Indiana State Trauma Care Committee

June 17, 2016

Indiana State Department of Health

Email questions to: **indianatrauma@isdh.in.gov**

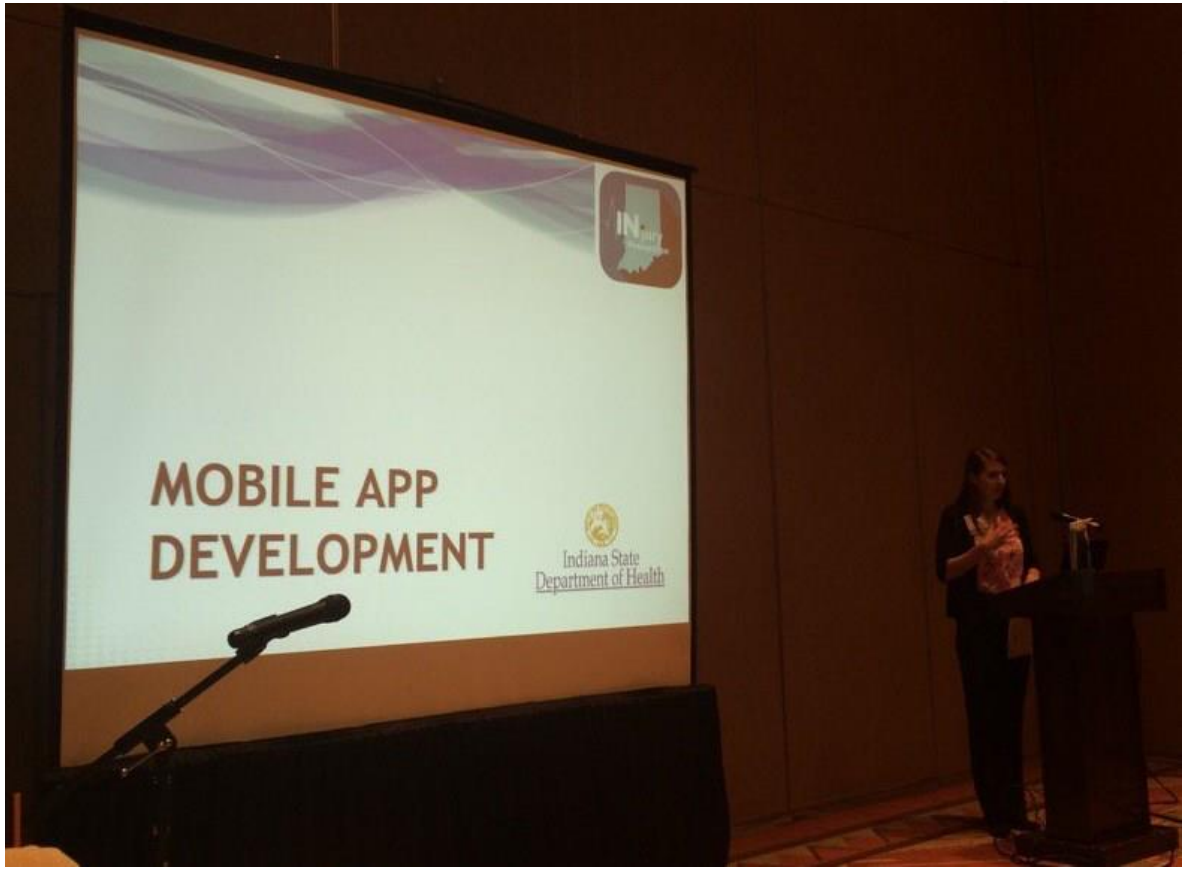
Updates

Katie Hokanson, *Trauma and Injury Prevention Director*

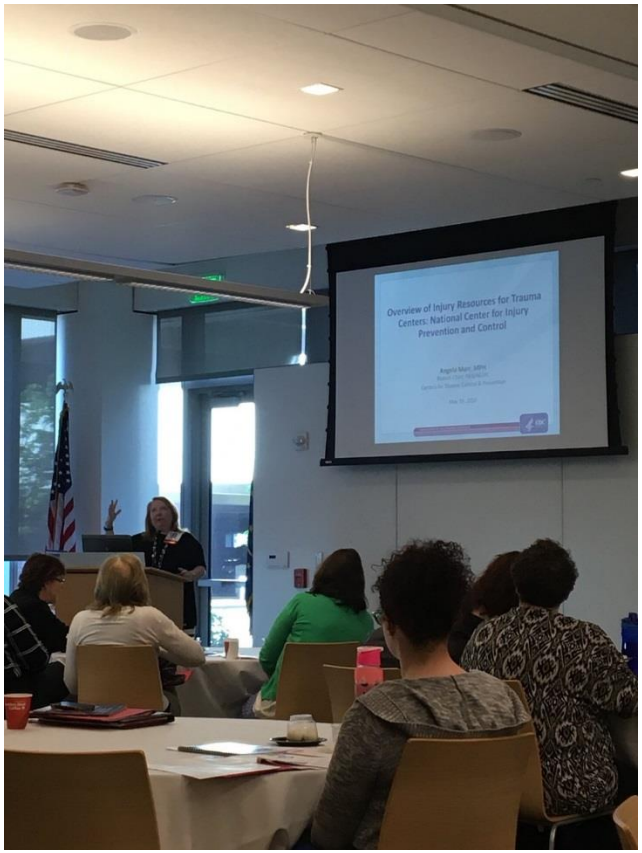
Indiana State Department of Health

Email questions to: **indianatrauma@isdh.in.gov**

Safe States 2016 Conference



2016 Injury Prevention Advisory Council (IPAC) Conference



Indiana State Department of Health

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Indiana Violent Death Reporting System (NVDRS)

- ~1,550 INVDRS cases for 2015
  - 63% of cases are suicides
- ~500 cases YTD
- Participation Status:
  - 48 out of 92 county coroners (52%)
  - 260 out of 400 law enforcement agencies (65%)

Indiana State Department of Health

Indiana Violent Death Reporting System (NVDRS)

2016 EMS Medical Director's Conference

- Friday, August 26, 9 – 3:30
- Sheraton Indianapolis at Keystone Crossing
- Presentations include:
  - Stop the bleeding
  - MCI/Autopsy results *Keynote Speaker*
  - EMS MDs round robin
  - EMS Case reports from EM Residents
  - Demystifying EMS-C *Keynote Speaker*
  - Ultrasounds
  - Board Certifications
  - Inhalational Burns

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Grant Funding Updates

- Ineligible for the Core State Violence and Injury Prevention Program (Core SVIPP) Grant
- Applying for:
  - Prescription Drug Overdose: Prevention for States Program Supplement
    - This supplements are current PDO: PfS grant that we received in March.
  - Enhanced State Surveillance of Opioid-Morbidity and Mortality
    - This focuses on improving the timeliness of morbidity and mortality data collection and dissemination of the data.

Regional Updates

Indiana State Department of Health

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Regional updates

- District 1
- District 3
- District 5
- District 7
- District 10

Indiana State Department of Health

Trauma Designation Subcommittee Update

June 17, 2016
Gerardo Gomez, MD, FACS
Committee Chair

Dr. Lewis Jacobson, Dr. R. Lawrence Reed, Spencer Grover, Wendy St. John, Jennifer Mullen, Lisa Hollister, Amanda Elikofer, Katie Hokanson, Ramzi Nimry, Missy Hockaday, Teri Joy, Art Logsdon, Judy Holsinger, Jennifer Conger, Dr. Emily Fitz, Dr. Matthew Sutter, Dr. Christopher Hartman, Ryan Williams

ISDH Trauma Designation Subcommittee Meeting Agenda

June 8, 2016

1.) The EMS Commission's Technical Advisory Committee (TAC) reviewed the changes to the Triage and Transport Rule on June 16th. They are going to make a recommendation that the EMS Commission adopt the recommended changes to the Triage & Transport Rule. The TAC suggested that some members of the Designation Subcommittee attend the EMS Commission meeting on Friday, June 24th at 10am at Fishers Town Hall.

2.) 2 Year Facilities Review

- **St. Elizabeth East**
- **Good Samaritan**
- **Community Anderson**

Locations of ACS Verified and "In the Process of ACS Verified" Trauma Centers in Indiana

Trauma Centers
in Indiana

Level I
Indianapolis
Eskenazi Health
IU Health Methodist Hospital
Riley Hospital for Children at IU Health
St. Vincent Indianapolis Hospital

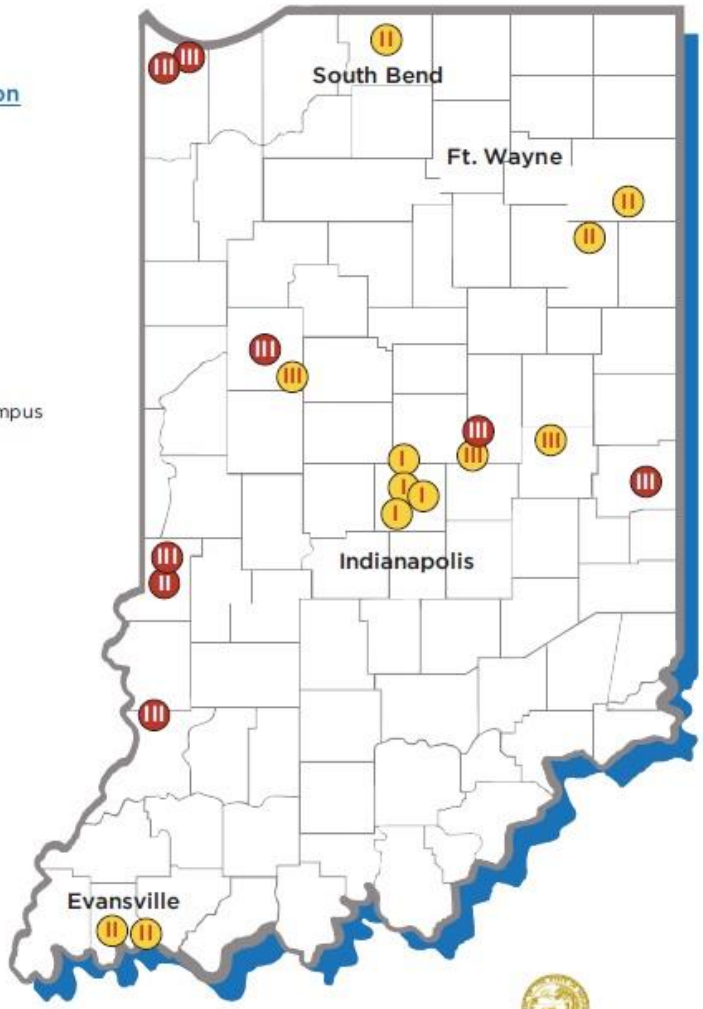
Level II
Evansville
Deaconess Hospital
St. Mary's Medical Center of Evansville
Ft. Wayne
Lutheran Hosptial of Indiana
Parkview Regional Medical Center
South Bend
Memorial Hospital of South Bend

Level III
Lafayette
IU Health - Arnett Hospital
Muncie
IU Health - Ball Memorial Hospital
Anderson
St. Vincent Regional Hospital

In the process of ACS Verification

Level II
Terre Haute
Terre Haute Regional

Level III
Anderson
Community Hospital - Anderson
Gary
Methodist Hospital - Northlake Campus
Lafayette
Franciscan St. Elizabeth - East
Vincennes
Good Samaritan Hospital
Richmond
Reid Health
Crown Point
Franciscan St. Anthony Health
Terre Haute
Union Hospital - Terre Haute



Indiana State Department of Health
Trauma and Injury Prevention

Updated: 4-6-2016

"In the Process" of ACS Verification Trauma Centers

Facility Name	City	Level	Adult / Pediatric	"In the Process" Date*	1 Year Review Date**	ACS Consultation Visit Date	ACS Verification Visit Date
Franciscan St. Elizabeth East	Lafayette	III	Adult	12/20/2013	02/20/2015	02/12-02/13, 2015	December 2015
Community Hospital Anderson	Anderson	III	Adult	06/20/2014	08/21/2015	May 2016	TBD
Good Samaritan	Vincennes	III	Adult	06/20/2014	08/21/2015	05/19-05/20, 2015	05/23-05/24, 2016
Methodist Northlake	Gary	III	Adult	08/20/2014	10/30/2015	10/7-10/8, 2015	February 2017
Franciscan Health St. Anthony Crown Point	Crown Point	III	Adult	12/18/2015	January/February 2017	TBD	TBD
Reid Health	Richmond	III	Adult	12/18/2015	January/February 2017	02/02-02/03, 2016	TBD
Terre Haute Regional	Terre Haute	II	Adult	12/18/2015	January/February 2017	09/08-09/09, 2016	April 2017
Union Hospital	Terre Haute	III	Adult	02/26/2016	March/April 2017	09/01-09/02, 2016	TBD

*Date the EMS Commission granted the facility "In the process" status

**Date the Indiana State Trauma Care Committee (ISTCC) reviewed/reviews the 1 year review documents. This date is based on the first ISTCC meeting after the 1 year date.

Facility is past the two year mark for their "In the Process" status.

Updated on: Friday, June 17, 2016

Subcommittee Updates
Performance Improvement Subcommittee

Dr. Larry Reed, *Title*
IU Health – Methodist Hospital

Indiana State Department of Health

ISDH Performance Improvement Subcommittee update

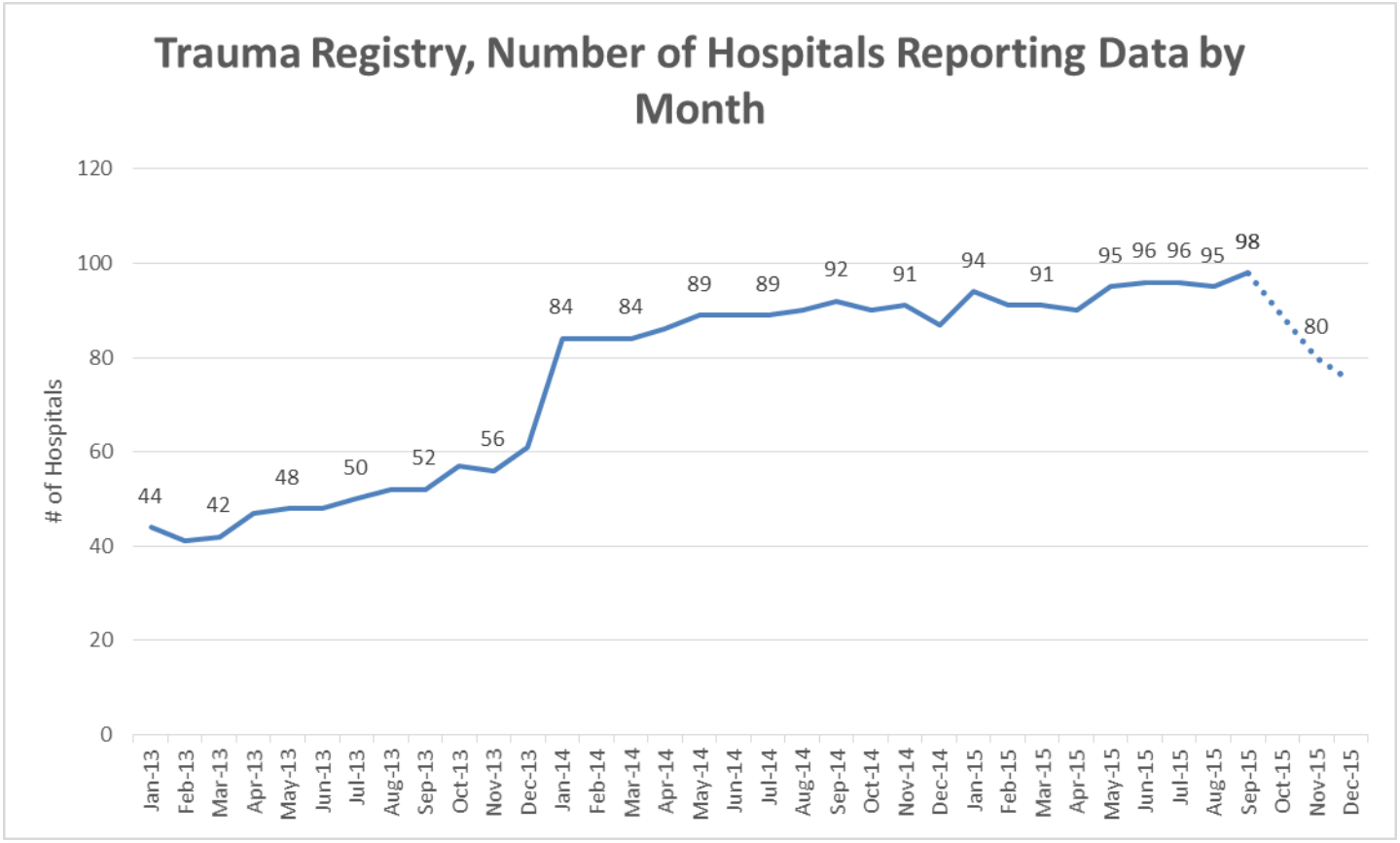
Committee Members: Chair Larry Reed, MD Adam Weddle, Brittanie Fell, Chuck Stein, Jennifer Mullen, Kelly Mills, Lindsay Williams, Mary Schober, Tracy Spitzer, Amanda Rardon, Carrie Malone, Dawn Daniels, Jeremy Malloch, Kristi Croddy, Lisa Hollister, Missy Hockaday, Peter Jenkins, MD, Spencer Grover, Wendy St. John, Annette Chard, Chris Wagoner, Dusten Roe, Jodi Hackworth, Latasha Taylor, Merry Addison, Regina Nuseibeh, Tammy Robinson, Bekah Dillion, Christy Claborn, Emily Grooms, Kasey May, Lesley Lopossa, Marie Stewart, Michele Jolly, Sarah Quaglio, Tara Roberts

ISDH Staff: Katie Hokanson, Ramzi Nimry, Camry Hess

Goals

1. Increase the number of hospitals reporting data to Indiana Trauma Registry
2. Decrease average ED LOS at non-trauma centers
   - Identification of "root cause"
   - "Reason for Transfer Delay"
   - Analysis by *shock index, GCS, ISS , age, body region, single vs. multiple system*
3. Increase EMS run sheet collection
4. Improve trauma registry data quality

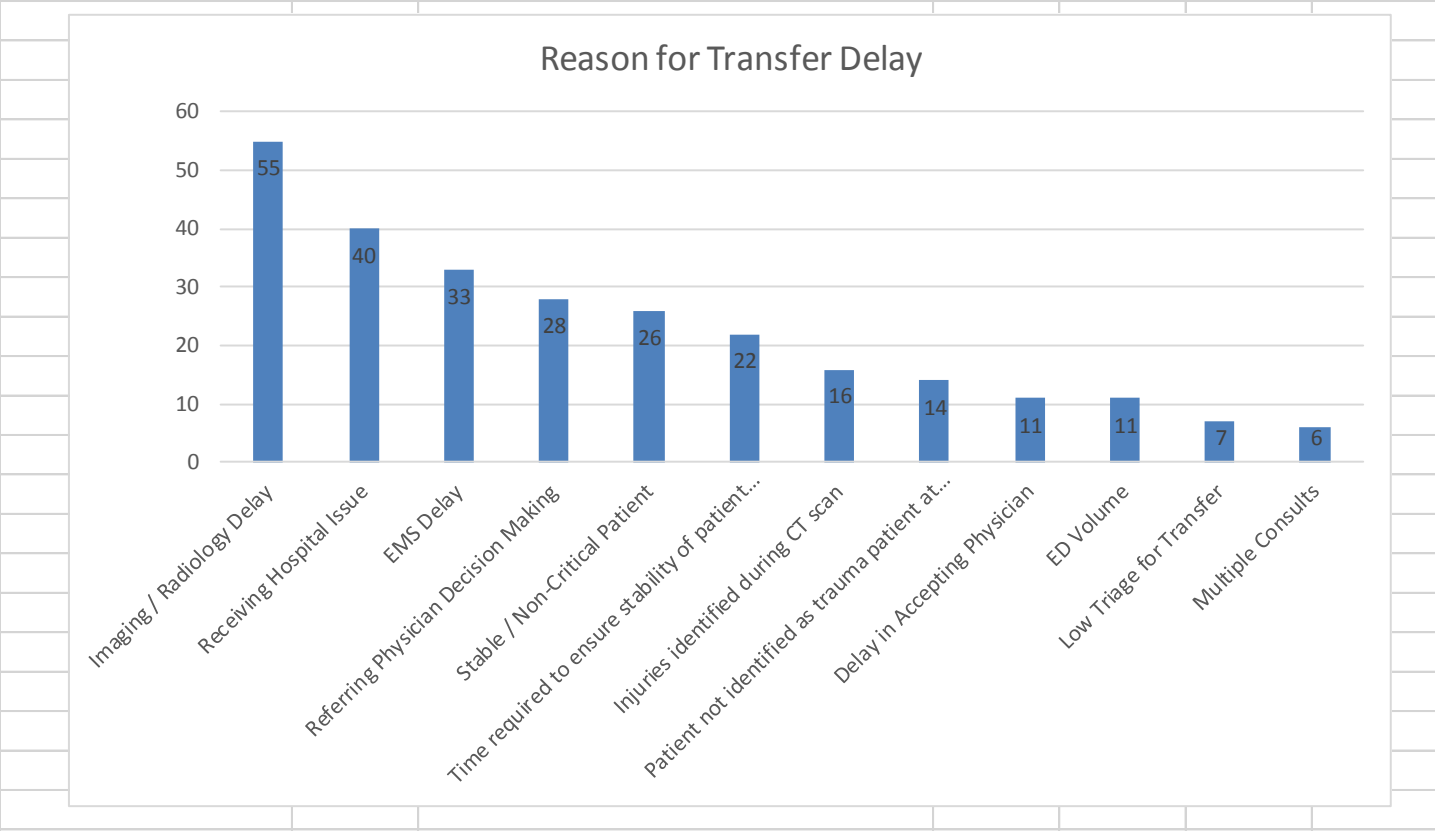
Number of Hospitals Reporting



District Success

- District 1 (12/13) 92%
- District 2 (9/10) 90%
- District 3 (13/16) 81%
- District 4 (7/7) 100%
- District 5 (21/25) 84%
- District 6 (15/15) 100%
- District 7 (7/7) 100%
- District 8 (7/8) 88%
- District 9 (7/10) 70%
- District 10 (8/9) 89%

ED LOS/Reason for Transfer Delays



Less than 5 cases: Patient should not have been included in registry, shift change, patient choice to transfer, specialty surgeon availability at referring facility, referring facility issue, new staff in ED, transfer for ETOH withdraw, communication issue, new EMR, Blood bank delay, receiving hospital issue - VA, OR availability at referring facility, weather

EMS Run sheet collection

- Need specifics information
  - Date and approximate time of the patient arrival
  - Destination (which hospital)
  - Mechanism of Injury
- What time of program or system do the EMS agencies utilize?
  - Paper, fax, electronic, etc.

Deliverables from committee

- Feb 29th letter sent to all ED submitting data to ISDH trauma registry regarding ED LOS
- Document "Reason for Transfer Delays"
- State TQIP programs

Future Goals

- Interfacility transfer protocols
- Analysis of Triage and Transport rule
- Linkage software for double transfers
- State TQIP risk adjusted benchmarking system

Next Meeting

September 13th, 2016

10-11am EST Larkin Conference Room

November 15, 2016

10-11am EST Larkin Conference Room

Michigan Trauma Quality Improvement Program (MTQIP)

Dr. Mark Hemmila, *Professor of Surgery*
Jill Jakubus, *Program Manager – Data and Analytics, MTIQP*
Judy Mikhail, *Program Manager, MTQIP*
University of Michigan Health System

Indiana State Department of Health

The Michigan Trauma Quality Improvement Program

Indiana State Trauma Care Committee
June 17, 2016

Disclosure

- Support for MTQIP is provided by BCBSM/BCN
- BCBSM/BCN is a non-profit mutual insurance company

Why?

- Why build a collaborative quality initiative?

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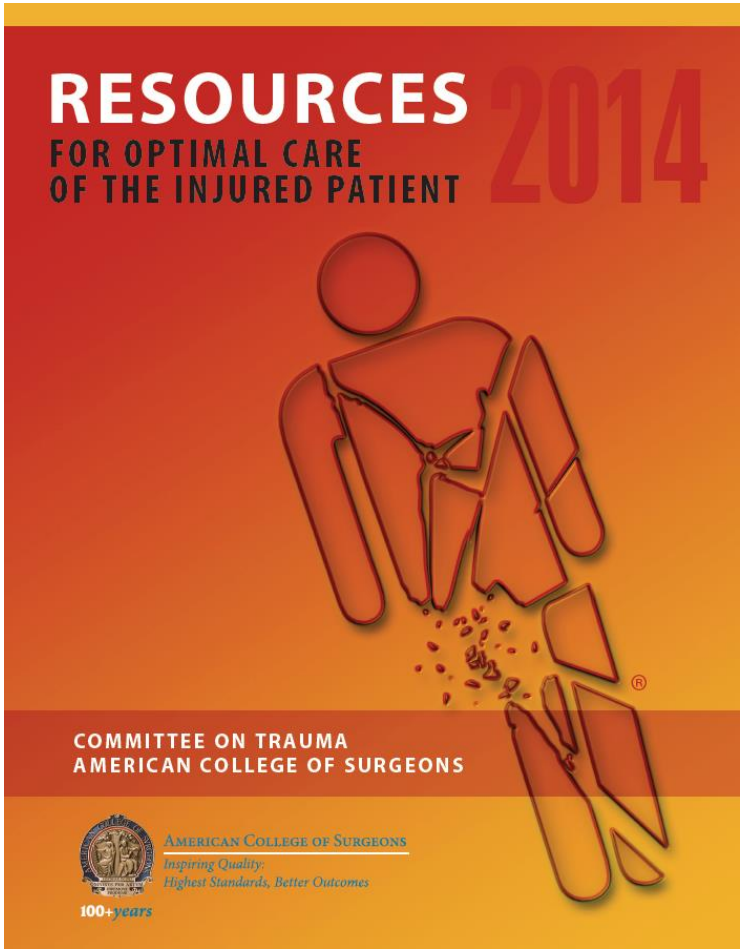
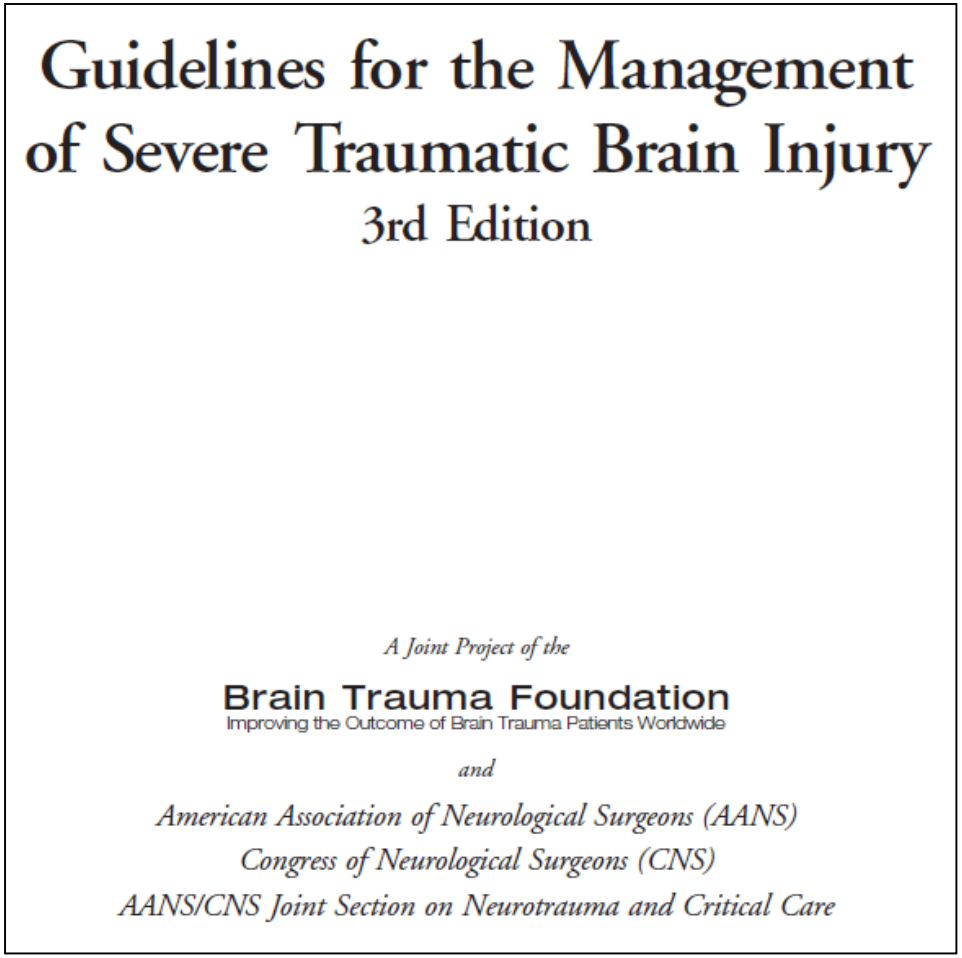
Systems Based Care





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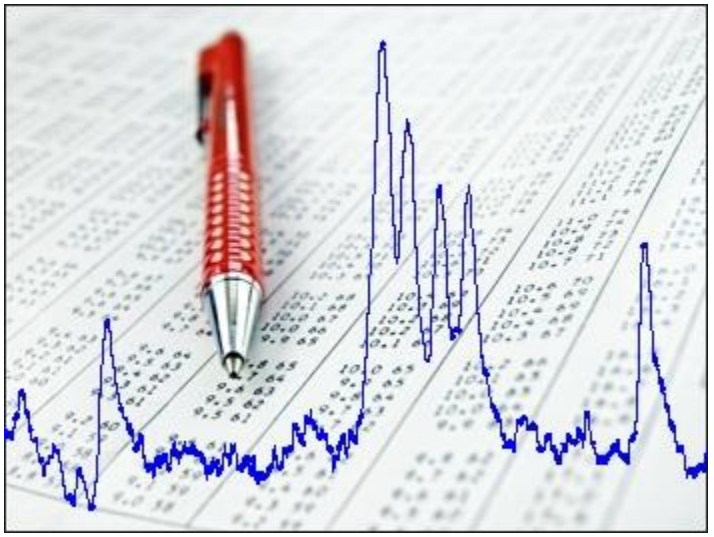
Decision Making



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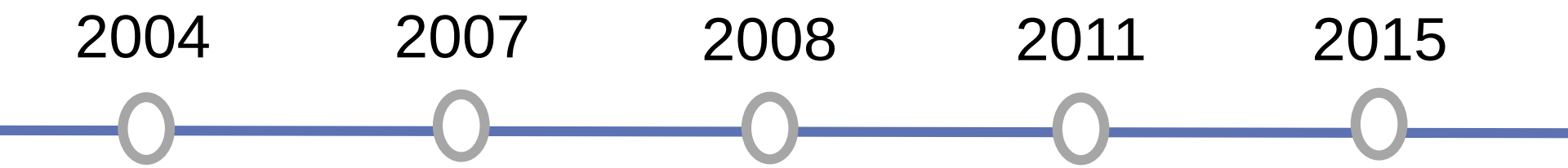
Collaborate

- Share
- Learn
- Understand

MTQIP Timeline



Data quality pilot

Surgery: NSQIP methodology as a means of tracking and reducing adverse outcomes in trauma

Surgery: Potential for cost reduction with improved quality of care

MTQIP created as a pilot with 7 centers

MTQIP becomes a formal BCBSM/BCN Collaborative Quality Initiative

J Trauma ACS: Regional CQI improves outcomes and reduces cost

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Michigan Trauma Quality Improvement Program

- 29 Level 1 and 2 Trauma Centers in Michigan
- Voluntary Participation
- Funded by BCBS of Michigan
- Coordinating Center
  - University of Michigan
  - Program Director, Manager, Analyst, Support Staff
- Participating Centers
  - Trauma Registry
  - ACS-TQIP

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Michigan Trauma Quality Improvement Program

- Meetings
  - 4 times per year
- Feedback Reports
- Quality Improvement Projects
  - Global
  - Center Specific
- Trauma Registry
  - Data submission and collation
  - Data definitions
  - Validation visits
  - Process measures module

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Support

- Coordinating Center
  - $830,000 operating
  - $250,000 ACS-TQIP
- Participant Trauma Centers
  - 1 FTE per 525 MTQIP cases
  - $2,600 trauma registry
- Total
  - $4,000,000 year

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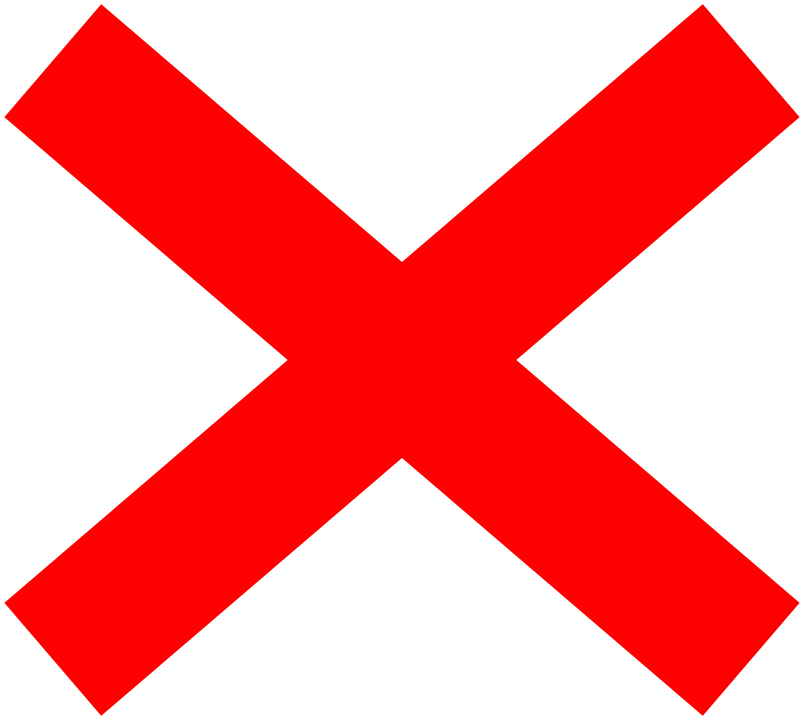
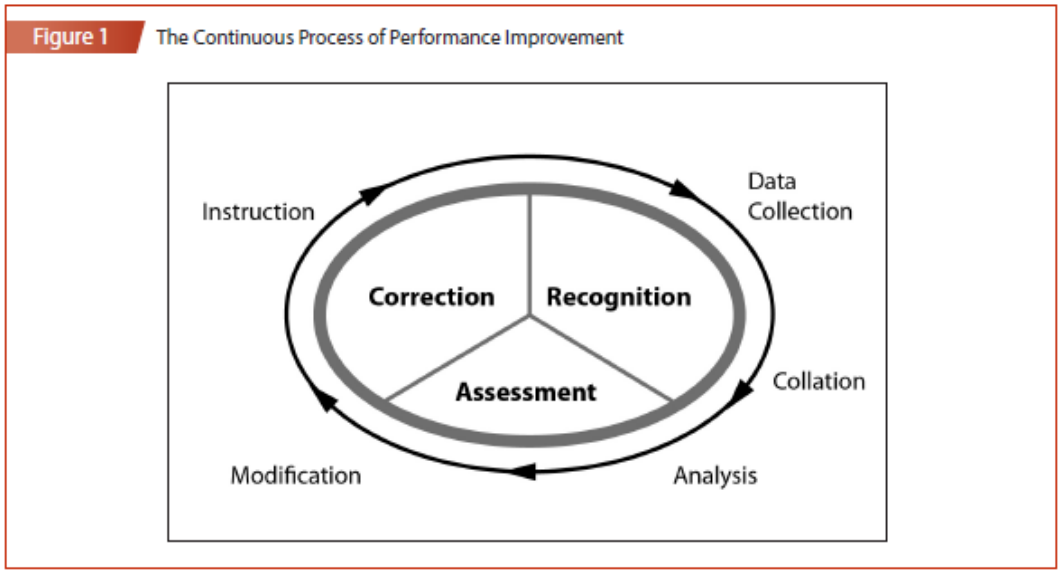
What it is not

- State trauma system
- Policeman
- Mortality
- Reports



What it is

- Performance improvement program
- Information
  - Exchange
  - Context
  - Discussion
- Education
  - Data
  - Peer Group
  - Experts



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Change

- Some are fine
- Some are not
- How to get better?

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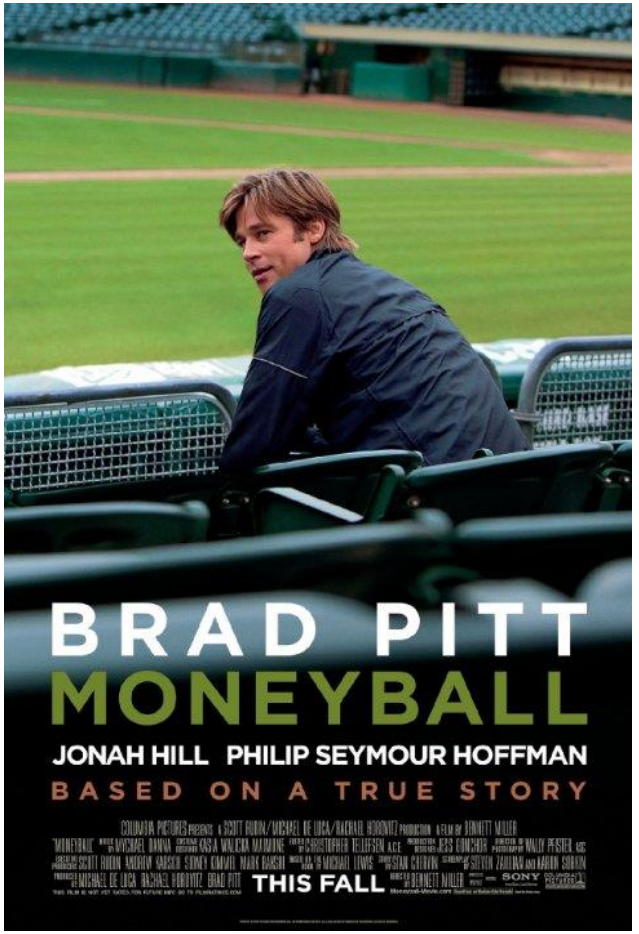
Change

- Some are fine
- Some are not
- How to get better?
- Change



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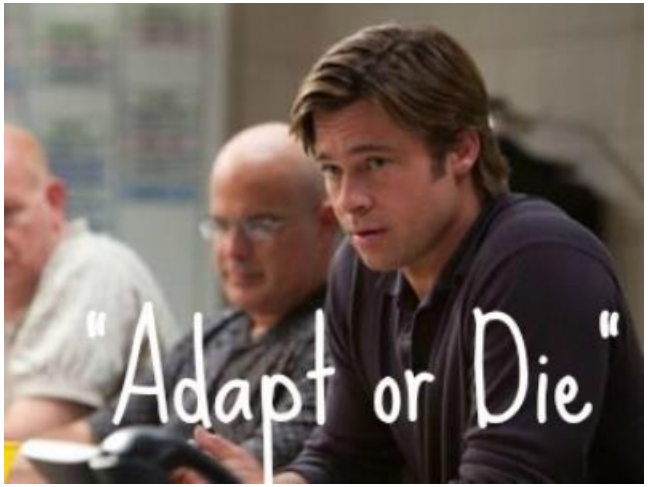
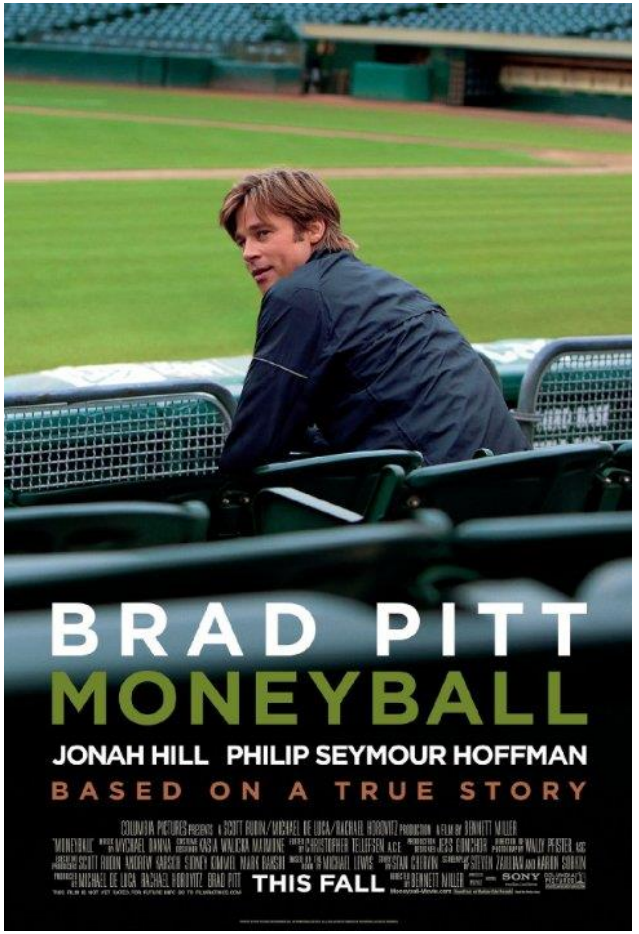
Change

- Some are fine
- Some are not
- How to get better?
- Change
- Change is hard





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How to create “change”

- You suck! Do it this way.

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How to create “change”

- You suck! Do it this way.

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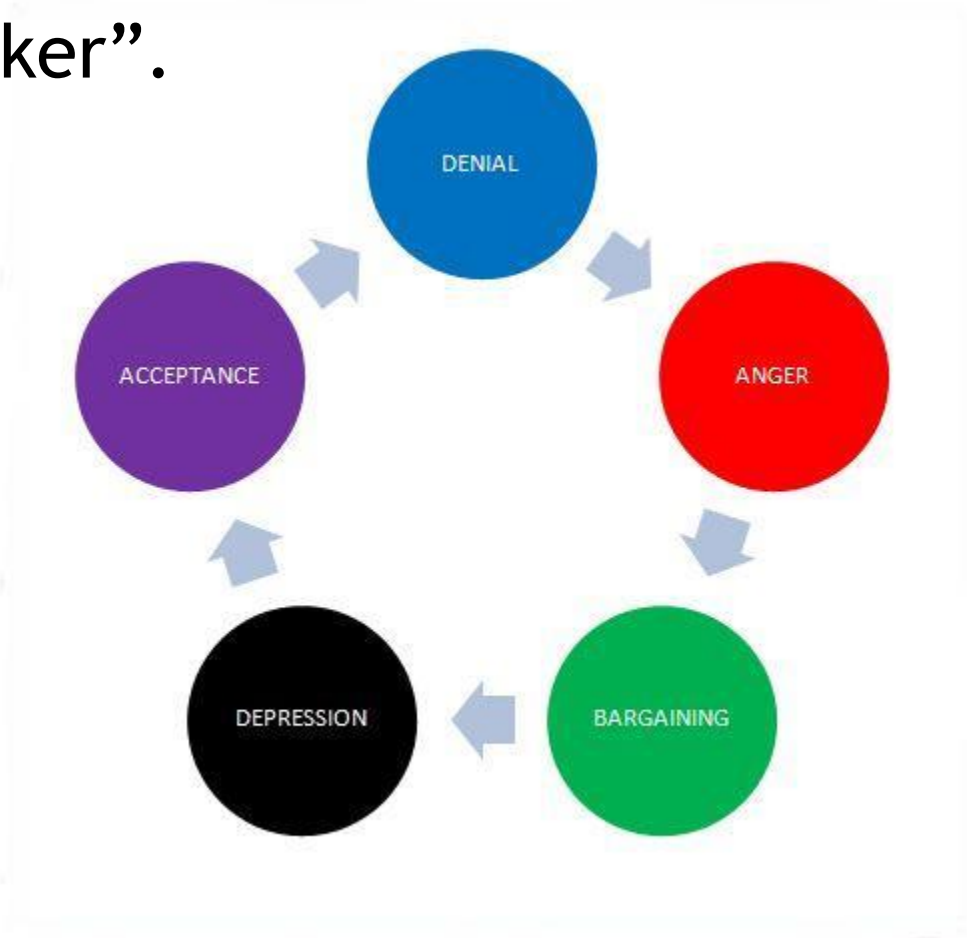
How to create “change”

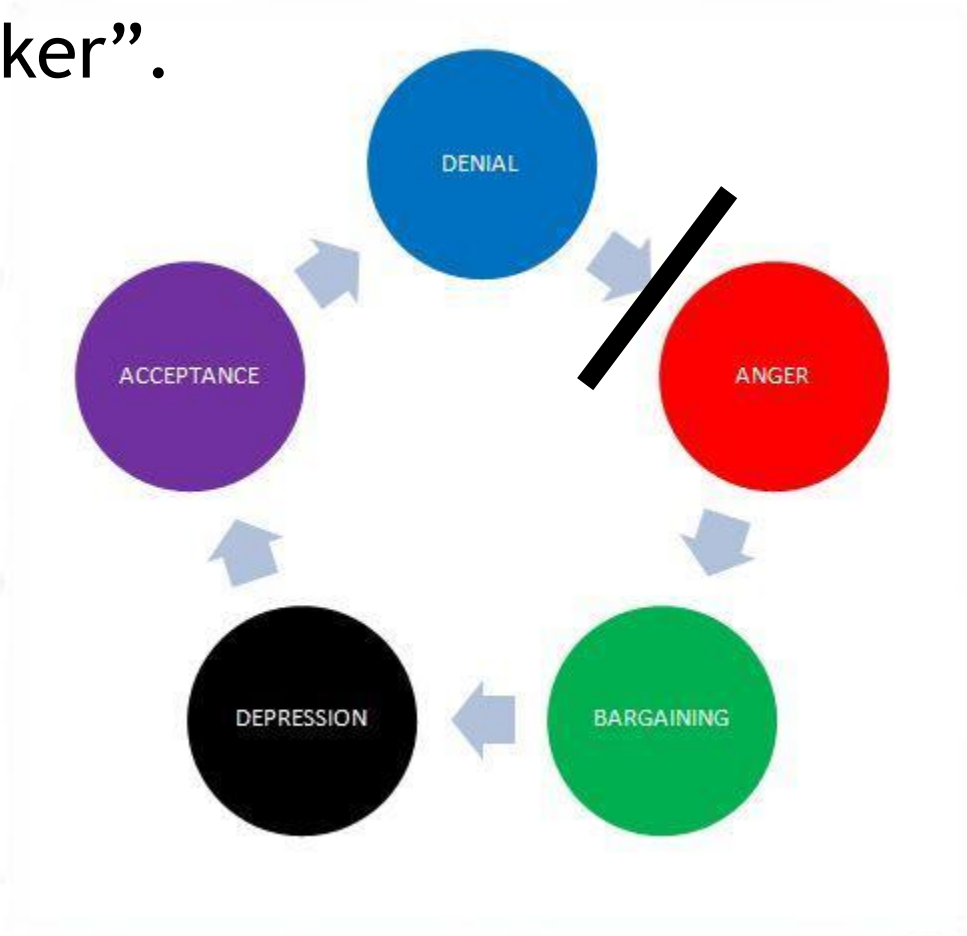
- Blinded Data
- “My patients are sicker”.
- I am different
- Who is that guy?



How to create “change”

- Blinded Data
- “My patients are sicker”.
- I am different
- Who is that guy?

- Stuck



Why do I have these results?

- Feedback does not always correlate with performance.
  - Warning light
  - Delve into data

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Why do I have these results?

- Data
  - Capture
    - Available in Medical Record
    - Source
  - Definition
    - MTQIP Data Dictionary
    - Validation
- Real “It must be me”
  - Review Patients
  - Explanation? Yes or No
  - What do you do – process of care

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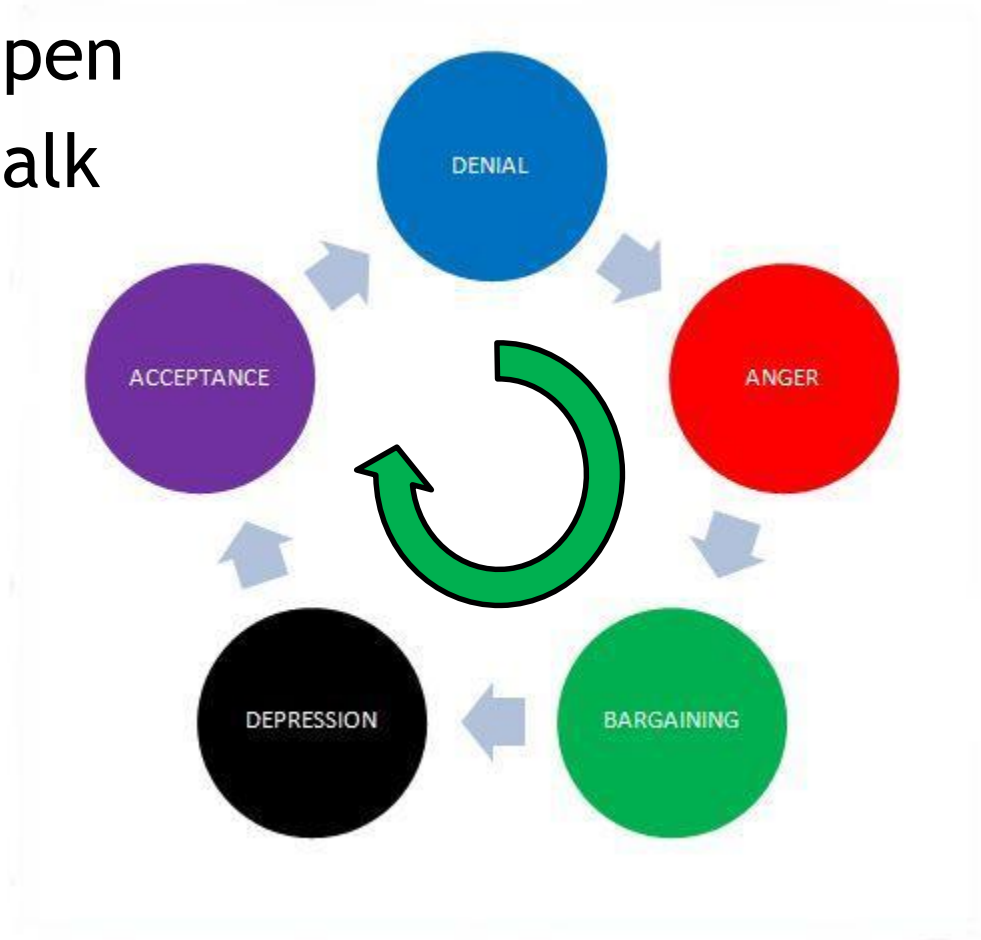
How to create “change”

- Unblinded Data
- Get’s it out in the open
- Something we can talk about
- Trust



Motivation Levers

- Reports
  - Credible
  - Drill into data → Access
- Collaborative scoring
  - Accountability
  - Focus
- Unblinding
  - Discussion/Collegial Competition
  - Do more than drink the coffee and eat the donuts
- Site Visits
  - Customer service

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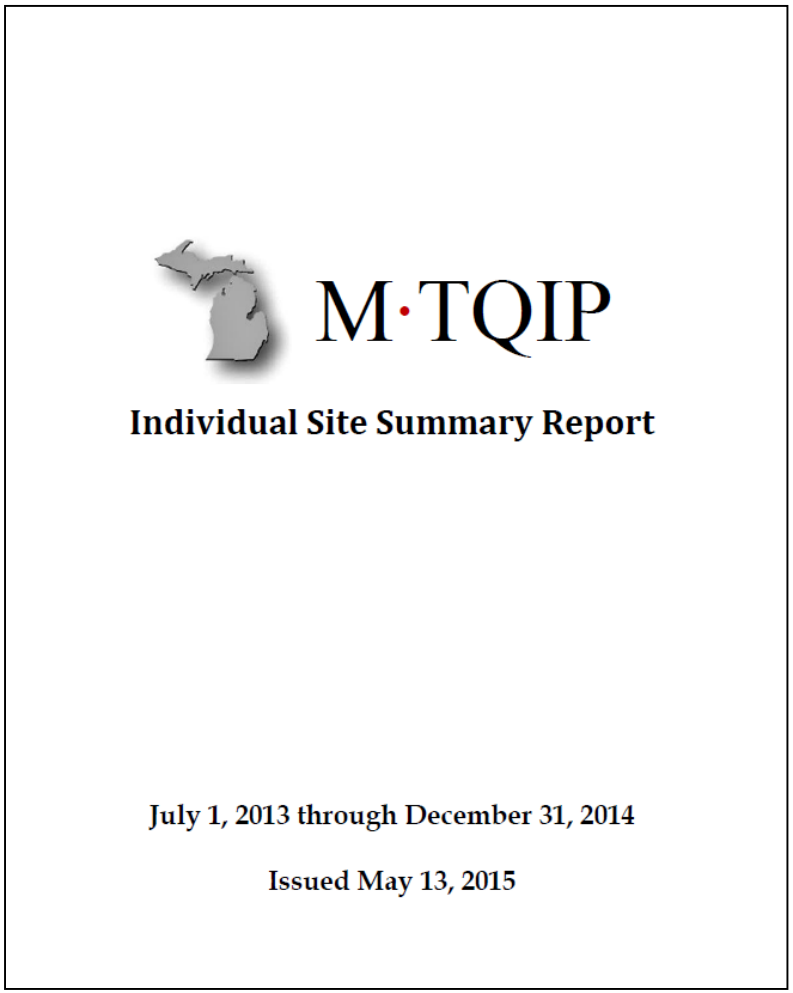
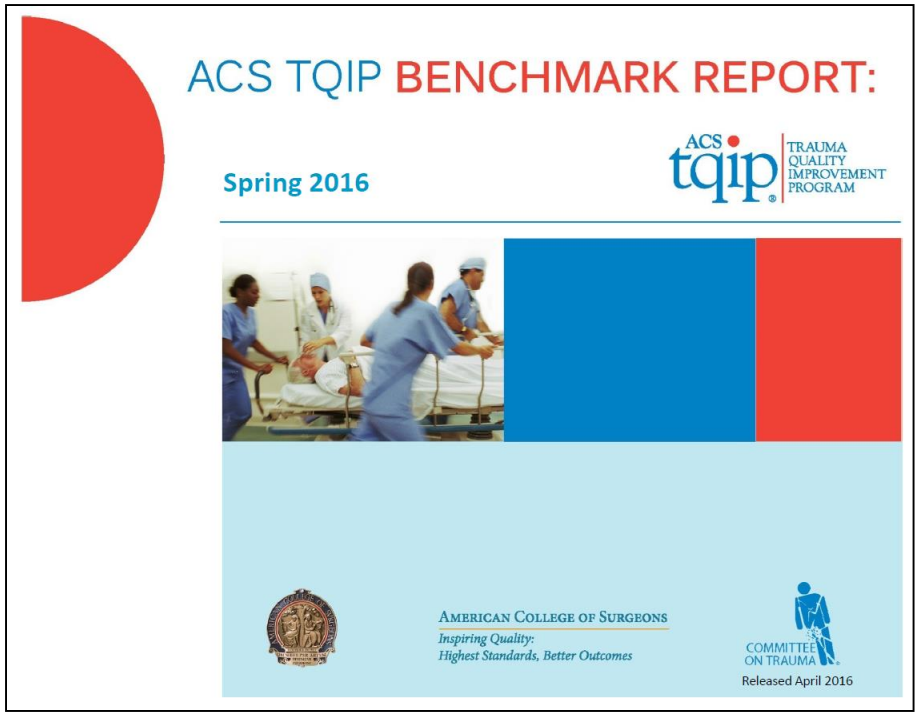
Reports





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Michigan Trauma Quality Improvement Program (MTQIP)
2016 Performance Index
January 1, 2016 to December 31, 2016

Measure	Weight	Measure Description			Points Earned	
#1	10	**Data Submission (No Points For Partial/Incomplete Submissions)**				PARTICIPATION (50%)
		On time and complete 3 of 3 times			10	
		On time and complete 2 of 3 times			5	
		On time and complete 1 of 3 times			0	
#2	20	**Meeting Participation-Surgeon**				
		Participated in 3 of 3 meetings			20	
		Participated in 2 of 3 meetings			10	
		Participated in 1 of 3 meetings			5	
		Participated in 0 of 3 meetings			0	
#3	10	**Meeting Participation-Clinical Reviewer or Trauma Program Manager**				
		Participated in 3 of 3 meetings			15	
		Participated in 2 of 3 meetings			10	
		Participated in 1 of 3 meetings			5	
		Participated in 0 of 3 meetings			0	
#4	10	**Meeting Participation-Trauma Registrars (All Registrars Attend-Preferred)**				
		At least one Registrar per program participated in the June Registrar meeting			5	
		Did not participate			0	
#5	10	**Data Accuracy**	**First Validation Visit Error Rate**	**Two or > Validation Visits Error Rate**		PERFORMANCE (50%)
		5 Star Validation	0-4.5%	0-4.5%	10	
		4 Star Validation	4.6-5.5%	4.6-5.5%	8	
		3 Star Validation	5.6-8.0%	5.6-7.0%	5	
		2 Star Validation	8.1-9.0%	7.1-8.0%	3	
		1 Star Validation	>9.0%	>8.0%	0	
#6	10	**Site Specific Quality Initiative Using MTQIP Data (Feb 2016-Feb 2017)**				
		Developed and implemented with evidence of improvement			10	
		Developed and implemented with no evidence of improvement			5	
		Not developed or implemented			0	
#7	10	**Mean Ratio of Packed Red Blood Cells (PRBC) to Fresh Frozen Plasma (FFP) in Patients Transfused ≥5 Units RBC In First 4 Hrs (18 Months Data)**				
		Tier 1: ≤ 1.5			10	
		Tier 2: 1.6-2.0			10	
		Tier 3: 2.1-2.5			5	
		Tier 4: >2.5			0	
#8	10	**Admitted Patients (Trauma Service-Cohort 2) With Initiation of Venous Thromboembolism (VTE) Prophylaxis <48 Hours After Arrival (18 Months Data)**				
		>50%			10	
		≥40%			5	
		<40%			0	
#9	10	**COLLABORATIVE WIDE INITIATIVE: Inferior Vena Cava Filter Use**				
		≤1.5			10	
		>1.5			0	
				Total (Max Points) =	100	

M·TQIP

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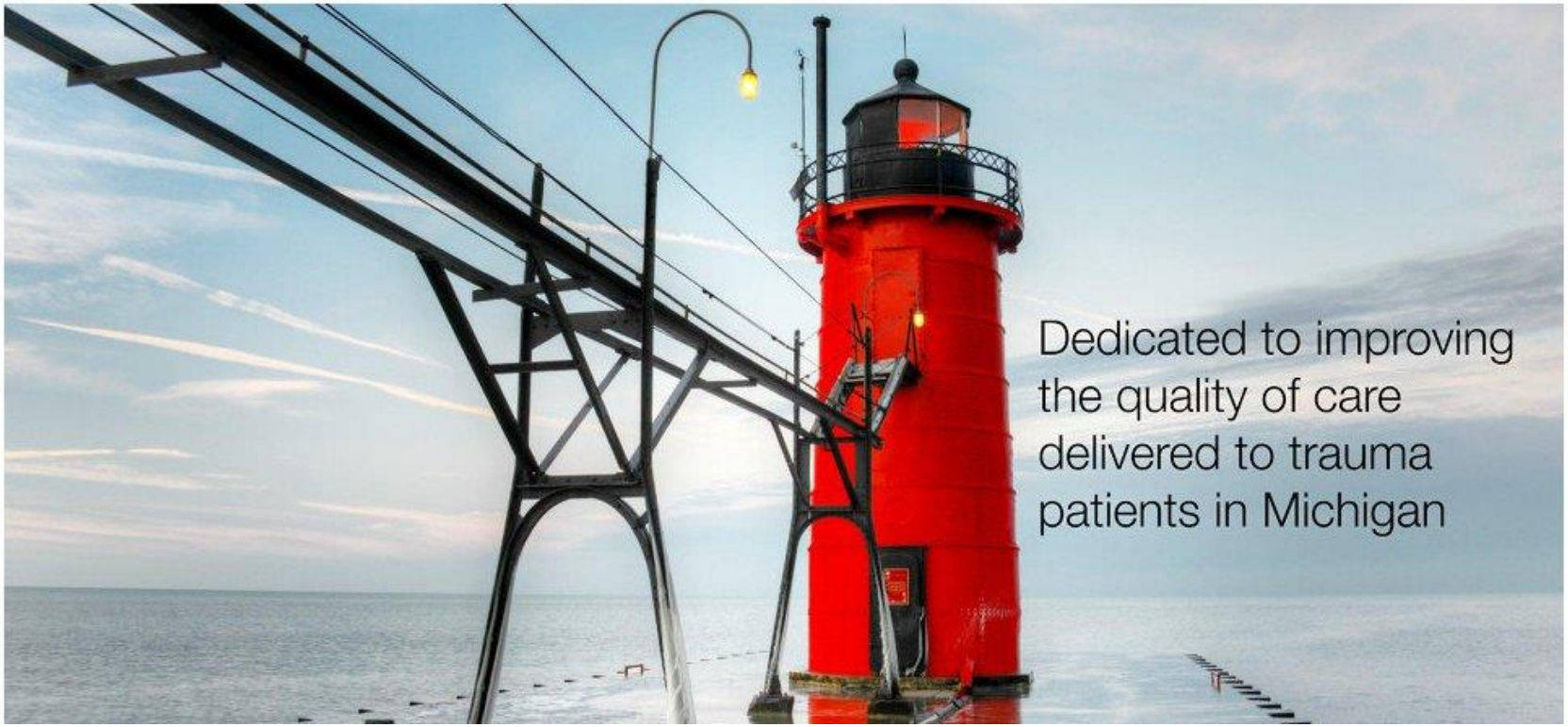

MTQIP Data

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FILTERS

HOSPITALS

University Of Michigan Health System

APPLY

COHORT

Cohort 1 (All)

DEAD

No Filter

NO SIGNS OF LIFE

Include DOAs

ISS

ALL

AGE

ALL

TRANSFERS OUT

Include Transfers Out

PERIOD GROUP

Default Periods

DEFAULT PERIODS

Program To Date

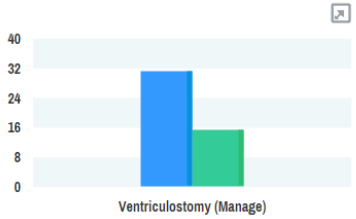
TRENDING INTERVAL

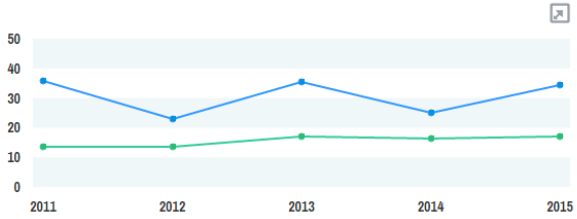
Annual

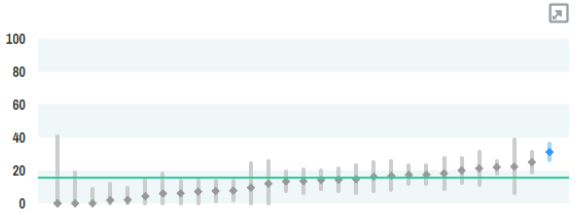
PEER GROUPS

MTQIP - All

LEGEND University Of Michigan Health System MTQIP - All Other Hospitals MTQIP - All 95% Confidence Interval







TBI Management	Cases Numerator	Cases Denominator	University Of Michigan Health System - Unadj	University Of Michigan Health System - Adj	MTQIP - All - Unadj	MTQIP - All - Adj	P Value (unadj)	P Value
TBI Patients	218	218	218	NA	93	NA	<0.001	NA
Dead (with TBI)	77	218	35.3	38.8	44.8	44.8	0.0032	0.018
Alive w/o Intervention	81	218	37.2	NA	29.7	NA	0.011	NA
Alive with Intervention	60	218	27.5	NA	25.5	NA	0.48	NA
Dead w/o Intervention	47	218	21.6	NA	28.3	NA	0.021	NA
Dead with Intervention	30	218	13.8	NA	16.5	NA	0.25	NA
Dead and Intervention Withheld	7	218	3.21	NA	10.2	NA	<0.001	NA
Any Intervention (Manage)	90	218	41.3	NA	42	NA	0.82	NA
Brain Operation (Manage)	43	218	19.7	NA	23.1	NA	0.21	NA
Any Monitor (Manage)	79	218	36.2	NA	31.6	NA	0.13	NA
Ventriculostomy (Manage)	68	218	31.2	NA	15.4	NA	<0.001	NA
IPPM (Manage)	39	218	17.9	NA	24.9	NA	0.013	NA

Results

- VTE
  - ↓ 35%
  - ↑ LMWH, ↑ Timeliness
- IVC Filters
  - 3.3% → 1.4%
- Serious Complications
  - 12.2% → 9.2%
- It is not about Mortality

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Results and Return on Investment

AAST 2014 PLENARY PAPER

Regional collaborative quality improvement for trauma reduces complications and costs

Mark R. Hemmila, MD, Anne H. Cain-Nielsen, MS, Wendy L. Wahl, MD, Wayne E. Vander Kolk, MD, Jill L. Jakubus, PA-C, Judy N. Mikhail, MSN, MBA, *and* **Nancy J. Birkmeyer, PhD,** *Ann Arbor, Michigan*

BACKGROUND: Although evidence suggests that quality improvement to reduce complications for trauma patients should decrease costs, studies have not addressed this question directly. In Michigan, trauma centers and a private payer have created a regional collaborative quality initiative (CQI). This CQI program began as a pilot in 2008 and expanded to a formal statewide program in 2010. We examined the relationship between outcomes and expenditures for trauma patients treated in collaborative participant and nonparticipant hospitals.

METHODS: Payer claims and collaborative registry data were analyzed for 30-day episode payments and serious complications in patients admitted with trauma diagnoses. Patients were categorized as treated in hospitals that had different CQI status: (1) never participated (Never-CQI); (2) collaborative participant, but patient treated before CQI initiation (Pre-CQI); or (3) active collaborative participant (Post-CQI). DRG International Classification of Diseases—9th Rev. codes were crosswalked to Abbreviated Injury Scale (AIS) 2005 codes. Episode payment data were risk adjusted (age, sex, comorbidities, type/severity of injury, and year of treatment), and price was standardized. Outcome data were risk adjusted. A serious complication consisted of one or more of the following occurrences: acute lung injury/adult respiratory distress syndrome, acute kidney injury, cardiac arrest with cardiopulmonary resuscitation, decubitus ulcer, deep vein thrombosis, enterocutaneous fistula, extremity compartment syndrome, mortality, myocardial infarction, pneumonia, pulmonary embolism, severe sepsis, stroke/cerebral vascular accident, unplanned intubation, or unplanned return to operating room.

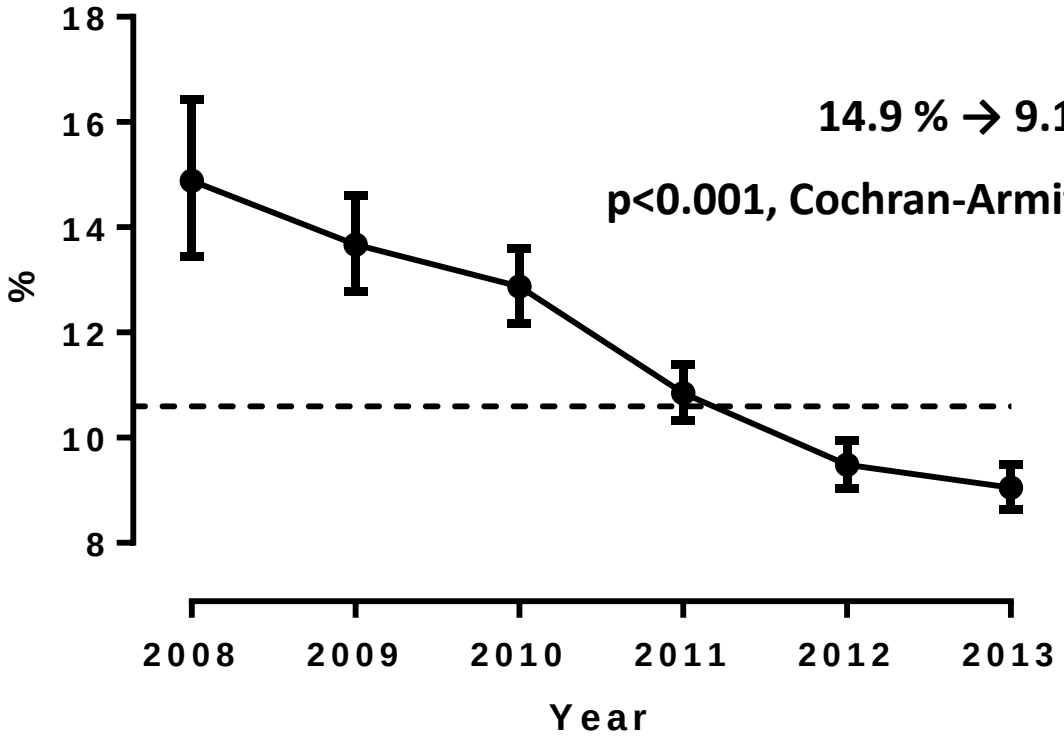
RESULTS: The risk-adjusted rate of serious complications declined from 14.9% to 9.1% ($p < 0.001$) in participating hospitals (Post-CQI, n = 26). Average episode payments decreased by $2,720 (from $36,043 to $33,323, $p = 0.08$) among patients treated in Post-CQI centers, whereas patients treated at Never-CQI institutions had a significant year-to-year increase in payments (from $23,547 to $28,446, $p < 0.001$). A savings of $6.5 million in total episode payments from 2010 to 2011 was achieved for payer-covered Post-CQI treated patients.

CONCLUSION: This study confirms our hypothesis that participation in a regional CQI program improves outcomes and reduces costs for trauma patients. Support of a regional CQI for trauma represents an effective investment to achieve health care value. (*J Trauma Acute Care Surg*. 2015;78: 78–87.

LEVEL OF EVIDENCE: Economic/value-based evaluation, level III.

KEY WORDS: Trauma outcomes; quality improvement; complications; costs.

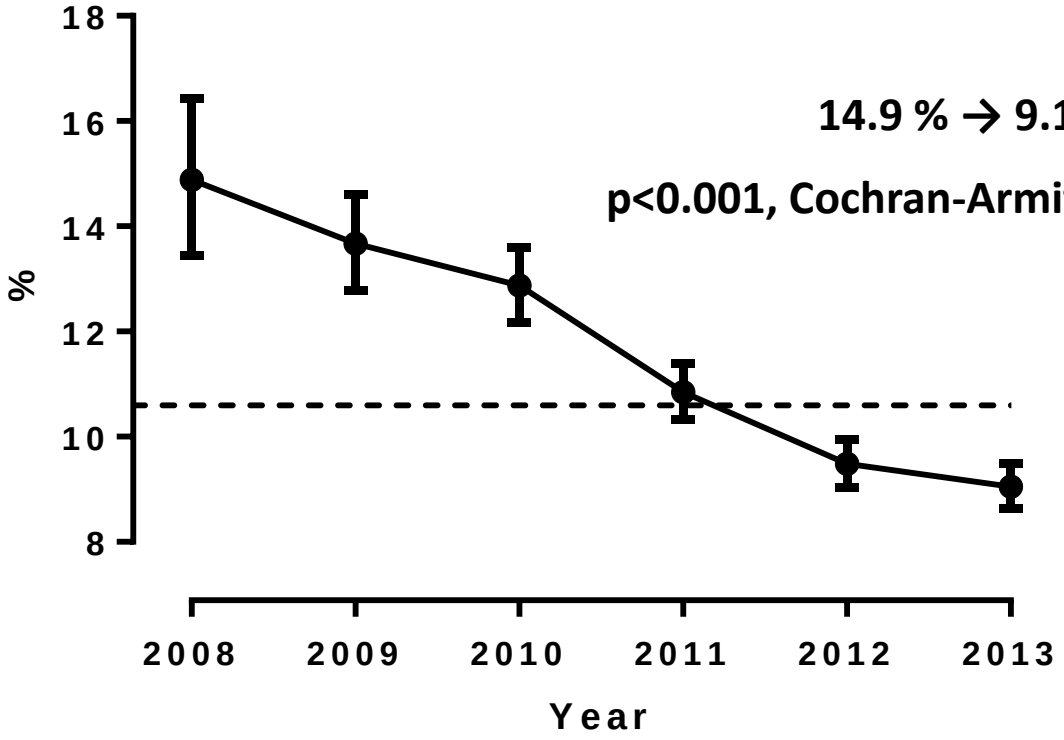
Serious Complication Rate (Adjusted)



	2008	2009	2010	2011	2012	2013
Trauma Centers, N	7	14	22	23	26	26

M·TQIP

Serious Complication Rate (Adjusted)



14.9 % → 9.1%

p<0.001, Cochran-Armitage Trend Test

Mortality 5.2 % → 4.2 %

p<0.001, Cochran-Armitage Trend Test

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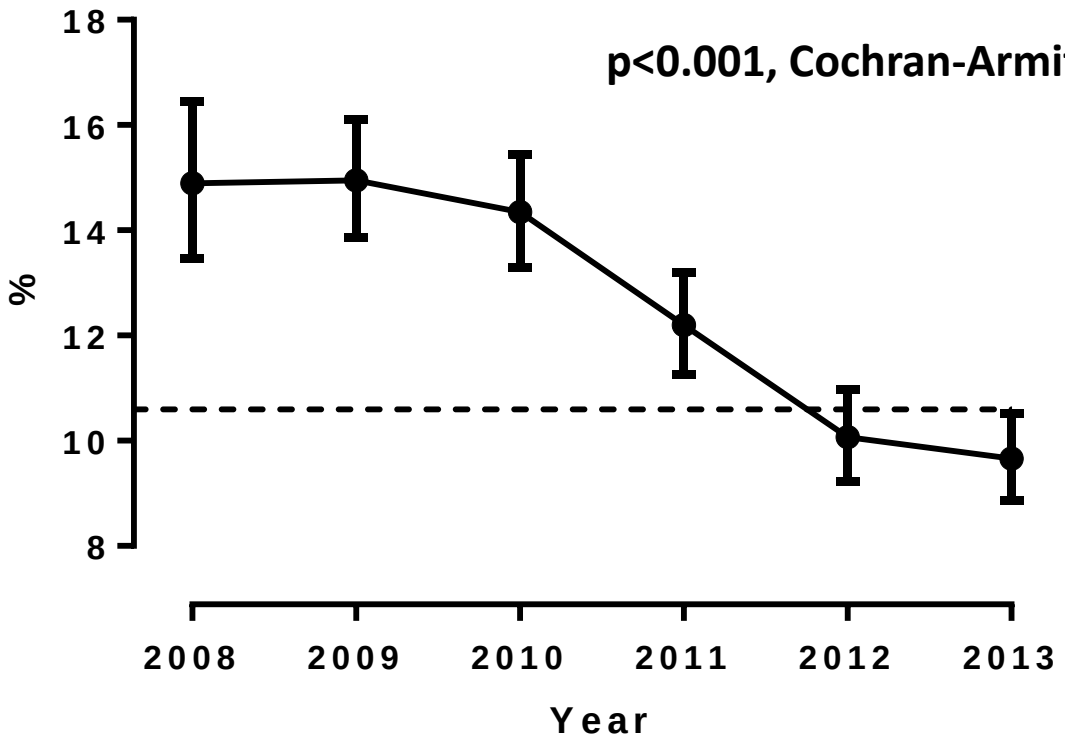
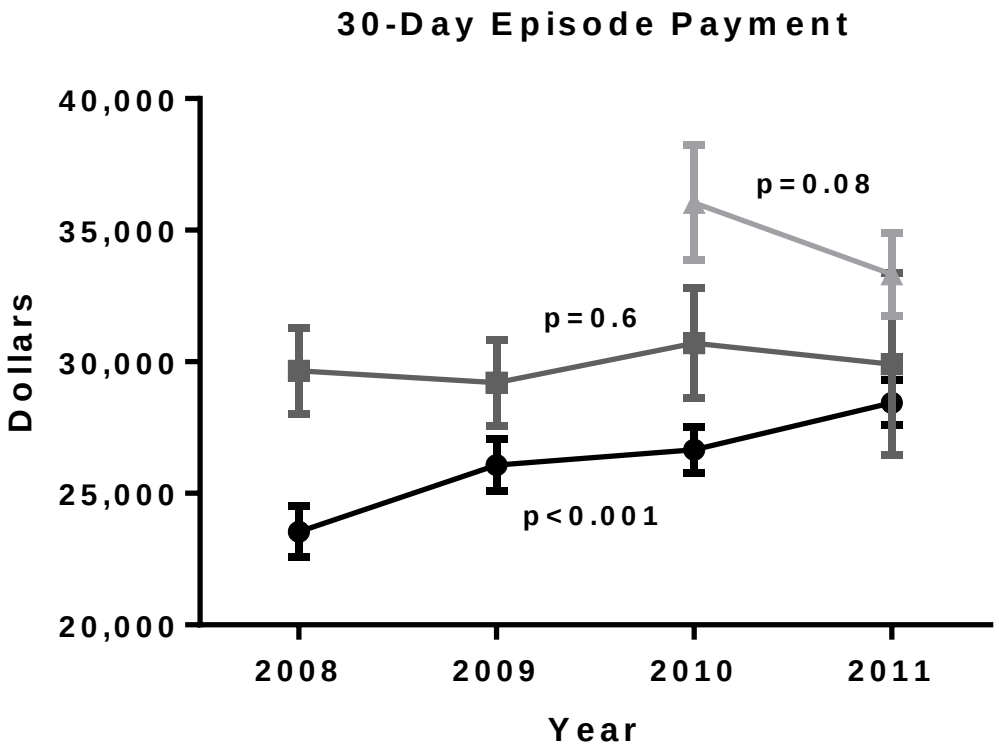
Serious Complication Rate (Adjusted)
Original Centers



	2008	2009	2010	2011	2012	2013
Trauma Centers, N	7	7	7	7	7	7

M·TQIP



Never - CQI

$23,500 → $28,400

+ $4,900

Post - CQI

$36,000 → $33,300

- $2,700

Cohort	2008	2009	2010	2011
Never CQI, N	6,639	6,226	7,567	8,241
Pre - CQI, N	2,247	2,280	1,381	526
Post - CQI, N	0	0	1,246	2,384
Total, N	8,886	8,506	10,194	11,151

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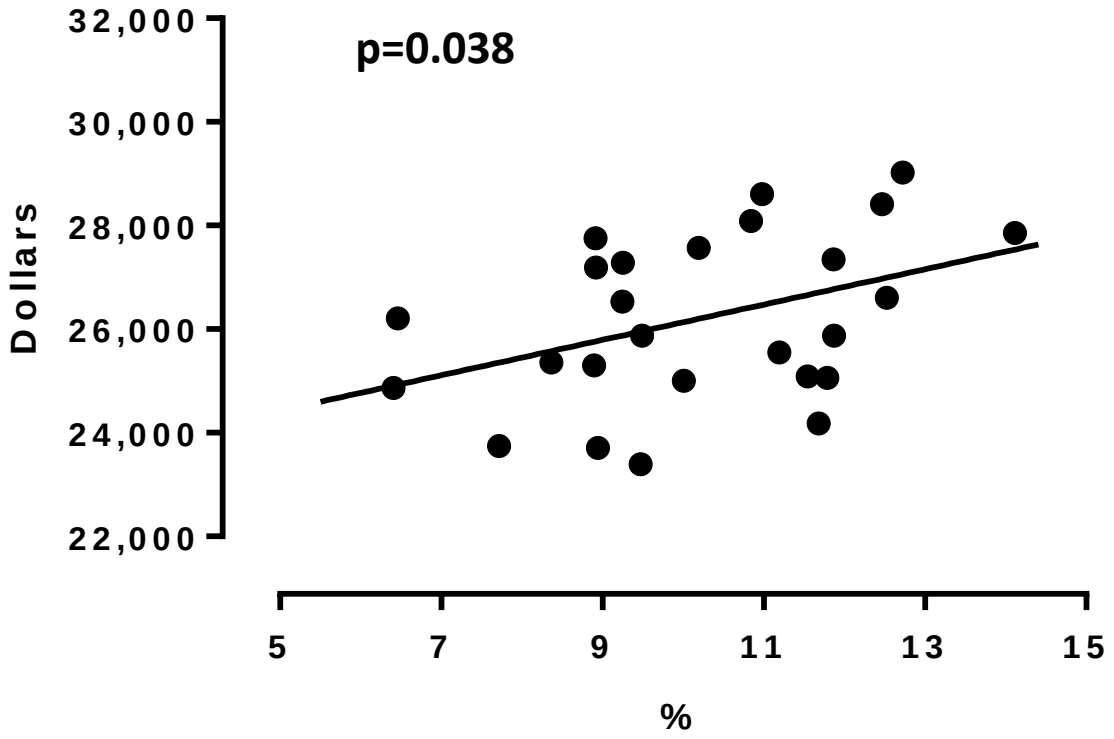
Serious Complication Rate vs. Payment



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Summary

- Serious Complications
  - 40% reduction
- Episode payments
  - Increased for Never-CQI patients (control)
  - Declined for Post-CQI patients
- Cost Savings to BCBSM
  - $6.5 million from 2010 to 2011
- Limitations
  - Unable to link payer claims to MTQIP outcomes (PHI)
  - Small proportion of total trauma patient population
    - BCBSM 12%
    - Different demographics (older and more female)
  - Limited risk-adjustment for episode payments

M·TQIP

Cases

- Patient #1
  - Unplanned admission to ICU
  - Unplanned intubation
- Patient #2
  - Unplanned admission to ICU
  - Deep surgical site infection
- Patient #3
  - Unplanned intubation
  - CPR

Cases

- Patient #1
  - ~~Unplanned admission to ICU~~
  - Unplanned intubation
- Patient #2
  - ~~Unplanned admission to ICU~~
  - Deep surgical site infection
- Patient #3
  - Unplanned intubation
  - ~~CPR~~

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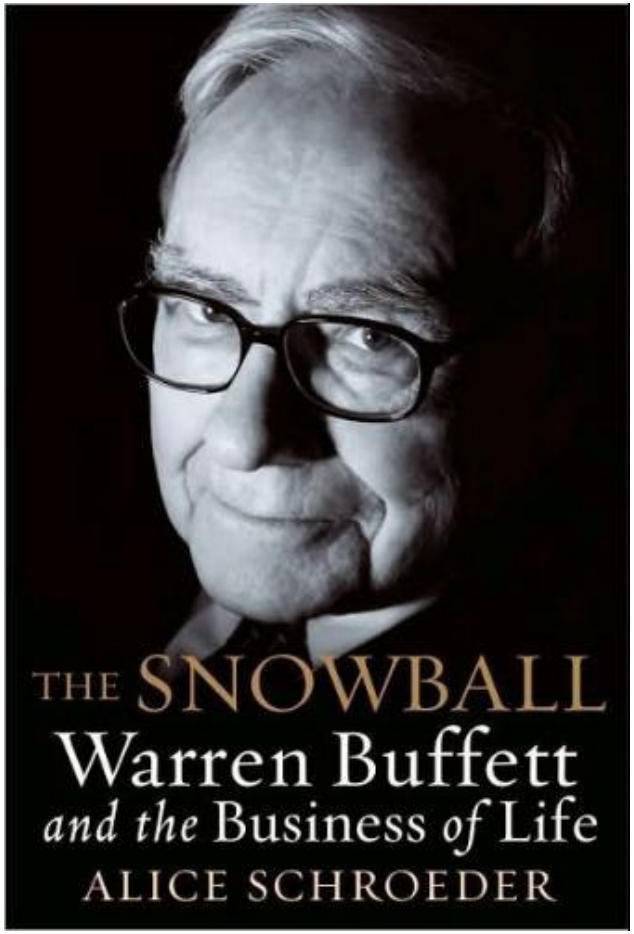
Information

- Warren Buffet
  - “Life is like a snowball. The important thing is finding wet snow and a really long hill.”
- Data is costly
  - Time = Money
- Right information
- Lot’s of potential energy



“It is not the strongest of the species that survives, nor the most intelligent, but rather the one most responsive to change.”

Charles Darwin

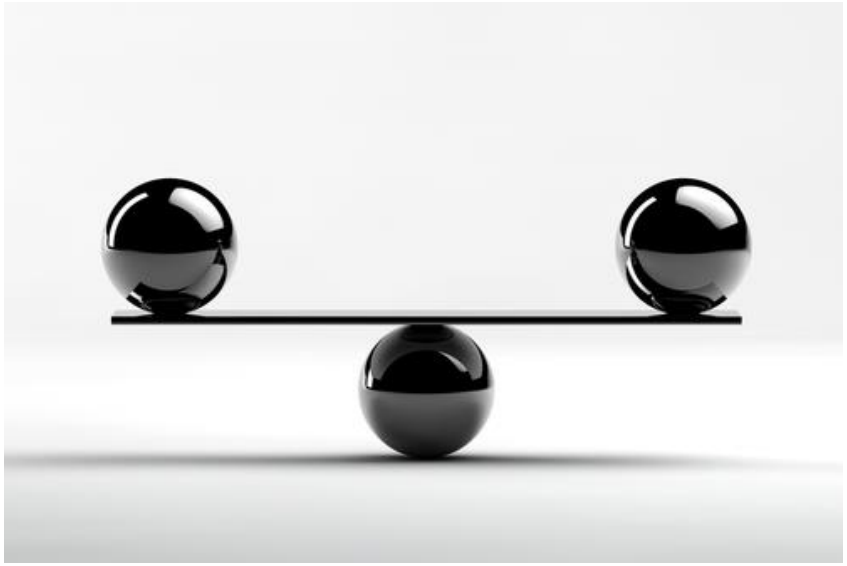

Kodak


MONTGOMERY
WARD


amazon.com


M·TQIP

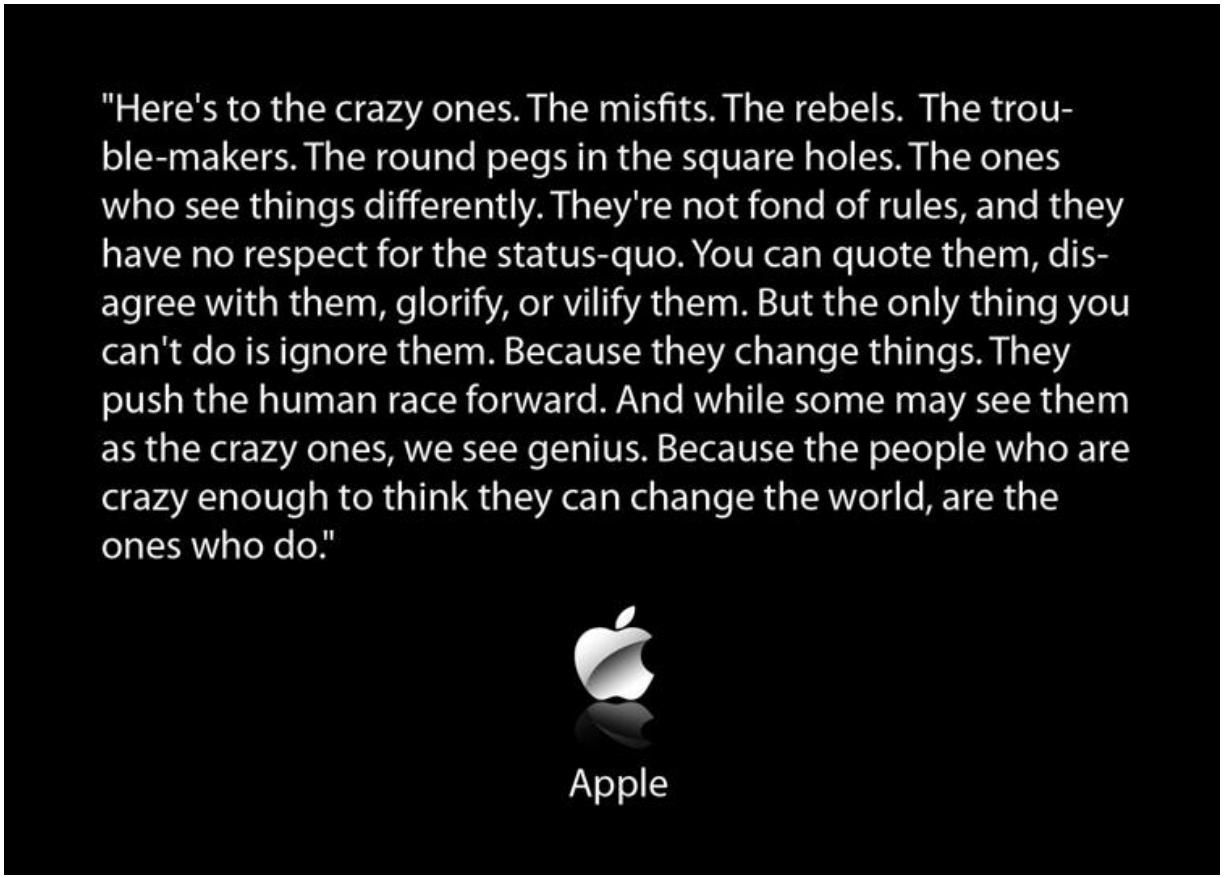
Quality Dilemmas



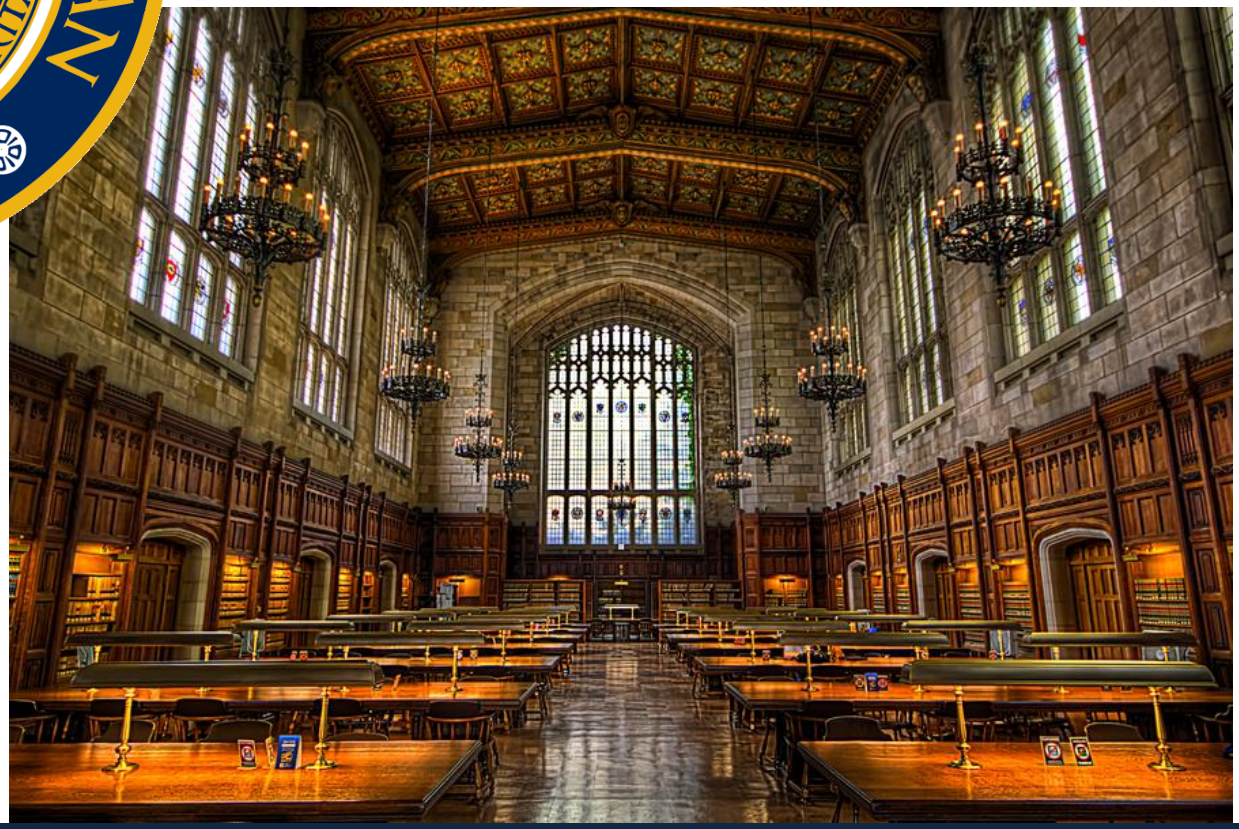
Standardization **Innovation**

M·TQIP

Think Different



M·TQIP



Trauma Registry Report

Camry Hess, *Database Analyst*

Ramzi Nimry, *Trauma System Performance Improvement Manager*

Indiana State Department of Health

Email questions to: **indianatrauma@isdh.in.gov**

Hospital Discharge Orders Written Date/Time

- New element as of admission on 1/1/2016
- What questions would you like answered concerning this element?
  - Percent complete/missing
  - Time between this element and another element

Email questions to: **indianatrauma@isdh.in.gov**

Summary of Hospitals Reporting Status- Q4 2015

New to Reporting / Started Reporting Again

- Community Westview Hospital
- Dupont Hospital
- Franciscan Health Rensselaer
- Gibson General Hospital
- St. Mary Medical Center (Hobart)
- St. Vincent Mercy
- Valparaiso Medical Center

Dropped off

- Decatur County Memorial Hospital
- Hancock Regional Hospital
- Hendricks Regional Health
- Major Hospital
- Rush Memorial Hospital
- Scott County Memorial Hospital
- St. Vincent Clay Hospital
- St. Vincent Frankfort Hospital

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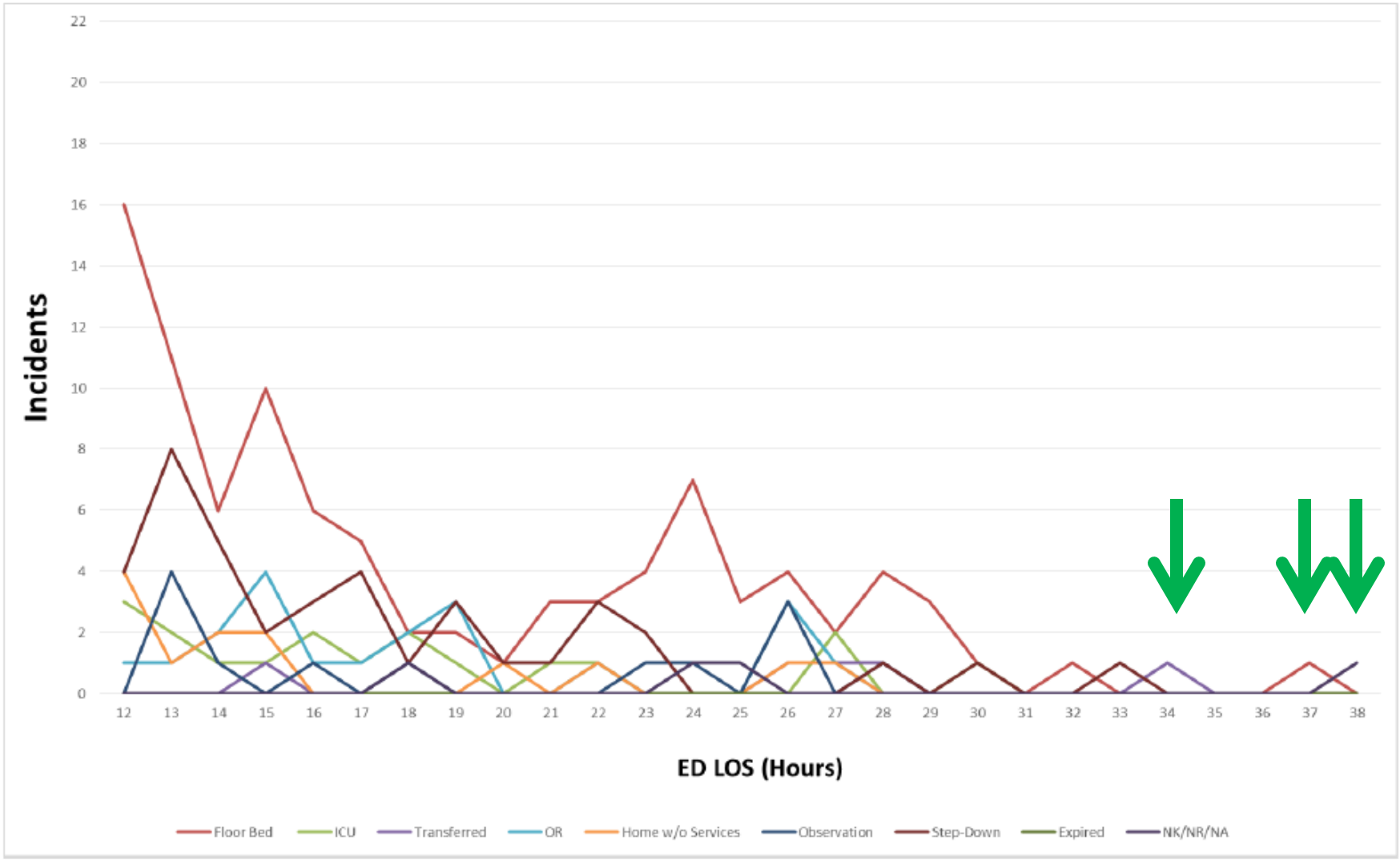
Quarter 4 2015 Statewide Report

- 8,728 incidents
- October 1, 2015 – December 31, 2015
- 96 total hospitals reporting
  - 9 Level I and II Trauma Centers
  - 7 Level III Trauma Centers
  - 80 Non-Trauma Hospitals

Indiana State Department of Health

Email questions to: **indianatrauma@isdh.in.gov**

ED LOS > 12 Hours - Page 3



N=197

*No cases expired

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ED LOS > 12 Hours - Page 4

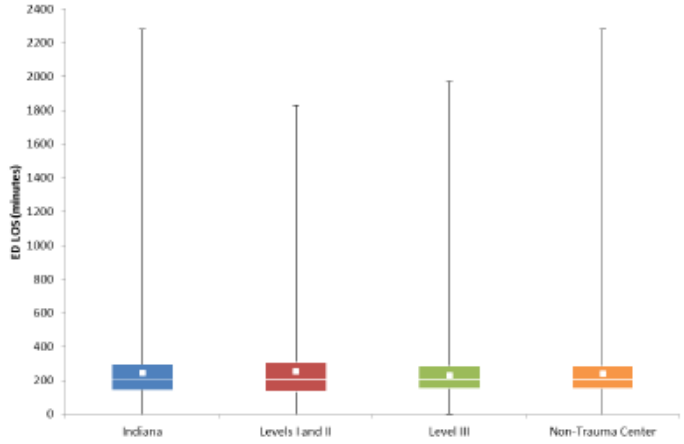
ED LOS > 12 Hours, N=197

Facilities	133 Level I and II 6 Level III 58 Non-trauma Centers	**ISS**	98 (1-8 cat); 70 (9-15 cat); 18 (16-24); 7 (25-44); 4 (No ISS)
Average Distance from Scene to Facility	20.8 Miles	**GCS Motor**	1 (1 cat); 1 (4 cat); 5 (5 cat); 155 (6 cat); 35 (unknown)
Transport Type	141 Ambulance; 7 Helicopter, 41 Private Vehicle/Walk-In; 8 Unknown	**RTS—Systolic**	4 (3-4)
Trauma Type	142 Blunt; 12 Penetrating; 1 Burn; 10 Other; 32 Unknown	**RTS—GCS Scale**	3.9 (0-4)
Cause of Injury	62 Fall; 50 MVC; 17 Struck; 5 Firearm; 14 Transport; 7 Cut/Pierce; 1 Bicyclist; 1 Burn; 2 Bite/Sting; 1 Bicyclist; 38 Unknown	**RTS—Resp. Scale**	3 (3-4)
Signs of Life	177 Yes; 1 No; 19 Unknown	**RTS**	7.5 (3—7.8)
Age	55.1 Years (0.5-93 Years)	**B Value**	3.97 (0.4-5.6)
Gender	79 Female; 118 Male	**Ps**	0.97 (0.6—1)
Interfacility Transfer	43 Yes; 154 No	**Resp. Assistance**	1 Yes; 55 No; 141 Unknown
Region	35 North; 112 Central; 27 South; 23 Unknown	**ED LOS**	17.9 (12-34)
		ED Disposition	1 AMA; 87 Floor; 1 Home w/ Services; 13 Home w/o Services; 16 ICU; 3 NA; 13 Observation; 19 OR; 38 Telemetry; 5 Transferred; 1 Unknown

-Region was created from injury zip code. Missing = no injury zip or injury zip from out of state.
-Numbers represent counts per category or mean with minimum and maximum in parentheses.
-No signs of life is defined as having none of the following: organized EKG activity, papillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress (2015 Trauma Registry Data Dictionary, page 185).

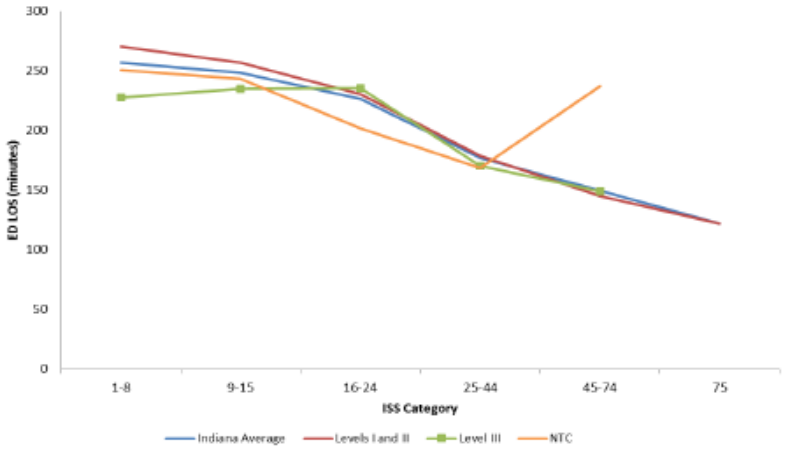
ED Length of Stay: Bar & Whisker - Page 5

ED LOS (Minutes) - All Patients



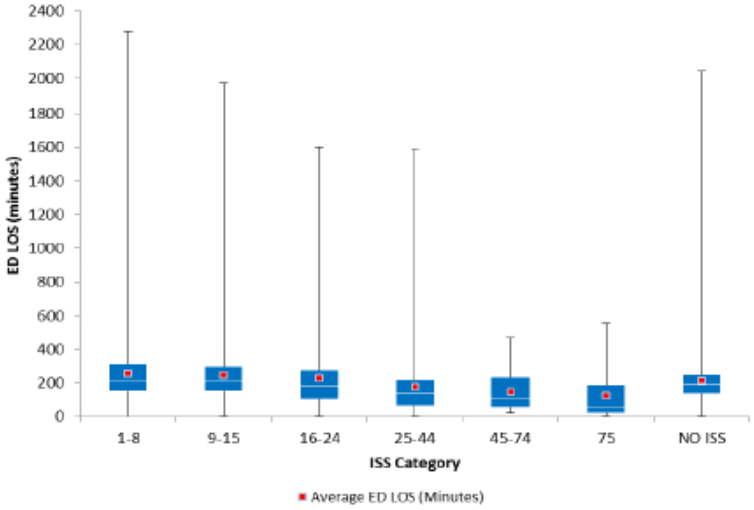
A table with all the values for ED LOS is found on page 56.

ED LOS (Minutes) by ISS



Note for EDLOS by ISS, there were 11 cases with ISS of 75; none were at non-trauma centers.

ED LOS (Minutes) by ISS



A table with values for ED LOS by ISS may be found on page 57.

ED Disposition Expired - Page 8

ED Disposition = Expired for Ps ≥ 50%, N=7

Facilities	1 Non-Trauma Centers 6 Trauma Centers	**ISS**	4 (1-8 cat.); 1 (9-15 cat.); 2 (25-44)
Average Distance from Scene to Facility*	14.5 Miles	**GCS Motor**	4 (1 cat); 1 (5 cat); 1 (6 cat); 1 Unknown
Transport Type	6 Ambulance; 1 Helicopter	**RTS—Systolic**	3.7 (2-4)
Trauma Type	6 Blunt; 1 Penetrating	**RTS—GCS Scale**	2 (0-4)
Cause of Injury	2 Fall; 3 MVC; 1 Firearm; 1 Transport	**RTS—Resp. Scale**	2.4 (0-4)
Signs of Life	3 Yes; 4 No	**RTS**	4.5 (2.3-7.8)
Age	35.4 Years (10—73 Years)	**B Value**	2 (1-3.8)
Gender	2 Female; 5 Male	**Ps**	0.9 (0.7—0.98)
Interfacility Transfer	1 Yes; 6 No	**Resp. Assistance**	1 Yes; 1 No; 5 Unknown
Region	4 North; 1 Central; 1 Unknown	**ED LOS**	1.41 hours (0.2-2.2 hours)

-Region was created from injury zip code. Missing = no injury zip or injury zip from out of state.
-Numbers represent counts per category or mean with minimum and maximum in parentheses.
-No signs of life is defined as having none of the following: organized EKG activity, papillary responses, spontaneous respiratory attempts or movement, and unassisted blood pressure. This usually implies the patient was brought to the ED with CPR in progress (2015 Trauma Registry Data Dictionary, page 185).

Trauma Centers - Page 9

ED Dispo ≠ Expired, Hospital Dispo = Expired for Ps ≥ 50%, N=79, Trauma Centers

Interfacility Transfer	27 Yes		Interfacility Transfer	52 No
Average Distance from Scene to Facility	38.8 Miles		Average Distance from Scene to Facility	19.1 Miles
Transport Type	16 Ambulance; 7 Helicopter; 4 Unknown		Transport Type	33 Ambulance; 11 Helicopter; 1 Private; 7 Unknown
Trauma Type	26 Blunt; 1 Penetrating		Trauma Type	48 Blunt; 4 Penetrating
Cause of Injury	23 Fall; 2 MVC; 1 Cut/Pierce; 1 Transport		Cause of Injury	26 Fall; 19 MVC; 1 Struck; 4 Firearm; 2 Transport
Signs of Life	17 Yes; 10 Unknown		Signs of Life	37 Yes; 15 Unknown
Age	70.2 Years (1-95 Years)		Age	64.6 Years (9-102 Years)
Gender	13 Female; 14 Male		Gender	21 Female; 31 Male
Region	6 North; 14 Central; 4 South; 3 NK		Region	10 North; 26 Central; 9 South; 7 NK
ISS	4 (1-8); 12 (9-15); 2 16-24); 9 (25-44)		ISS	3 (1-8); 17 (9-15); 11 (16-24); 20 (25-44); 1 (45-74)
GCS Motor	7 (1 cat); 1 (2 cat); 2 (4 cat); 1 (5 cat); 17 (6 cat); 1 (unknown)		GCS Motor	6 (1 cat); 2 (3 cat); 5 (4 cat); 5 (5 cat); 34 (6 cat)
RTS—Systolic	4 (3-4)		RTS—Systolic	3.8 (2-4)
RTS—GCS Scale	3.4 (0-4)		RTS—GCS Scale	3.2 (0-4)
RTS—Resp. Scale	3.1 (3-4)		RTS—Resp. Scale	3 (2-4)
RTS	7 (3.8-7.8)		RTS	6.7 (3.8-7.6)
Ps	0.8 (0.6– .995)		Ps	0.8 (0.5– .995)
Resp. Assistance*	2 Yes; 12 No; 13 Unknown		Resp. Assistance	8 Yes; 24 No; 20 Unknown
ED LOS	3.1 Hours (0.1—7.5 Hours)		ED LOS	3.5 Hours (0.2—21.4 Hours)

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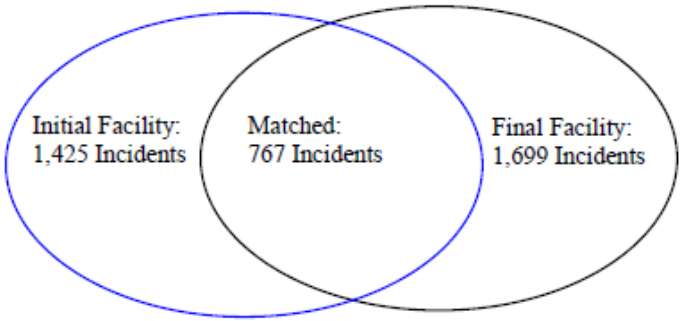
Non-Trauma Centers - Page 10

ED Dispo ≠ Expired, Hospital Dispo = Expired for Ps ≥ 50%, N=19, Non-trauma Centers

Interfacility Transfer	1 Yes		Interfacility Transfer	18 No
Average Distance from Scene to Facility	24.4 Miles		Average Distance from Scene to Facility	8.2 Miles
Transport Type	1 Not Known		Transport Type	14 Ambulance; 1 Private; 3 Unknown
Trauma Type	1 Blunt		Trauma Type	18 Blunt
Cause of Injury	1 Fall		Cause of Injury	18 Fall
Signs of Life	1 Yes;		Signs of Life	17 Yes; 1 Unknown
Age	69 Years		Age	79 (49-100 Years)
Gender			Gender	10 Female; 8 Male
Region			Region	5 North; 9 Central; 1 South; 3 Unknown
ISS	1 (9-15)		ISS	3 (1-8); 11 (9-15); 1 (16-24); 2 (25-44); 1 Unknown
GCS Motor	1 (6 cat)		GCS Motor	2 (1 cat); 1 (3 cat); 2 (4 cat); 1 (5 cat); 9 (6 cat); 3 Unknown
RTS—Systolic	4		RTS—Systolic	3.9 (3-4)
RTS—GCS Scale	4		RTS—GCS Scale	3.5 (0-4)
RTS—Resp. Scale	3		RTS—Resp. Scale	3 (3)
RTS	7.6		RTS	7 (3.8-7.6)
Ps	0.96		Ps	0.9 (0.5-0.98)
Resp. Assistance	1 No		Resp. Assistance	8 No; 10 Unknown
ED LOS	1 Unknown		ED LOS	3.2 (0.6-6.6)

Linking - Page 11

For Quarter 4, 2015, of the 8,728 incidents reported to the Indiana Trauma Registry, 1,425 cases that had an ED Disposition of "Transferred to another acute care facility" at the initial facility or that had the Inter-Facility Transfer equal to "Yes" at the Trauma Center. Of those transferred, 767 cases were probabilistically matched. The linked cases make up 25% of the Q4 2015 data. All public health preparedness districts are represented. The diagram below illustrates the overlap between the transfers reported from the initial facility and from the final facility that can be matched.



The initial facility in which transfers come from may be considered Critical Access Hospitals (CAHs). All Indiana CAHs are considered Rural, and must meet additional requirements to have a CAH designation, such as having no more than 25 inpatient beds and being located in a rural area. Facilities that are highlighted indicate that these facilities reported data for Quarter 4, 2015.

Within this transfer data section, the purple columns represent the transfer cases and the single percentages represent the percent for the transfer cases. For two demographic variables, patient age groupings and gender, the Indiana average is included to provide more insight to this transfer population.

Indiana Critical Access Hospitals (CAHs)

Adams Memorial Hospital	Perry County Memorial Hospital
Cameron Memorial Community Hospital Inc	Pulaski Memorial Hospital
Community Hospital of Bremen Inc	Putnam County Hospital
Decatur County Memorial Hospital	Rush Memorial Hospital
Dukes Memorial Hospital	Scott Memorial Hospital
Gibson General Hospital	St Vincent Frankfort Hospital Inc
Greene County General Hospital	St Vincent Jennings Hospital Inc
Harrison County Hospital	St Vincent Mercy Hospital
IU Health Bedford Hospital	St Vincent Randolph Hospital Inc
IU Health Blackford Hospital	St Vincent Salem Hospital Inc
IU Health Paoli Hospital	St. Mary's Warrick Hospital Inc
IU Health Tipton Hospital	St. Vincent Clay Hospital Inc
IU Health White Memorial Hospital	St. Vincent Dunn Hospital Inc
Jasper County Hospital	St. Vincent Williamsport Hospital, Inc.
Jay County Hospital	Sullivan County Community Hospital
Margaret Mary Community Hospital Inc	Union Hospital Clinton
Parkview LaGrange Hospital	Woodlawn Hospital
Parkview Wabash Hospital	

Rural Hospitals

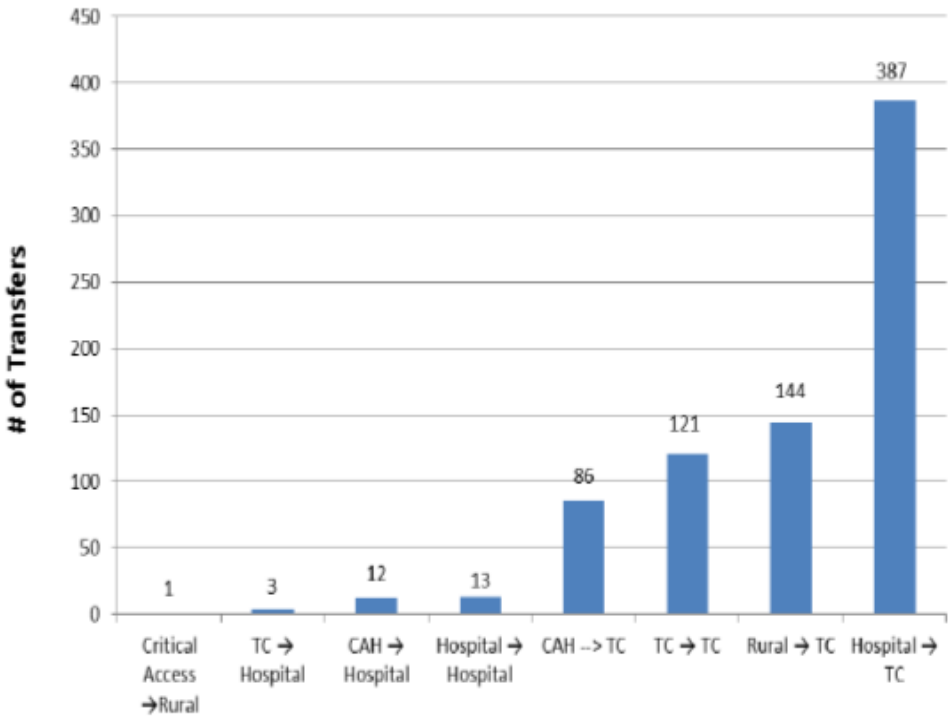
Columbus Regional Hospital	Kosciusko Community Hospital
Daviess Community Hospital	Major Hospital
Fayette Regional Health System	Marion General Hospital
Franciscan St Anthony Health - Michigan City	Memorial Hospital
Franciscan St Elizabeth Health - Crawfordsville	Memorial Hospital and Health Care Center
Good Samaritan Hospital	Parkview Noble Hospital
Henry County Memorial Hospital	Reid Hospital & Health Care Services
Indiana University Health La Porte Hospital	Saint Joseph RMC - Plymouth
Indiana University Health Starke Hospital	Schneck Medical Center
King's Daughters' Health	

Transfer Patient: Facility Type - Page 13

Facility to Facility Transfers

For Transfer Patients:		
Initial Hospital Type	**Final Hospital Type**	**Incident Counts**
Critical Access Hospital	Rural Hospital	1
Trauma Center	Hospital	3
Critical Access Hospital	Hospital	12
Hospital	Hospital	13
Critical Access Hospital	Trauma Center	86
Trauma Center	Trauma Center	121
Rural Hospital	Trauma Center	144
Hospital	Trauma Center	387

Facility Transfer Type



Rural = Rural Hospital; TC = ACS Verified or In Process Trauma Center;

CAH = Critical Access Hospital; Hospital = does not fall into above categories

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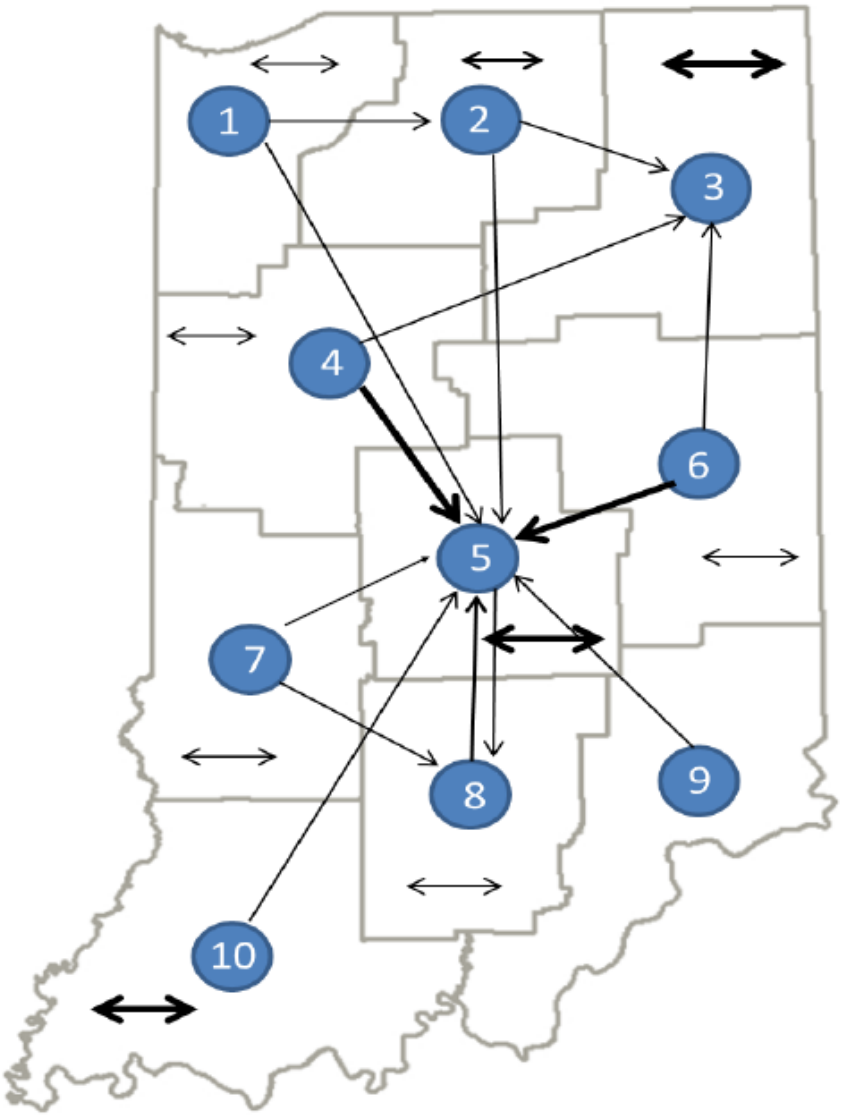
Transfer Patient Data - Page 15



For Transfer Patients:		
Public Health Preparedness District Initial Hospital	Public Health Preparedness District Final Hospital	Incident Counts
1	1	4
1	2	10
1	5	12
2	2	24
2	3	14
2	5	8
3	3	166
3	5	1
4	3	4
4	4	11
4	5	66
5	5	143
5	8	1
6	3	8
6	5	91
6	6	5
7	5	42
7	7	5
8	5	33
8	8	8
9	5	3
10	5	16
10	10	92

*The thickness of the line indicates the frequency of transfers out of or within the public health preparedness district The circles represent transfers from a specific PHPD, not of a specific hospital or county.

Transfer Patient Data - Page 16

For Linked Transfer

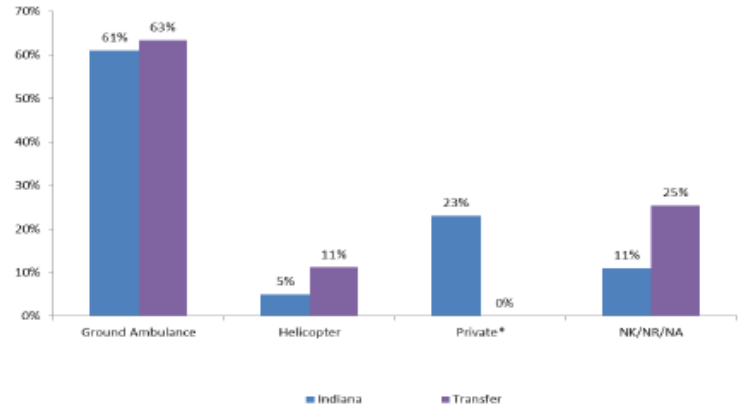
For Transfer Patients:	All Transfer Patients	*Critical**	*Physiological Critical***	*ISS Critical****	*Ps <0.5*****
Number of Patients	767	403	368	70	1
Total Time	4 hours 52.9 minutes	4 hours 45.5 minutes	4 hours 47.8 minutes	4 hours 17.2 minutes	5 hours 23 minutes
Total Mileage	50.3	53.1	53.1	53.9	103.6
Injury Scene to Initial Hospital Mileage***	8.1	8.4	8.5	8.4	43.9
Initial Facility to Final Facility Mileage	42.2	44.7	44.6	45.4	59.8

Estimated Average Distance (miles) by Region (region of final hospital):					
Region	Injury Scene to Initial Facility Mileage†	Initial Facility to Final Facility Mileage	Total Mileage	Drive Count	Air Count
Indiana Average	8.1	42.2	50.3	671	96
North Region	6.5	29.5	36.0	212	14
Central Region	8.4	51.6	60.0	372	65
South Region	10.9	30.2	41.1	84	17

*Critical patient is defined as having a GCS ≤ 12, OR Shock Index > 0.9 OR ISS >15 at the initial hospital.
**Physiological Critical Transfer patient is defined as having a Shock Index > 0.9 OR GCS ≤ 12 at the initial hospital.
*** ISS Critical Transfer patient is defined as ISS > 15 at the initial hospital.
****Probability of Survival < 0.5
†Injury Scene to Initial Facility Mileage location estimated by zip code centroid
Statistics for Estimated Average Distance by Region calculated by Public Health Geographics, Epidemiology Resource Center, ISDH

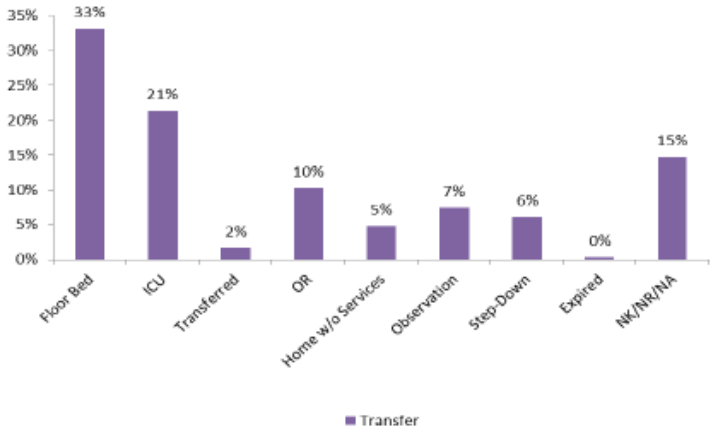
Transfer Patient Population - Page 18

Transport Mode– Final Hospital



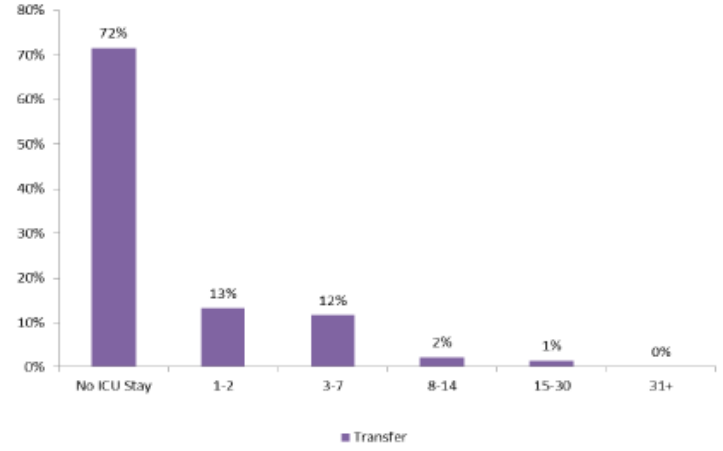
<1% Transport Mode: Police, Other * Indicates Private/ Public Vehicle, Walk-in

ED Disposition by Percentage- Final Hospital



ED Length of Stay (hours)- Final Hospital

ICU Length of Stay (days)- Final Hospital



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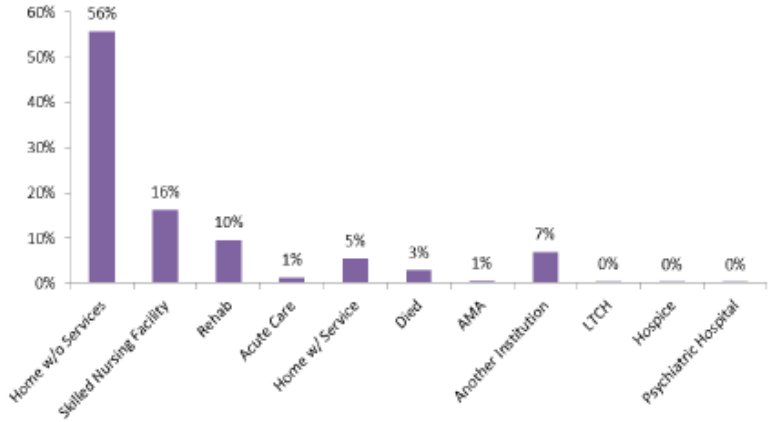
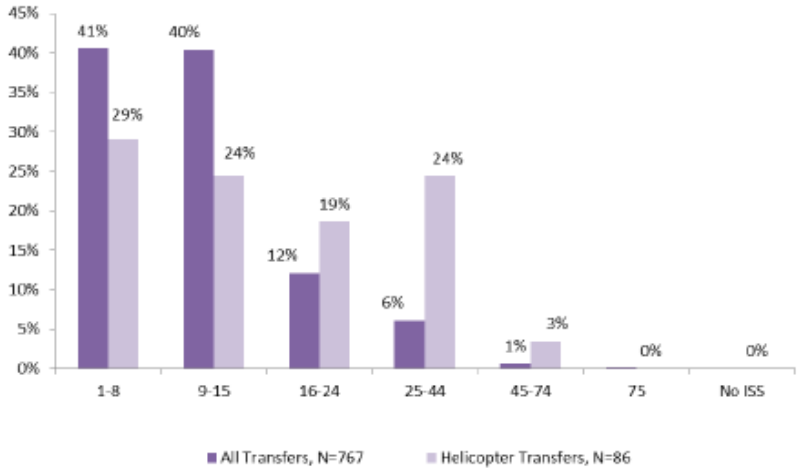
Transfer Patient Population - Page 19

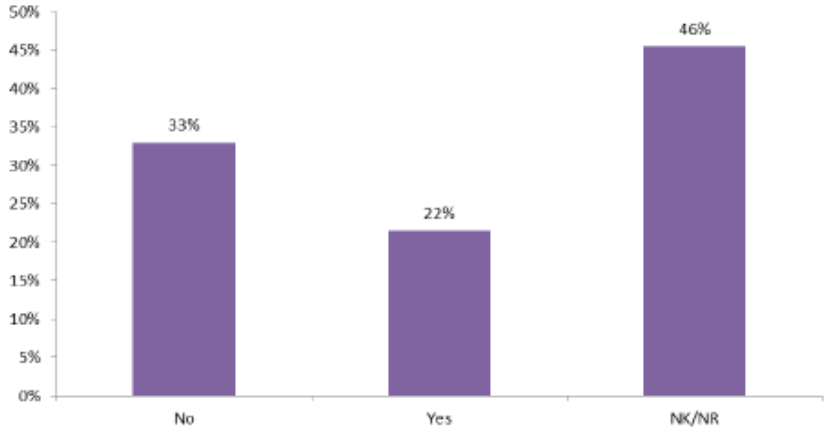
Discharge Disposition– Final Hospital



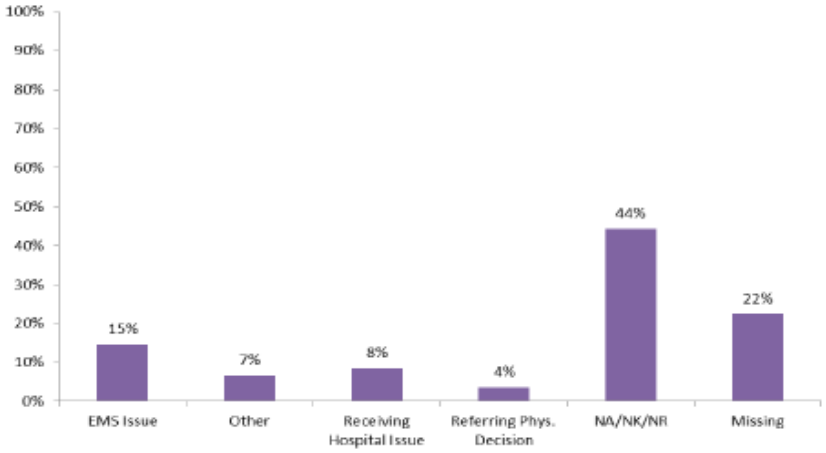
Helicopter Transfers by ISS– Final Hospital



Transfer Delay Indicated- Initial Hospital



Initial Facility Transfer Delay Reason



Higher than Average ED LOS for Transferred Patients

Hospital ID	
ID 3	ID 57
ID 5	ID 63
ID 12	ID 74
ID 14	ID 80
ID 19	ID 85
ID 30	ID 87
ID 31	ID 93
ID 38	ID 95
ID 41	ID 104
ID 44	ID 106
ID 48	ID 107
ID 51	ID 112
ID 53	ID 113

Other Business

Indiana State Department of Health

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Committee Meeting Dates for 2016

- August 19
- October 21
- December 16

Indiana State Department of Health

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Committee Meeting Dates for 2017

- February 17
- April 21
- June 16
- August 18
- October 20
- December 15

Indiana State Department of Health

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