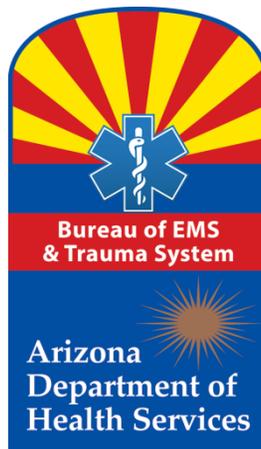


Trauma Quality Improvement Plan

2013 - 2016



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Background and Project Description

In January 2013 the American College of Surgeons issued a report to the Arizona Bureau of EMS and Trauma System (BEMSTS) identifying several recommendations to enhance the trauma system in Arizona. Three of the recommendations will be addressed in the proposed Quality Improvement Plan: 2013-2016.

Recommendation #1: Continue to partner with the Center for Rural Health (CRH) to enhance trauma care in rural Arizona;

Recommendation #2: Select a set of trauma system Quality Assurance (QA) indicators and track progress of these measures over time; and

Recommendation #3: Convene regular meetings of the trauma program managers to address trauma system issues.

On July 30, 2013, BEMSTS and The University of Arizona Center for Rural Health (CRH) convened a face-to-face meeting of the state's trauma program managers for an intensive one-day planning meeting. Hosted by the University Medical Center's Level I Trauma Center, four project goals were introduced and approved to address over the next three years.

Project Goals

Goal #1: Reduce the average length of time a [trauma patient](#) (as defined in the ASTR Inclusion Criteria) spends in a referring Level IV trauma center emergency department before being transferred to a Level I trauma center. **Median Baseline:** 3.1 hours; (2011 data) **Median Goal:** 2.0 hours (2016)

Goal #2: Reduce the frequency that a trauma patient is transferred to Level I trauma center after first being admitted to a Level IV Trauma Center. **Median Baseline:** 0.46 patients per Level IV TC; (2011 data) **Median Goal:** 0.46 per Level IV TC (2016)

Goal #3: Reduce the frequency of trauma patients who die in non-trauma centers. **Median Baseline:** 1.13%; (2011 data) **Median Goal:** .8% (2016)

Goal #4: Increase hospital billing efficiency for trauma patients. **Median Baseline:** Level I Trauma Centers - 86%; Level IV Trauma Centers - 39%; (2011 data) **Median Goal:** Level I Trauma Centers - 95%, Level IV Trauma Centers - 85% (2016)

Methods

The [Arizona State Trauma Registry 2011](#) (ASTR) and the [Hospital Discharge Database 2011](#) (HDD) were utilized to collect data points for the four measures.

- 1) The Emergency Department (ED) Dwell Time was calculated from ASTR by finding the difference of ED/Hospital Arrival Date/Time and ED Exit Date/Time. More commonly this is the Length of Stay (in hours) in the ED of patients with an ED disposition as a 'Transfer to acute care'.
- 2) The transfer after admission was calculated by filtering those patients who were admitted and then had a final discharge disposition as a 'transfer'.
- 3) Patients that die in a Non-Trauma Center were found by querying the HDD for trauma deaths that occurred in non-designated hospitals.

- 4) The trauma billing efficiency was calculated by comparing the patients who had trauma team activation and arrived by ambulance in ASTR. This number was compared to the patients who were reported as 068X trauma revenue code in HDD.

The 2012 data for the [Arizona State Trauma Registry](#) and the [Hospital Discharge Database](#) have been collected and closed out but will serve as a secondary baseline. Hospital level reports on these four measures will be analyzed quarterly with an expectation of seeing a measureable impact in August 2015.

Time Frame

This project began on July 30, 2013. It is estimated that there will be at least three meetings held at trauma centers around the state. When possible, a Morbidity & Mortality (M&M) conference will also occur at the same time to orient new trauma program managers in conducting trauma QA initiatives at their own institutions. At each meeting there will be a targeted discussion on each of the QA measures as well as an additional review and discussion of the latest data for each of the QA measures. The Quality Improvement Plan is estimated to be complete by June 20, 2016.

Goal	Primary Intervention	Secondary Intervention	Assignment	Frequency
Goal # 1: Reduce the average length of time that trauma patients spend in referring trauma center emergency departments before they are transferred to a Level I Trauma Center.	Develop transfer plans (not contracts) with more than one Level I Trauma Center.	Specify and maintain transfer protocols within the region to define personnel, equipment, and mode of transportation. Identify provisions for alternative methods of transport if the usual transport modality is unavailable.	Level IV TPM	ASAP
	Review the case file for all patients with an ED dwell time > 2 hours.		Level IV TPM Level IV TMD	Continuous
		Initiate a discussion with the sending institution to evaluate and strategize opportunities for improvement.	All Level TC TPM's & TMD's	
	Track and monitor the documentation of key time frames.	Time EMS notified Time EMS arrived <u>Time transfer decision made</u> <u>Time patient left</u> Time receiving hospital accepted patient	Level IV TPM	Continuous
	Track and monitor the documentation of any causes for delay in transport.	Document weather, EMS availability, transfer acceptance, CT, lab, blood products, etc.	Level IV TPM	Continuous
Goal # 2: Reduce the frequency that a trauma patient is transferred to another hospital after an initial admission to a Level IV Trauma Center.	Develop a written description of the type and nature of patients that can and cannot be admitted.	Review this tool with all trauma program members during monthly M & M meetings.	Level IV TPM Level IV TMD	ASAP and then monthly
	Review all case files for patients that were transferred after admission.		Level IV TPM Level IV TMD	Continuous
		Discuss the case with the sending institution to strategize opportunities for improvement.	Level I TPM Level I TMD	
	Admitting physician initiates a telephone consultation with a Level I Trauma Center surgeon on questionable cases.		Level IV TMD	As needed
Develop a formal (or informal) telemedicine or telephone consultation relationship with the sending institution.		Level I TMD		

Goal # 3: Reduce the frequency that trauma patients die in non-trauma centers.	Involve EMS in monthly M & M discussions.		Level IV TPM Level IV TMD	Monthly
	Ensure that local EMS agencies have access to trauma specific education.	EMS providers should have the following training: <ul style="list-style-type: none"> • EPIC for TBI • Prehospital Trauma Life Support (PHTLS) • In-service on regional trauma destination protocols • In-service on special populations (elderly, young, TBI, anti-coagulation) 	EMS Agency Level I & IV TC EMS Regions CRH	At least annually
	Sponsor educational offerings for both EMS and trauma hospitals.			
	Produce region specific reports on each of the four PI indicators and share them with the Regional EMS Councils.		Bureau	
	Explore adoption of trauma transport rules with the EMS Councils and MDC that take into consideration regional variation.		Bureau EMS Regions	
	Develop multidisciplinary trauma committees to evaluate Bureau reports.		EMS Regions	
Goal # 4: Increase hospital billing efficiency for trauma patients.	Develop trauma team activation criteria.	Share with other hospital staff and EMS during monthly M & M meetings.	Level IV TPM Level IV TMD	ASAP and then monthly
	Review all charts to ensure proper documentation of trauma team activations.		Level IV TPM	Daily
	Meet with the Charge Auditor and CFO to review discrepancies between trauma records and billing records.		Level IV TPM Level IV TMD Level I TPM Level I TMD	Twice yearly
	Purchase membership in the Foundation for Trauma Care.		All TC's	ASAP
	Advertise and facilitate two Trauma Billing Best Practices webinars.		CRH	Annually
	Sponsor Rural Trauma Team Development courses at Critical Access Hospitals in Arizona.		CRH	Twice annually
	Hold Trauma System PI Meetings for TPM's.		CRH Bureau	Three times per year