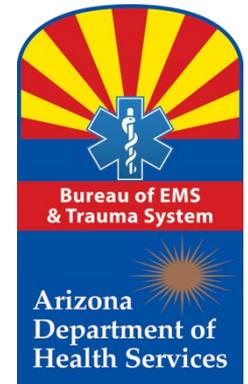


# Bureau of EMS and Trauma System Statewide Performance Improvement Measures



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# Goals

1. Reduce Emergency Department (ED) dwell time at Level III/IV trauma centers before transfer to a Level I trauma center,
2. Reduce transfers after admission,
3. Reduce deaths outside of trauma centers,
4. Increase billing efficiency

Pre-Injury

Pre-hospital

Hospitalization

Post-Acute Care

Data Collection

Data Analysis



Injury

Injury prevention

Communications Infrastructure

- 911 training policies
- Resource allocation, direction and guidance

EMS Infrastructure

- Protocols
- Medical Direction
- Triage and transport guidelines

Hospital infrastructure

- Policies
- Resources
- Triage and transport
- CQI, MM reviews, outreach



- Rehabilitation plans
- Community reintegration



Quality Assurance

Additional Data Sources:  
Transportation  
Vital Statistics  
Economic  
Geographical

# PDCA/Deming Cycle

- ❖ Corrective actions
- ❖ Analyze the differences



- ❖ Establish the objectives
- ❖ Plan processes

- ❖ Study the actual results
- ❖ compare against the expected results

- ❖ Implement the plan
- ❖ execute the process

Reduce Emergency Department  
(ED) dwell time at Level III/IV  
trauma centers before transfer  
to a Level I trauma center

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 regional to define personnel, equipment, and mode of transportation. Identify provisions for alternative methods of transport if usual transport modality is unavailable.	Level IV TPM	ASAP
	Review the case file for all patients with 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 cause for delay in transport.	Document weather, EMS availability, transfer acceptance, CT, lab, blood products, etc.	Level IV TPM	Continuous

## INTERHOSPITAL TRANSFER TO LEVEL I/II CHECKLIST

*Please Fill Out This Form For Trauma Patients Being  
Transferred To A Level I or II Trauma Center*

ED Arrival Date: \_\_\_/\_\_\_/\_\_\_ ED Arrival Time: \_\_\_:\_\_\_

Reason for transfer:  Higher Level of Care  Specialty Care  
 Patient Request  Directed by Payor

Was trauma team activated?  Yes  No

If yes, Date trauma team activated: \_\_\_/\_\_\_/\_\_\_

Time trauma team activated: \_\_\_:\_\_\_

Date first patient contact by physician: \_\_\_/\_\_\_/\_\_\_

Time first patient contact by physician: \_\_\_:\_\_\_

Decision to transfer date: \_\_\_/\_\_\_/\_\_\_ Decision to transfer time: \_\_\_:\_\_\_

Number of Trauma Centers contacted to receive transfer patient: \_\_\_ Level:  I  II

Date first attempt made: \_\_\_/\_\_\_/\_\_\_ Time first attempt made: \_\_\_:\_\_\_

Date transfer confirmed by receiving physician: \_\_\_/\_\_\_/\_\_\_

Time transfer confirmed by receiving physician: \_\_\_:\_\_\_

Name of Level I hospital: \_\_\_

Date EMS contacted for transfer to Level I: \_\_\_/\_\_\_/\_\_\_

Time EMS contacted for transfer to Level I: \_\_\_:\_\_\_

Date EMS arrived at your facility for transfer to Level I: \_\_\_/\_\_\_/\_\_\_

Time EMS arrived at your facility for transfer to Level I: \_\_\_:\_\_\_

Date patient discharged from your ED: \_\_\_/\_\_\_/\_\_\_

Time patient discharged from your ED: \_\_\_:\_\_\_

Mode of transport:  ground ambulance  air ambulance  private car

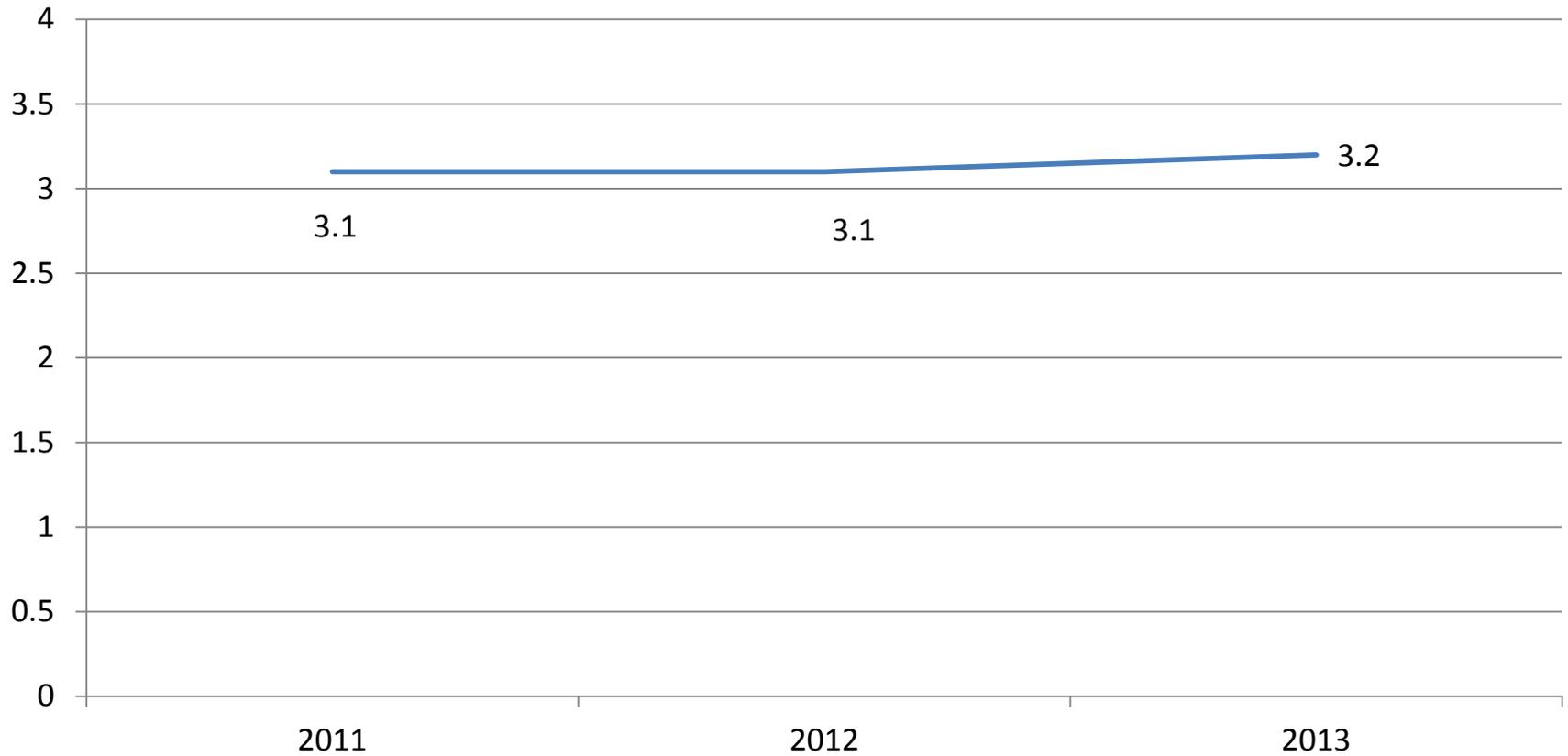
Reason for discharge delay:

- |   |   |
|---|---|
| <input type="checkbox"/> Incomplete paperwork                       | <input type="checkbox"/> Acceptance delay/bed assignment issues |
| <input type="checkbox"/> Extreme weather delay                      | <input type="checkbox"/> Time delay due to family dynamics      |
| <input type="checkbox"/> Time delay due to patient stability        | <input type="checkbox"/> Delay due to internal decision making  |
| <input type="checkbox"/> Delay due to lab/radiologic studies        | <input type="checkbox"/> Mass transfusion delay                 |
| <input type="checkbox"/> Law enforcement/prisoner management delays | <input type="checkbox"/> Delay due to EMS availability          |

# Median Interval Times (Minutes)

Interval	≤ 2 Hours		> 2 Hours	
	Median	Q1-Q3	Median	Q1-Q3
Trauma Team Activated → Patient ED Arrival	5	2-13	2	-3-10
Patient ED Arrival → First Doctor Contact	3	0-12	<b>8</b>	1-17
First Doctor Contact → Decision To Transfer	21	6-46	<b>95</b>	67-132
Decision to Transfer → Transfer Confirmed	13	0-25	<b>20</b>	2-50
Transfer Confirmed → EMS Contacted	0	-10-7	4	0-18
EMS Contacted → EMS Arrival	17	6-32	21	7-41
EMS Arrival → Patient Discharged	15	7-27	15	9-23.5

## Median Dwell Time at Level IV Trauma Centers (hrs)

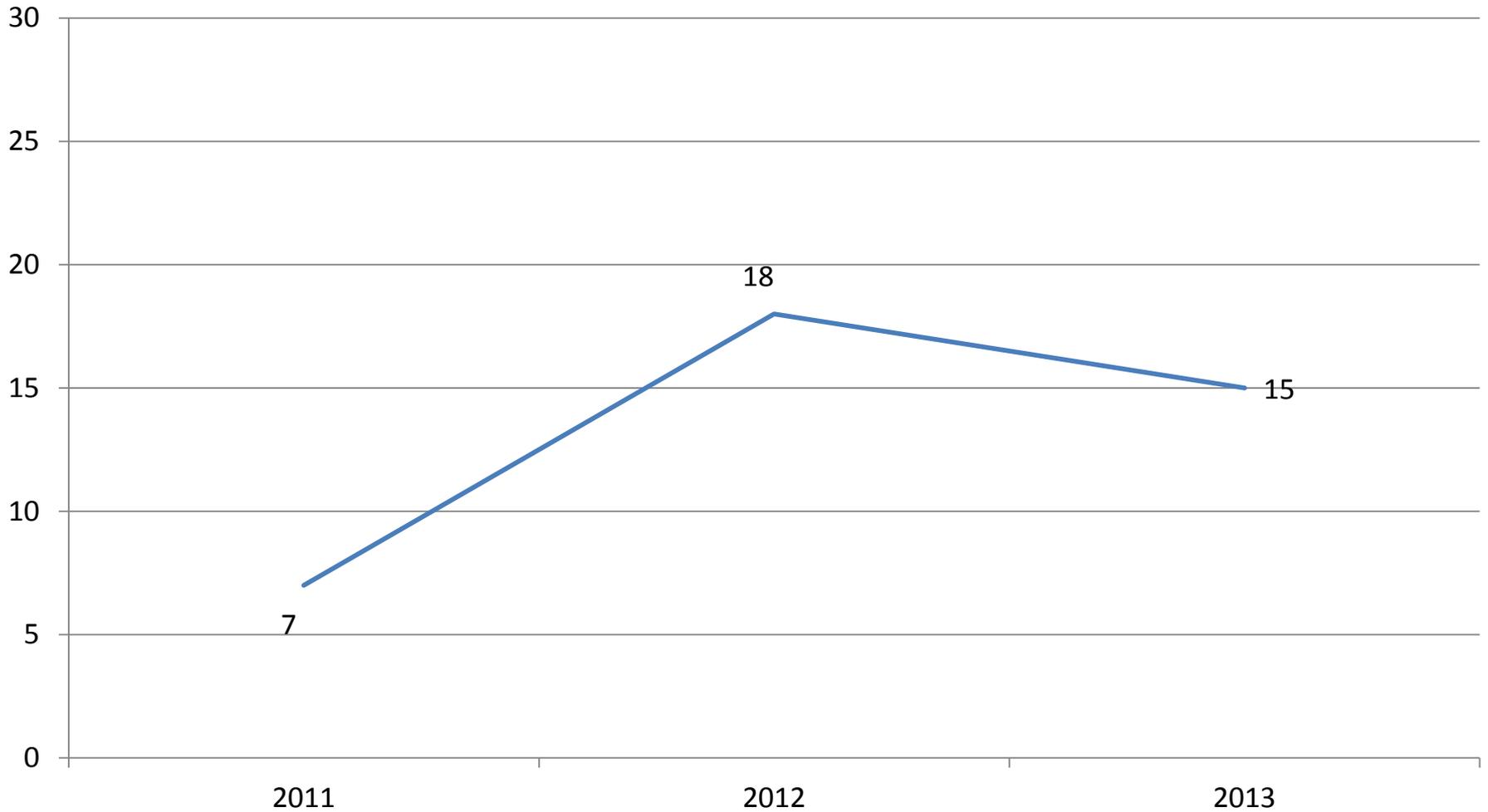


Goal	Primary Intervention	Secondary Intervention	Assignment	Frequency
Goal # 1: Reduce the average length of time that trauma patients spend in referring trauma center emergency departments before they are transferred to a Level I Trauma Center.	Develop transfer plans (not contracts) with more than one Level I Trauma Center.	Specify and maintain transfer protocols within the regional to define personnel, equipment, and mode of transportation. Identify provisions for alternative methods of transport if usual transport modality is unavailable.	Level IV TPM	ASAP
	Review the case file for all patients with 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 cause for delay in transport.	Document weather, EMS availability, transfer acceptance, CT, lab, blood products, etc.	Level IV TPM	Continuous

# Reduce transfers after admission

Goal	Primary Intervention	Secondary Intervention	Assignment	Frequency	
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	

## Transfers after admission at Level IV Trauma Centers



# Reduce deaths outside of trauma centers

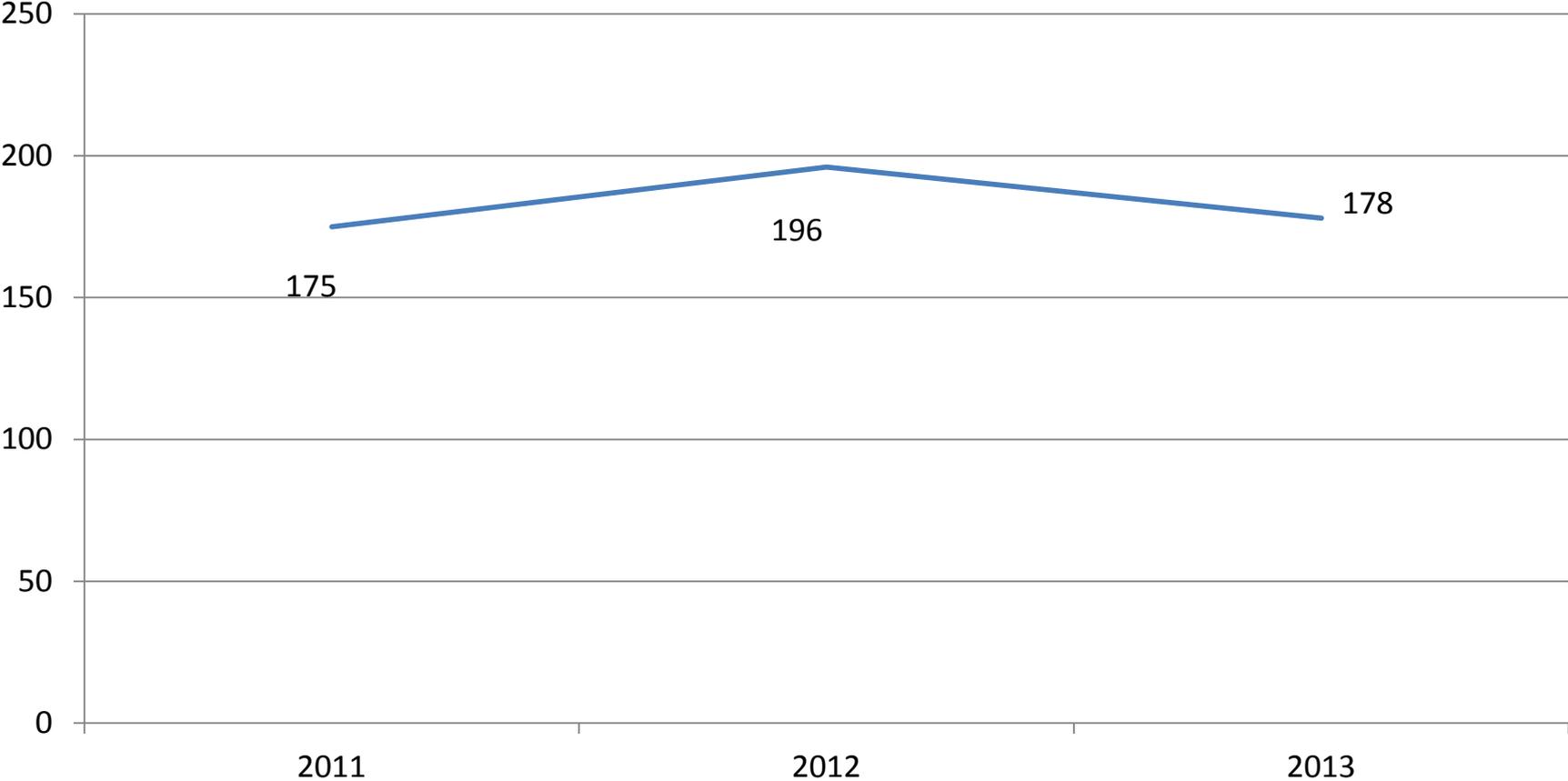
Goal	Primary Intervention	Secondary Intervention	Assignment	Frequency
Goal # 3: Reduce the frequency that trauma patients die in non-trauma centers.	Involve EMS in monthly M & M discussions.		Level IV TPM Level IV TMD	Monthly
	Ensure that local EMS agencies have access to trauma specific education.	EMS providers should have the following training:  • EPIC for TBI • (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	
	Develop multidisciplinary trauma committees to evaluate Bureau reports.		EMS Regions	

# Bureau Initiatives

- Infographics
- Outreach to County Health Departments
- EMS specific trauma reports
- Identified specific population



# Mortality at Non trauma centers

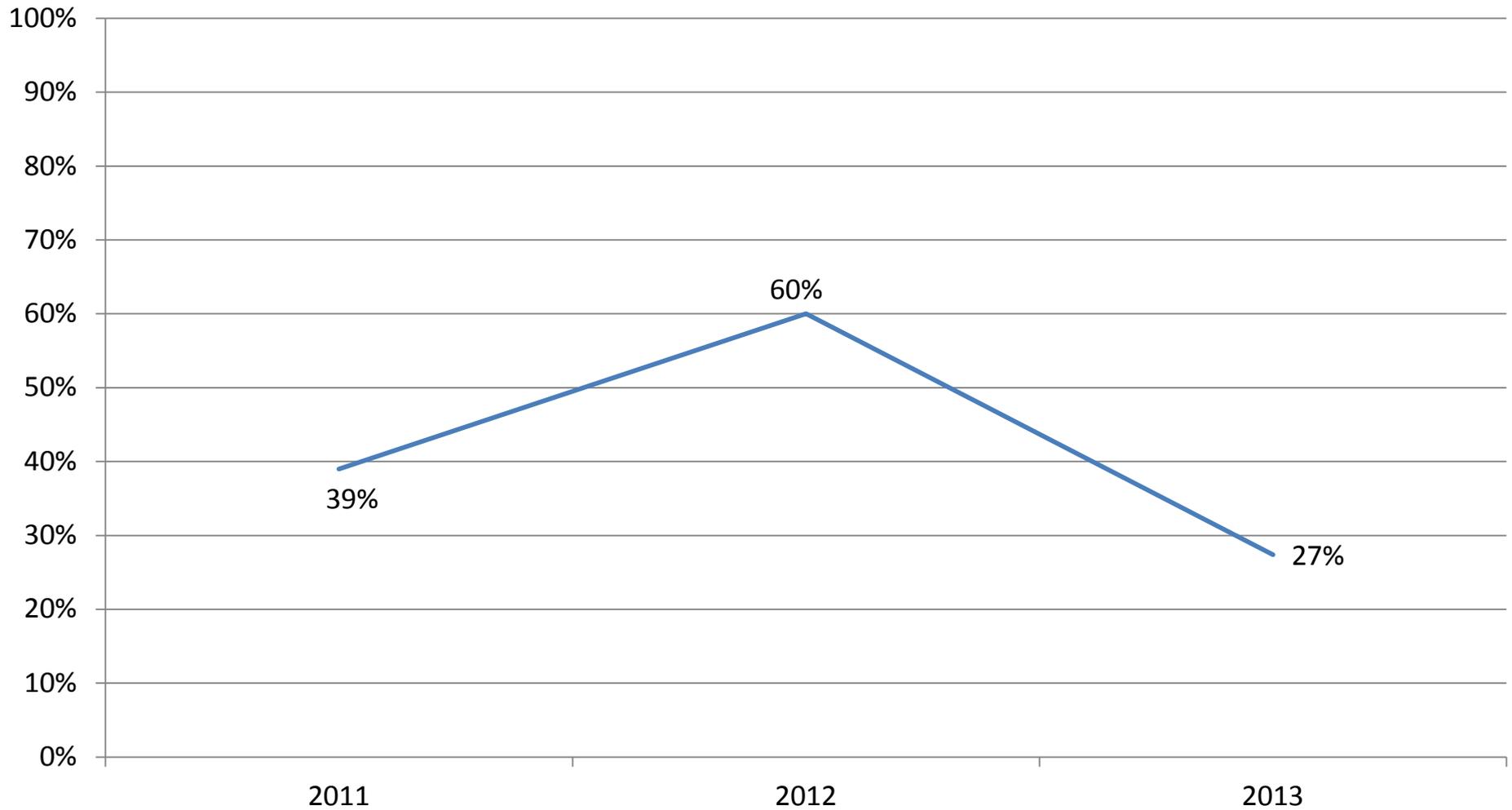


Goal	Primary Intervention	Secondary Intervention	Assignment	Frequency
Goal # 3: Reduce the frequency that trauma patients die in non-trauma centers.	Involve EMS in monthly M & M discussions.		Level IV TPM Level IV TMD	Monthly
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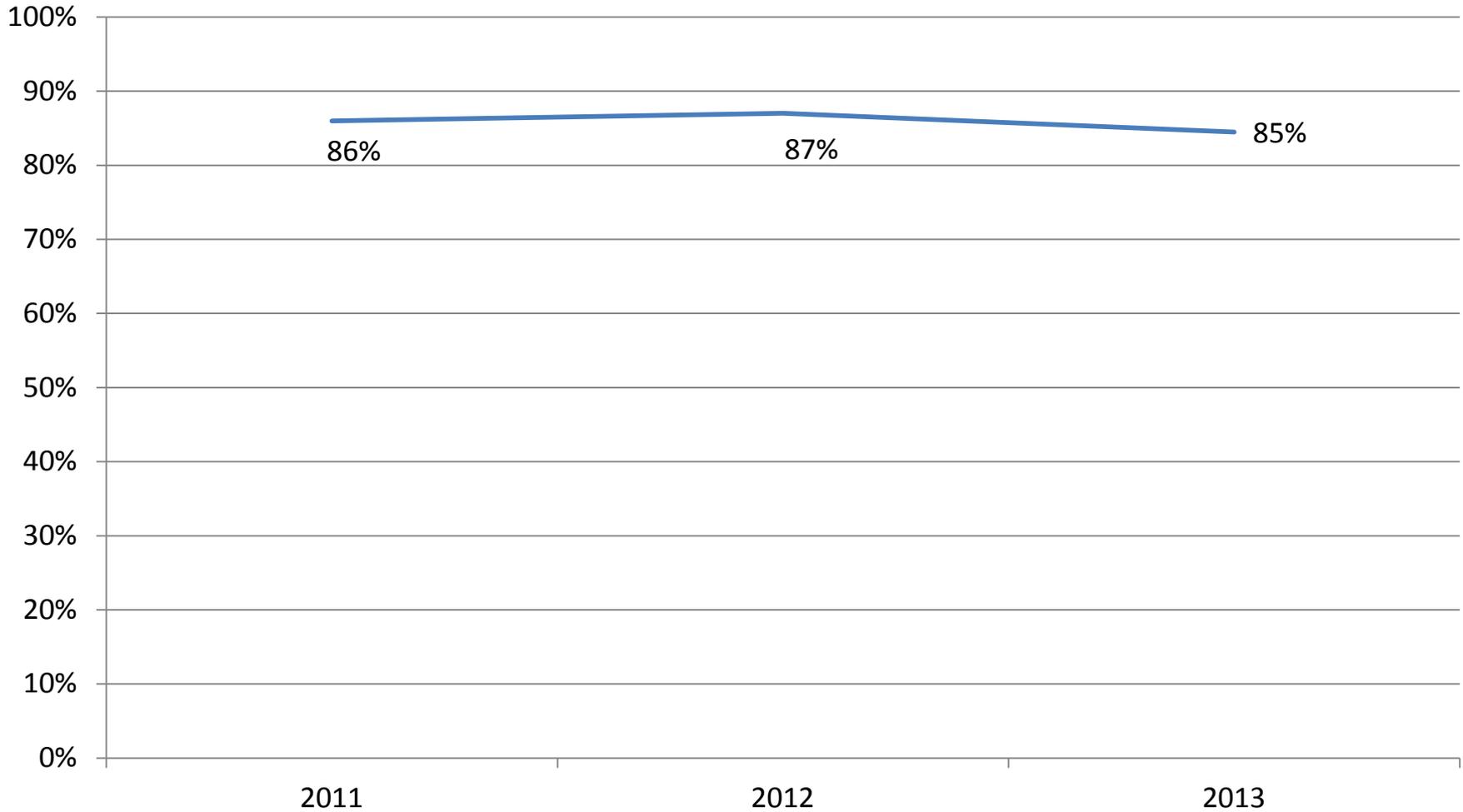
# Increase billing efficiency

Goal	Primary Intervention	Secondary Intervention	Assignment	Frequency
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

## Billing Efficiency at Level IV Trauma Centers



## Billing Efficiency at Level I Trauma Centers



Goal	Primary Intervention	Secondary Intervention	Assignment	Frequency
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





спасибо  
danke 謝謝  
ngiyabonga  
teşekkür ederim  
dank je  
gracias  
tapadh leat  
bedankt  
hvala  
mauruuru  
thank you  
dziękuję  
sagolun  
sukriya  
kop khun krap  
go raibh maith agat  
mochchakkeram  
arigato  
takk  
dakujem  
merci  
merci  
ευχαριστώ  
obrigado  
terima kasih  
감사합니다