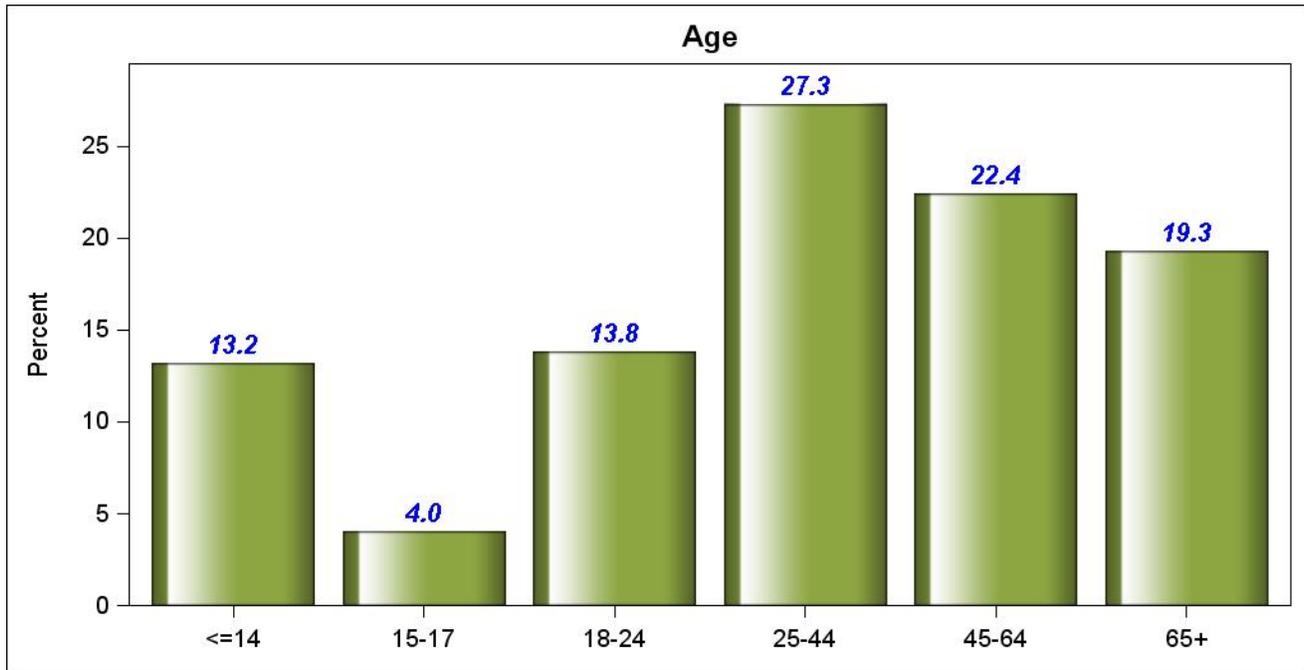
- Age, Gender, Race/Ethnicity, County of Injury, Mechanism of injury

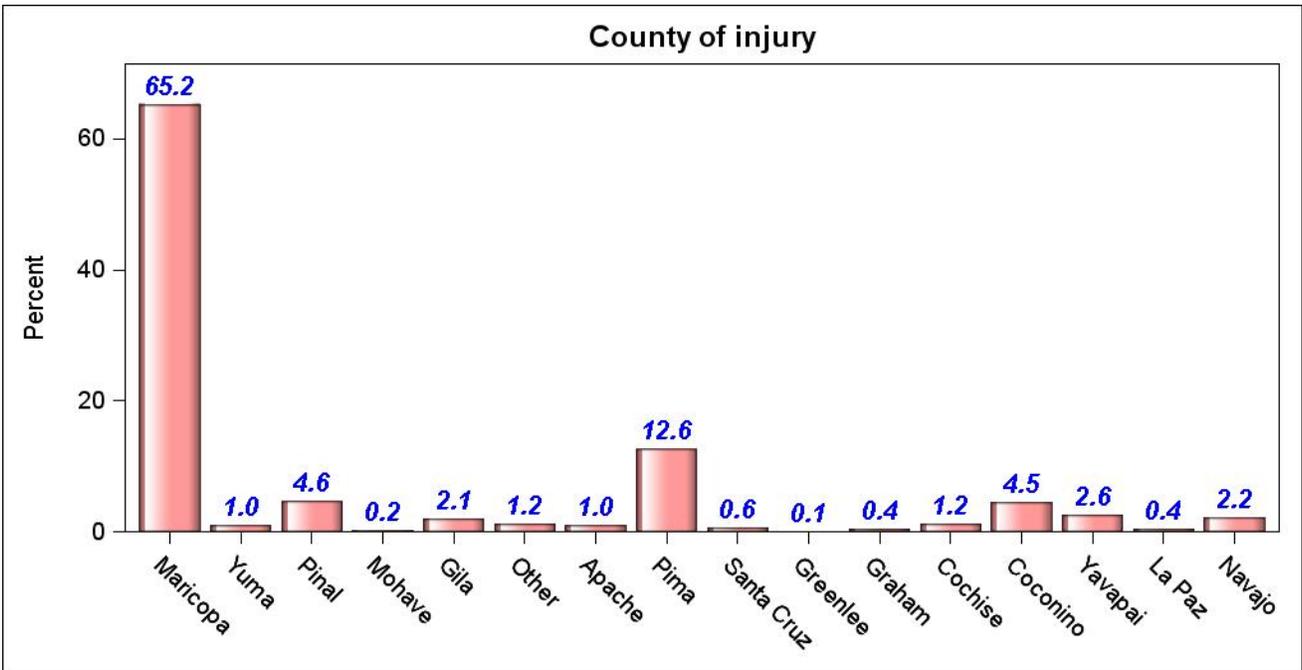
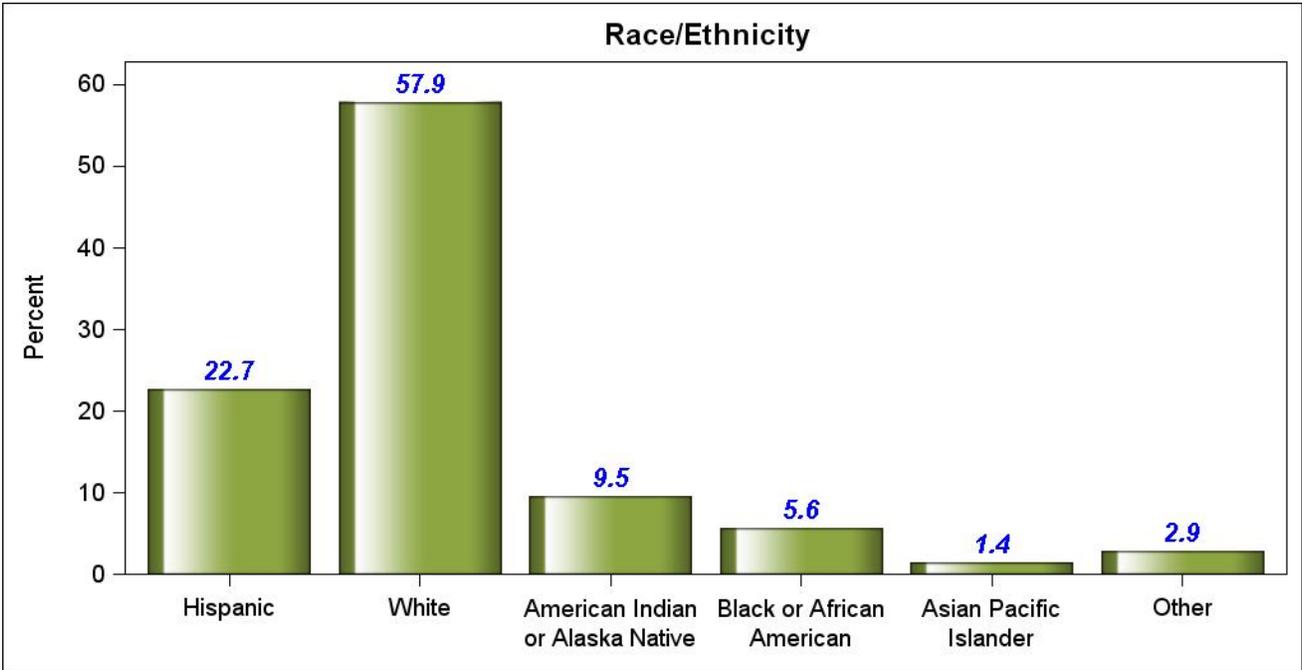
### 2. Payer mix, Type of transport, Discharge disposition

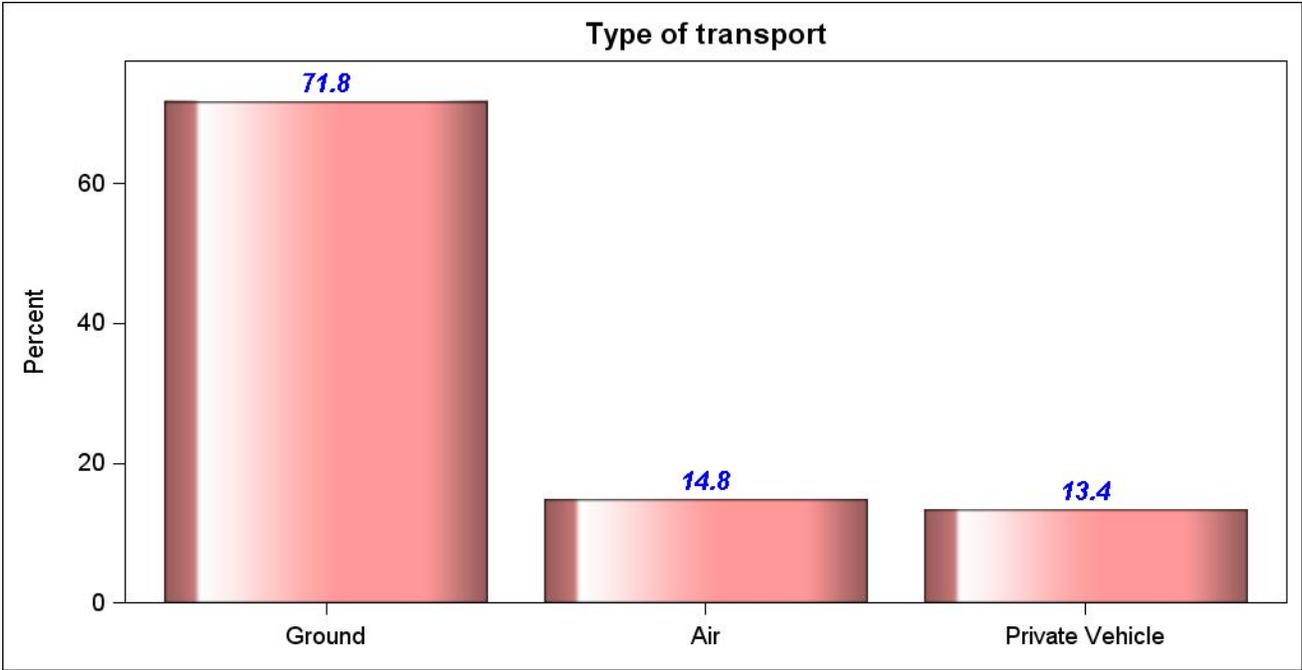
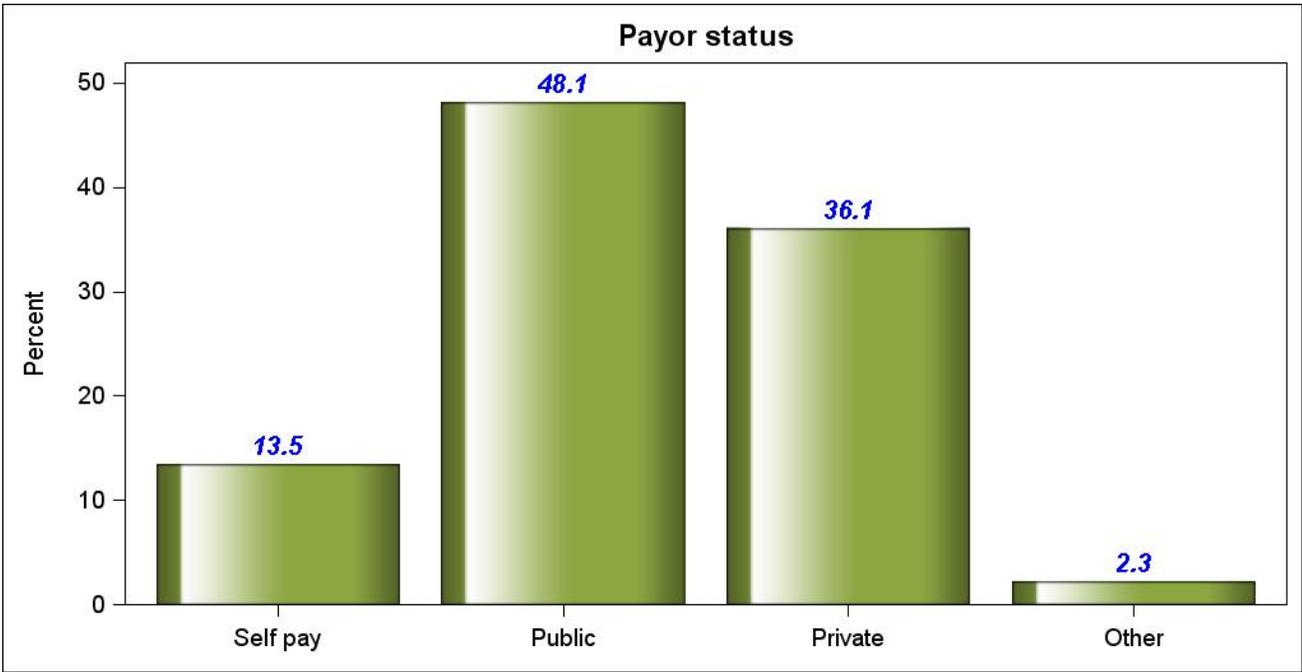
*For additional information on data elements and definitions please refer to the [ASTR data dictionary](#).*

**Level I Trauma Centers**  
**Data Source: Arizona State Trauma Registry 2014**

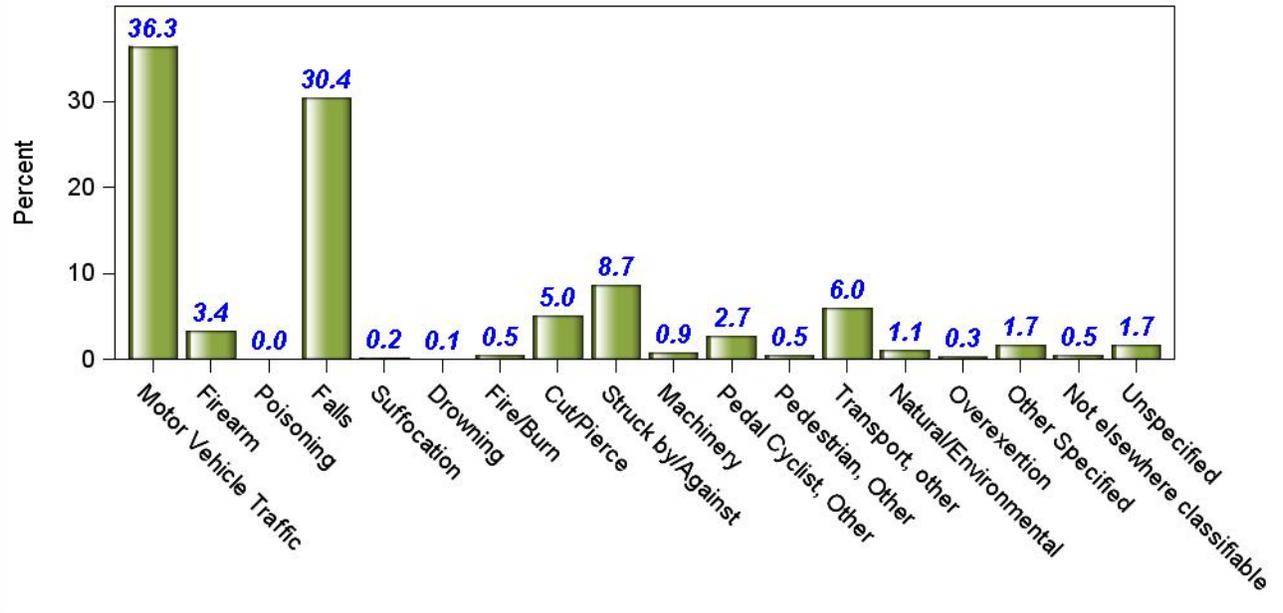
**Trauma patients demographics**







### Mechanism of trauma



**Table 1: Patient demographics**

	<b>N</b>	<b>%</b>
<b>Total Trauma trauma patients</b>	24,945	100.0%
<b>Age</b>		
<=14	3,297	13.2%
15-17	1,006	4.0%
18-24	3,445	13.8%
25-44	6,806	27.2%
45-64	5,585	22.3%
65+	4,806	19.2%
<b>SEX</b>		
Female	9,220	36.9%
Male	15,725	63.0%
<b>Ethnicity</b>		
*Missing/ND	126	0.5%
Hispanic	5,637	22.5%
White	14,365	57.5%
American Indian or Alaska Native	2,363	9.4%
Black or African American	1,396	5.5%
Asian Pacific Islander	349	1.3%
Other	709	2.8%
<b>County of injury</b>		
*Missing	306	1.2%
Apache	245	0.9%
Cochise	305	1.2%
Coconino	1,103	4.4%
Gila	511	2.0%
Graham	102	0.4%
Greenlee	23	0.0%
La Paz	106	0.4%
Maricopa	16,070	64.4%
Mohave	48	0.1%
Navajo	549	2.2%
Other	289	1.1%
Pima	3,107	12.4%
Pinal	1,145	4.5%
Santa Cruz	147	0.5%

**Table 1: Patient demographics**

	<b>N</b>	<b>%</b>
<b>Yavapai</b>	649	2.6%
<b>Yuma</b>	240	0.9%

**Table 2: Mechanism of trauma**

	<b>N</b>	<b>%</b>
<b>Total trauma patients</b>	24,945	100.0%
<b>Mechanism of trauma</b>		
<b>*Missing/NA/ND</b>	*	0.0%
<b>Motor Vehicle Traffic</b>	9,062	36.3%
<b>Firearm</b>	839	3.3%
<b>Poisoning</b>	*	0.0%
<b>Falls</b>	7,576	30.3%
<b>Suffocation</b>	57	0.2%
<b>Drowning</b>	22	0.0%
<b>Fire/Burn</b>	133	0.5%
<b>Cut/Pierce</b>	1,258	5.0%
<b>Struck by/Against</b>	2,170	8.6%
<b>Machinery</b>	213	0.8%
<b>Pedal Cyclist, Other</b>	670	2.6%
<b>Pedestrian, Other</b>	114	0.4%
<b>Transport, other</b>	1,507	6.0%
<b>Natural/Environmental</b>	272	1.0%
<b>Overexertion</b>	71	0.2%
<b>Other Specified</b>	418	1.6%
<b>Not elsewhere classifiable</b>	131	0.5%
<b>Unspecified</b>	419	1.6%

**Table 3: Event characteristics**

	<b>N</b>	<b>%</b>
<b>Mode of Transport</b>		
*Missing	321	1.2%
Air	3,654	14.6%
Ground	17,673	70.8%
Private Vehicle	3,297	13.2%
<b>Payer Mix</b>		
Not Documented	176	0.7%
Self pay	3,341	13.3%
Public	11,926	47.8%
Private	8,944	35.8%
Other	558	2.2%
<b>Discharge Status</b>		
Court/Law	172	0.6%
Expired	778	3.1%
Home	19,259	77.2%
Home Health	595	2.3%
Hospice	141	0.5%
Left AMA	254	1.0%
Psychiatric/Other Institution	274	1.0%
SNF/LTC/Other Rehab	3,210	12.8%
Transfer/Acute care	262	1.0%

\*Categories with less than 10 count were excluded from analysis

\*AMA – Against medical advice

\*SNF – Skilled nursing facility

\*LTC – Long term care

Arizona Department of Health Services  
Bureau of Emergency Medical Services and Trauma System



## ST-SEGMENT

## MYOCARDIAL INFARCTION (STEMI)



Data Source:

Arizona Prehospital Information & EMS Registry System (AZ-PIERS), Hospital Discharge Database (HDD), Cardiac Event Data and Reporting (CEDAR) System

Prepared by: Vatsal Chikani, MPH, Robyn Blust, MPH, Anne Vossbrink, MS, Karen Rogge-Miller, Rogelio Martinez, MPH

## Purpose:

The purpose of this report is to provide agencies with the data needed to evaluate and improve their ST–Segment Elevation Myocardial Infarction (STEMI) performance. This report can be used to support ongoing Quality Assurance initiatives.

This report analyzes the following STEMI related performance measures:

1. Recognition of a STEMI in the prehospital field,
2. Documentation of a 12-lead Electrocardiogram (ECG), hospital pre-notification, and total on scene time,
3. Transportation to a cardiac receiving/referral center,
4. Distribution of prehospital aspirin; provide oxygen to hypoxic patients,
5. EMS contact to balloon time,
6. Morbidity and mortality.

## Methodology:

The Arizona Prehospital Information & EMS Registry System (AZ-PIERS), the Cardiac Event Data and Reporting (CEDAR), and the Hospital Discharge Database (HDD) were linked for events occurring from January 1, 2014, to December 31, 2014. STEMI confirmation in CEDAR and the HDD identified 1,547 STEMI records. A record was considered a STEMI if: (1) it was reported in CEDAR as a STEMI, or (2) any of the first five diagnosis codes in the HDD were STEMI (410.0 to 410.5, 410.8, 410.9, 412, 429.71, 429.79, and 411.81).

## Limitations:

1. The balloon time calculation was not possible for STEMI records that were identified from the HDD and not CEDAR, as the HDD does not collect this information.
2. If a patient received care for a STEMI involving more than one submitting EMS agency, that patient would be counted multiple times (once for each EMS agency encounter). Therefore, this analysis reports on STEMI cases and not STEMI patients.

## Data variables associated with report:

Unit Arrived on Scene Date/Time (E05_06)	Receiving Hospital Contacted (IT5_71)
Unit Left Scene Date/Time (E05_09)	STEMI Triage Criteria (IT12_1)
Arrived at Scene Date/Time (E05_07)	Procedure (E19_03)
Arrived at Destination (E05_10)	Destination Code (E20_02)
Race (E06_12)	Medication Given (E18_03)
Ethnicity (E06_13)	Age (E06_14)

## Performance Measure 1: Recognize STEMI in the prehospital field

**Table 1: STEMI recognition by EMS and hospital**

	N	Percent
Total STEMI cases reported to HDD	4,935	NA
Total STEMI cases reported to CEDAR	2,784	NA
*EMS-STEMI = Yes	797	NA
Linked STEMI cases	1,547	NA
EMS-STEMI = Yes & (HOSP or CEDAR-STEMI) = Yes	197	24.7%
EMS-STEMI = No & (HOSP or CEDAR-STEMI) = Yes	1,350	87%
EMS-STEMI = Yes & (HOSP & CEDAR-STEMI) = No	600	75%

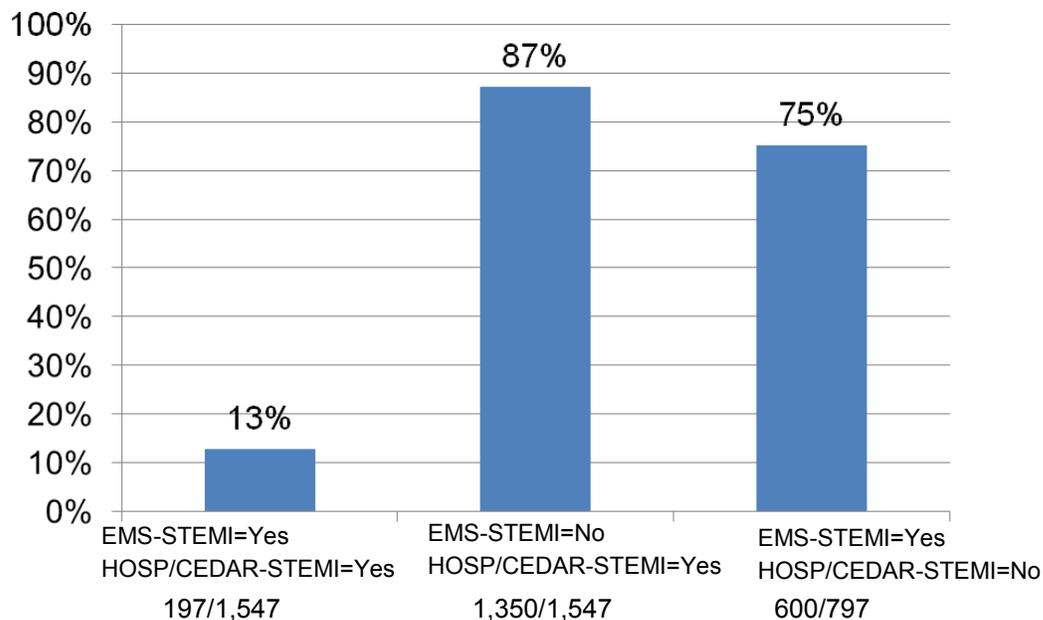
HOSP-STEMI= Yes if HDD first five diagnosis codes are equal to STEMI

CEDAR-STEMI= Yes if CEDAR confirmed STEMI,

EMS-STEMI=Yes if STEMI Triage Criteria or STEMI Probable is Yes

There were 4,935 STEMI cases identified in the HDD and 2,874 in CEDAR. After linking HDD, CEDAR and AZPIERS, a total of 1,547 HDD or CEDAR confirmed STEMI cases were identified. Of these, 197 cases were properly documented and identified as STEMI by EMS agencies.

**Graph 1: STEMI recognition by EMS, CEDAR and hospital**



**Table 2: STEMI patient demographics (n=1,547)**

	N	%
<b>Age (years)</b>		
< 55	265	17.1%
55-64	343	22.1%
65-74	432	27.9%
75-84	296	19.1%
≤85	211	13.6%
<b>Gender</b>		
Missing	32	2%
Male	986	63.7%
Female	529	34.1%
<b>Race/ethnicity</b>		
Missing	592	38.2%
American Indian or Alaska Native	*	*
Asian	*	*
Black or African American	25	1.6%
Native Hawaiian or Other Pacific Islander	*	*
White	862	55.7%
Other Race	56	3.6%

\* Categories with fewer than ten cases are not displayed

Males made up 64% of STEMI cases. The largest proportion of STEMIs occurred in patients over 65 years of age (61%).

The documentation of *Race* (E06\_12) by field providers continues to improve. Resources are available online to help providers and EMS agencies feel comfortable when collecting race and ethnicity:

- <http://www.hretdisparities.org/Howt-4176.php>
- <http://www.hretdisparities.org/uploads/ResponseMatrix.ppt>
- <http://www.azdhs.gov/documents/preparedness/emergency-medical-services-trauma-system/data/the-importance-of-demographic-data.pdf>

## Performance Measure 1: Documentation of a 12-lead ECG, hospital 12-lead transmission, and total on scene time

**Table 3: ECG performance on scene (n=1,547)**

	N	%
Missing	616	39.8%
No on scene ECG	93	6%
ECG performed	838	54.1%

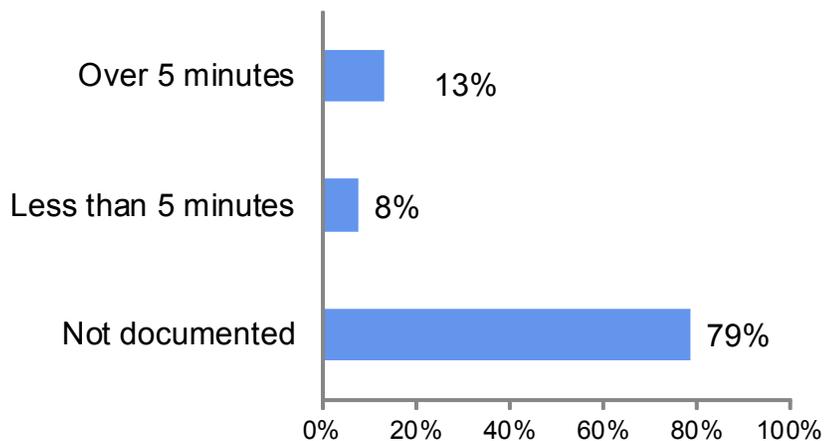
Of the 1,547 STEMI cases, 54% had an ECG performed on scene. The documentation of an ECG can be reported through either AZ-PIERS or CEDAR.

**Table 4: Patient contact by EMS to 12-lead ECG time (minutes) (n=1,547)**

Not Documented	Documented	Min	Max	25% Percentile	Median	75% Percentile	90% Percentile
1,222	325	0	39	4	7	10	16

Only 325 STEMI cases (21%) reported a procedure date/time in AZ-PIERS. EMS agencies and vendors should ensure all mapping is correct for Procedure Date/Time (E19\_01).

**Graph 2: Patient contact by EMS to 12-lead ECG time (5 minutes benchmark) (n=1,547)**



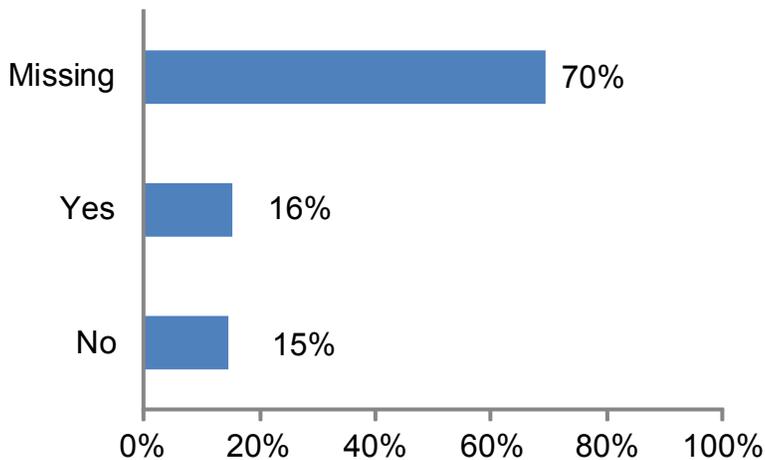
In 1,222 STEMI records, the 12-lead ECG procedure was not documented in the procedure variable (E19\_03). Due to the high percentage of missing data (79%), the time calculation may be unreliable. Until data quality improves, benchmarks will be difficult to determine.

**Table 5: STEMI Notification to hospital (n=1,547)**

	N	%
Missing	1,507	97.4%
Hospital notification	40	2.6%

Hospital notification occurred in 3% of the STEMI cases. This variable was obtained through Receiving Hospital Contacted (IT5\_71).

**Graph 3: Transmission of 12-lead ECG to hospital (n=1,547)**



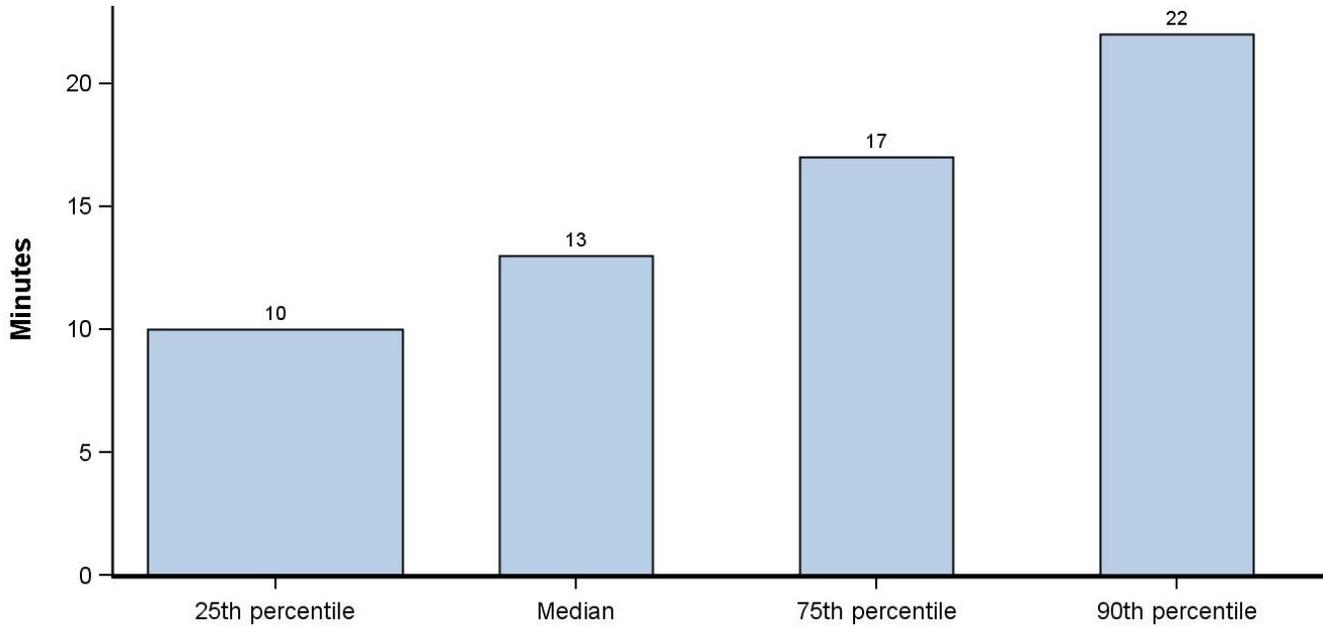
Hospital transmission was missing in 70% of STEMI cases. This data was obtained from either the CEDAR database or AZ-PIERS. EMS agencies can collect this information through the Procedures (E19\_03).

**Table 6: Transmission of 12-lead ECG to Hospital, as reported by AZ-PIERS (n=1,547)**

	N	%
Missing	1,523	98.4%
Documented transmission	24	1.5%

Most of the documented transmission of ECGs came from the CEDAR database. EMS agencies selected the NEMESIS code 89.821 in Procedures (E19\_03) only 1.5% of the time.

**Graph 3: EMS contact to departure time (minutes) (n=1,547)**



The median on scene time for a STEMI patient was 13 minutes.

**Table 7: Total on scene time (30 minute benchmark)**

	N	%
Not documented	100	6.4%
Less than or equal to 30 minutes	1,406	90.8%
Over 30 minutes	41	2.6%

**Table 8: Total on scene time (20 minute benchmark)**

	N	%
Not documented	100	6.4%
Less than or equal to 20 minutes	1,263	81.6%
Over 20 minutes	184	11.8%

In 91% of cases, EMS had a total on scene time of less than 30 minutes. In 82% of cases, EMS had a total on scene of 20 minutes.

### Performance Measure 3: Transportation to a cardiac center

**Table 9: Hospital destination for STEMI patients (n=1,547)**

	N	%
Non-cardiac center	79	5.1%
Cardiac center (receiving/referral)	1,468	94.8%

In 2014, 95% of STEMI patients were taken to a cardiac center.

A complete list can be found of cardiac centers can be found at:

<http://www.azdhs.gov/preparedness/emergency-medical-services-trauma-system/save-hearts-az-registry-education/index.php#cardiac-centers>

## Performance Measure 4: Provide aspirin; provide oxygen to hypoxic patients

**Table 10: STEMI records with aspirin (n=1,547)**

Aspirin	N	%
No	1,168	75.5%
Yes	379	24.4%

Only 24% of STEMI cases were reported to have received aspirin in the prehospital field.

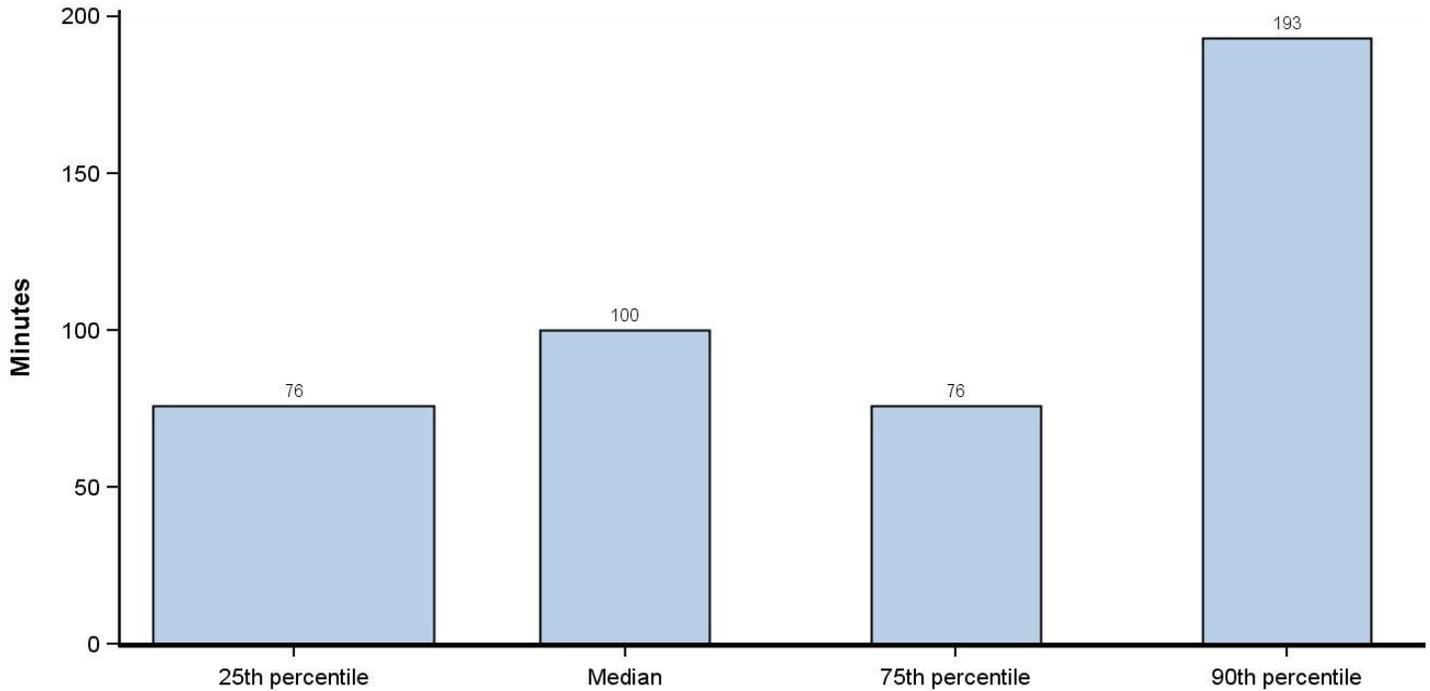
**Table 11: STEMI records receiving oxygen (n=1,547)**

Oxygen given	Missing SP0 <sub>2</sub> documentation		SP0 <sub>2</sub> < 94 %		SP0 <sub>2</sub> ≥ 94 %	
	N	%	N	%	N	%
No	98	83%	244	60.7%	767	74.6%
Yes	20	16.9%	158	39.3%	260	25.3%
<b>Total</b>	<b>118</b>	<b>100%</b>	<b>402</b>	<b>100%</b>	<b>1,027</b>	<b>100%</b>

Recent research suggests that oxygen should only be given to STEMI patients that are hypoxic SPO<sub>2</sub> < 94%. STEMI cases that were hypoxic received oxygen 39% of the time.

## Performance Measure 5: EMS contact to balloon time

Graph 4: EMS contact to balloon time (n=1,547)



The EMS contact to balloon time (E2B) was available for 42% of STEMI cases. Since balloon time is only available in CEDAR, this time is unavailable in HDD confirmed cases.

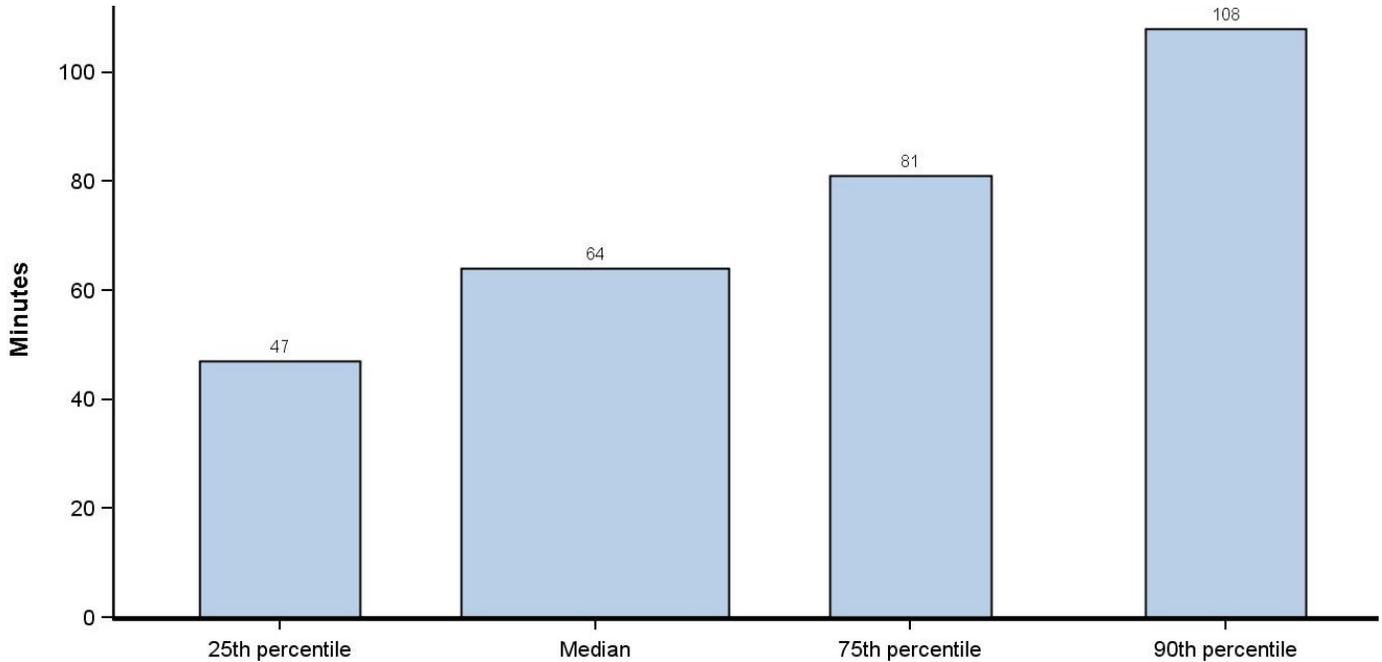
**The median time interval from EMS contact to ED balloon time was 100 minutes.**

Table 12: EMS contact to balloon time (n=1,547)

Not Documented	Documented	Min	Max	25% Percentile	Median minutes	75% Percentile	90% Percentile
901	646	28	5,876	76	100	137	193

## Performance Measure 5: Hospital ED Door to balloon time

Graph 5: Emergency Department (ED) door to balloon time (n=1,547)

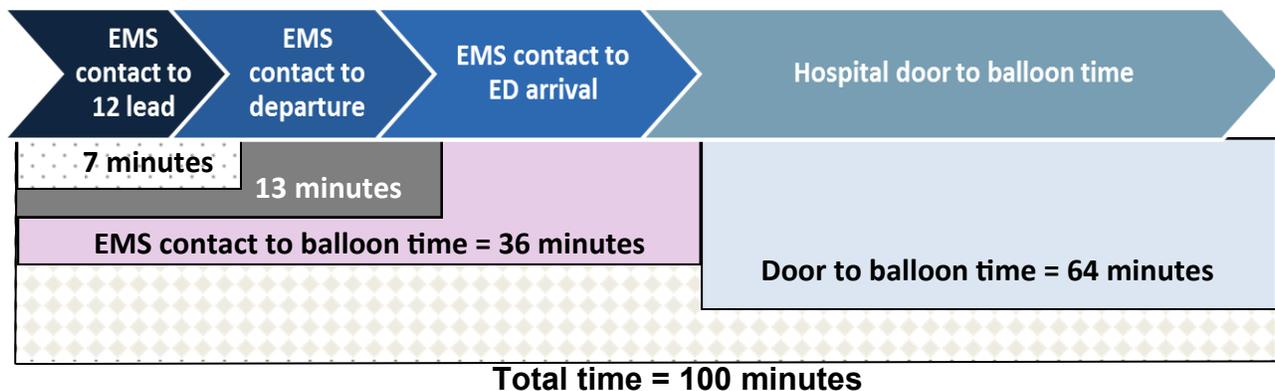


The Door to Balloon (D2B) time was available for 675 STEMI records. The median door to balloon time for a STEMI patient was 64 minutes.

Table 13: ED door to balloon time (n=1,547)

Not Documented	Documented	Min	Max	25% Percentile	Median minutes	75% Percentile	90% Percentile
872	675	10	5,814	47	64	81	108

Figure 1: Median time distribution of STEMI cases



**Table 14: Hospital length of stay (n=1,547)**

	25th Percentile	Median	75th Percentile
Hospital length of Stay (days)	2	2	5

The median hospital length of stay for a STEMI patient was 2 days.

**Table 15: Hospital discharge disposition (n=1,547)**

Hospital discharge status	N	%
Home	902	58.3%
Transferred to Acute Care	70	4.5%
SNF/ALF/Rehab/Long Term	281	18.1%
Left against medical advice	27	1.7%
Expired	207	13.3%
Hospice	57	3.6%
Discharged with planned readmission	3	0.1%

ALF=Assisted Living Facility, SNF=Skilled Nursing Facility

Of all the STEMI patients, 58% were discharged home, 13% of patients died in the hospital.