The Michigan Trauma Quality Improvement Program

Ypsilanti, MI
October 16, 2014

Welcome/Introductions

- New Center (July)
  - MidMichigan Medical Center (Midland)
    - Thomas Veverka MD, TMD
    - Tom Wood TPM
    - Lori Coppola Registrar
- New People
  - McLaren Lapeer
    - Nick Nunnally DO, TMD

Welcome/Introductions

- Guests
  - BCBSM
    - Alex Leaven
  - UMTRI
    - Lisa Buckley, PhD
  - UM Neurosurgery, MANS
    - Jason Heth, MD
  - MiBOQI
    - Lynn Henry, MD

ACS-TQIP

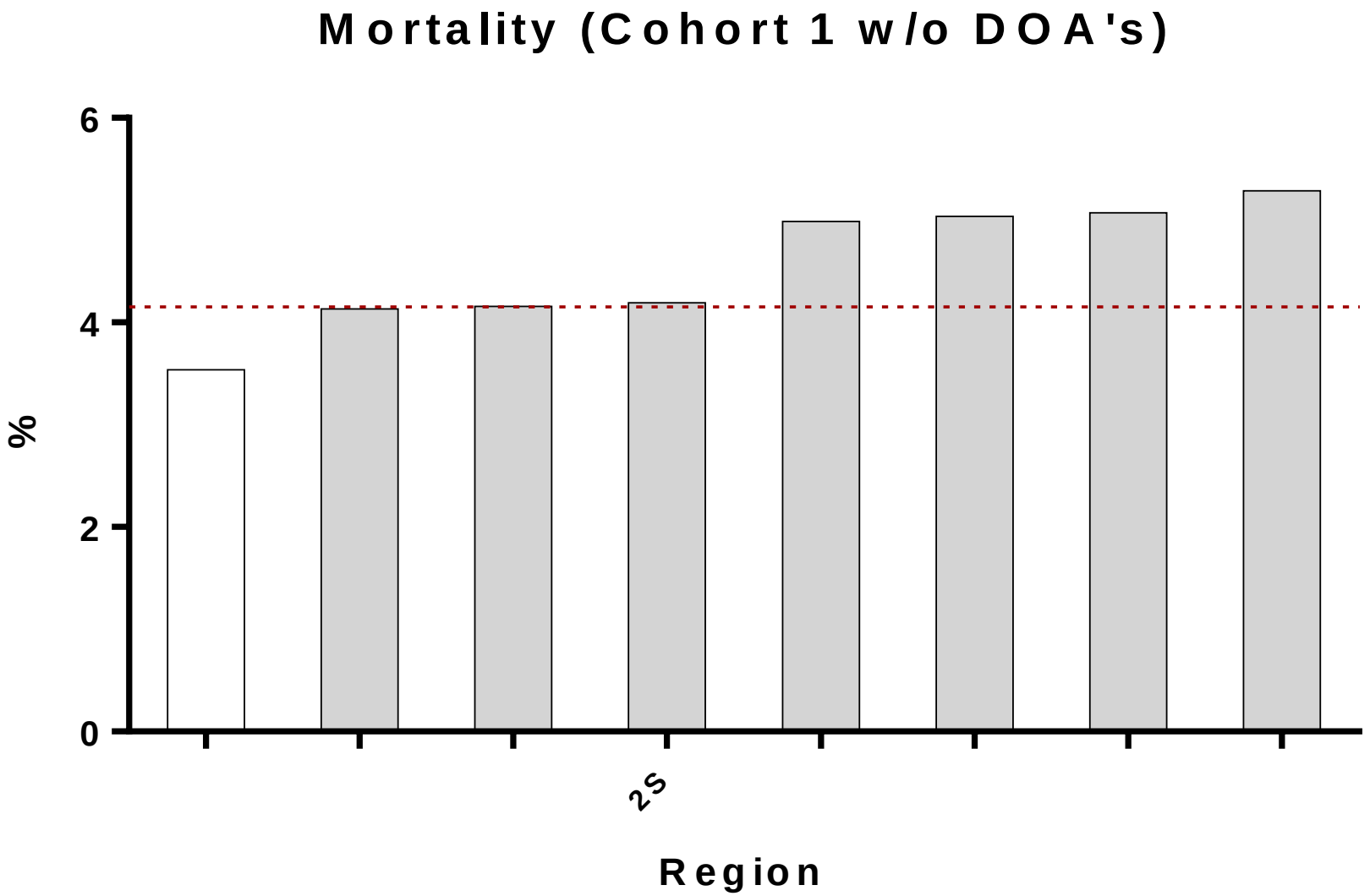
- ACS-TQIP Meeting
  - Chicago IL, November 9-11, 2014
- Michigan Report
  - Executing contract for 2015 and 2016
  - Frequency
    - Two outcome reports per year
    - One custom report agreed on by TQIP and MTQIP
- Center Benchmark Reports
  - September 2014

Data Submission

- DI
  - XML written and being revised
  - Server configuration and software install
  - Test data
  - V5 Report Writer Files
- February Submission
  - 3/1/2013 to 10/31/2014
- ArborMetrix Website
  - Aim for 1 month turnaround
  - New data available in November

Regional Data

- ArborMetrix Online
  - Your hospital, compare to other hospitals
  - Your region, compare to other regions


Mortality (Cohort 1 w/o DOA's)
6
4
2
0
%
2S
Region

Regional Data

- ArborMetrix online
  - Your hospital, compare to other hospitals
  - Your region, compare to other regions
- Executive Committee
  - Endorsed
- Discussion
  - State
  - FOIA
- Vote

Future Meetings

- Winter
  - Tuesday February 10, 2015
  - Ypsilanti, Marriott
- Spring
  - Wednesday May 13, 2015
  - Location being updated
- Options
  - Neurosurgery, Feasible?, When ?

Risk Adjustment

Jill Jakubus, PA-C

AAST - MTQIP

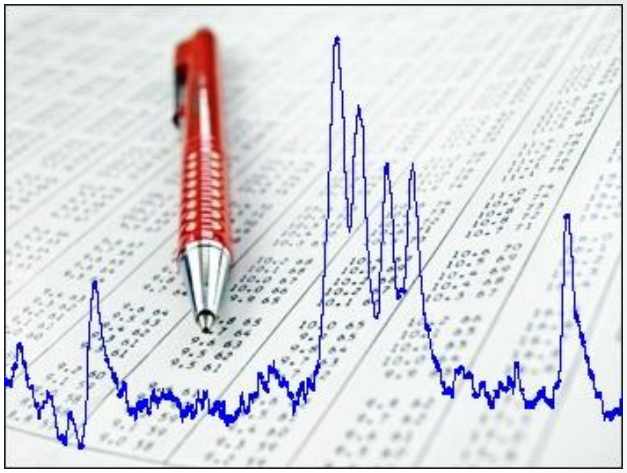
Mark Hemmila, MD

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,
Nancy J. Birkmeyer PhD

M·TQIP

Background



- Quality Improvement
  - Reduce Mortality
  - Reduce Complications
- Gathering Information = Time
- Time = Money
- Evaluate MTQIP
- Impact on Quality
- Impact on Costs/Payment
- Return on Investment

M·TQIP

Methods – Serious Complications

- MTQIP database 2008-2013
- Inclusion Criteria
  - Age ≥ 18
  - At least one “trauma” IDC-9 diagnosis code
  - Blunt or penetrating mechanism of injury
  - ISS ≥ 5
  - Hospital disposition known
- Exclusion Criteria
  - No signs of life (ED SBP=0, HR=0, GCS=3)

M·TQIP

Complication	Grade 1	Grade 2	Grade 3	Serious
Catheter-related Bloodstream Infection	X			
C. Difficle Colitis	X			
Deep SSI	X			
Drug or Alcohol Withdrawl Syndrome	X			
Graft/Prosthesis/Flap Failure	X			
Organ/Space SSI	X			
Osteomyelitis	X			
Superficial SSI	X			
Unplanned Return to ICU	X			
Urinary Tract Infection	X			
Wound Disruption	X			
Decubitus Ulcer		X		X
DVT		X		X
Enterocutaneous Fistula		X		X
Extremity Compartment Syndrome		X		X
Pneumonia		X		X
Pulmonary Embolism		X		X
Unplanned Intubation		X		X
Unplanned Return to OR		X		X
Acute Lung Injury/ARDS			X	X
Acute Kidney Injury (Dialysis)			X	X
Cardiac Arrest with CPR			X	X
Mortality			X	X
Myocardial Infarction			X	X
Severe Sepsis			X	X
Stroke/CVA			X	X

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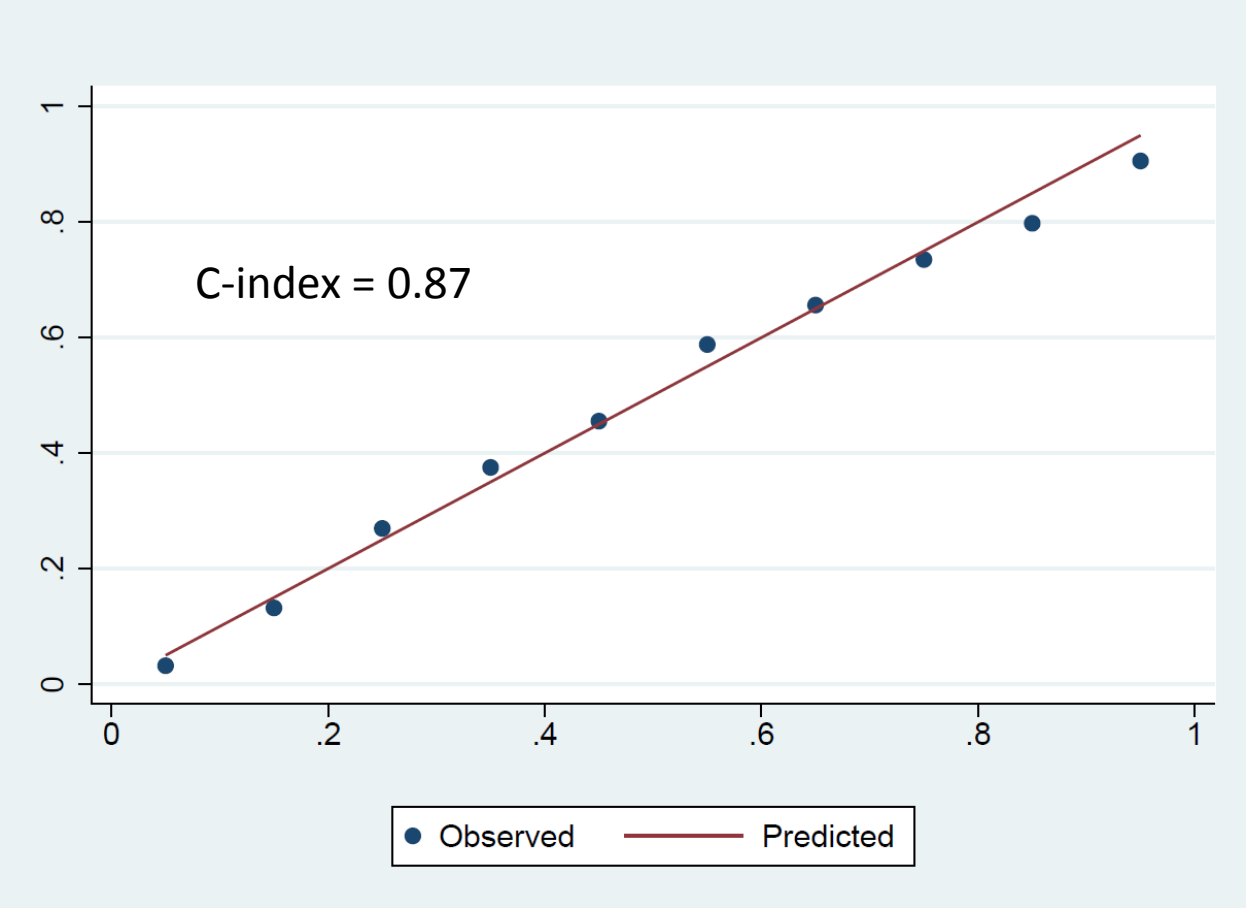
Serious Complications Model



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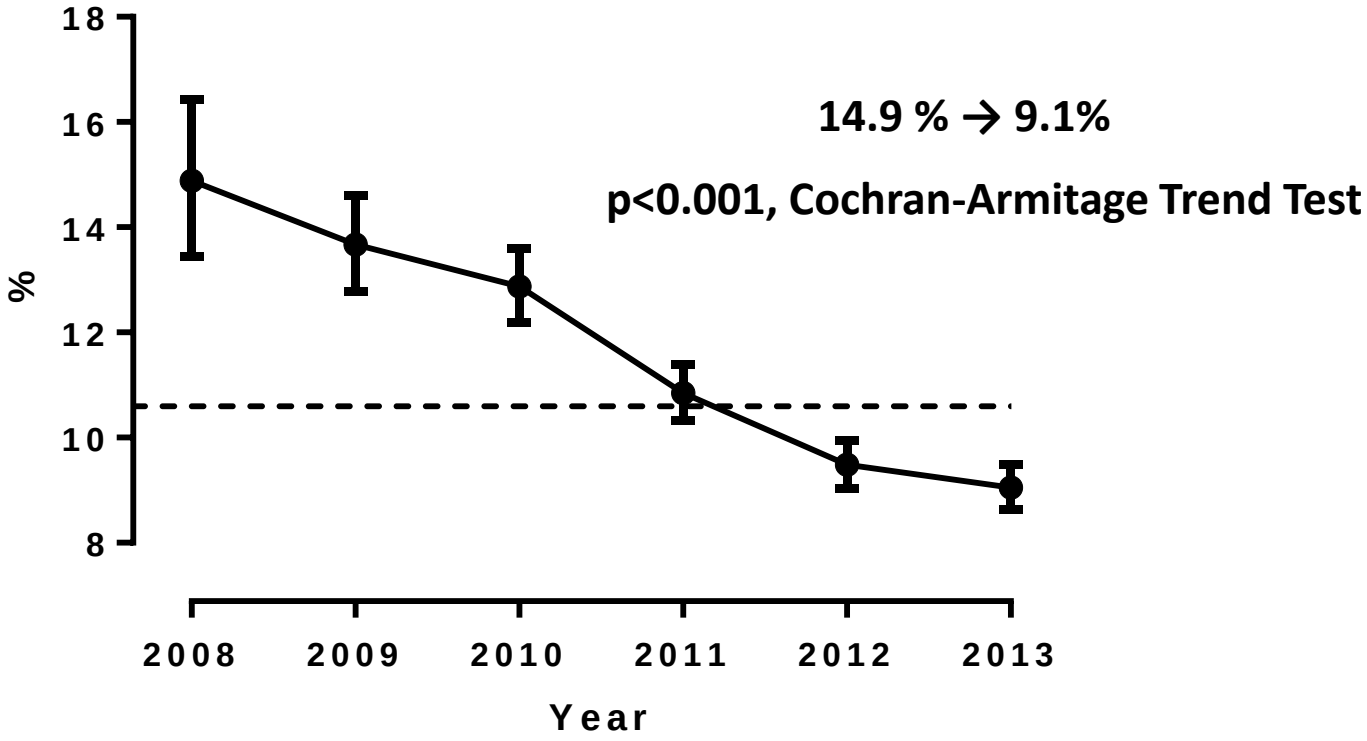
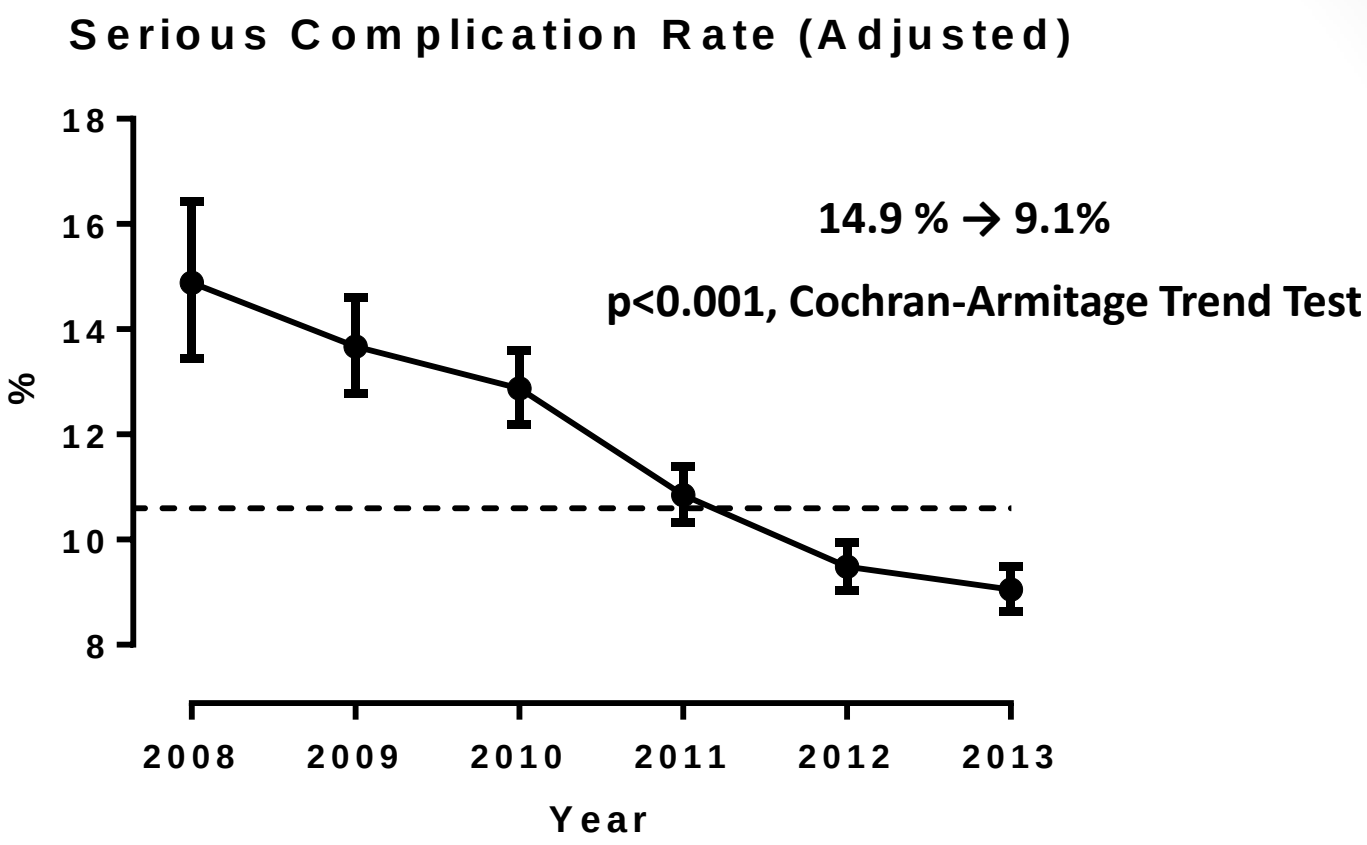
Serious Complication Rate (Adjusted)



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

M·TQIP



Mortality 5.2 % → 4.2 %

p<0.001, Cochran-Armitage Trend Test

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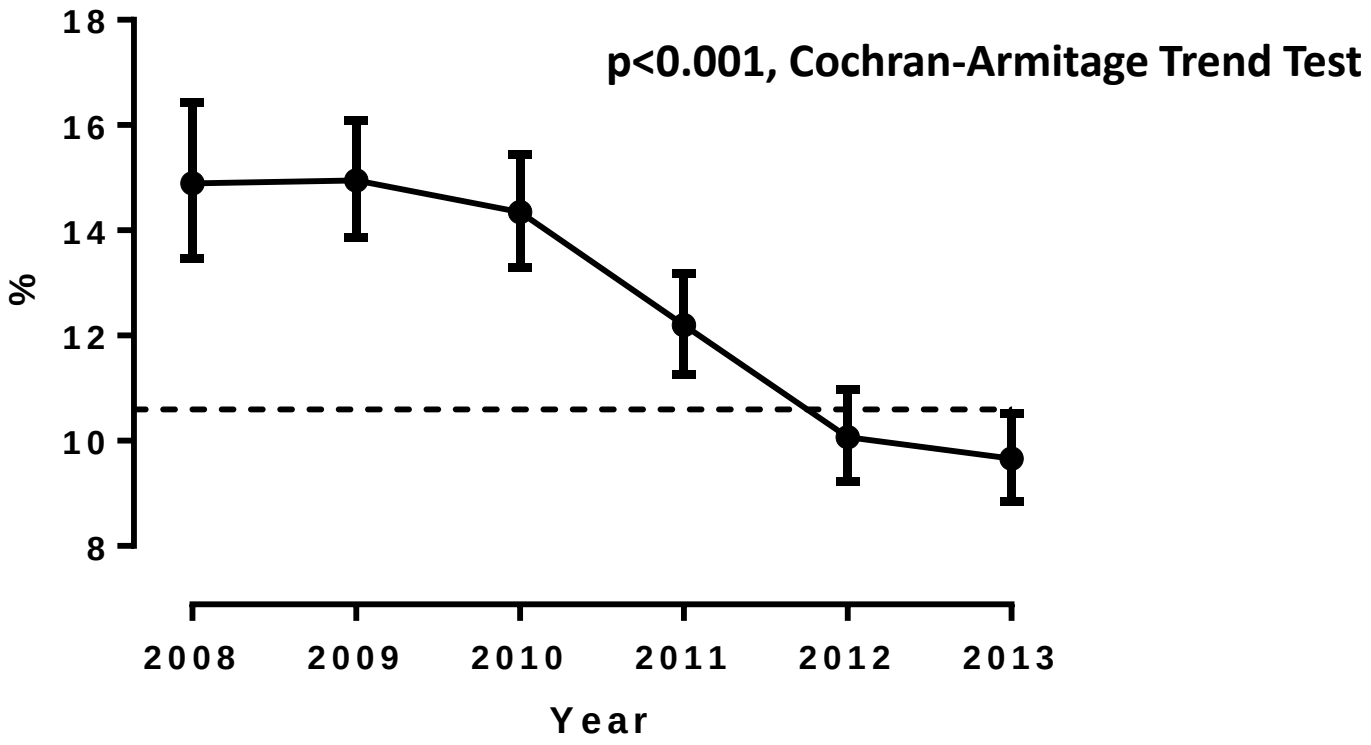
Serious Complication Rate (Adjusted)
Original Centers



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

M·TQIP

Methods – Episode Payments

- BCBSM claims data 2008-2011
- Inclusion Criteria
  - At least one “trauma” ICD-9 diagnosis code
  - ISS ≥ 1
- Exclusion Criteria
  - Burn injuries only
- Episode ends 30-days after discharge
- Price standardized

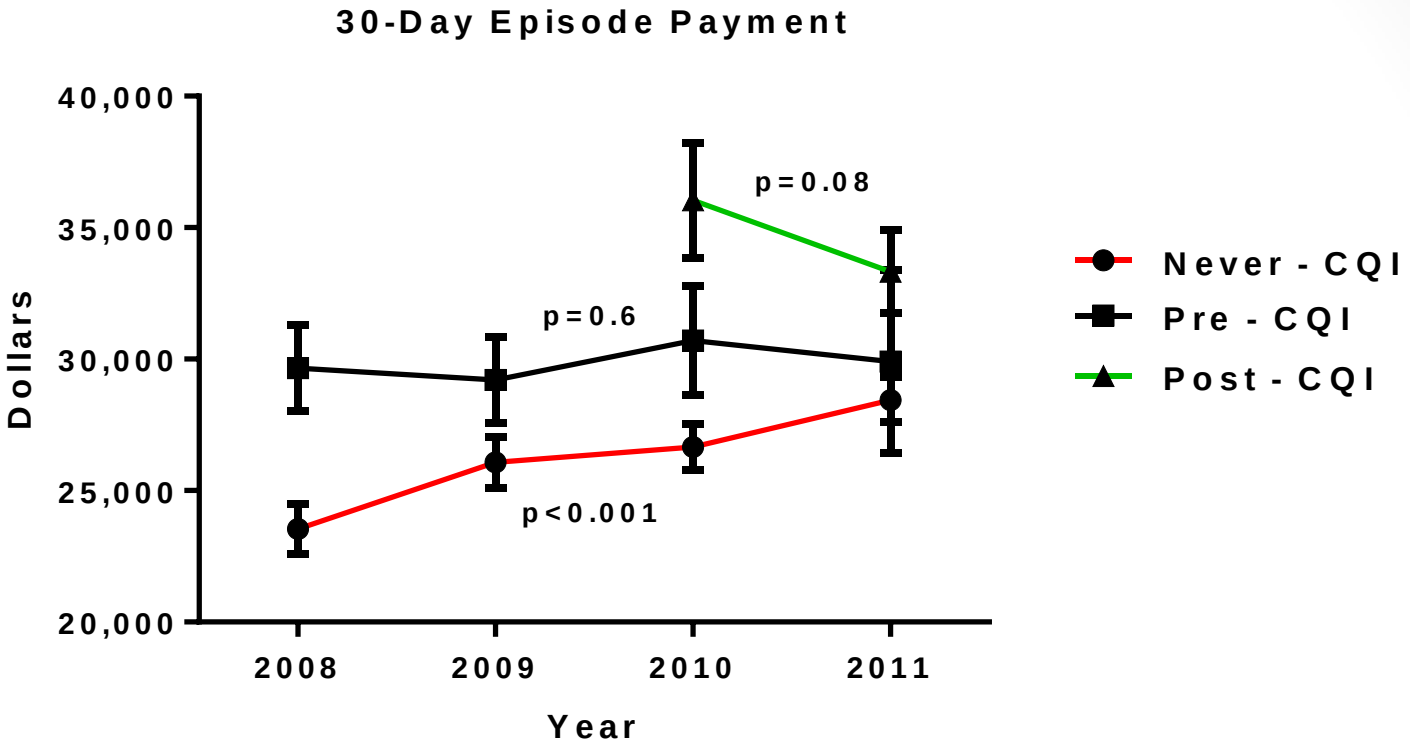
M·TQIP

Methods – Episode Payments

- Cohorts
  - Never-CQI
  - Pre-CQI
  - Post-CQI

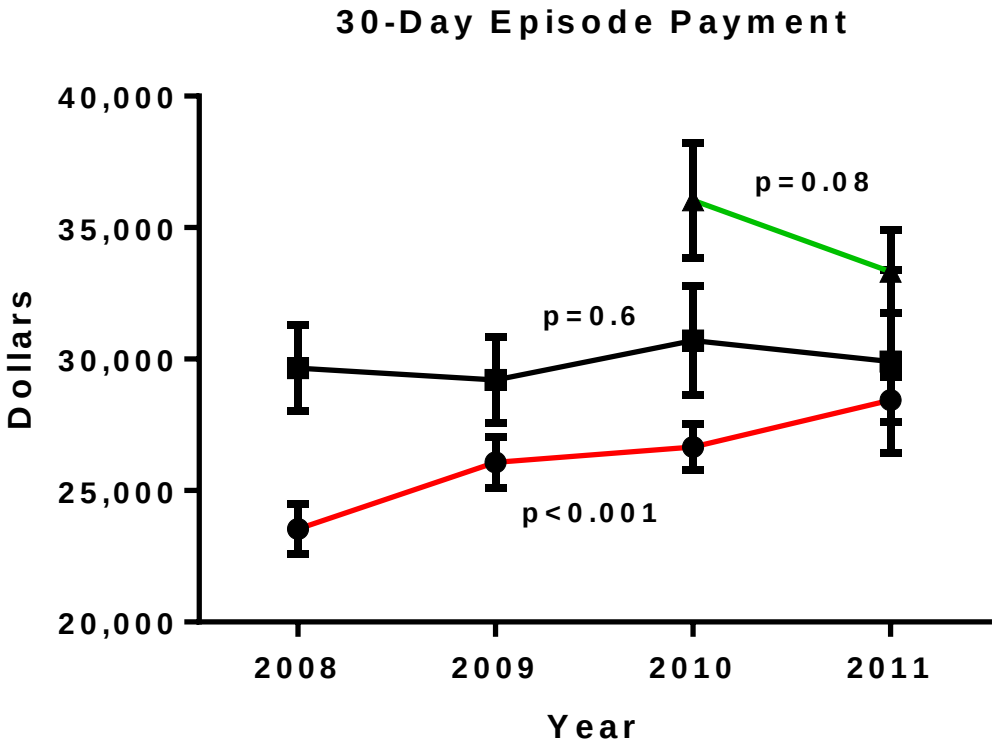
  } MTQIP Hospital
- ICD-9 to AIS 2005 Crosswalk
- Multivariable linear regression
  - Age, Gender
  - Elixhauser comorbidity index
  - ISS
  - AIS>2 by body region

M·TQIP



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

M·TQIP



Never - CQI
Pre - CQI
Post - CQI

Never - CQI

$23,500 → $28,400

+ $4,900

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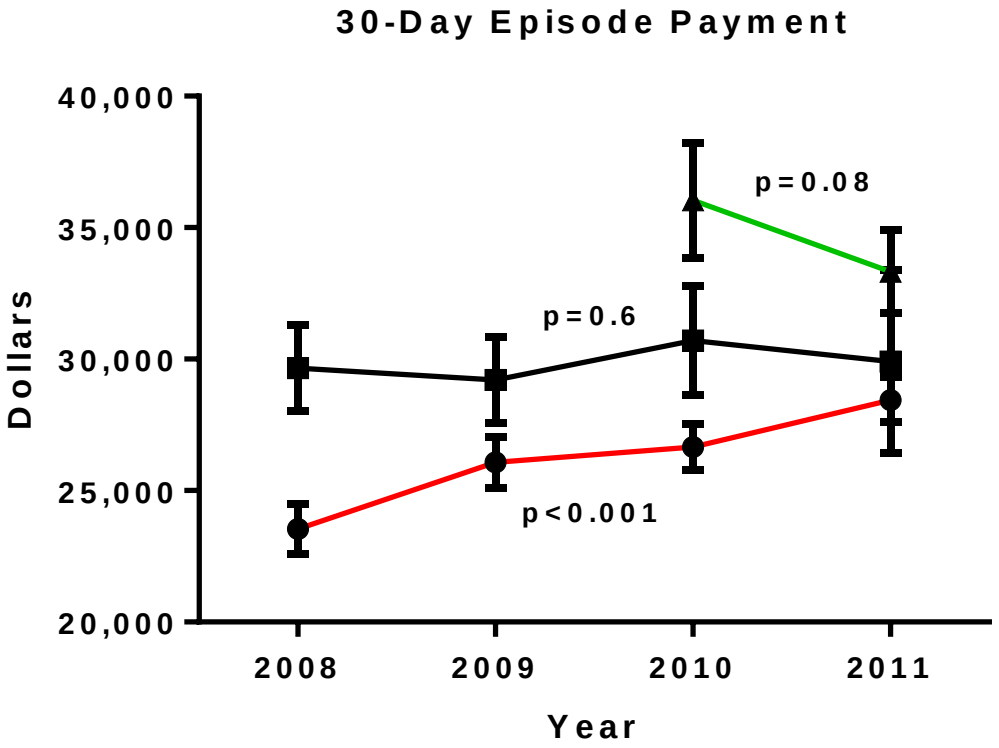
M·TQIP



Never - CQI

$23,500 → $28,400

+ $4,900

Post - CQI

$36,000 → $33,300

- $2,700

Cohort	2008	2009	2010	2011
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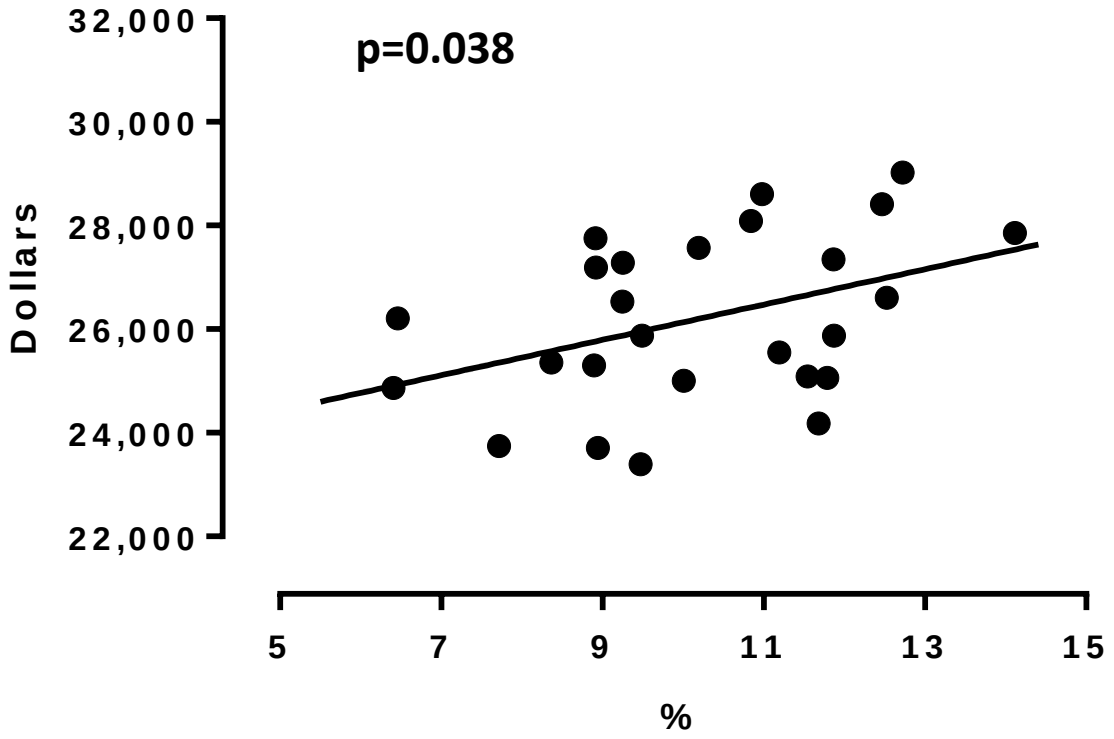
M·TQIP

Serious Complication Rate vs. Payment



M·TQIP

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

MTQIP Reports

Mark Hemmila, MD

Confidentiality Agreement

- Everyone signs a confidentially agreement for entry to the meeting
- Every meeting
- No photos
- Reports distributed

Confidentiality Agreement

The following examples are to be considered privileged and confidential information and should be discussed only within the confines of the MTQIP Quality Collaborative meetings.

- Any and all patient information.
- Any and all patient identifiers which are considered privileged and protected health information as defined by current HIPPA laws.
- Any specific Michigan trauma case information.
- Any information discussed regarding a specific MTQIP site outcome.
- Any reference to a specific MTQIP site result or analysis.
- All trauma data presented including but not limited to Composite Metrics.

Confidentiality Agreement

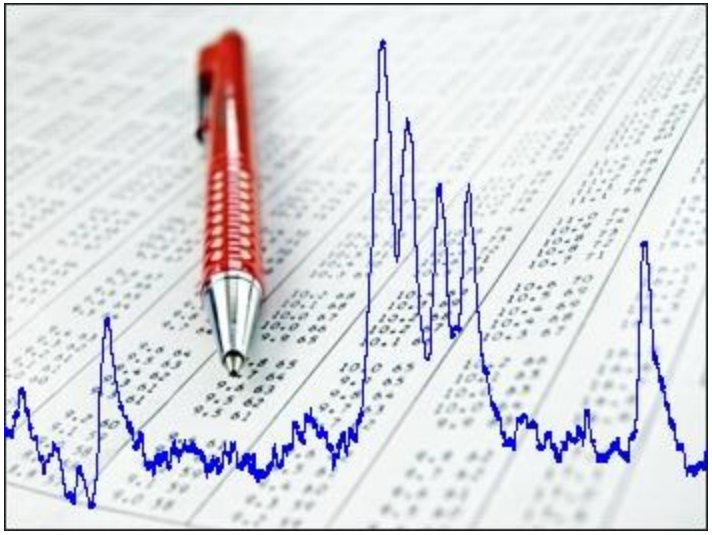
By signing this document, I agree to protect the confidentiality of all information discussed at this meeting and take steps to safeguard against any disclosure of privileged information that may have been discussed. I understand that any violation of confidentiality may result in my personal removal from participation in the project as well as the removal of the hospital site I represent.

Hospitals Submitting Extra Data

- Minimum Range 11/12 to 10/13
- Centers submitting data into 2014

- Beaumont
- Borgess
- Bronson
- Covenant
- Genesys
- Henry Ford Detroit
- Oakwood Dearborn
- Oakwood Southshore
- Sinai-Grace
- Sparrow
- Spectrum
- St. John
- St. Joseph Mercy Ann Arbor
- St. Mary's of Michigan
- University of Michigan

Hospital Metrics



MTQIP 2014 Hospital Metrics

- Participation 70%
  - Data Submission
  - Surgeon Lead
  - Trauma Program Manager/Registrar
  - Site-specific QI project
  - Presentation/Use of MTQIP data
- Performance 30%
  - Data Validation
  - Massive Transfusion Protocol
  - VTE Prophylaxis

2014 MTQIP Hospital Metrics

Measure	Weight	Measure Description	Points (Existing Participants)	Points (New Participants)
PARTICIPATION (70%)				
#1	**10**	**Data Submission**		
		On time 3 of 3 times	10	10
		On time 2 of 3 times	5	5
		On time 1 of 3 times	0	0
#2	**20**	**Meeting Participation – Surgeon Lead**		
		Participated in 3 of 3 meetings	20	20
		Participated in 2 of 3 meetings	10	10
		Participated in 1 of 3 meetings	5	5
		No participation	0	0
#3	**20**	**Meeting Participation – Trauma Manager/Registrar (Avg)**		
		Participated in 3 of 3 meetings	20	20
		Participated in 2 of 3 meetings	10	10
		Participated in 1 of 3 meetings	5	5
		No participation	0	0
#4	**10**	**Site Specific Quality Improvement Project Implementation**		
		Project data submitted	10	10
		Project data not submitted	0	0
#5	**10**	**Surgeon Lead Presents MTQIP Reports at Hospital Meetings**		
		Presented at 3 meetings	10	10
		Presented at 2 meetings	8	8
		Presented at 1 meeting	5	5
		Did not present	0	0
		*Signed attestation required		

PERFORMANCE (30%)					
#6	10	**Accuracy of Data**			
			Visit #1	**Visit #2 or More**	
		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%	> 8.0%	0
					na
#7	10	**Massive Transfusion (defined as ≥ 4 u PRBC in first 4 hours): Mean PRBC to Plasma Ratio for first 4 hours of admission**			
		≤ 1.5			10
		1.6 - 2.5			7.5
		> 2.5			5
		> 3.0			0
					na
#8	10	**Timely VTE Prophylaxis (< 48 hours of admission)**			
		> 50%			10
		≥ 40%			5
		< 40%			0
					na

Center Acronyms

Borgess	**BO**
Botsford	**BF**
Bronson	**BM**
Covenant	**CO**
Detroit Receiving	**DR**
Genesys	**GH**
Henry Ford Detroit	**HF**
Henry Ford Macomb	**HM**
Hurley	**HU**
Marquette General	**MG**
McLaren Macomb	**MC**
McLaren Lapeer	**ML**
McLaren Pontiac	**PO**
Munson	**MU**
Oakwood Dearborn	**OW**
Oakwood Southshore	**OS**
Sinai Grace	**SG**
Sparrow	**SP**
Spectrum Health	**SH**
St. John	**JO**
St. Joseph Mercy Ann Arbor	**SJ**
St. Joseph Mercy Oakland	**SO**
St. Marys Mercy (Grand Rapids)	**MM**
St. Marys Michigan (Saginaw)	**SM**
U of M	**UM**
William Beaumont	**WB**

Blood Products (11/1/12 to 6/30/14)

Inclusion:

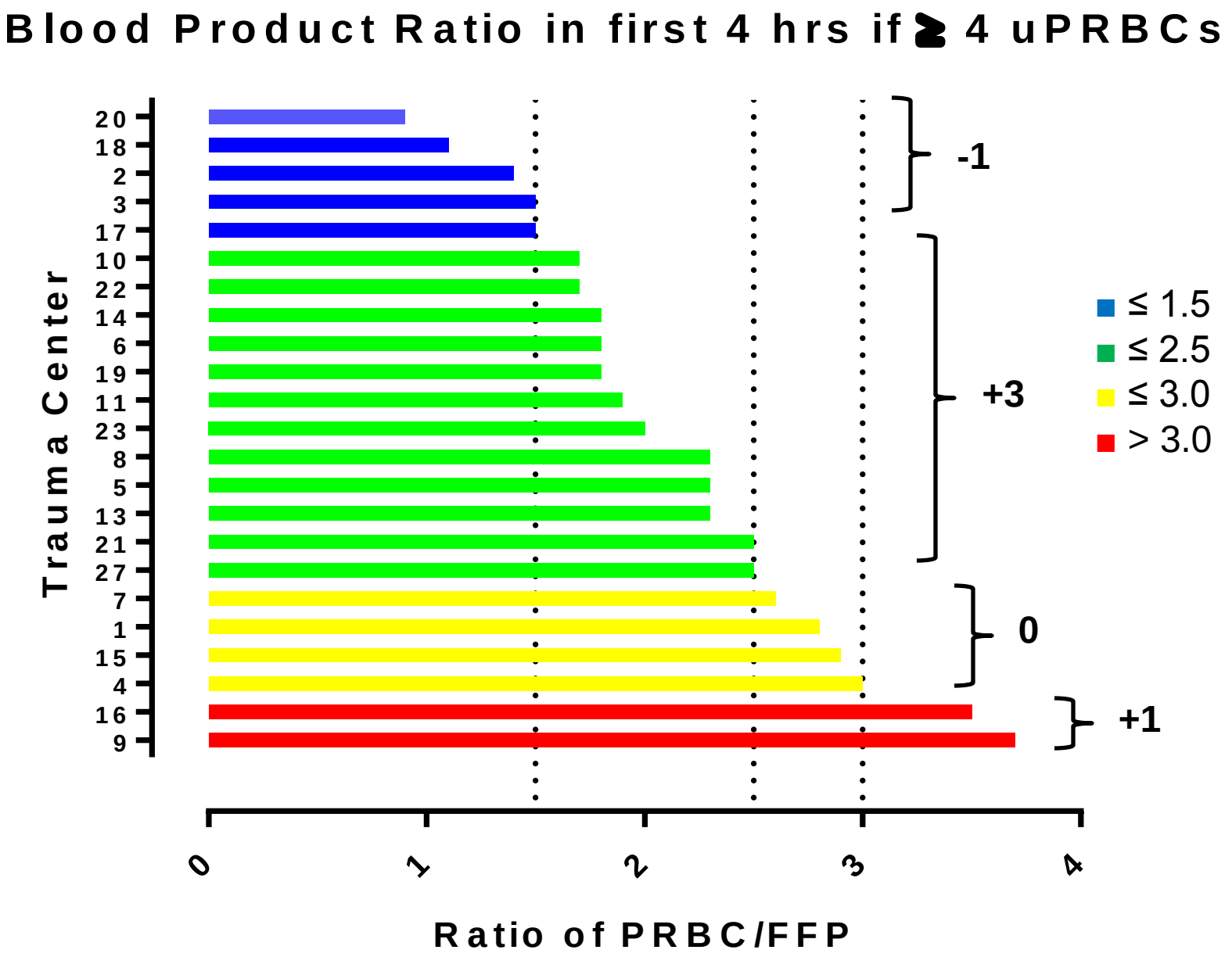
PRBC 4hrs ≥ 4 units

Trauma Center	N Patients	Ratio PRBC/FFP 4 hrs	N Ratio PRBC/FFP 4 hrs ≤ 3	N Ratio PRBC/FFP 4 hrs ≤ 2.5	N Ratio PRBC/FFP 4 hrs ≤ 1.5	Ratio PRBC/FFP 24 hrs	N Ratio PRBC/FFP 24 hrs ≤ 2.0	N Ratio PRBC/FFP 24 hrs ≤ 1.5	Dead
20	5	0.9	3	3	3	0.8	2	2	1
18	19	1.1	18	18	16	1.2	18	16	8
2	8	1.4	5	5	4	1.4	6	4	2
3	14	1.5	9	9	6	1.6	8	5	5
17	17	1.5	12	11	9	1.6	11	9	6
10	23	1.7	18	17	16	1.5	19	18	8
22	1	1.7	1	1	0	3.3	0	0	1
14	19	1.8	12	12	6	1.8	11	7	12
6	3	1.8	3	3	1	1.5	3	2	2
19	11	1.8	6	5	2	1.6	7	3	2
11	22	1.9	16	16	9	1.8	14	10	9
23	3	2.0	1	1	0	2.3	1	0	2
8	10	2.3	8	5	3	2.3	5	4	4
5	12	2.3	9	6	2	2.5	4	3	5
13	10	2.3	7	6	3	1.7	3	2	1
21	40	2.5	21	16	8	2.6	16	7	16
27	21	2.5	13	12	7	2.5	12	7	9
7	20	2.6	12	12	4	2.3	10	6	6
1	17	2.8	7	7	3	2.7	6	3	9
15	44	2.9	22	16	4	2.5	17	10	15
4	16	3.0	9	6	3	3.0	6	3	8
16	7	3.5	4	4	1	3.5	2	1	4
9	2	3.7	0	0	0	3.3	0	0	1
Total	344	1.9	216	191	110	1.7	181	122	136

MTQIP 2014 Hospital Metrics

- Massive Transfusion
  - ≥ 4 units PRBC's in first 4 hrs
  - Average of ratio for each patient

Ratio PRBC/FFP	Points
< 1.5	10
1.6 – 2.5	7.5
> 2.5	5
> 3.0	0


Blood Product Ratio in first 4 hrs if ≥ 4 uPRBCs
Trauma Center
20
18
2
3
17
10
22
14
6
19
11
23
8
5
13
21
27
7
1
15
4
16
9
-1
+3
0
+1
≤ 1.5
≤ 2.5
≤ 3.0
> 3.0
0
1
2
3
4
Ratio of PRBC/FFP

Patient List - Blood

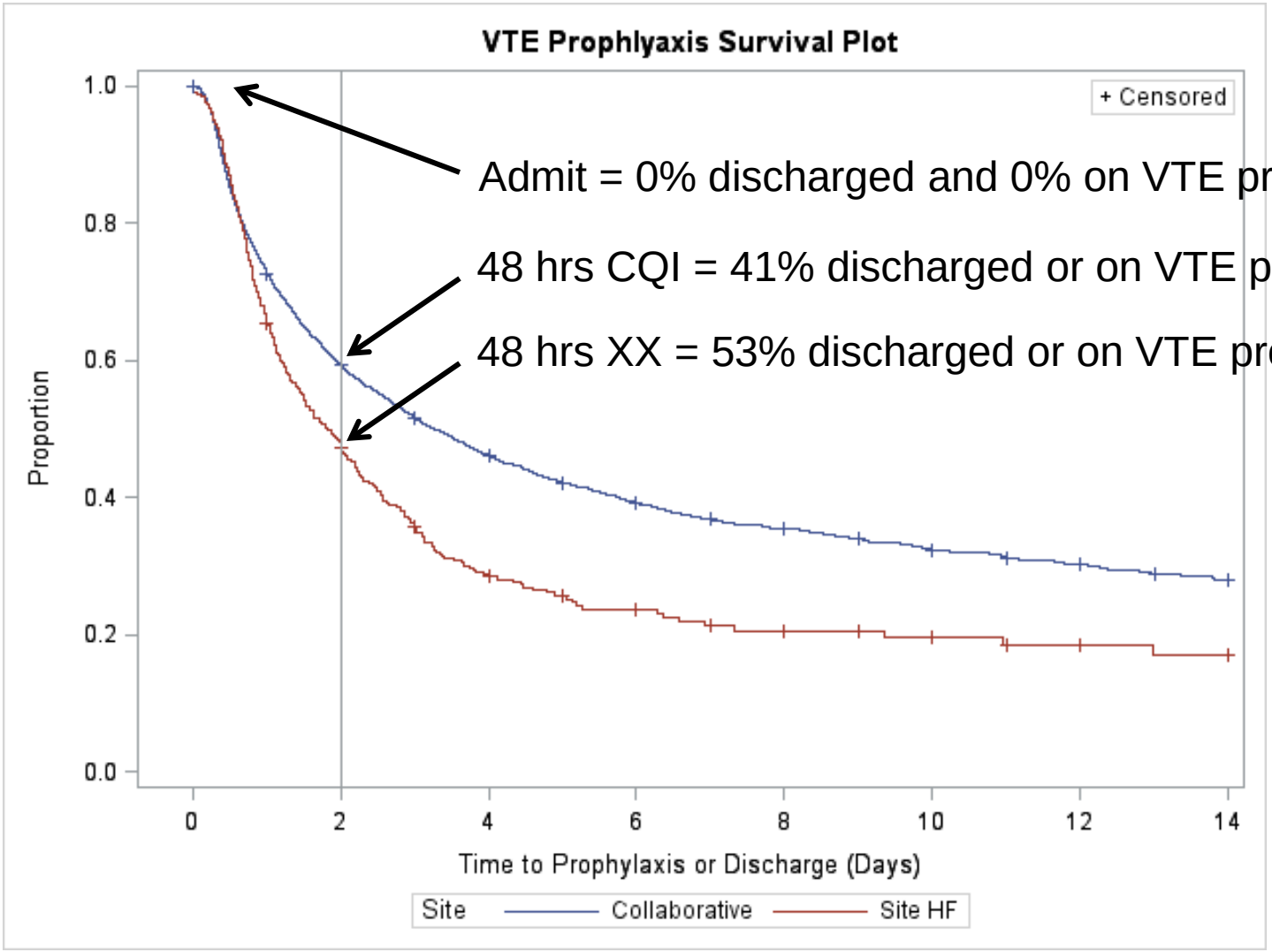
recordno	traumactr	age	blunt	ed_arrdate	ed_arrtime	ed_bp	ed_pulse	ed_mtr	usrais_iss	prbc4	ffp4	plt4	cryo4	ratio4
						64	151	6	10	6	2	5	0	3
						110	81	1	38	10	10	10	0	1
						99	84	1	34	4	4	0	0	1
						137	100	1	22	4	0	0	0	
						107	106	6	16	7	8	15	0	0.875
						0	0	1	9	11	0	0	0	
						65	73	6	59	4	3	0	0	1.333333
						137	98	6	16	4	0	0	0	
						119	150	6	34	38	36	40	2	1.055556

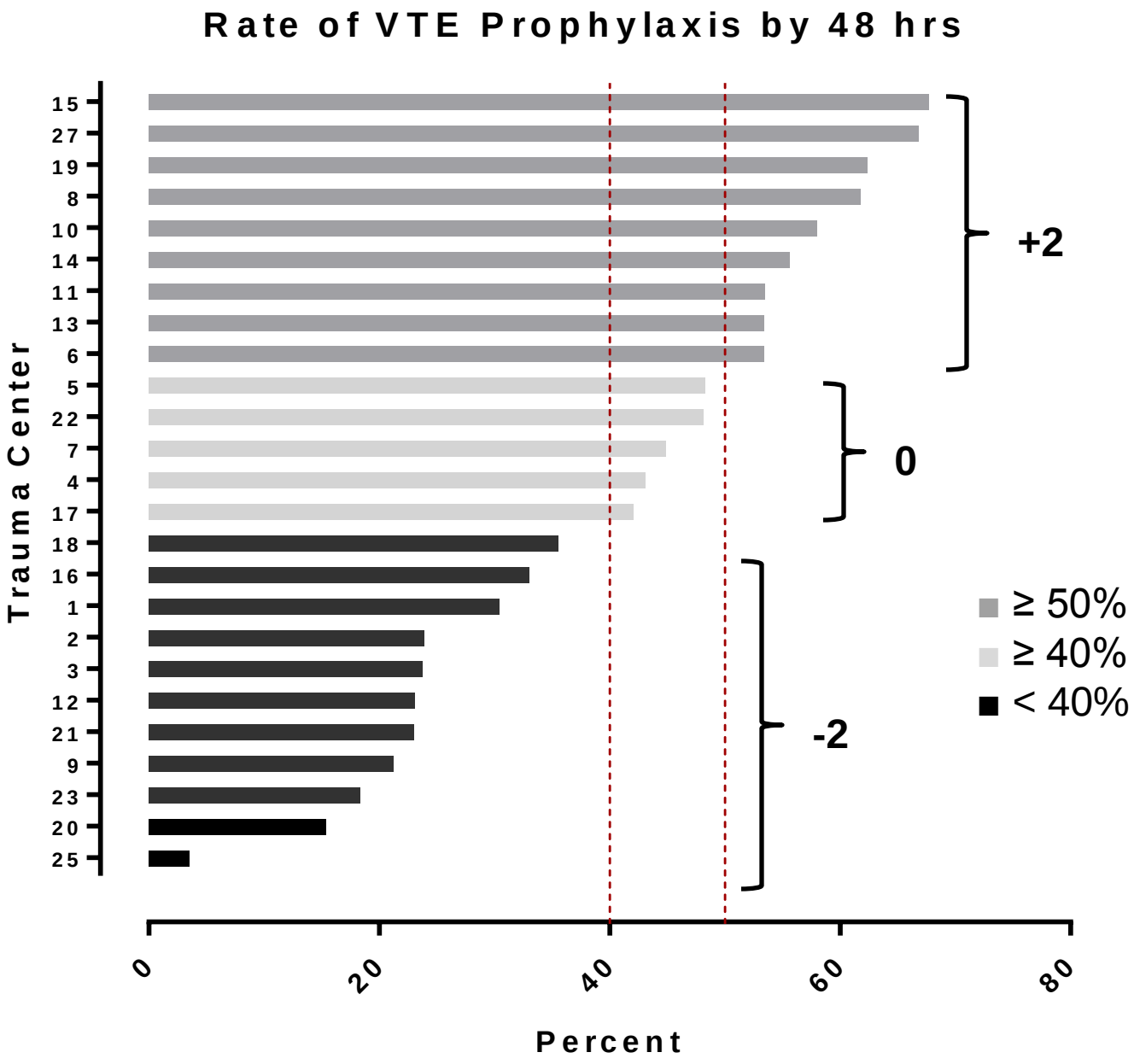
- Your list of patients
- 0 = No
- 1 = Yes
- Injury, Blood products, TXA, Operation, Angio
- Additional data?

VTE Prophylaxis

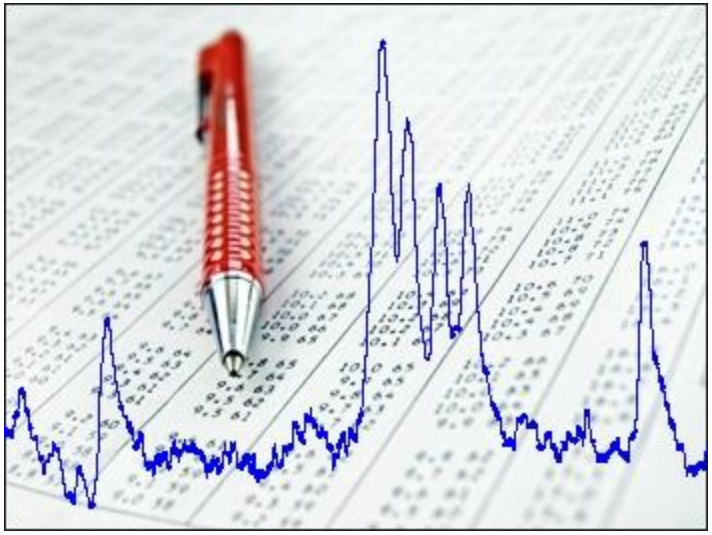
- Admit Trauma Service
  - In hospital with no VTE pro = non-Event
  - Discharge Home in 48 hrs = Event
  - VTE Prophylaxis in 48 hrs = Event
- Rate
  - > 50% (10 points)
  - > 40% (5 points)
  - 0 – 40% (0 points)

VTE Prophylaxis




Rate of VTE Prophylaxis by 48 hrs
Trauma Center
15
27
19
8
10
14
11
13
6
5
22
7
4
17
18
16
1
2
3
12
21
9
23
20
25
+2
0
-2
≥ 50%
≥ 40%
< 40%
0
20
40
60
80
Percent

Collaborative Metrics



MTQIP 2014 Collaborative Metrics

- Hemorrhage (≥ 4 u PRBC's first 4 hrs)
  - % of patients with 4hr PRBC/FFP ratio < 2.5
    - Begin = 34 %
    - Current = 56 %
    - Target = 80 %

Blood Products (11/1/12 to 6/30/14)

Inclusion:

PRBC 4hrs ≥ 4 units

Trauma Center	N Patients	Ratio PRBC/FFP 4 hrs	Ratio PRBC/FFP 4 hrs ≤ 3	Ratio PRBC/FFP 4 hrs ≤ 2.5	Ratio PRBC/FFP 4 hrs ≤ 1.5	Ratio PRBC/FFP 24 hrs	Ratio PRBC/FFP 24 hrs ≤ 2.0	Ratio PRBC/FFP 24 hrs ≤ 1.5	Dead
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23	3	2.0	1	1	0	2.3	1	0	2
8	10	2.3	8	5	3	2.3	5	4	4
5	12	2.3	9	6	2	2.5	4	3	5
13	10	2.3	7	6	3	1.7	3	2	1
21	40	2.5	21	16	8	2.6	16	7	16
27	21	2.5	13	12	7	2.5	12	7	9
7	20	2.6	12	12	4	2.3	10	6	6
1	17	2.8	7	7	3	2.7	6	3	9
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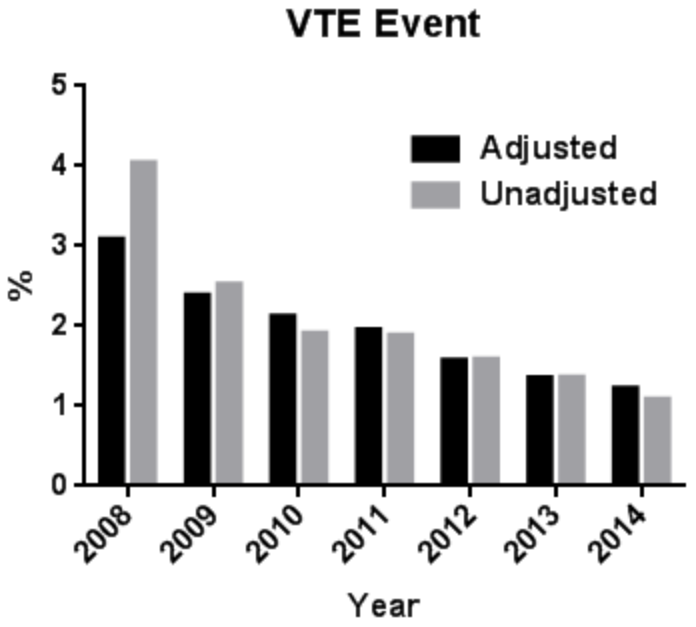
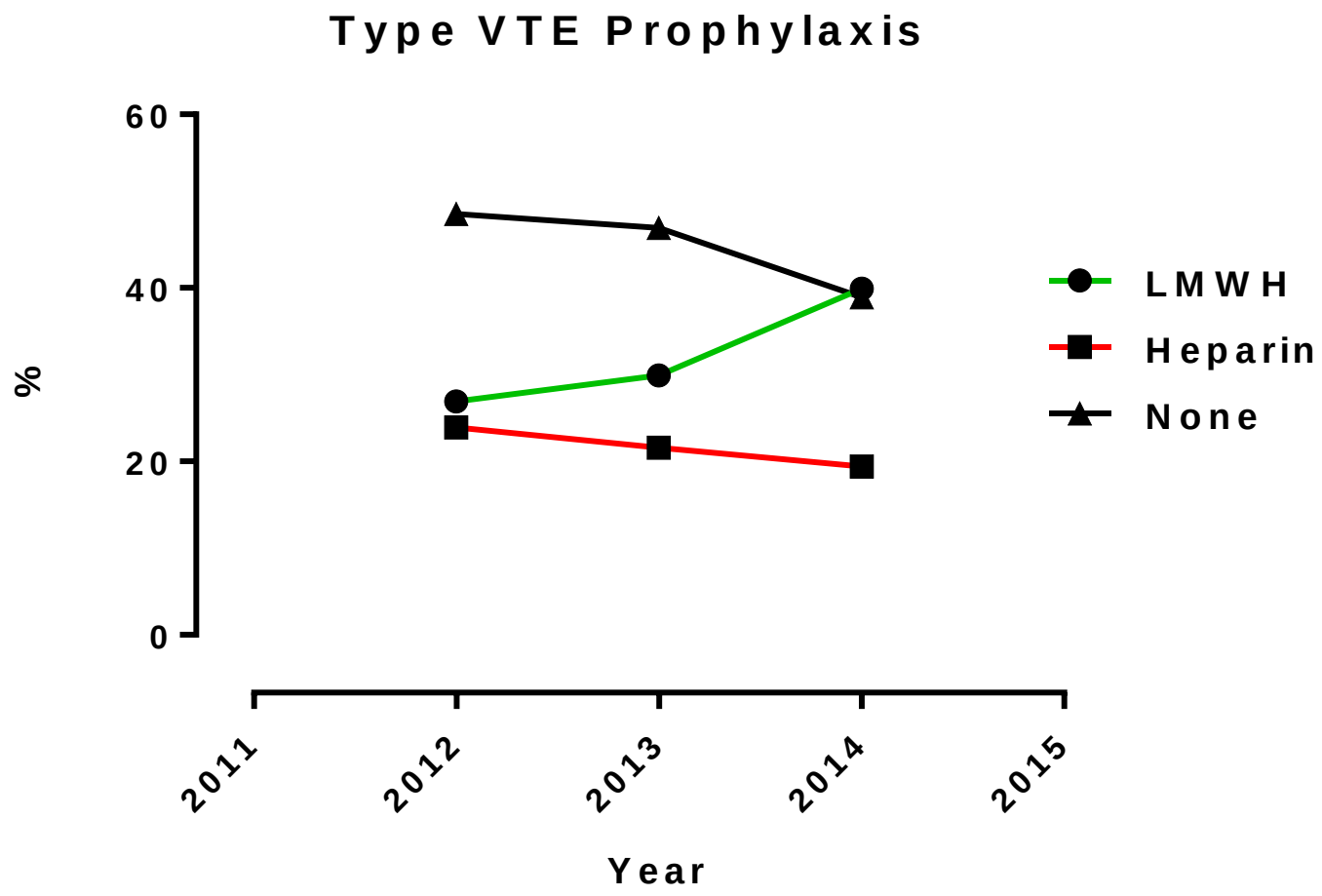
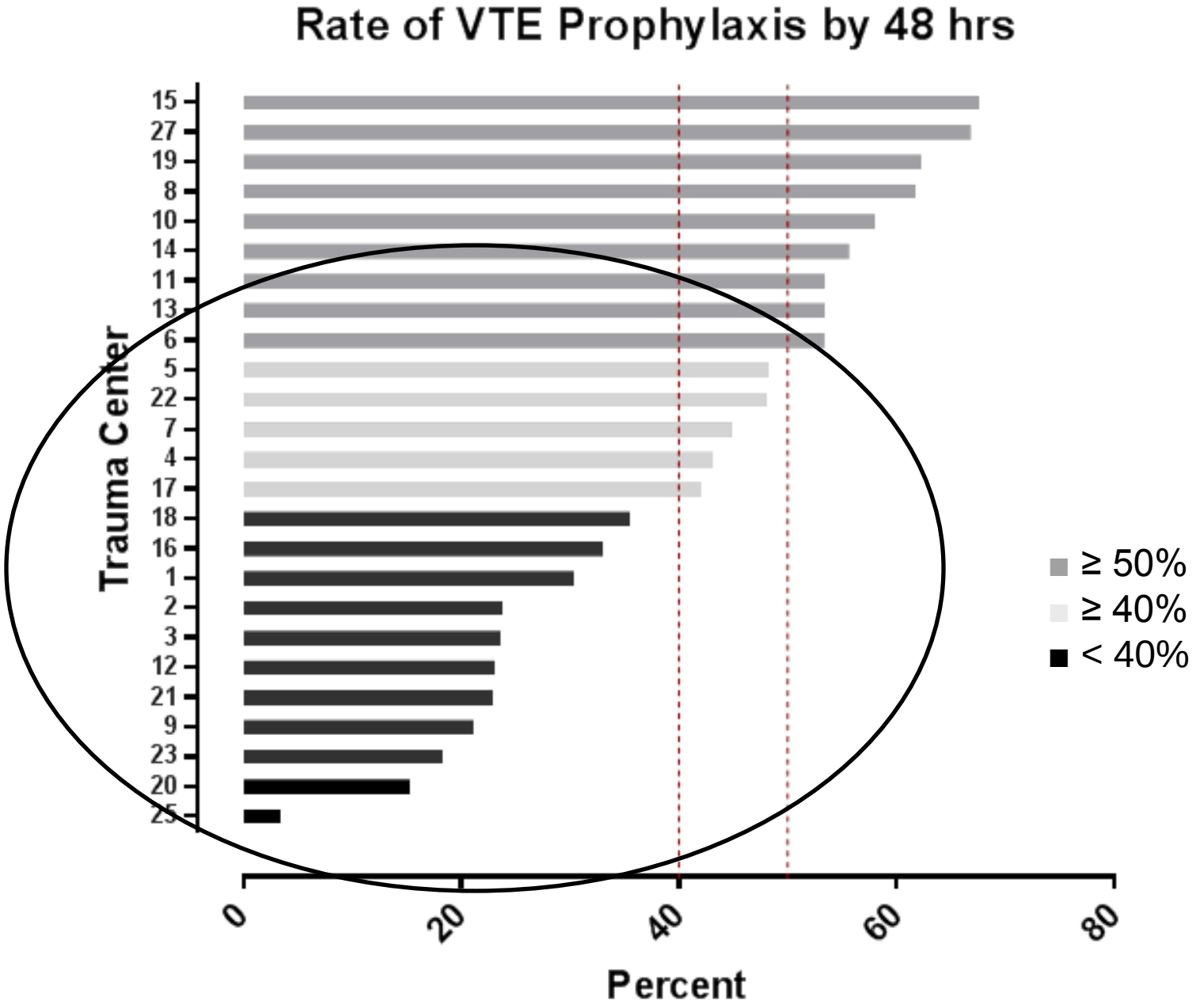
4	16	3.0	9	6	3	3.0	6	3	8
16	7	3.5	4	4	1	3.5	2	1	4
9	2	3.7	0	0	0	3.3	0	0	1
Total	344	1.9	216	191	110	1.7	181	122	136

MTQIP 2014 Collaborative Metrics

- VTE
  - VTE Rate
    - Begin = 2.5 %
    - Current = 1.4 %
    - Target = 1.5 %
  - 48 hr VTE Prophylaxis Rate
    - Begin = 38 %
    - Current = 40 %
    - Target = 50 %

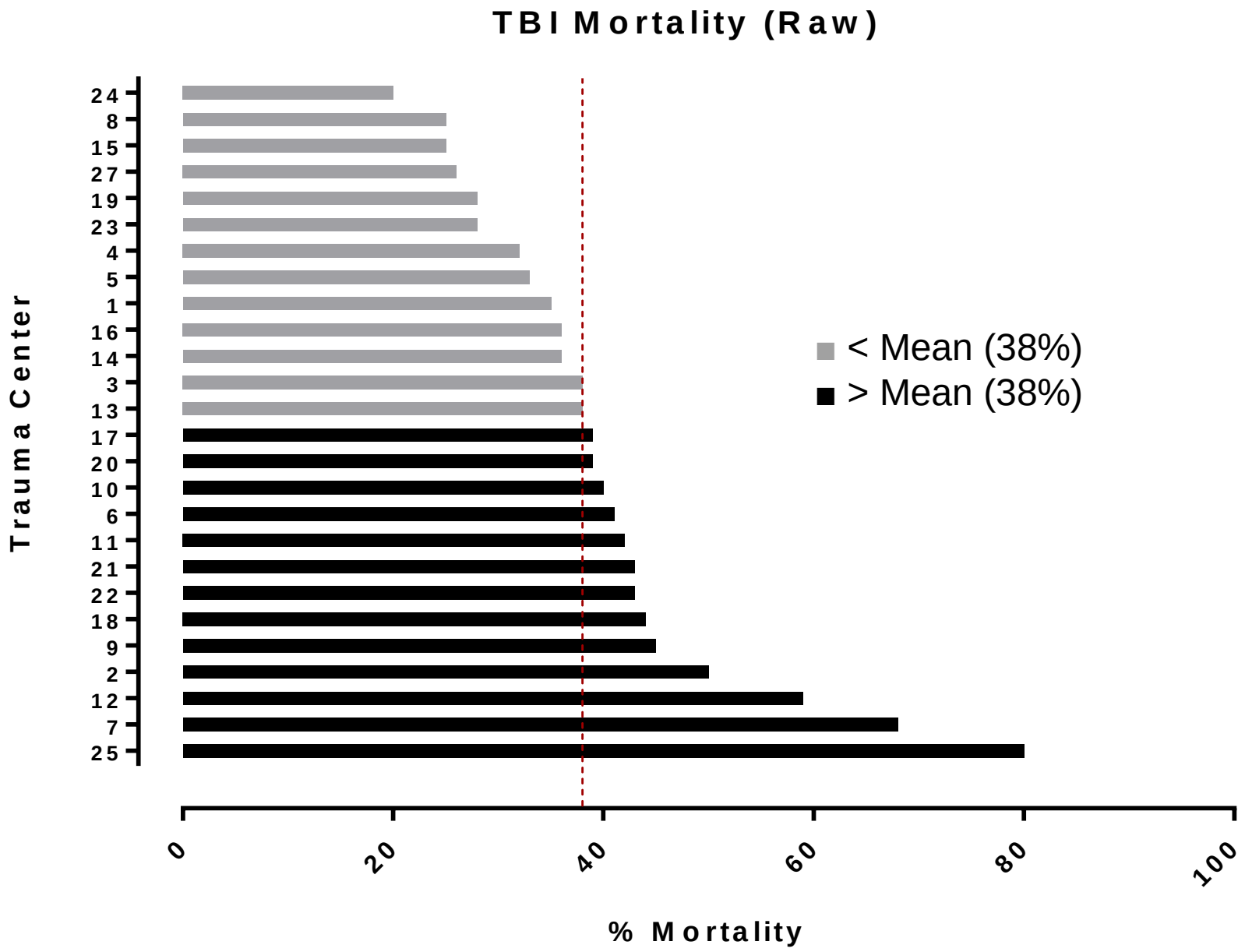



Type VTE Prophylaxis
60
40
20
0
%
2011
2012
2013
2014
2015
Year
LMWH
Heparin
None


Rate of VTE Prophylaxis by 48 hrs
Trauma Center
15
27
19
8
10
14
11
13
6
5
22
7
4
17
18
16
1
2
3
12
21
9
23
20
25
0
20
40
60
80
Percent
≥ 50%
≥ 40%
< 40%

MTQIP 2014 Collaborative Metrics

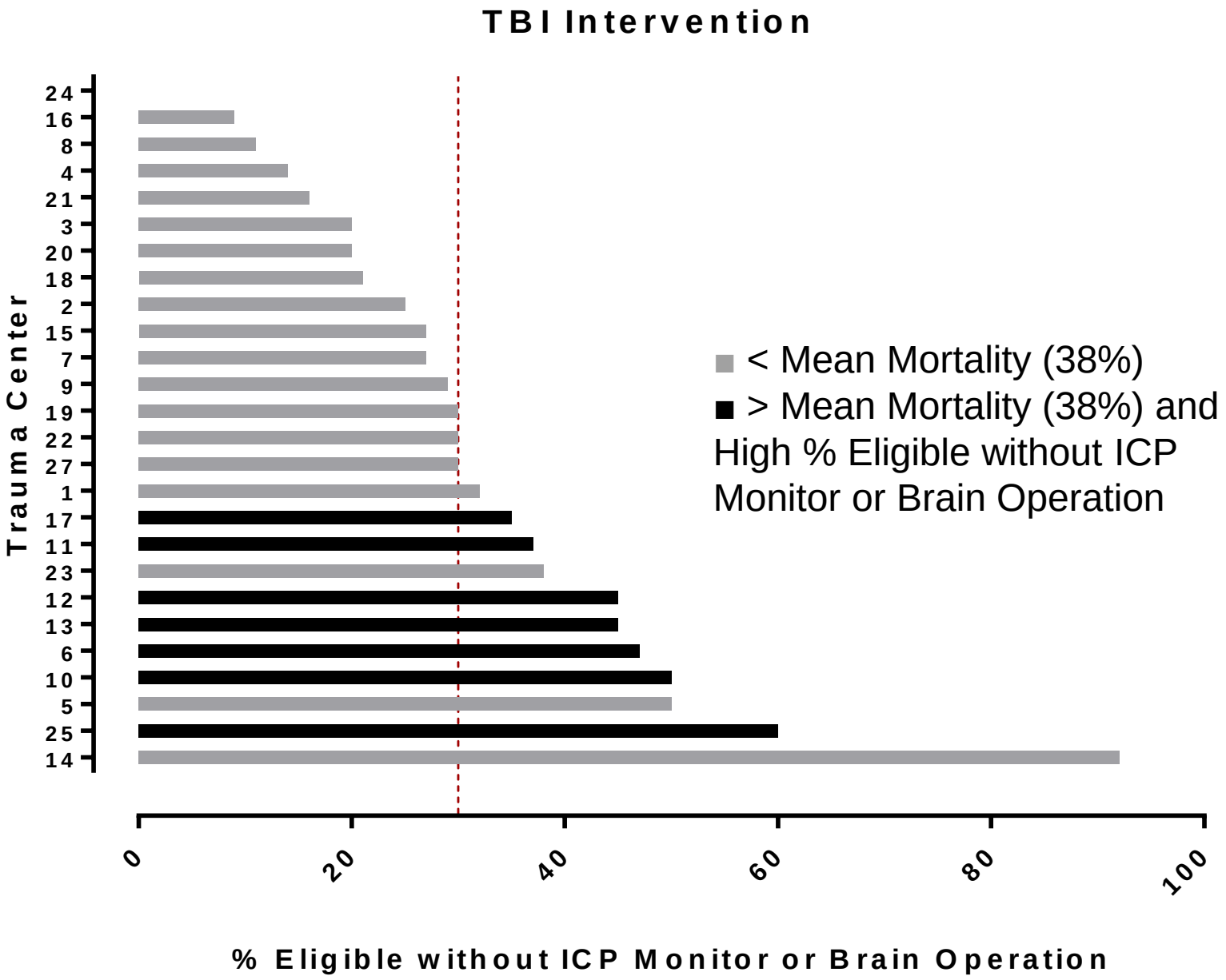
- Brain Injury
  - % of eligible patients with TBI intervention (Monitor or Operation)
    - Begin = 57 %
    - Current = 70 %
    - Target = 70 %
  - Selection Criteria
    - AIS Head > 0, excluding vascular, scalp, and bony injuries
    - Exclude if no signs of life
    - Exclude if Max GCS>8 and TBI GCS>8


TBI Mortality (Raw)
Trauma Center
24
8
15
27
19
23
4
5
1
16
14
3
13
17
20
10
6
11
21
22
18
9
2
12
7
25
< Mean (38%)
> Mean (38%)
0
20
40
60
80
100
% Mortality

Monitor or Operation for Head Injury (11/1/2012 to 6/30/14)

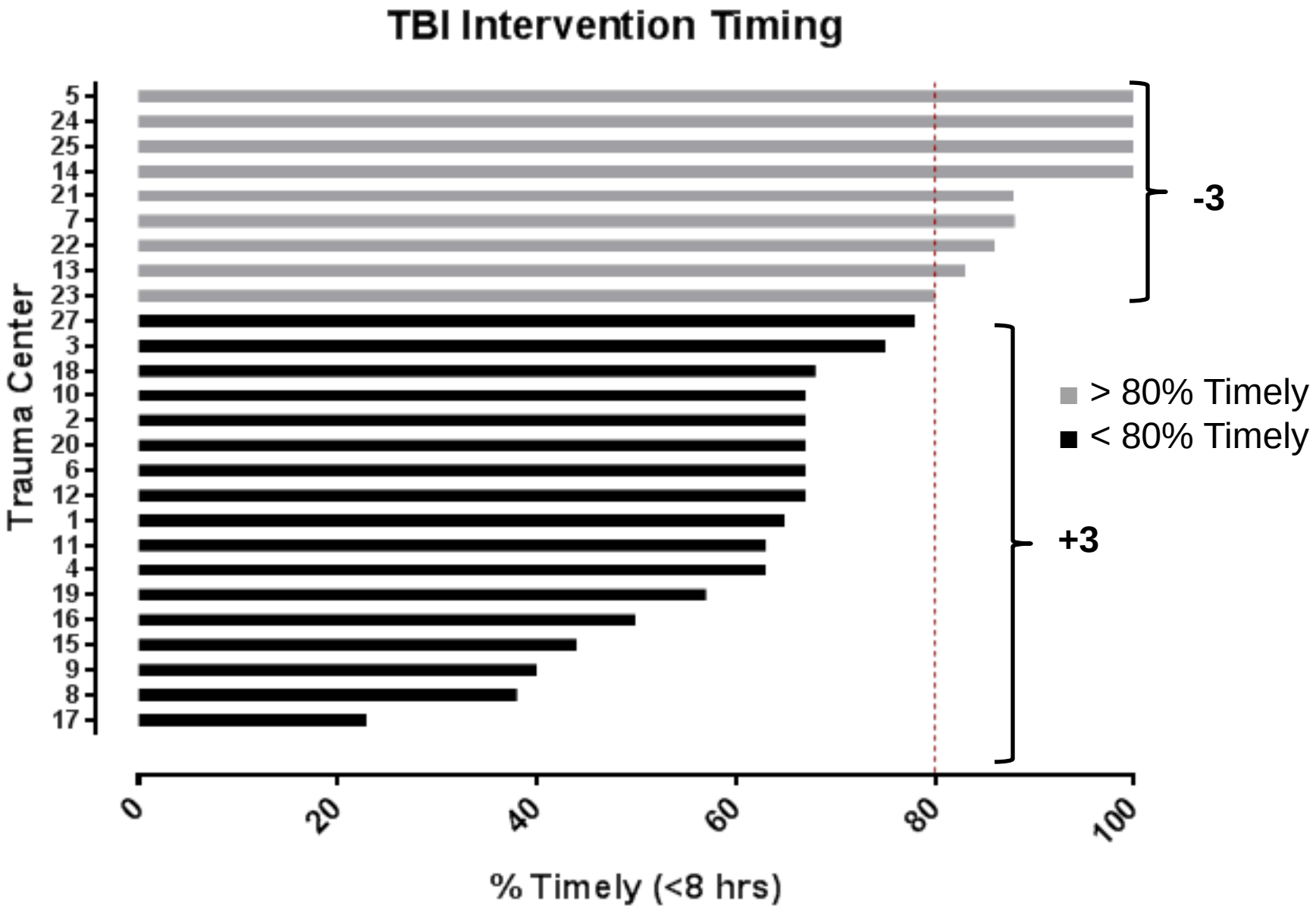
Inclusion:	Exclusion:
AIS Head > 0	No signs of life
	ED GCS > 8 & TBI GCS > 8

Trauma Cente	N	Dead	Alive w/o Intervent	Alive with Intervent	Dead w/o Intervent	Dead with Intervent	Dead and Monitor Withheld	Eligible & no Intervent	Eligible	% Eligible w/no Interven	% Dead / N
21	108	46	33	29	26	20	17	9	58	16%	43%
19	76	21	44	11	11	10	2	9	30	30%	28%
3	66	25	28	13	10	15	3	7	35	20%	38%
4	59	19	22	18	13	6	9	4	28	14%	32%
27	58	15	25	18	10	5	0	10	33	30%	26%
18	50	22	15	13	13	9	7	6	28	21%	44%
10	48	19	18	11	15	4	0	15	30	50%	40%
1	46	16	18	12	11	5	3	8	25	32%	35%
15	44	11	19	14	9	2	3	6	22	27%	25%
11	43	18	12	13	12	6	1	11	30	37%	42%
17	41	16	19	6	9	7	2	7	20	35%	39%
14	33	12	20	1	12	0	1	11	12	92%	36%
7	31	21	9	1	14	7	11	3	11	27%	68%
5	30	10	19	1	7	3	3	4	8	50%	33%
6	29	12	12	5	8	4	0	8	17	47%	41%
20	28	11	10	7	6	5	3	3	15	20%	39%
9	22	10	8	4	9	1	7	2	7	29%	45%
12	22	13	6	3	10	3	5	5	11	45%	59%
2	22	11	7	4	6	5	3	3	12	25%	50%
16	22	8	9	5	3	5	2	1	11	9%	36%
13	21	8	10	3	5	3	0	5	11	45%	38%
8	20	5	10	5	2	3	1	1	9	11%	25%
23	18	5	9	4	4	1	1	3	8	38%	28%
22	14	6	3	5	4	2	1	3	10	30%	43%
24	5	1	3	1	0	1	0	0	2	0%	20%
25	5	4	0	1	3	1	0	3	5	60%	80%
Total	961	365	388	208	232	133	85	147	488	30%	38%


TBI Intervention
Trauma Center
24
16
8
4
21
3
20
18
2
15
7
9
19
22
27
1
17
11
23
12
13
6
10
5
25
14
< Mean Mortality (38%)
> Mean Mortality (38%) and High % Eligible without ICP Monitor or Brain Operation
0
20
40
60
80
100
% Eligible without ICP Monitor or Brain Operation

MTQIP 2014 Collaborative Metrics

- Brain Injury
  - % of TBI intervention patients with timely intervention (≤ 8 hrs after arrival)
    - Begin = 65 %
    - Current = 68 %
    - Target = 80 %


TBI Intervention Timing
Trauma Center
5
24
25
14
21
7
22
13
23
27
3
18
10
2
20
6
12
1
11
4
19
16
15
9
8
17
-3
+3
> 80% Timely
< 80% Timely
0
20
40
60
80
100
% Timely (<8 hrs)

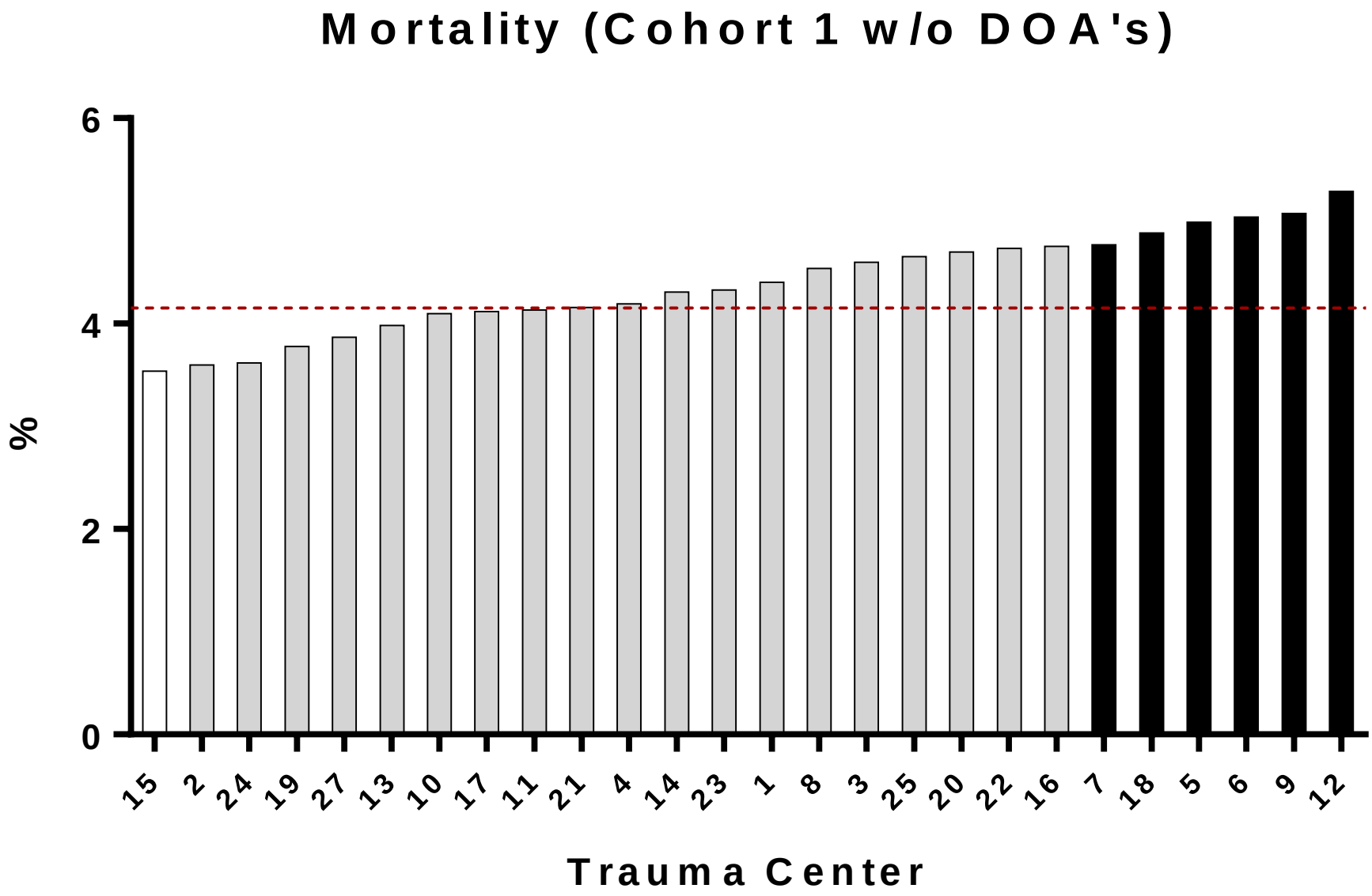
Patient List – TBI Intervention

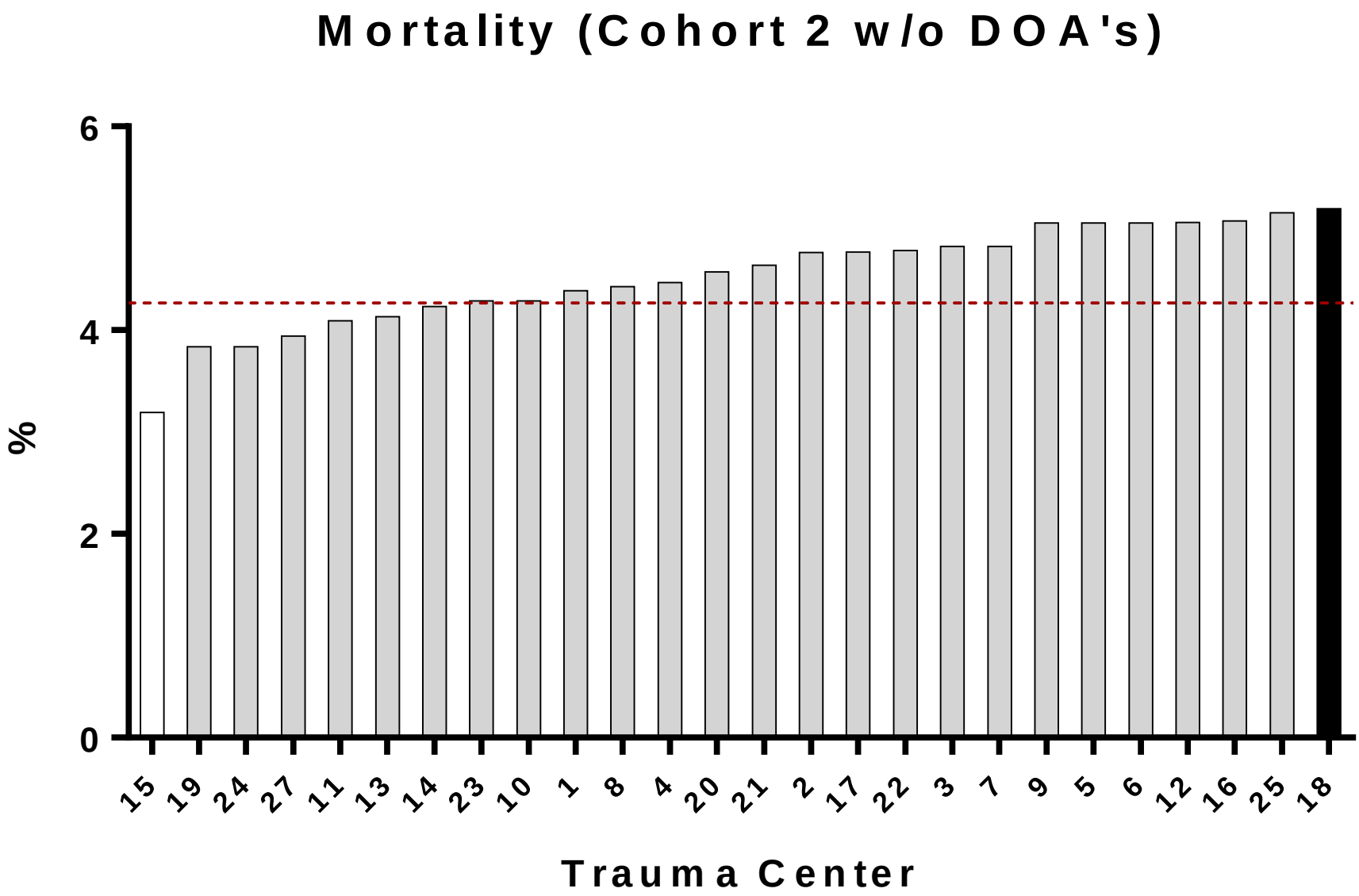
any_m	brain_op	vent	ippm	o2mon	jvb	time_to_br	time_to_ve	time_to_ip	time_to_o2	time_to_jv	minimum_	earliest_pl	timely
1	0	1	0	0	0		700				11.66667	vent	0
1	0	1	1	0	0		944	944			15.73333	multiple	0
1	0	1	0	0	0		1696				28.26667	vent	0
1	0	0	1	0	0			1640			27.33333	ippm	0
1	0	1	1	0	0			402			6.7	ippm	1
0	0	0	0	0	0								0
0	0	0	0	0	0								0
1	0	1	0	0	0		278				4.633333	vent	1
0	0	0	0	0	0								0
0	0	0	0	0	0								0
1	1	1	0	0	0	410	410				6.833333	multiple	1
1	0	1	0	0	0		1248				20.8	vent	0

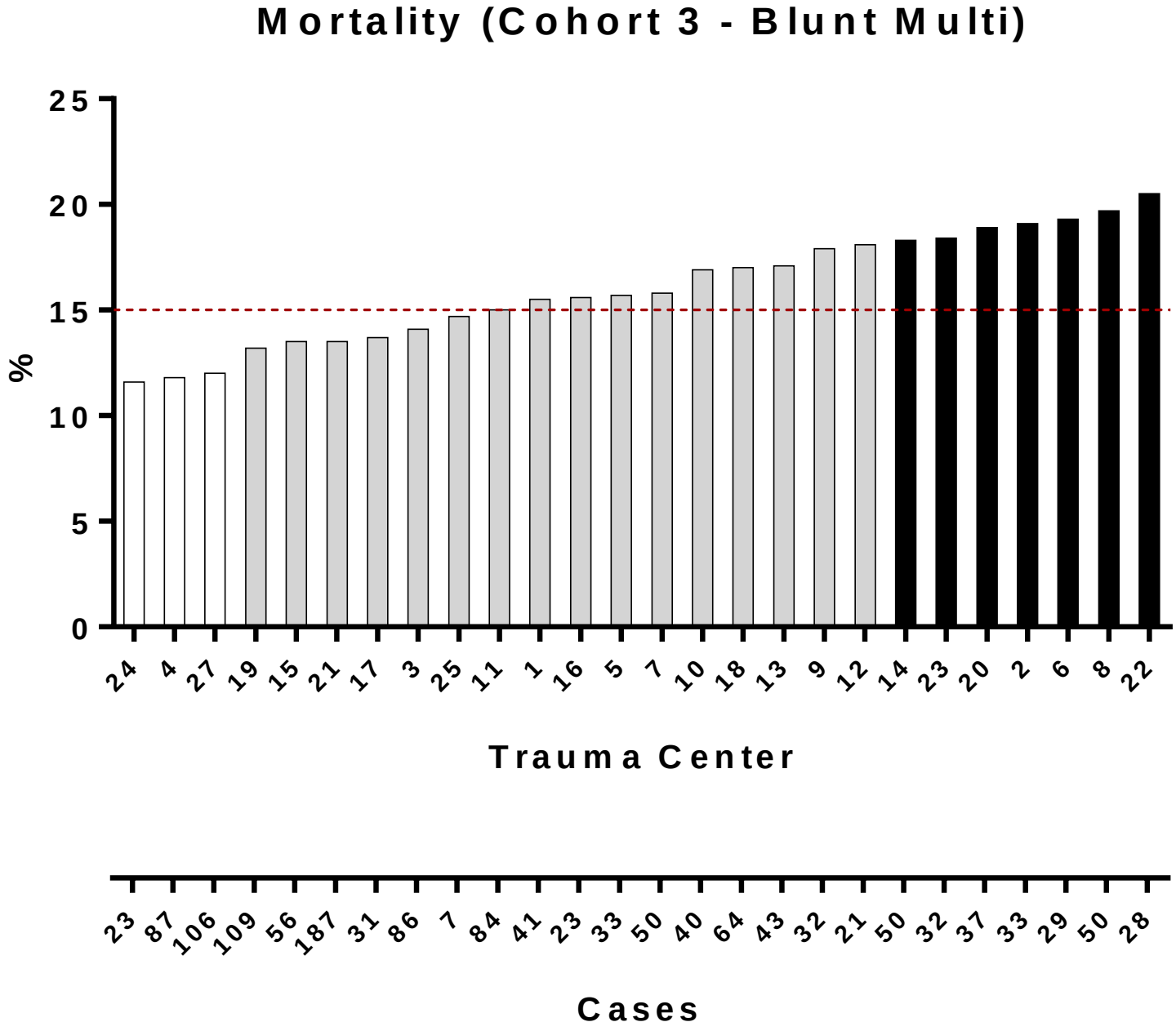
- Your list of patients
- 0 = No
- 1 = Yes
- Injury, Treatments, Time to, etc.
- Additional data?

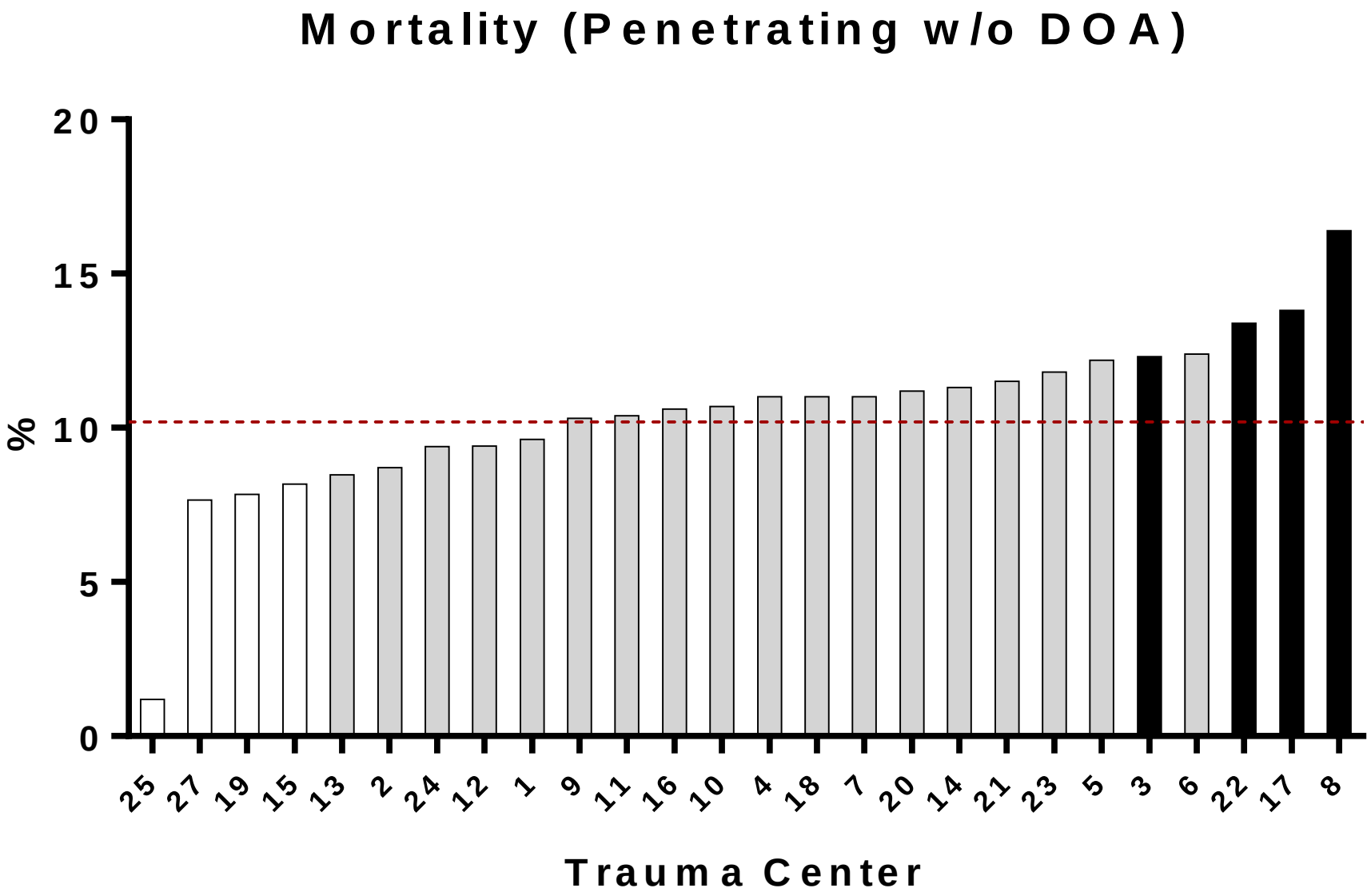
MTQIP Outcomes

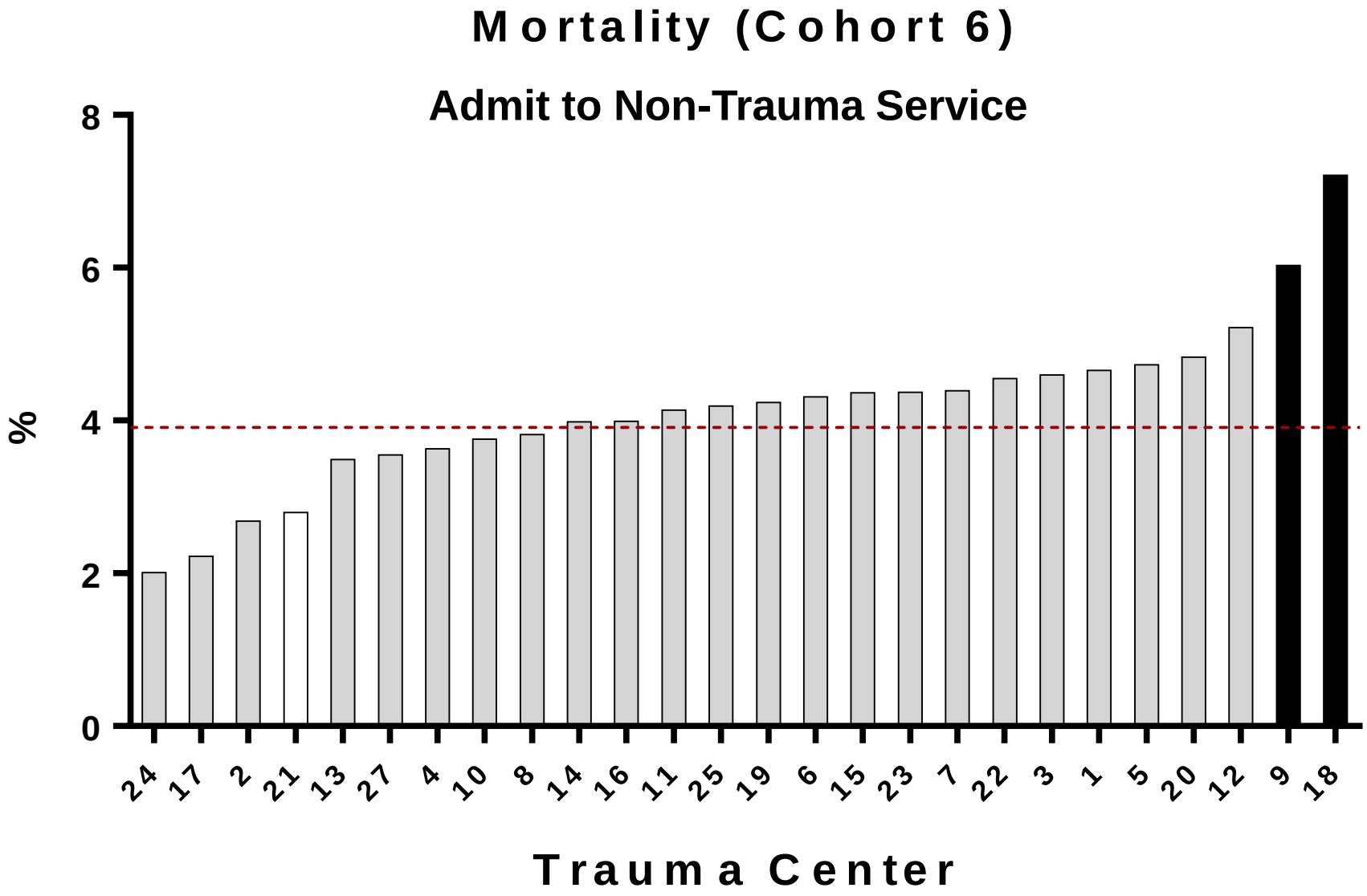
- ArborMetrix Report
- 11/1/2012 to 6/30/2014
- Rates
  - Risk and Reliability-adjusted
  - Red line is mean
- Legend
  - ▯ Low-outlier status (better performance)
  - ▯ Non-outlier status (average performance
  - ▮ High-outlier status (worse performance)

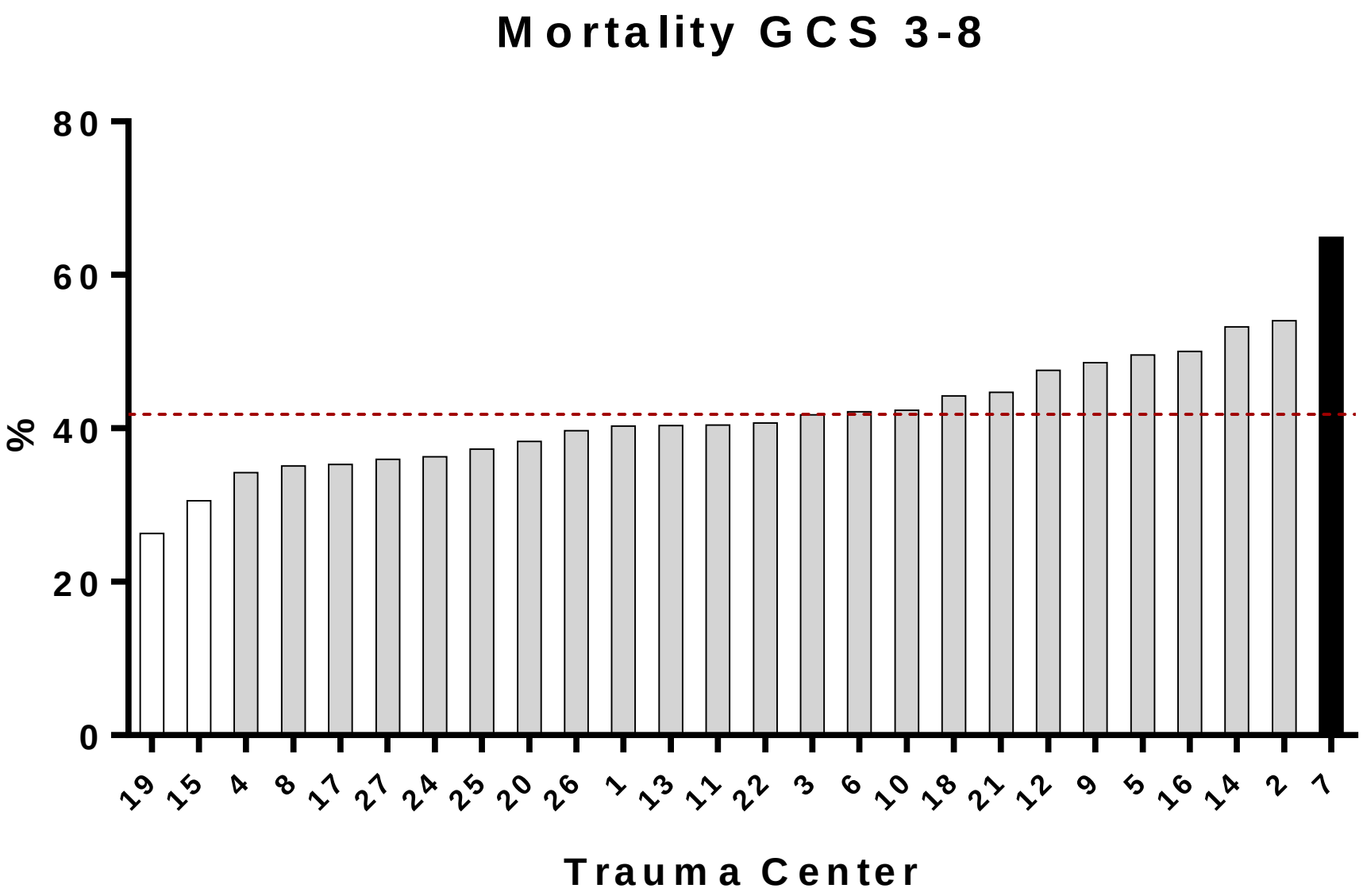

Mortality (Cohort 1 w/o DOA's)
6
4
2
0
%
15
2
24
19
27
13
10
17
11
21
4
14
23
1
8
3
25
20
22
16
7
18
5
6
9
12
Trauma Center

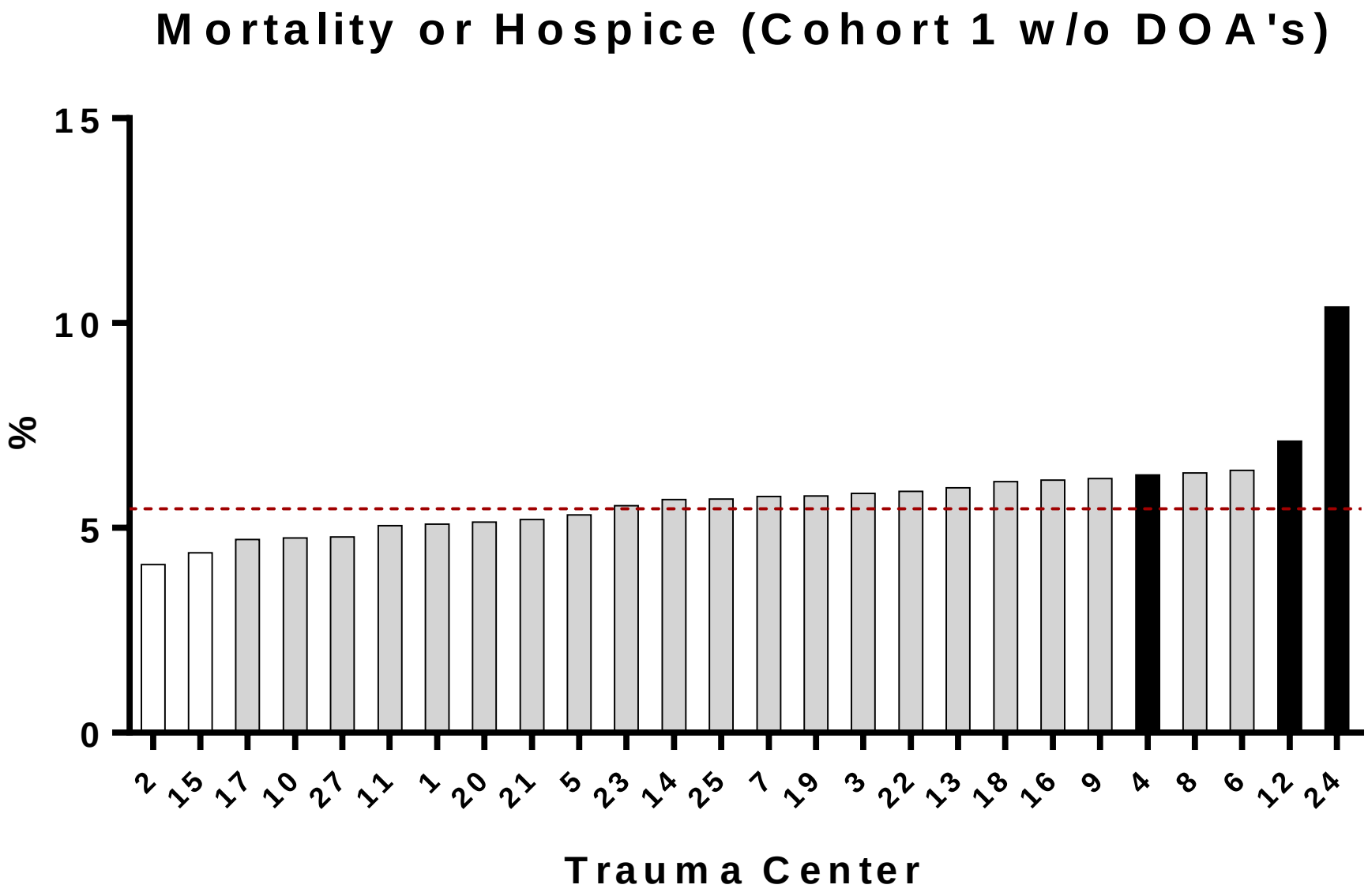

Mortality (Cohort 2 w/o DOA's)
6
4
2
0
%
15
19
24
27
11
13
14
23
10
1
8
4
20
21
2
17
22
3
7
9
5
6
12
16
25
18
Trauma Center

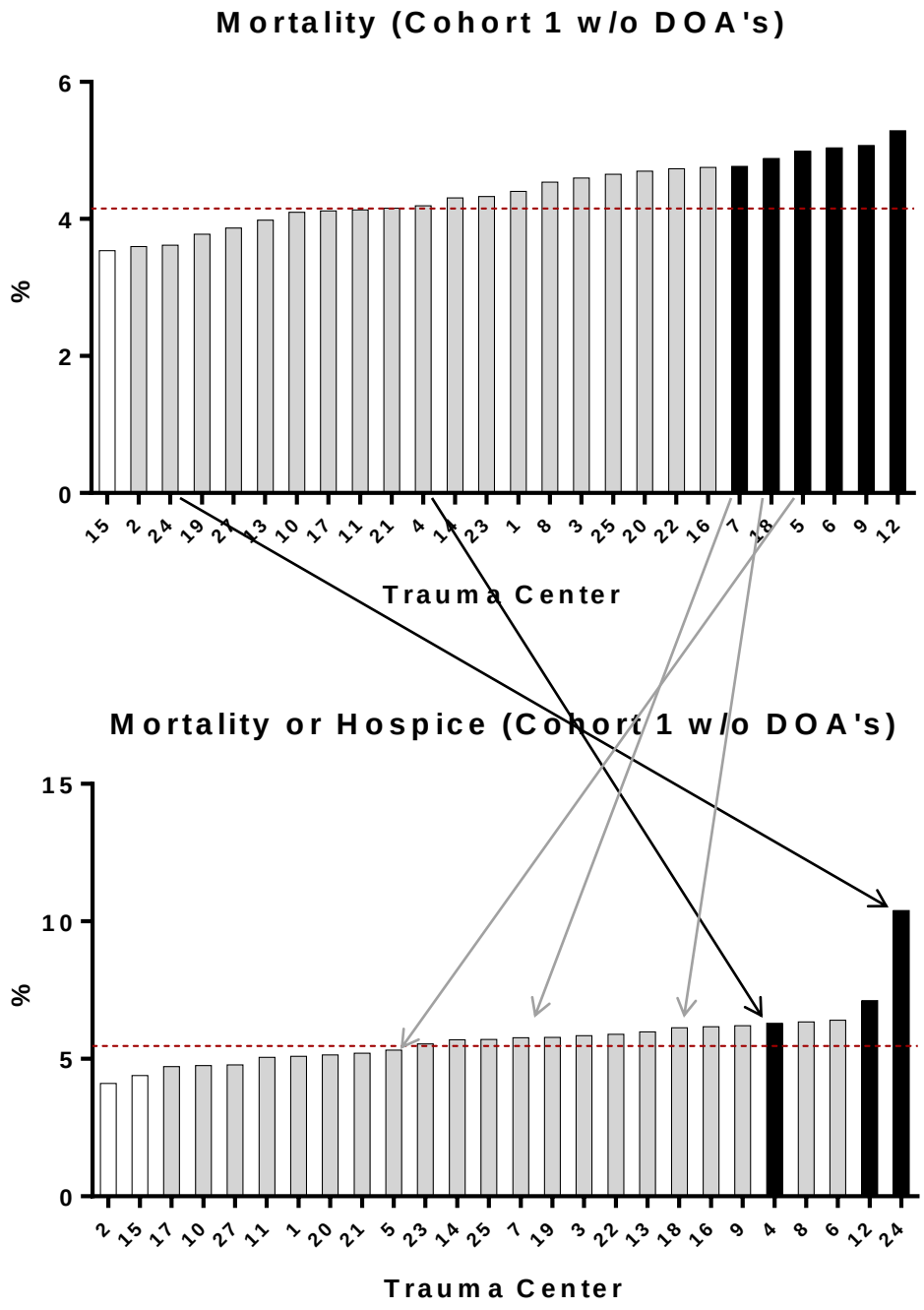

Mortality (Cohort 3 - Blunt Multi)
25
20
15
10
5
0
%
24 4 27 19 15 21 17 3 25 11 1 16 5 7 10 18 13 9 12 14 23 20 2 6 8 22
Trauma Center
23 87 106 109 56 187 31 86 7 84 41 23 33 50 40 64 43 32 21 50 32 37 33 29 50 28
Cases

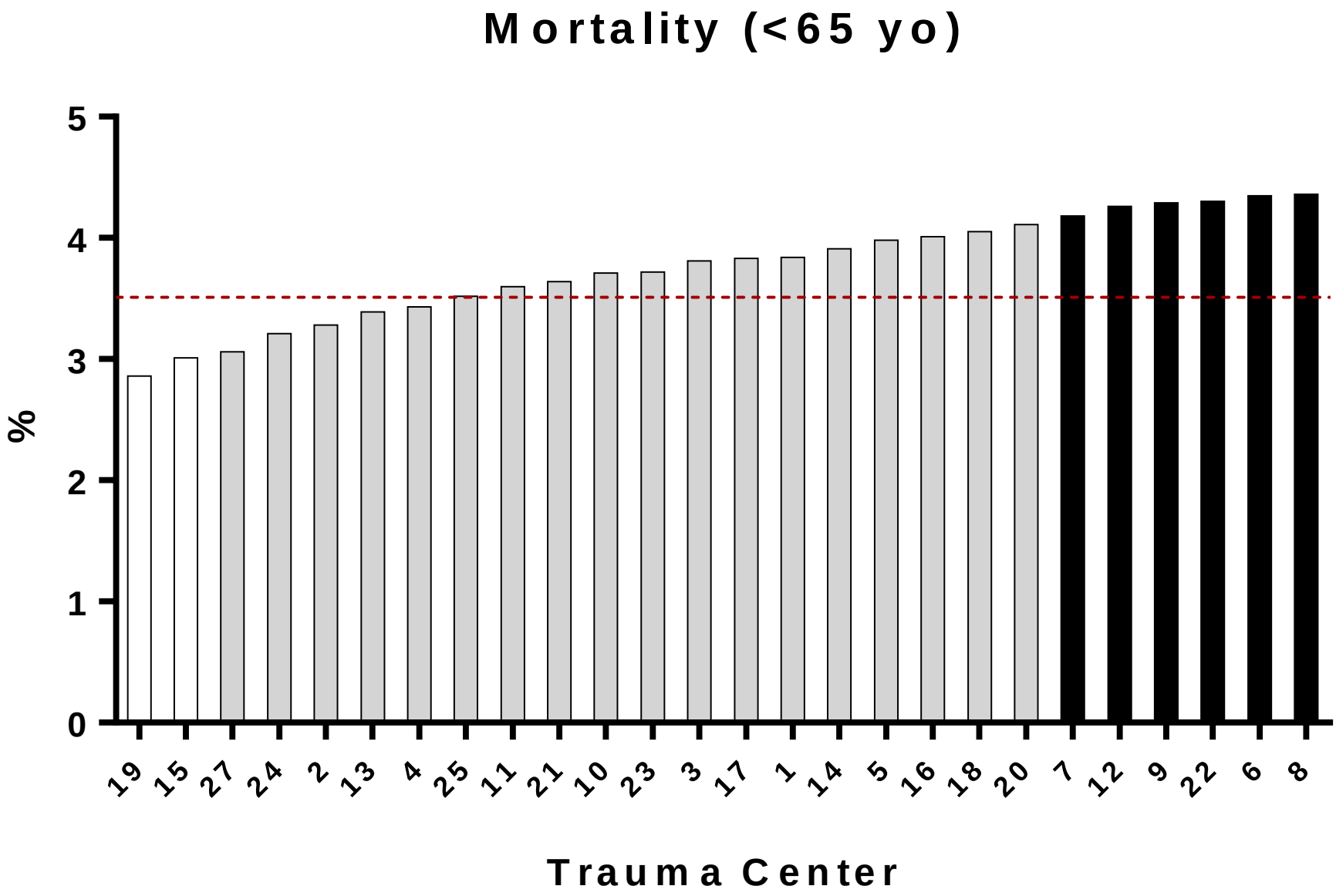

Mortality (Penetrating w/o DOA)
20
15
10
5
0
%
25 27 19 15 13 2 24 12 1 9 11 16 10 4 18 7 20 14 21 23 5 3 6 22 17 8
Trauma Center

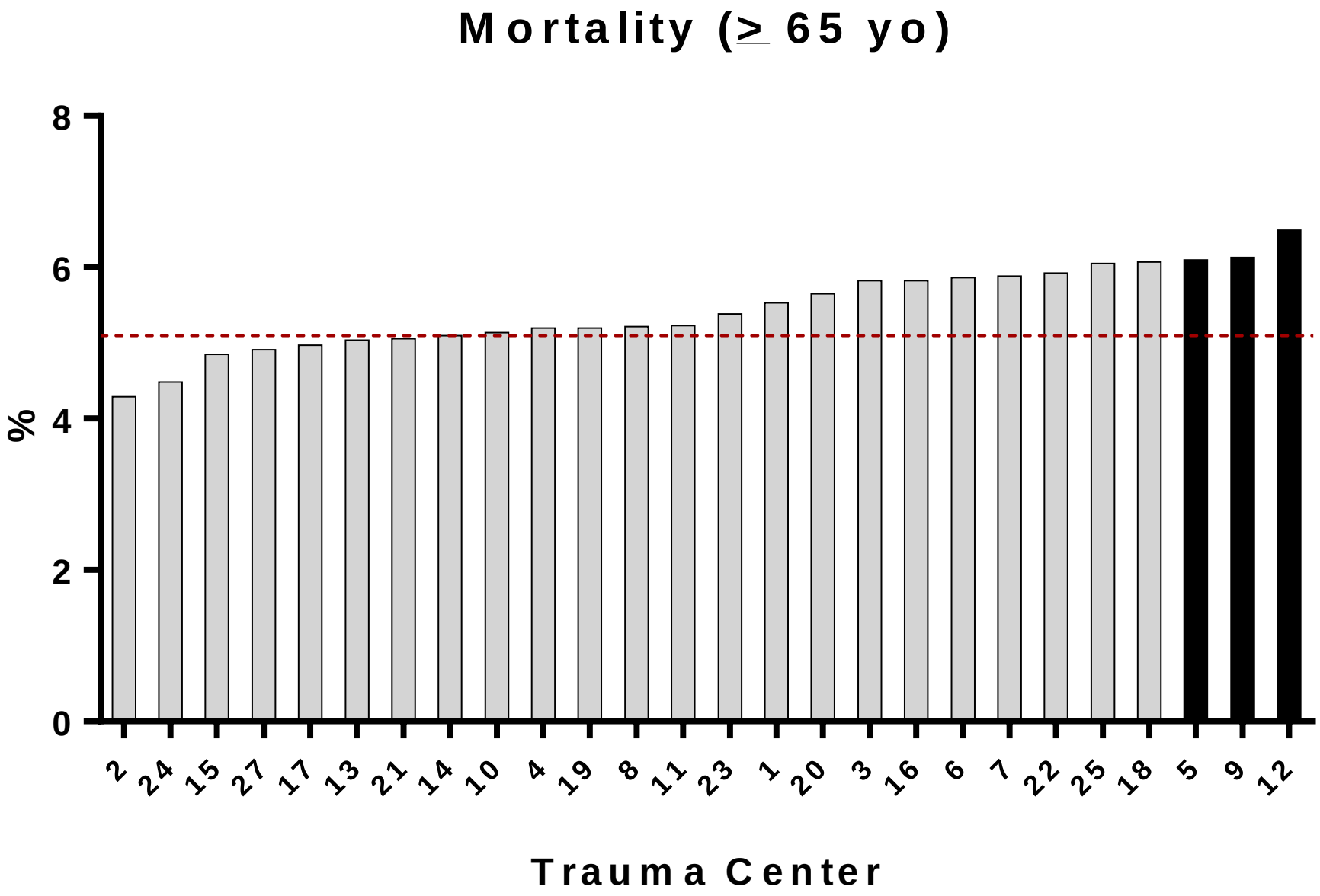

Mortality (Cohort 6)
Admit to Non-Trauma Service
%
8
6
4
2
0
24 17 2 21 13 27 4 10 8 14 16 11 25 19 6 15 23 7 22 3 1 5 20 12 9 18
Trauma Center


Mortality GCS 3-8
80
60
40
20
0
%
19
15
4
8
17
27
24
25
20
26
1
13
11
22
3
6
10
18
21
12
9
5
16
14
2
7
Trauma Center

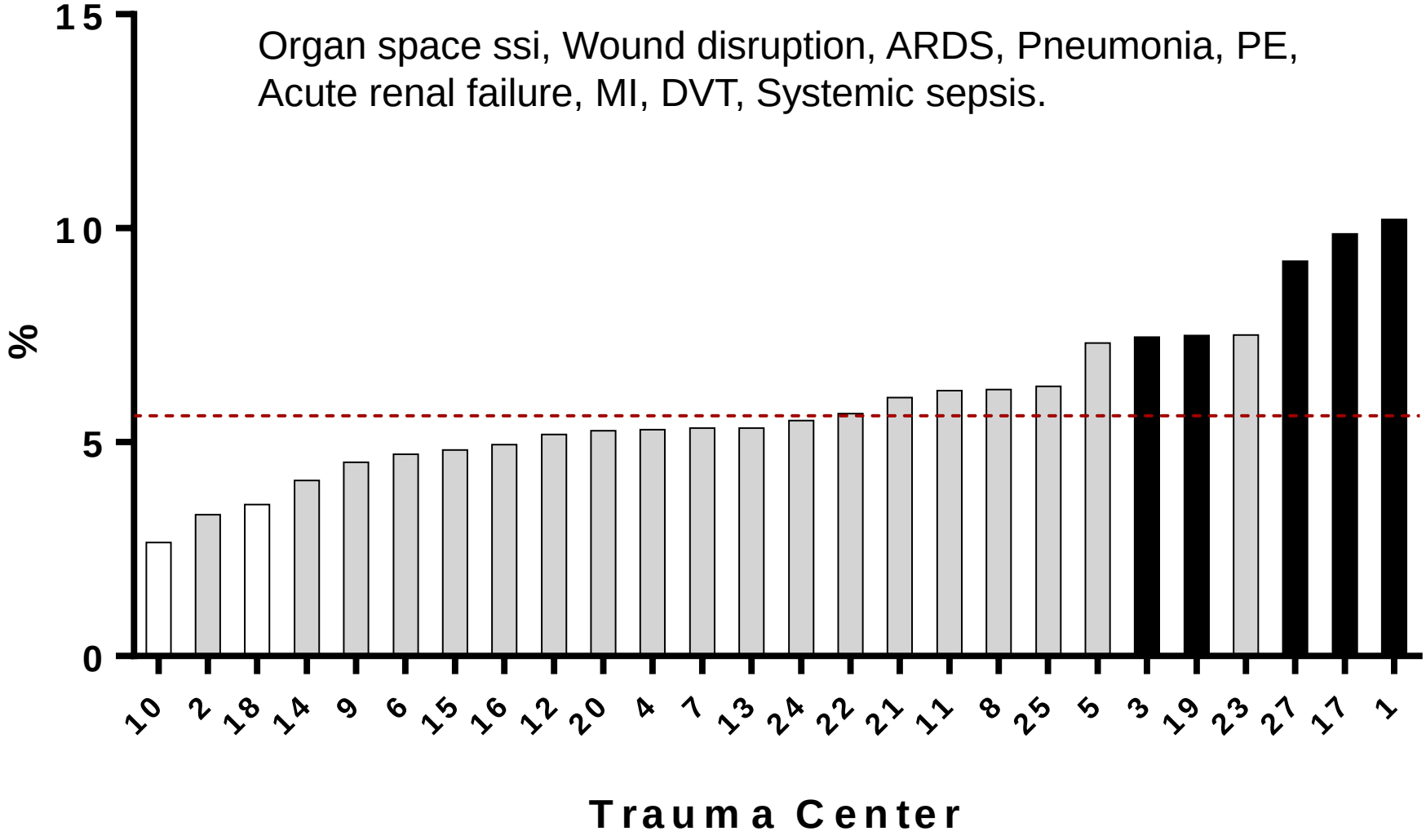

Mortality or Hospice (Cohort 1 w/o DOA's)
15
10
5
0
%
2
15
17
10
27
11
1
20
21
5
23
14
25
7
19
3
22
13
18
16
9
4
8
6
12
24
Trauma Center

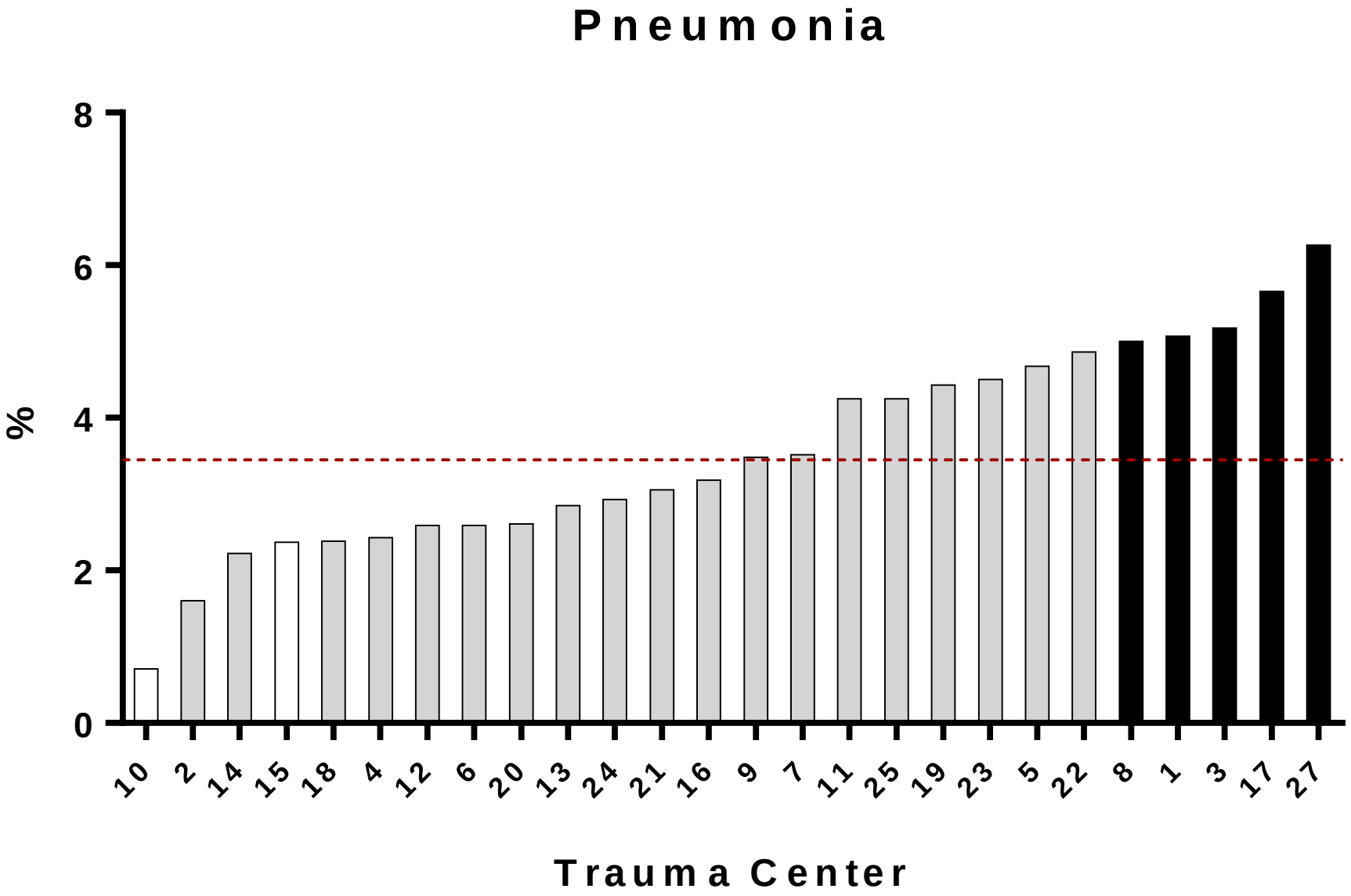

Mortality (Cohort 1 w/o DOA's)
%
6
4
2
0
15 2 24 19 27 13 10 17 11 21 4 14 23 1 8 3 25 20 22 16 7 18 5 6 9 12
Trauma Center
Mortality or Hospice (Cohort 1 w/o DOA's)
%
15
10
5
0
2 15 17 10 27 11 1 20 21 5 23 14 25 7 19 3 22 13 18 16 9 4 8 6 12 24
Trauma Center

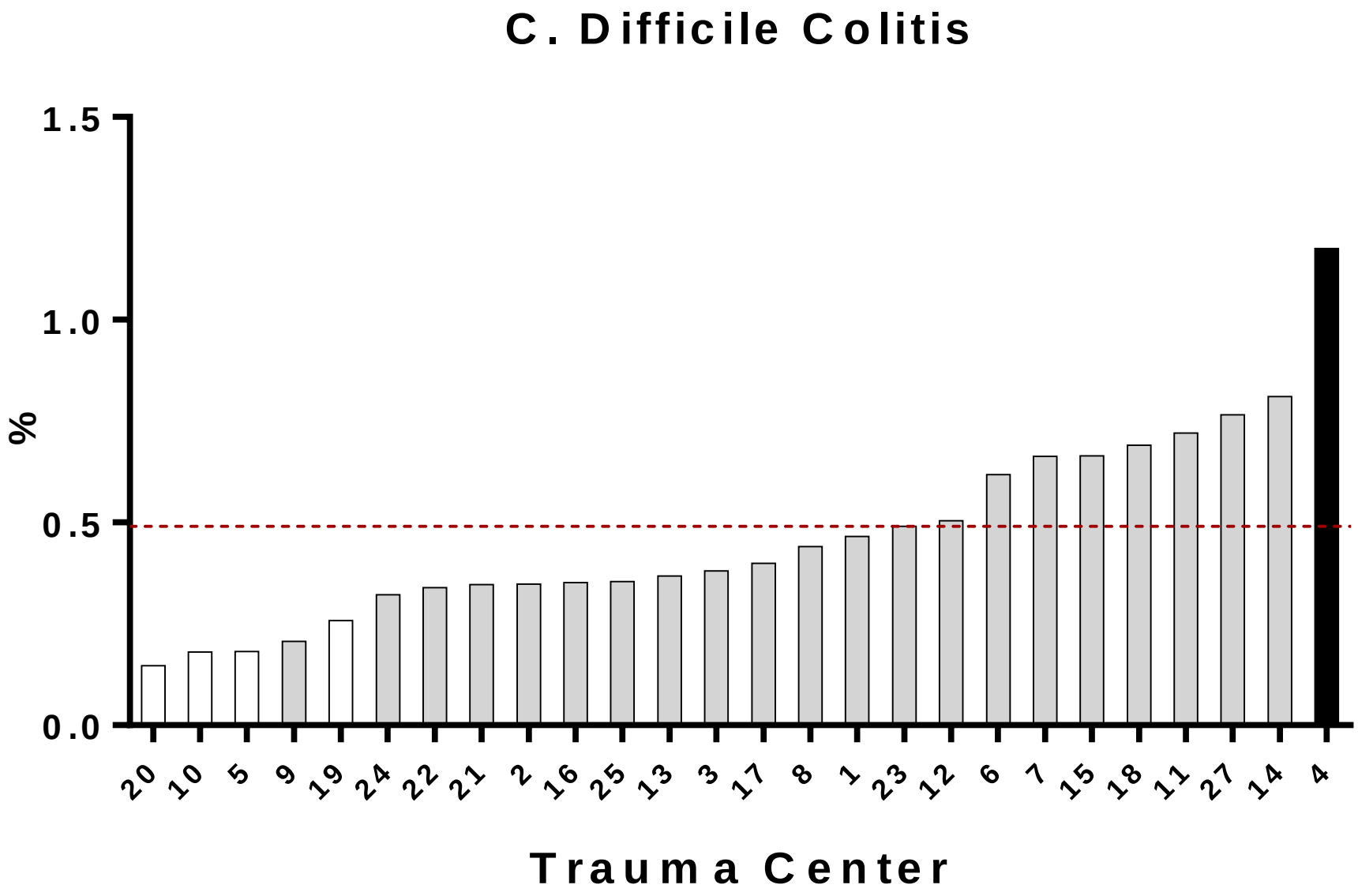

Mortality (<65 yo)
%
5
4
3
2
1
0
19
15
27
24
2
13
4
25
11
21
10
23
3
17
1
14
5
16
18
20
7
12
9
22
6
8
Trauma Center

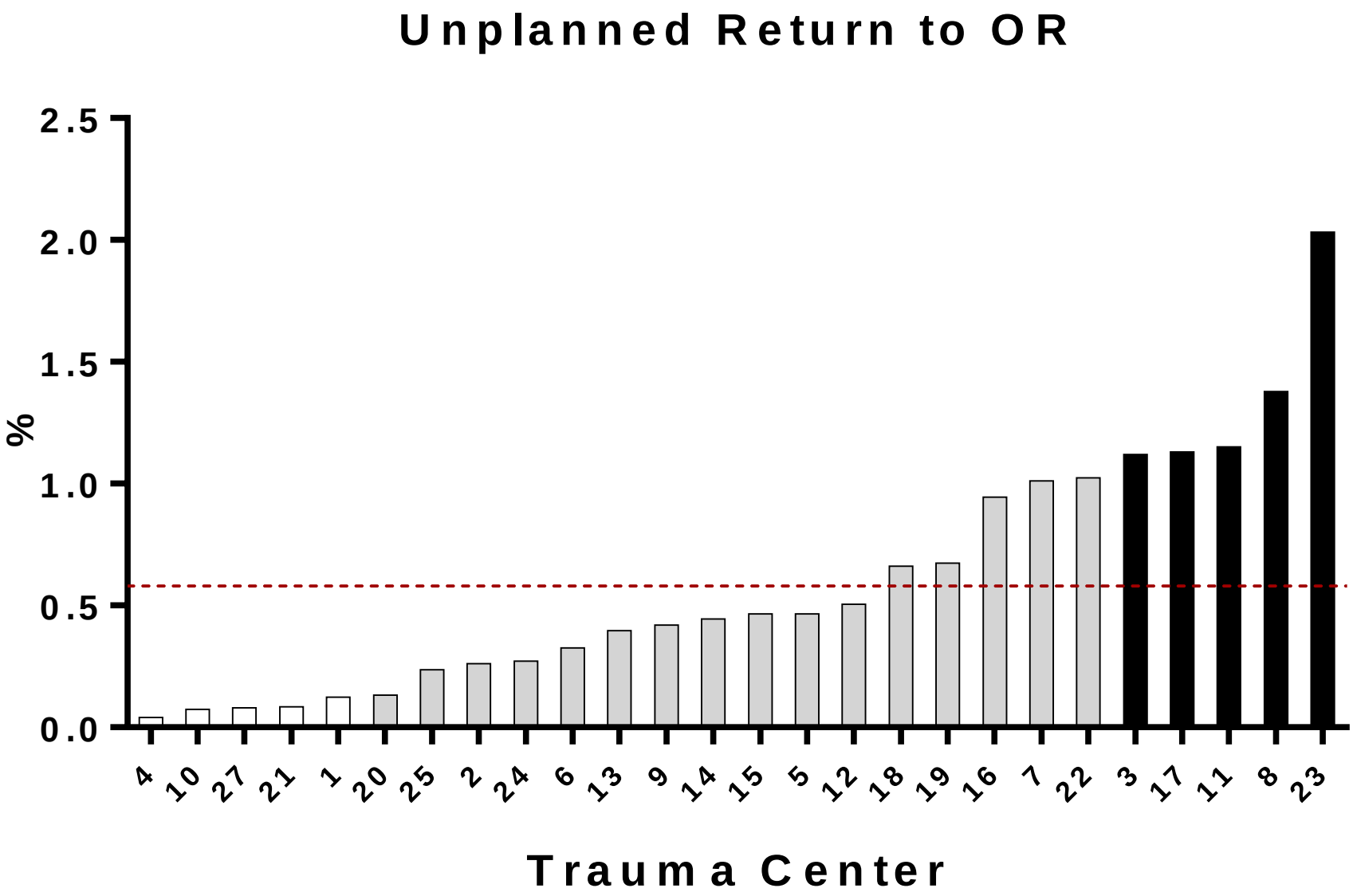

Mortality (≥ 65 yo)
8
6
4
2
0
%
2
24
15
27
17
13
21
14
10
4
19
8
11
23
1
20
3
16
6
7
22
25
18
5
9
12
Trauma Center

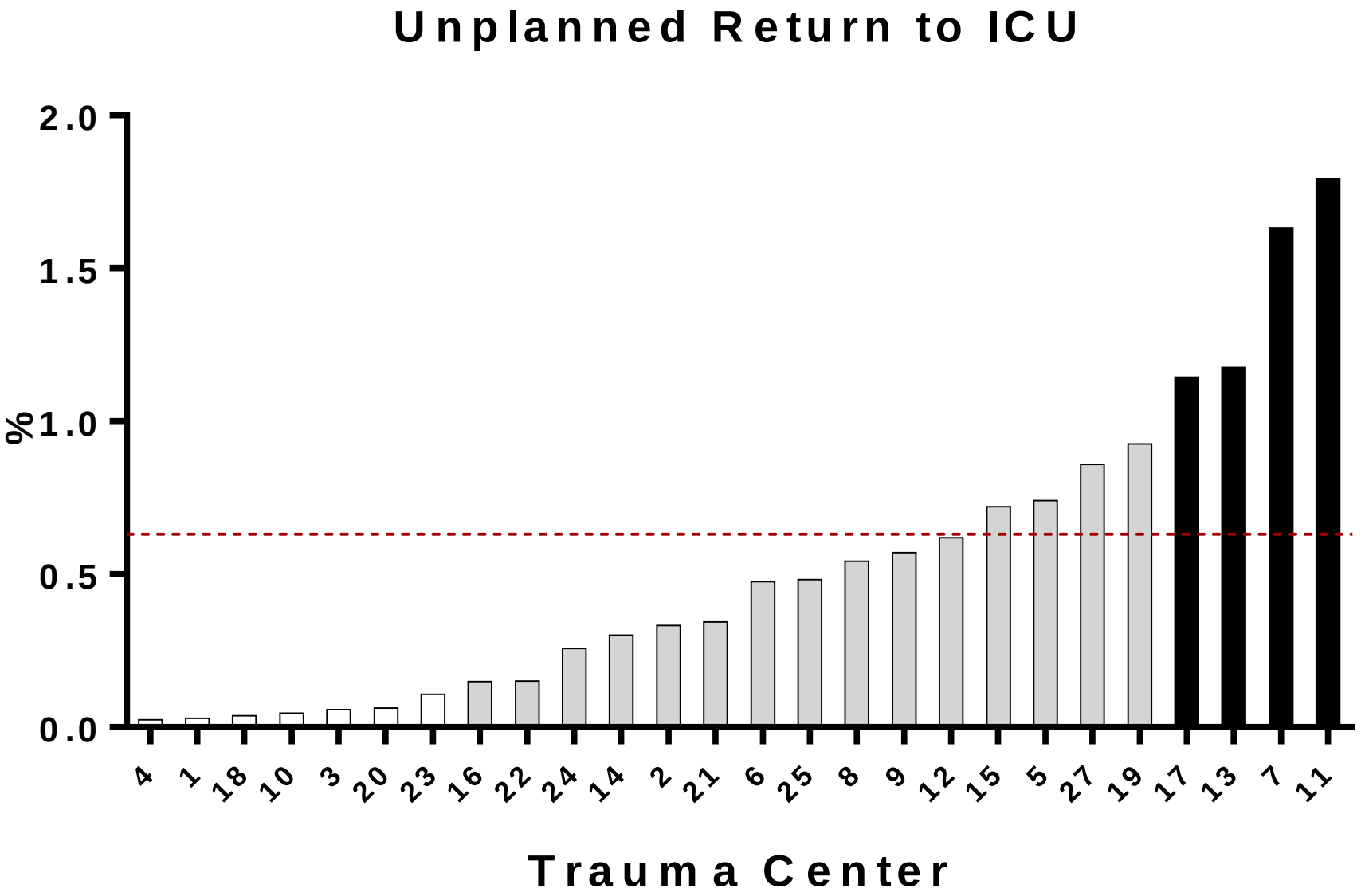
Complications (Group 2)

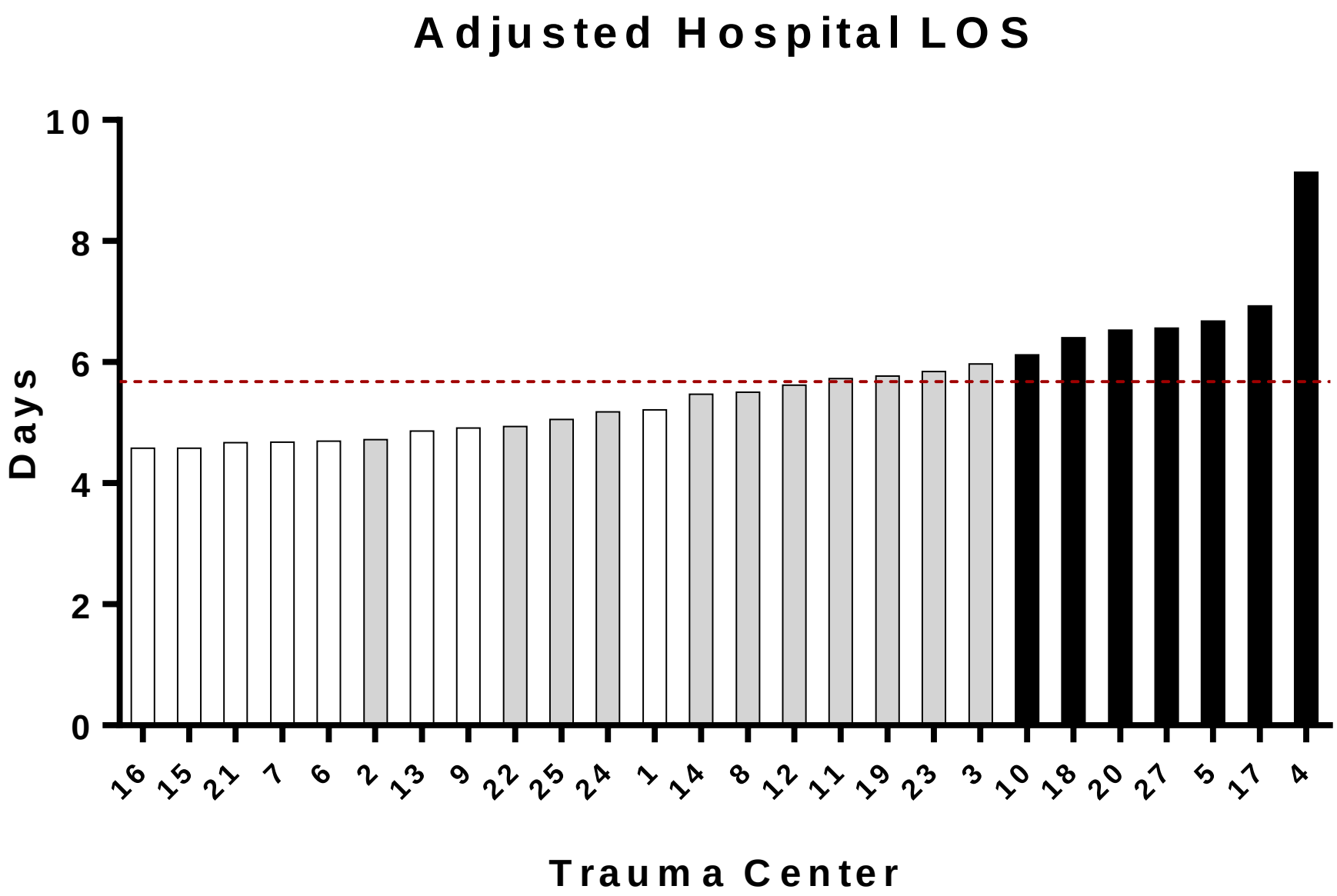


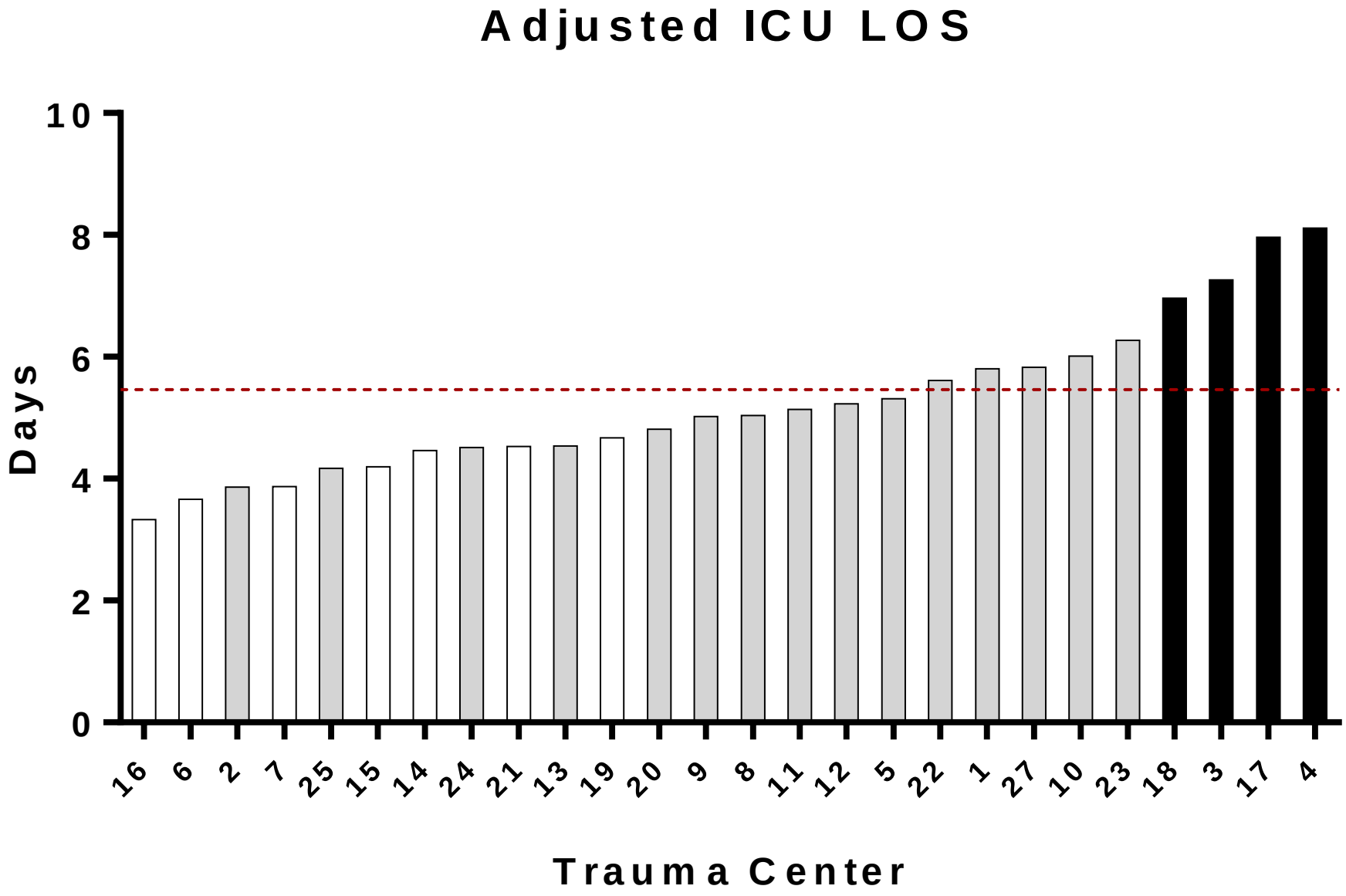

Pneumonia
%
8
6
4
2
0
10
2
14
15
18
4
12
6
20
13
24
21
16
9
7
11
25
19
23
5
22
8
1
3
17
27
Trauma Center

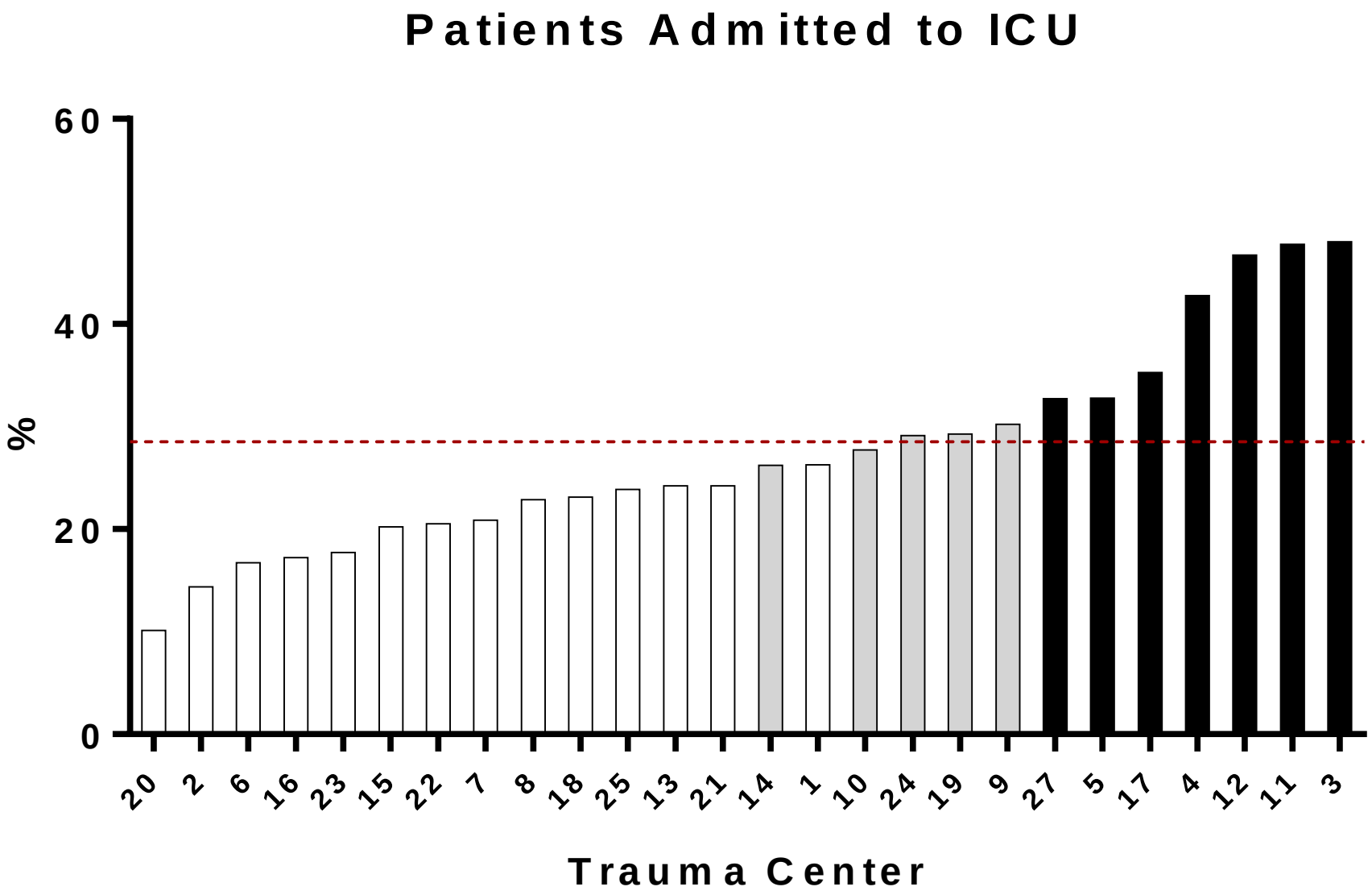

C. Difficile Colitis
1.5
1.0
0.5
0.0
%
20 10 5 9 19 24 22 21 2 16 25 13 3 17 8 1 23 12 6 7 15 18 11 27 14 4
Trauma Center

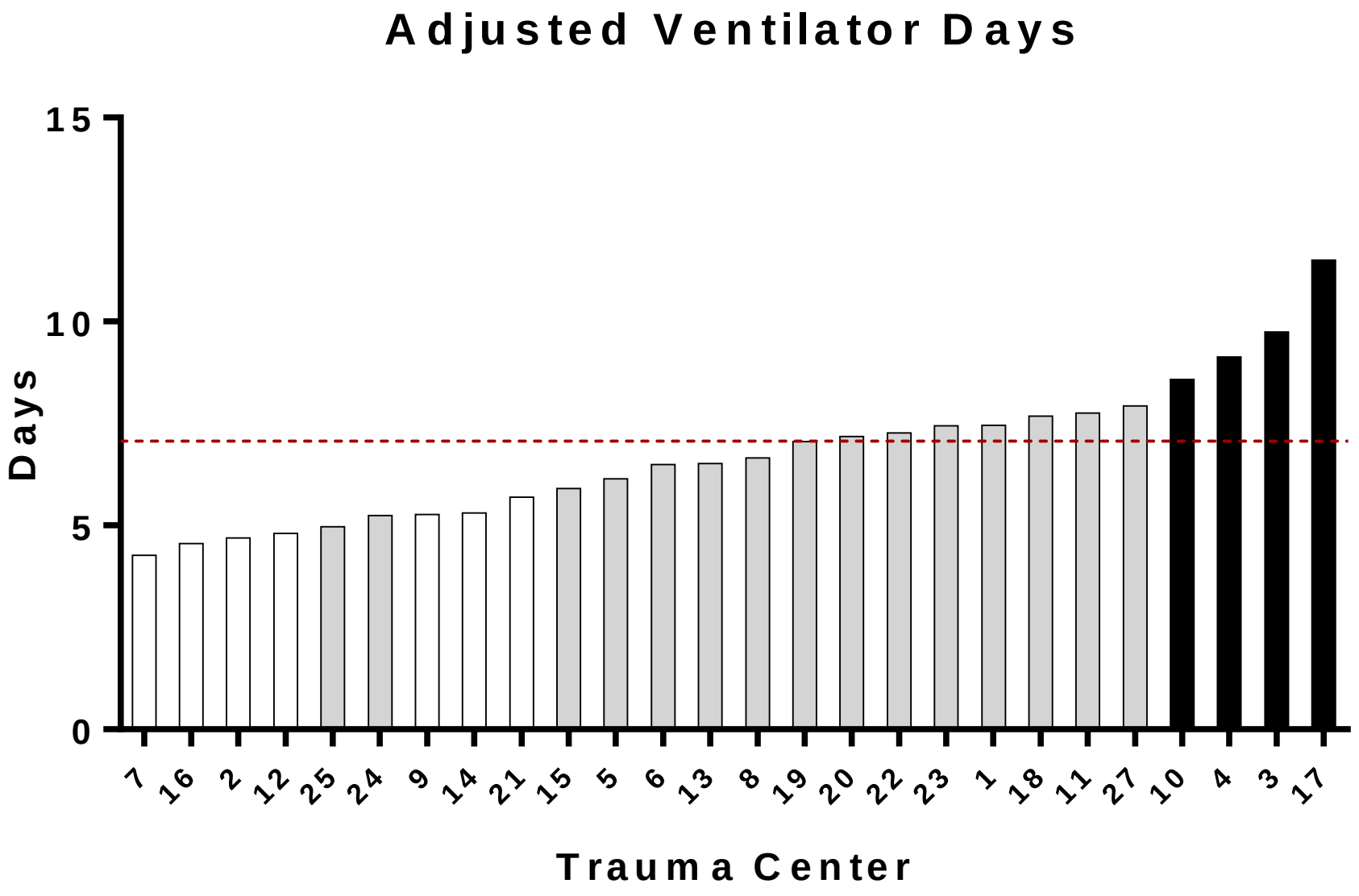

Unplanned Return to OR
2.5
2.0
1.5
1.0
0.5
0.0
%
4
10
27
21
1
20
25
2
24
6
13
9
14
15
5
12
18
19
16
7
22
3
17
11
8
23
Trauma Center

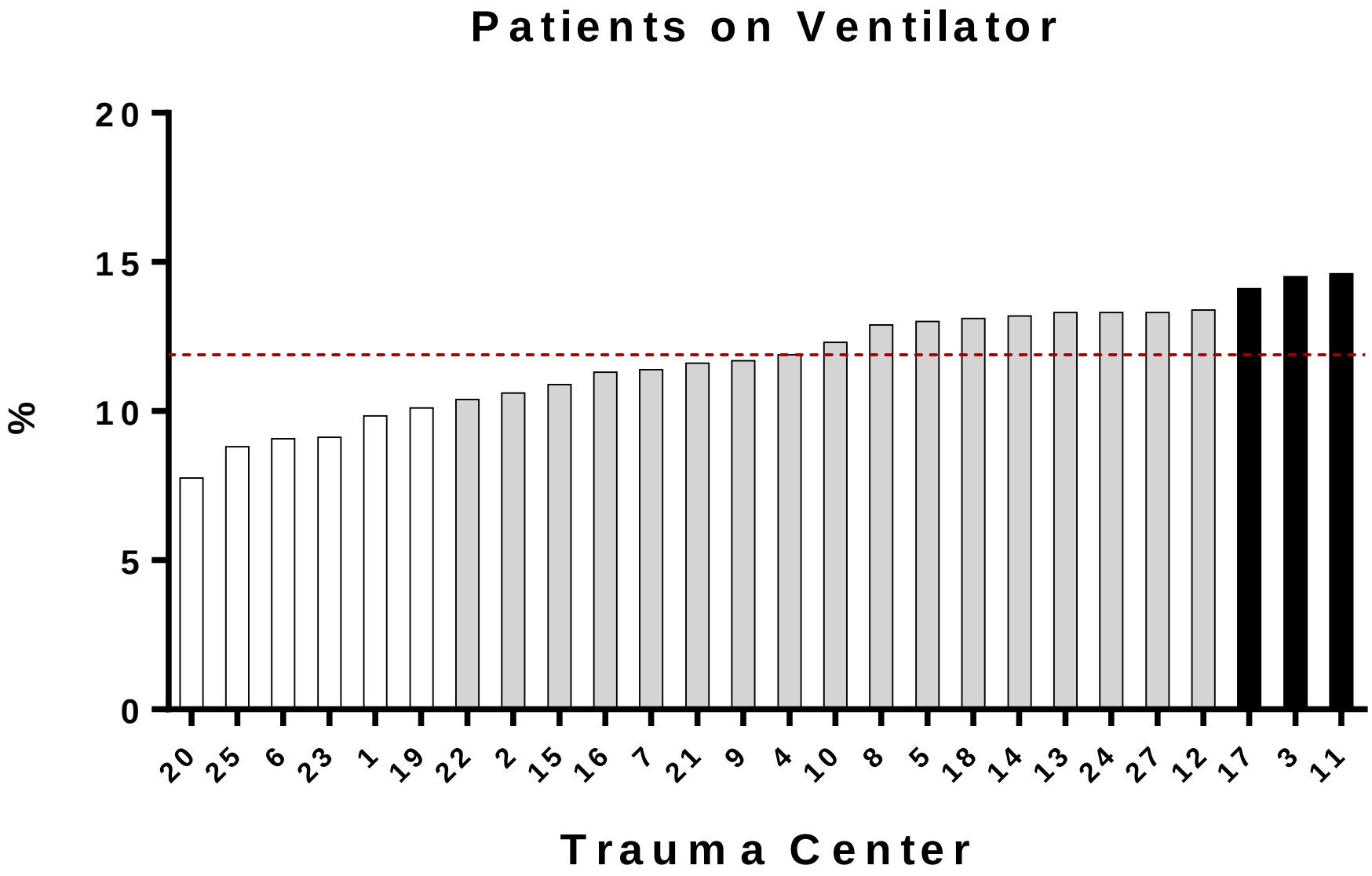

Unplanned Return to ICU
2.0
1.5
1.0
0.5
0.0
%
4
1
18
10
3
20
23
16
22
24
14
2
21
6
25
8
9
12
15
5
27
19
17
13
7
11
Trauma Center

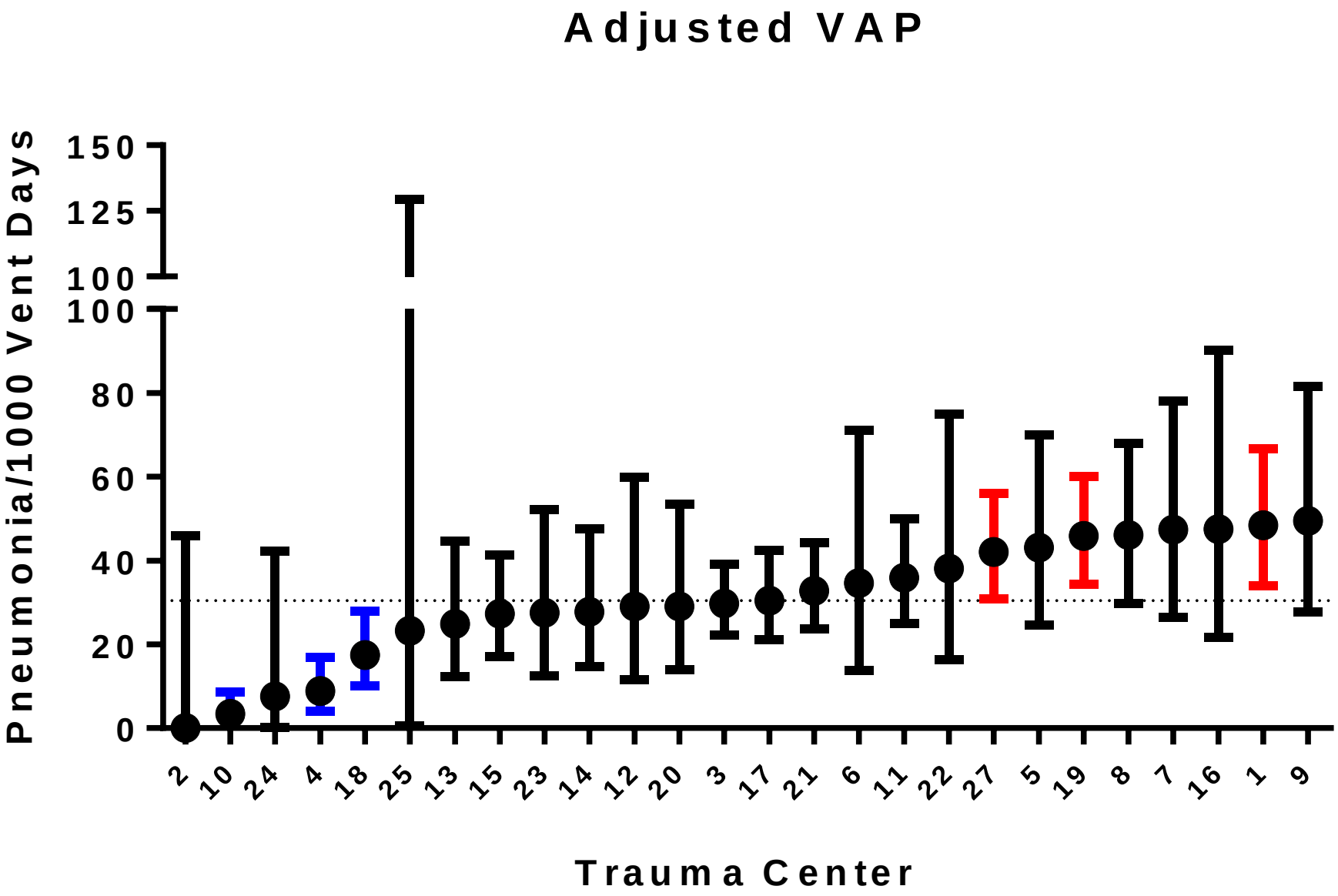

Adjusted Hospital LOS
Days
10
8
6
4
2
0
16 15 21 7 6 2 13 9 22 25 24 1 14 8 12 11 19 23 3 10 18 20 27 5 17 4
Trauma Center

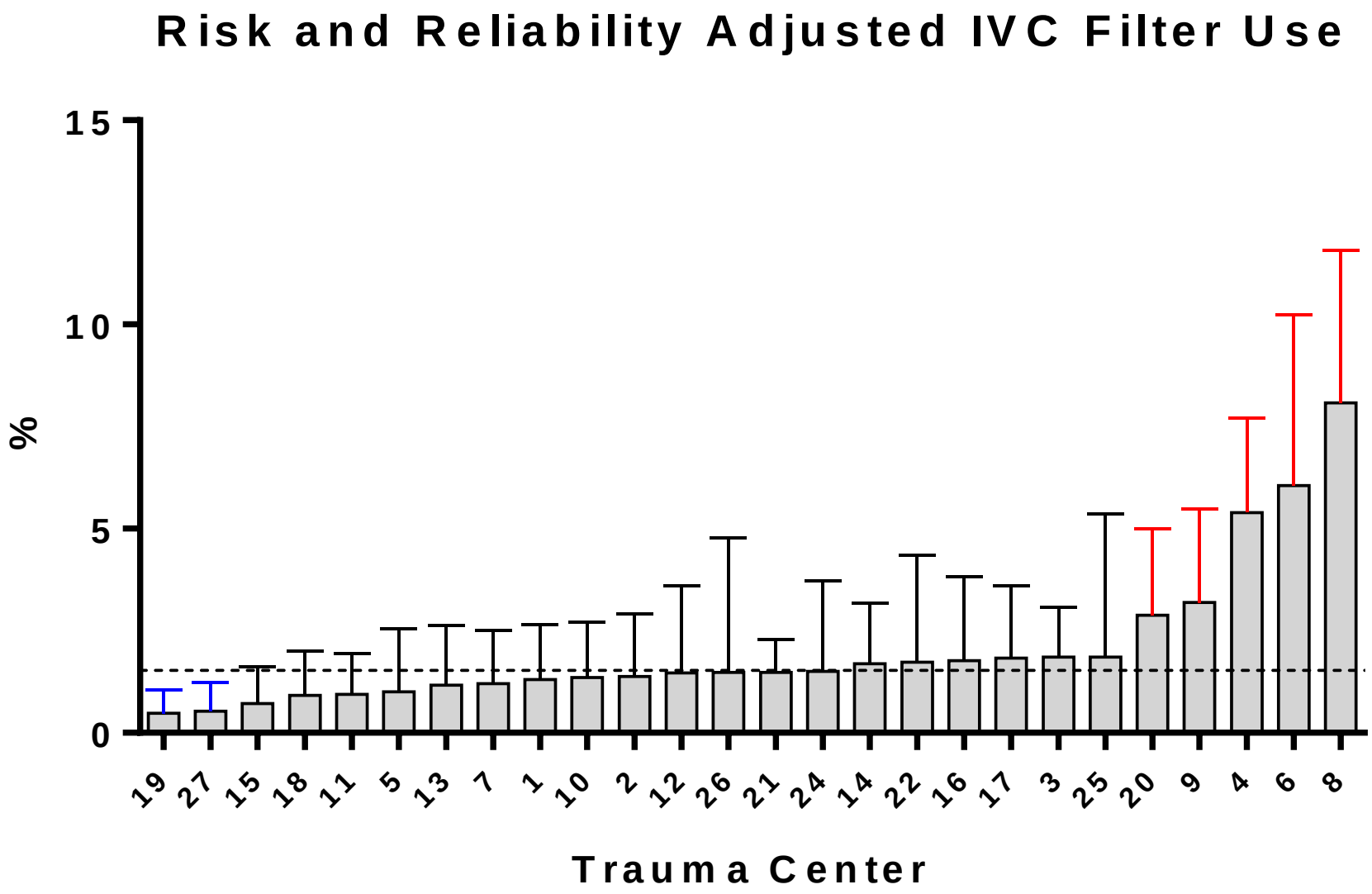

Adjusted ICU LOS
Days
10
8
6
4
2
0
16 6 2 7 25 15 14 24 21 13 19 20 9 8 11 12 5 22 1 27 10 23 18 3 17 4
Trauma Center

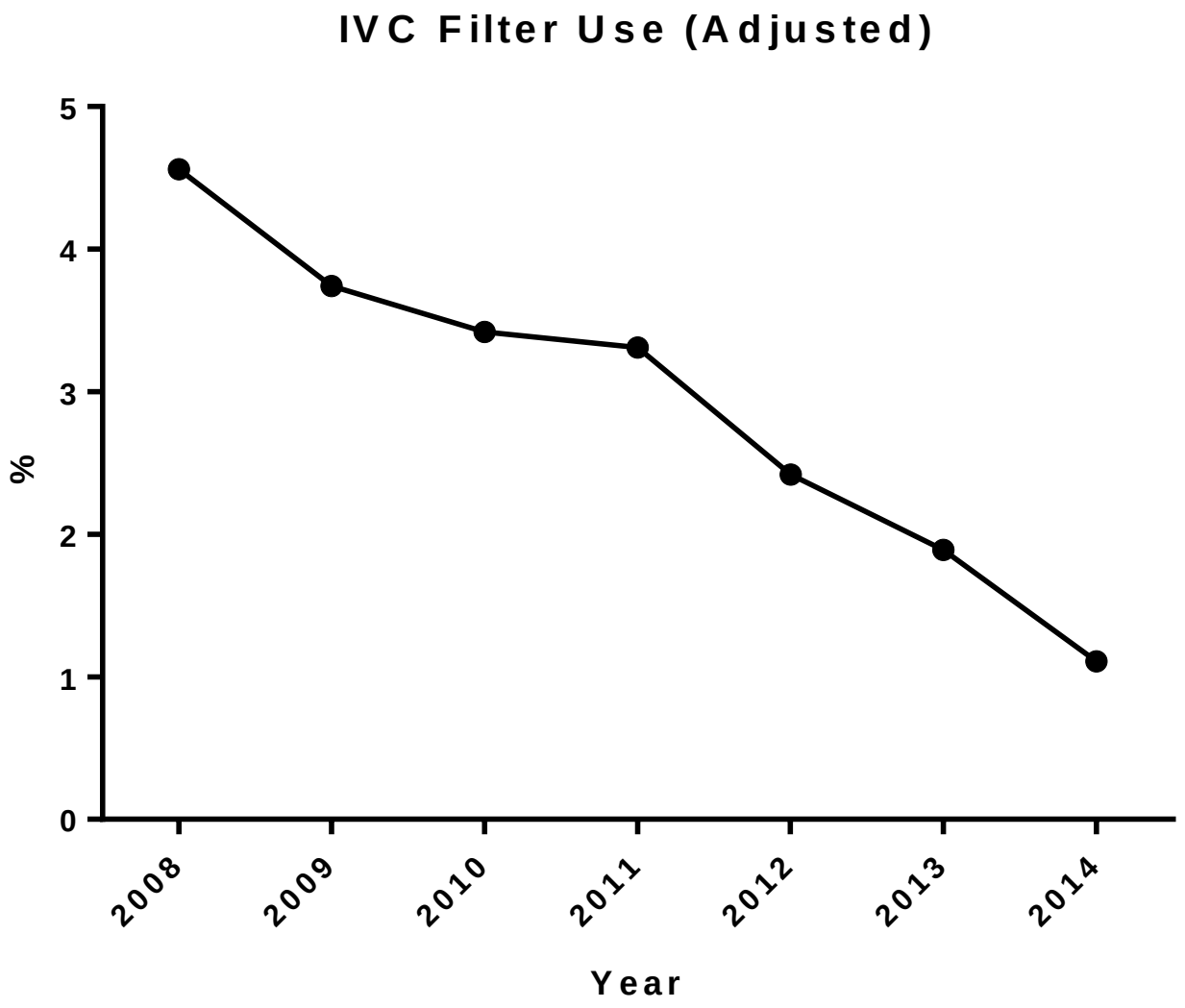

Patients Admitted to ICU
60
40
20
0
%
20
2
6
16
23
15
22
7
8
18
25
13
21
14
1
10
24
19
9
27
5
17
4
12
11
3
Trauma Center

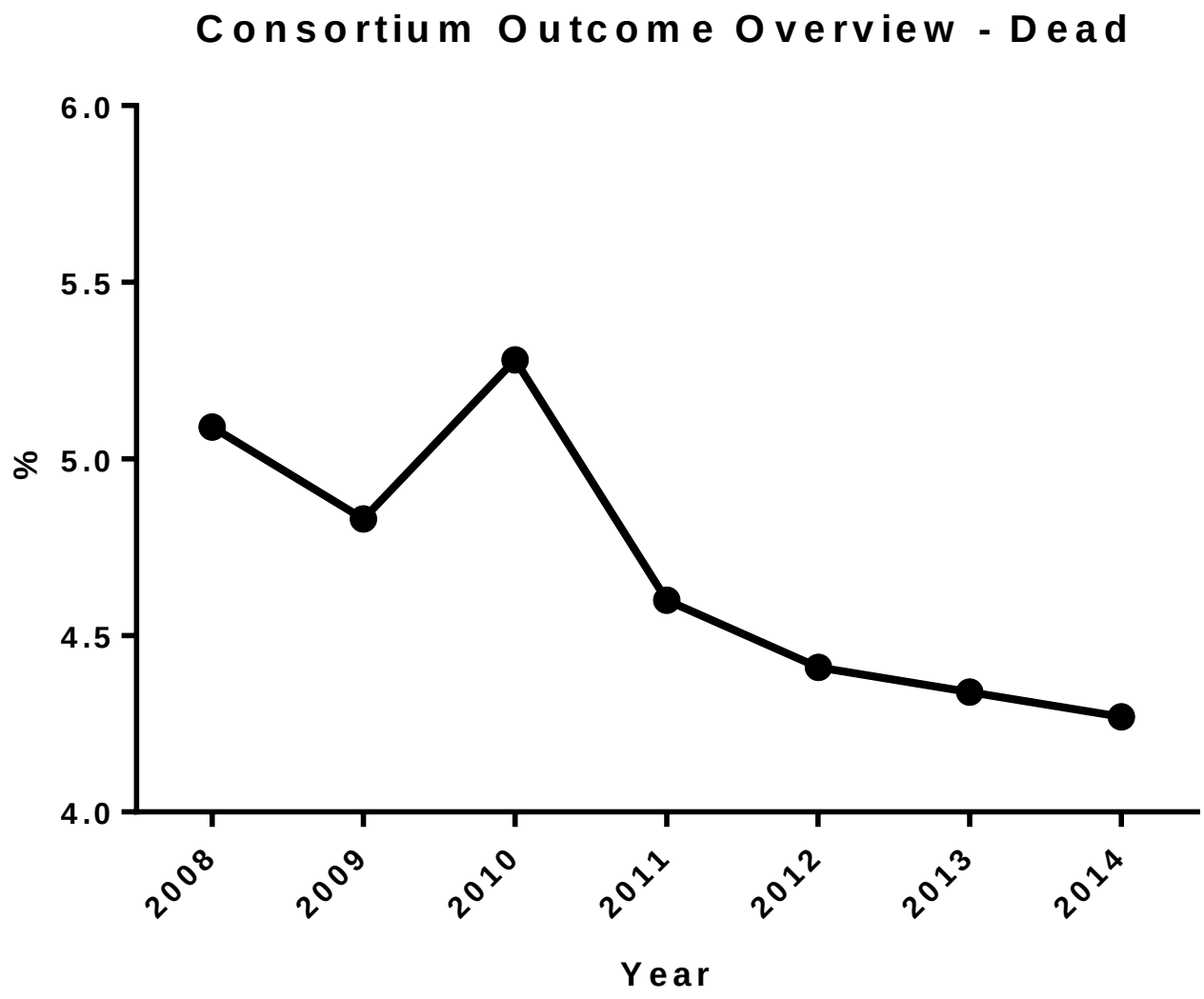

Adjusted Ventilator Days
15
10
5
0
Days
7
16
2
12
25
24
9
14
21
15
5
6
13
8
19
20
22
23
1
18
11
27
10
4
3
17
Trauma Center

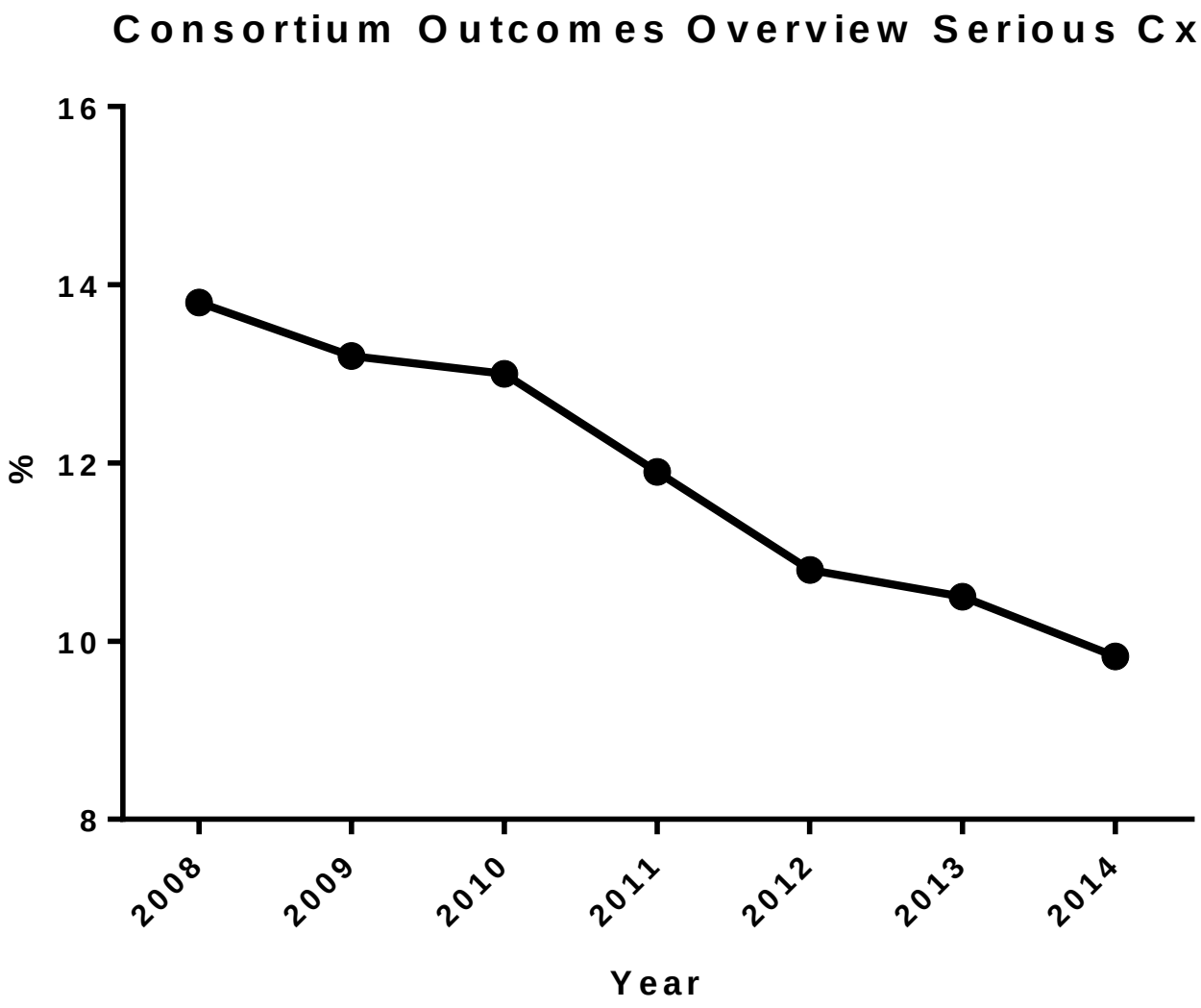

Patients on Ventilator
%
20
15
10
5
0
20 25 6 23 1 19 22 2 15 16 7 21 9 4 10 8 5 18 14 13 24 27 12 17 3 11
Trauma Center


Adjusted VAP
Pneumonia/1000 Vent Days
150
125
100
100
80
60
40
20
0
2
10
24
4
18
25
13
15
23
14
12
20
3
17
21
6
11
22
27
5
19
8
7
16
1
9
Trauma Center


Risk and Reliability Adjusted IVC Filter Use
15
10
5
0
%
19 27 15 18 11 5 13 7 1 10 2 12 26 21 24 14 22 16 17 3 25 20 9 4 6 8
Trauma Center


IVC Filter Use (Adjusted)
5
4
3
2
1
0
%
2008
2009
2010
2011
2012
2013
2014
Year


Consortium Outcome Overview - Dead
6.0
5.5
5.0
4.5
4.0
%
2008
2009
2010
2011
2012
2013
2014
Year


Consortium Outcomes Overview Serious Cx
16
14
12
10
8
%
2008
2009
2010
2011
2012
2013
2014
Year

Program Manger

Judy Mikhail, MSN MBA

MTQIP Program Manager Update 10.16.14

Judy Mikhail, MSN, MBA


Lifelong
LEARNING
CME

Proposed MTQIP CME Change 2015
American Board of Surgery
Maintenance of Certification

Part 1	**Professional Standing** Medical License in state of practice Privileges in specialty of practice Professional References: Chief of Surgery/Chair Credentialing
Part 2	**Lifelong Learning and Self Assessment** CME: 90 hrs/3yrs Self Assessment: 60/90 CME hrs must include self assessment, pass rate is 75%
Part 3	**Cognitive Expertise** Examination every 10 years
Part 4	**Evaluation of Performance in Practice** Practice Assessment: Ongoing participation in a local, regional or national outcome registry or quality assessment program, such as the ACS Surgeon Specific Registry (case log system), or state or national collaboratives.

Proposed MTQIP CME Change 2015

Part 2 (MTQIP)	**<u>Lifelong Learning and Self Assessment</u>** CME: 90 hrs/3yrs Self Assessment: 60/90 hrs., self assessment, pass is 75% ---------- ✓ Short quiz covering MTQIP presentations, Pass ≥ 75% ✓ Paper vs Survey Monkey? ✓ Approved through U of M CME office
Part 4 (MTQIP)	**<u>Evaluation of Performance in Practice</u>** Practice Assessment: Ongoing participation in a local, regional or national outcome registry or quality assessment program, such as the ACS Surgeon Specific Registry (case log system), or state or national collaboratives ---------- ✓ TQIP participation meets this criteria

Are you interested in MTQIP providing this type of CME?

2014 Hospital Performance Index

2014 MTQIP Hospital Performance Index

#	Wt	Measure Description	Points Existing Participants	Points New 2014 Participants
PARTICIPATION (70%)				
#1	10	**Data Submission**		
		On time 3 of 3 times	10	10
		On time 2 of 3 times	5	5
		On time 1 of 3 times	0	0
#2	20	**Meeting Participation – Surgeon Lead**		
		Participated in 3 of 3 meetings	20	20
		Participated in 2 of 3 meetings	10	10
		Participated in 1 of 3 meetings	5	5
		No participation	0	0
#3	20	**Meeting Participation – Trauma Manager/Registrar (Avg)**		
		Participated in 3 of 3 meetings	20	20
		Participated in 2 of 3 meetings	10	10
		Participated in 1 of 3 meetings	5	5
		No participation	0	0
#4	10	**Site Specific Quality Improvement Project Implementation**		
		Project data submitted	10	10
		Project data not submitted	0	0
#5	10	**Surgeon Lead Presents MTQIP Reports at Hospital Meetings**		
		Presented at 3 meetings	10	10
		Presented at 2 meetings	8	8
		Presented at 1 meeting	5	5
		Did not present	0	0
		*Signed attestation required		

2014 Current Participation Points (70 pts)

(Max Possible At This Time Is 30 pts)

<30 points	30 points	

Todays Point Calculation is NOT Inclusive Of:

- ✓ **Todays attendance TMD/TPM or Reg (worth 20)**
- ✓ **Site Specific QI Project due 12/31 (worth 10)**
- ✓ **Surgeon Attestation Meeting Presentations Qrtly due 12/31 (worth up to 10)**

PERFORMANCE (30%)

New Centers Only

#6	**10**	**Data Accuracy**	**Visit #1**	**Visit #2 or More**		na
		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%	> 8.0%	0	
#7	**10**	**Massive Transfusion (defined as ≥4 u PRBC in 1st 4 hrs)** **Mean PRBC to Plasma Ratio for 1st 4 hrs of admission**				na
		≤ 1.5			10	
		1.6 - 2.5			7.5	
		> 2.5			5	
		> 3.0			0	
#8	**10**	**Timely VTE Prophylaxis (< 48 hours of admission)**				na
		> 50%			10	
		≥ 40%			5	
		< 40%			0	
				Total Points Possible	100	70

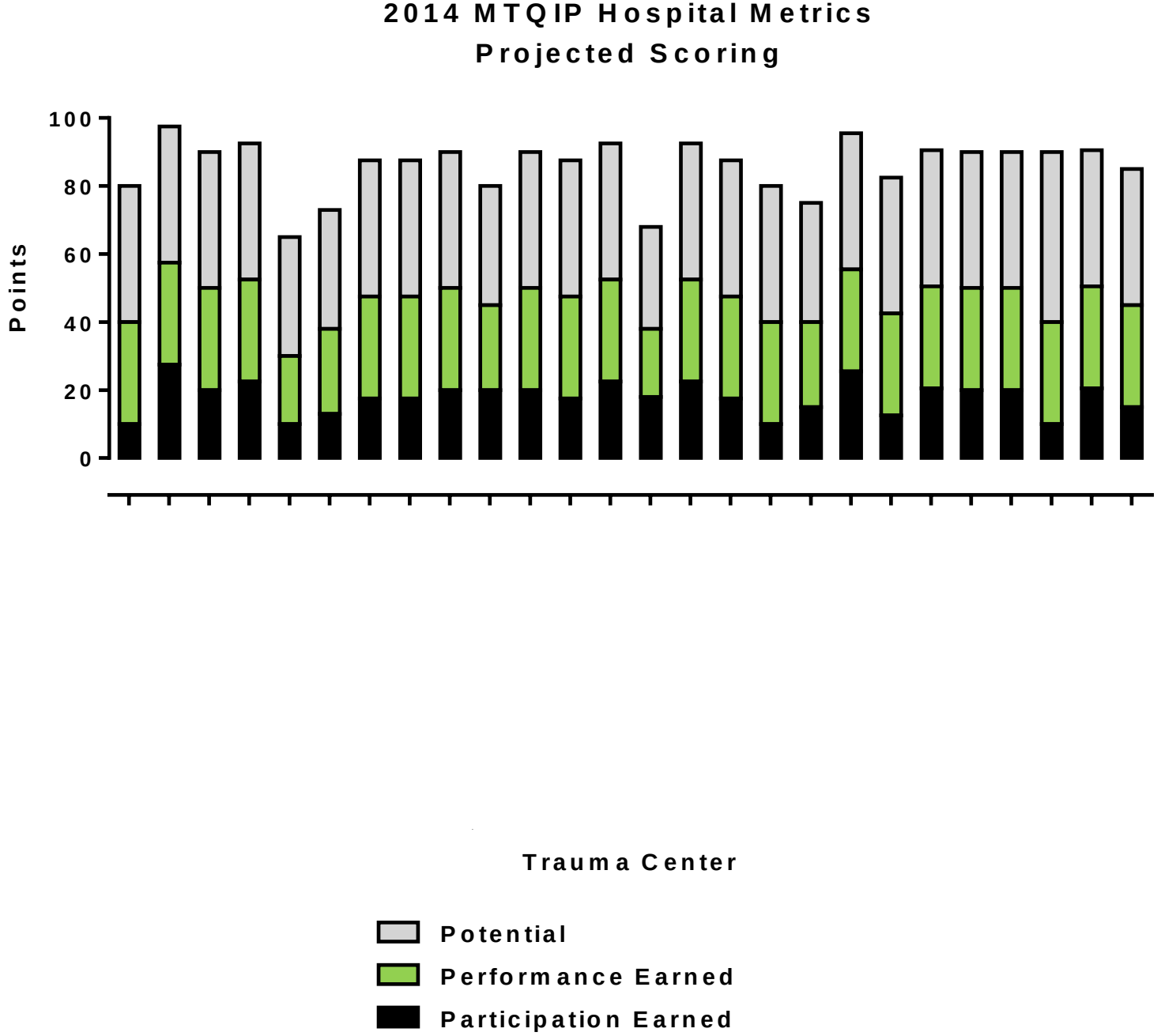
2014 Current **Performance Points** (30 pts)

≤ 10 points	11-20 points	21-30 points

New Centers Not Listed

MTQIP Total Points So Far

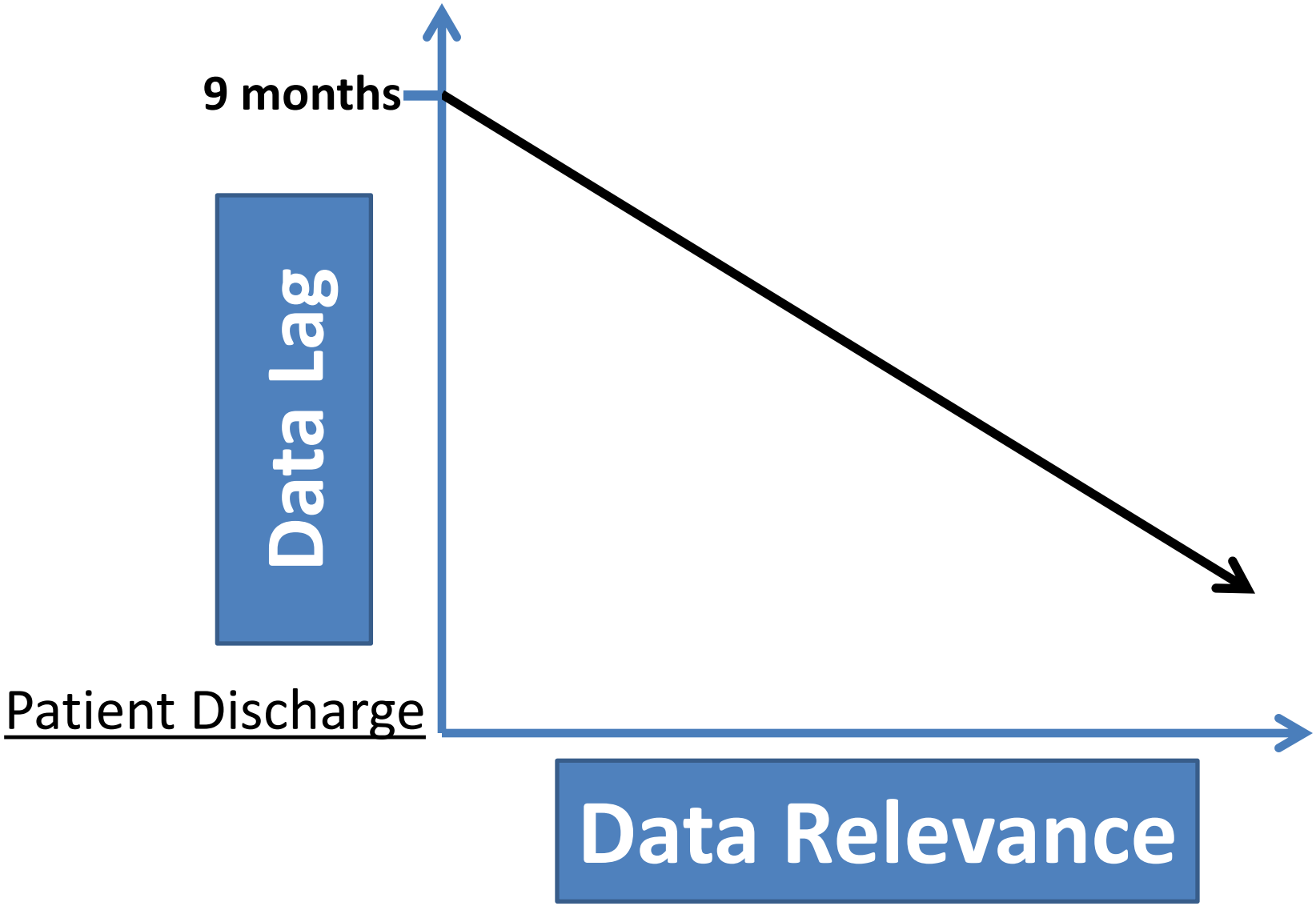
3 New Centers (Max 70pts)	23 Existing Centers (Max pts 100)		
30's	30's	40's	50's


2014 MTQIP Hospital Metrics
Projected Scoring
Points
100
80
60
40
20
0
Trauma Center
Potential
Performance Earned
Participation Earned

MTQIP
The Early Years

The Data Lag Is too Long

MTQIP Growing Pains



MTQIP

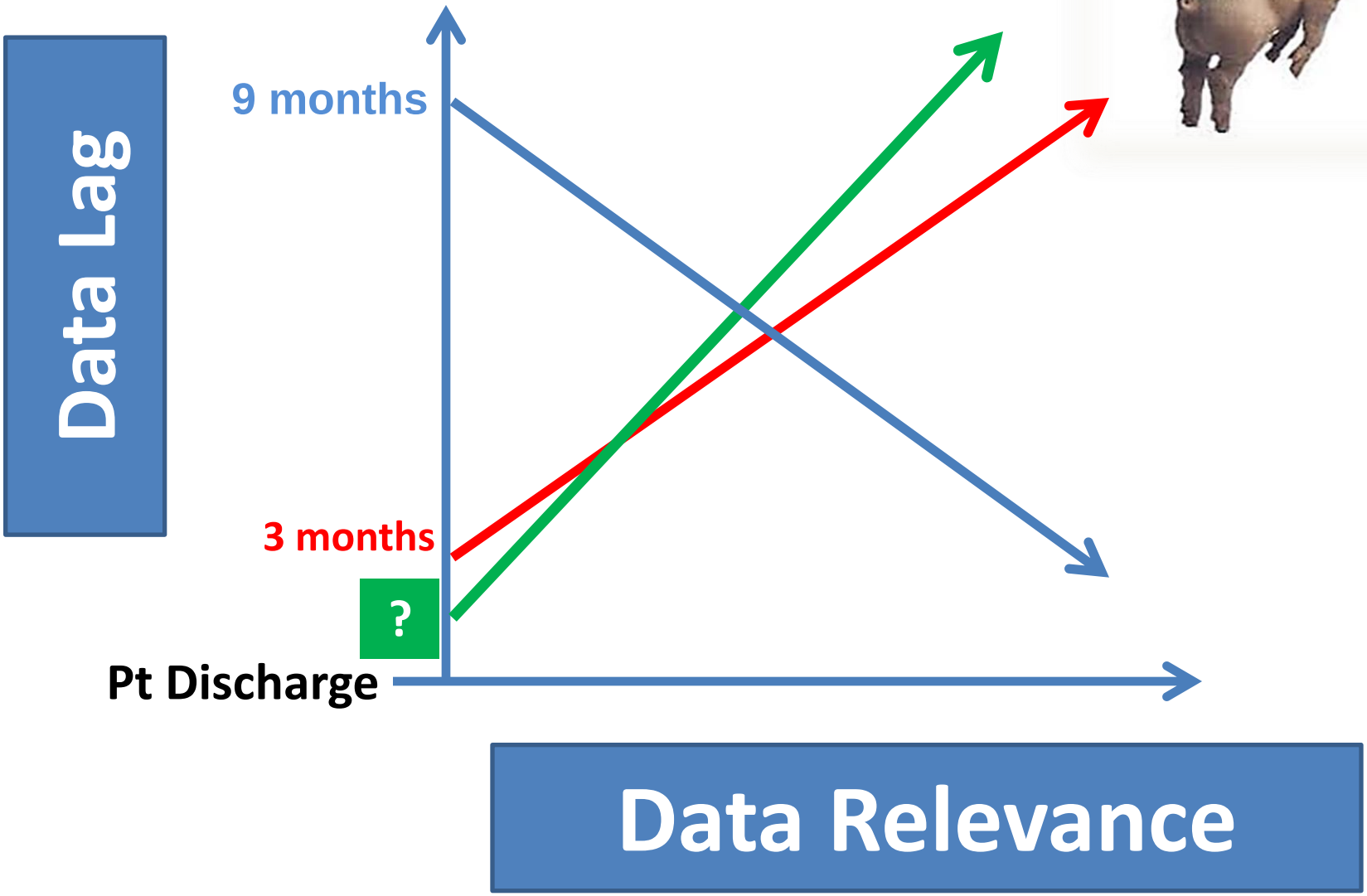
Can We Shorten Data Lag Time?

Can We *All* Run Faster?

Running Faster

- **Trauma Registries**
  - Resources
  - Efficiency
- **MTQIP**
  - Significant IT investment
  - Automate Data Transfer

MTQIP

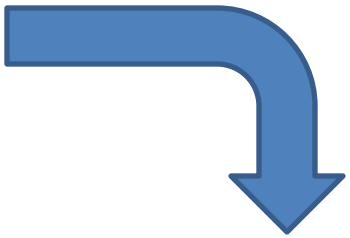


Data Submission Timing Change

What Does This Mean?

February 2015 Submission

Old (9 month lag)
3/1/2013 - 6/31/2014



New (3 month lag)
3/1/2013 - 10/31/2014

Proposed 2015 Hospital Expectations

Michigan Trauma Quality Improvement Program (MTQIP)
2015 Performance Index

Measure	Weight	Measure Description			Points earned
#1	30	**Data Submission**			
		On time 3 of 3 times			
		On time 2 of 3 times			
#2	15	**Meeting Participation-Surgeon**			
		Participated in 3 of 3 meetings			
		Participated in 2 of 3 meetings			
		Participated in 1 of 3 meetings			
#3	15	**Meeting P**			
					20
					10
					5
		…mprovement Project			
		…times			10
		…ta submitted 2 of 3 times			5
		Project data submitted 1 of 3 times			3
#5	10	**Surgeon Lead Presents MTQIP Reports at Hospital Meetings**			
		Presented at 3 meetings			10
		Presented at 2 meetings			8
		Presented at 1 meeting			5
		(Signed attestation required)			
#6	10	**Data Accuracy**		Visit #1	Visit #2
		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
#7	20	**Mean PRBC:FFP Ratio for 1st 4 hrs (Massive Transfusion)**			
		≤1.5			10
		1.6-2.5			7.5
		>2.5			5
		>3.0			0
#8		**Timely VTE Prophylaxis (<48 hrs of Admission)**			
		>50%			10
		≥40%			5
		<40%			0
				Total (Max points =	100

Similar, but not the same to 2014

Increasing Expectations

- Continually raise the bar
- Collect more detailed process measures
- More complex data collection

Increasing Expectations Discussion

- ***Possibility*** of BCBSM revising MTQIP reimbursement for data abstraction currently at 30% for a Registrar

- Change to 80% reimbursement
- Full time MTQIP RN
- ↑ Investment → Higher Expectations

What Does This Mean?

- Current BCBSM funding of FTE is 30%
  - $650,000 to $700,000 per year to trauma centers
- If BCBSM funds 80% of FTE
  - $1.94 Million per year
- Expectations
  - Commitment to MTQIP data collection
  - More data elements
  - More interaction (CC↔TC, TC↔TC)
  - Clearly defined new person in addition to registrar
  - No excuses

2016 Proposed Hospital Performance Index

- We need your input!
- More process measures?
- At least one outcome measure?

Example Other Collaboratives

Collaborative	Indicators
Percutaneous Cardiovascular	• Appropriateness of Percutaneous Coronary Intervention (70%) • Pre Procedure ASA (Unless Contraindicated) (100%) • Statin at Discharge >75% and ASA >90% • Post Transfusion <6% • Reduce Post Op Transfusion Non-Emergent pts with Hgb >8 to <10%
Bariatric	• Compliance with VTE prophylaxis pre-operatively >90% • Compliance with VTE prophylaxis post-operatively >90%
Breast Oncology	• Reduce surgical biopsy rate <10% • Reduced advanced imaging rate from previous year

Michigan Society of Thoracic & Cardiovascular Surgeons (MSTCVS)

Outcomes	• Isolated CABG: O/E mortality for rolling 24 months (Oct 1, 2012 – Sept 30, 2014) • Isolated AVR: O/E mortality for rolling 36 months (Oct 1, 2011– Sept 30, 2014)

Site Specific	• Implementation of one new site specific quality initiative
	  • Implemented with evidence of improvement
	  • Implemented with no evidence of improvement

Collaborative Wide	• Prolonged Ventilation will be the Collaborative-wide quality initiative • Collaborative mean post op prolonged ventilation < 9.0%

Lunch

Judy Mikhail, MSN MBA

Motorcycle Helmet Data

Dr. Lisa Buckley, UMTRI
Dr. Gaby Iskander, Spectrum

Evaluation of crash-related fatalities and serious injuries associated with the Michigan Motorcycle Helmet Law Repeal Utilizing Linked Crash and Hospital-Level Data

Dr. Lisa Buckley

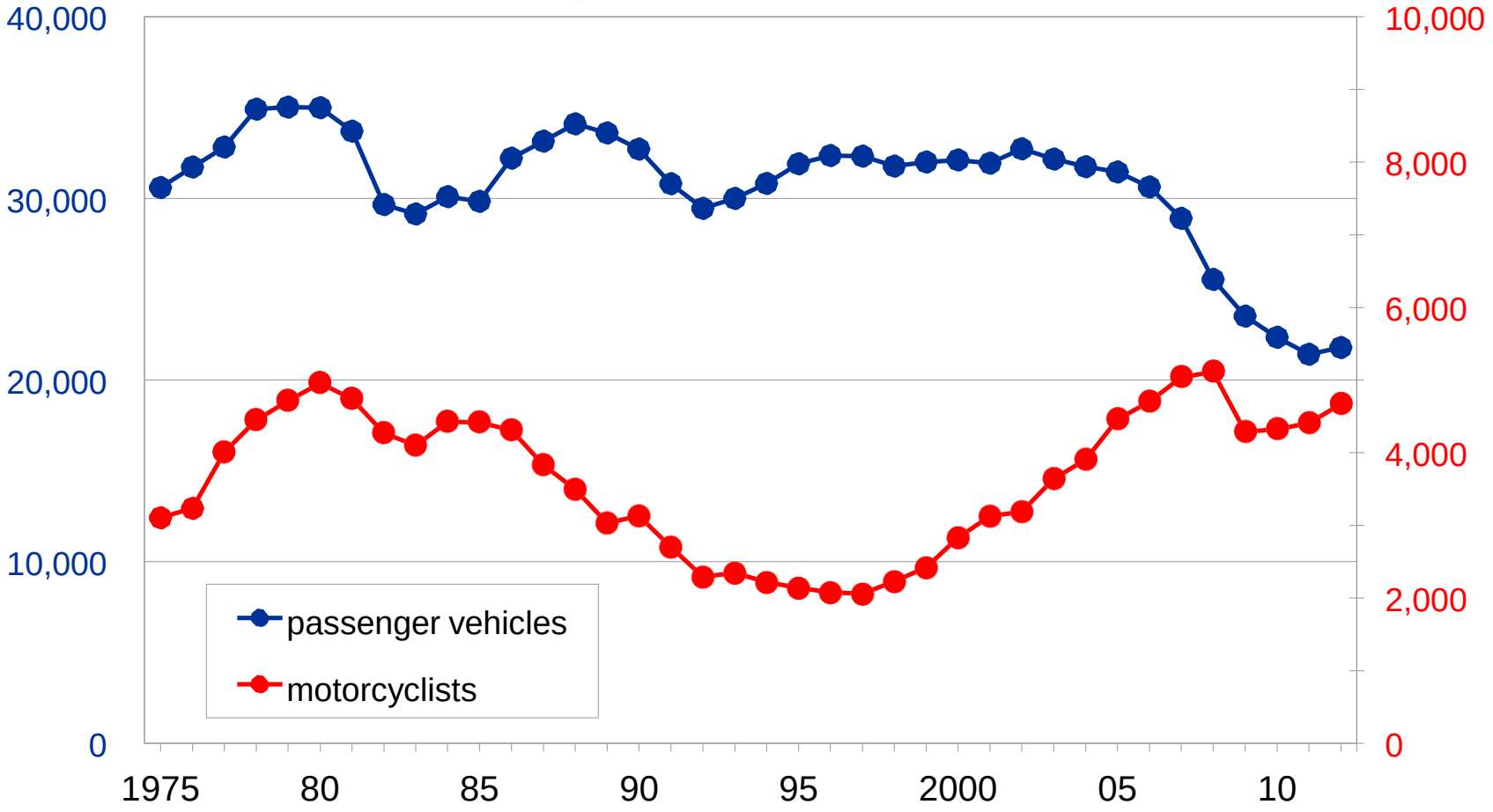
University of Michigan
Transportation Research Institute

Acknowledgements

- Research team: Dr. Bingham (PI), Dr. Carter, Dr. Flannagan, Mr. Bowman, Ms. Almani
- Funder: Insurance Institute for Highway Safety
- Dr. Mark Hemmila and Michigan Trauma Quality Improvement Program, MTQIP

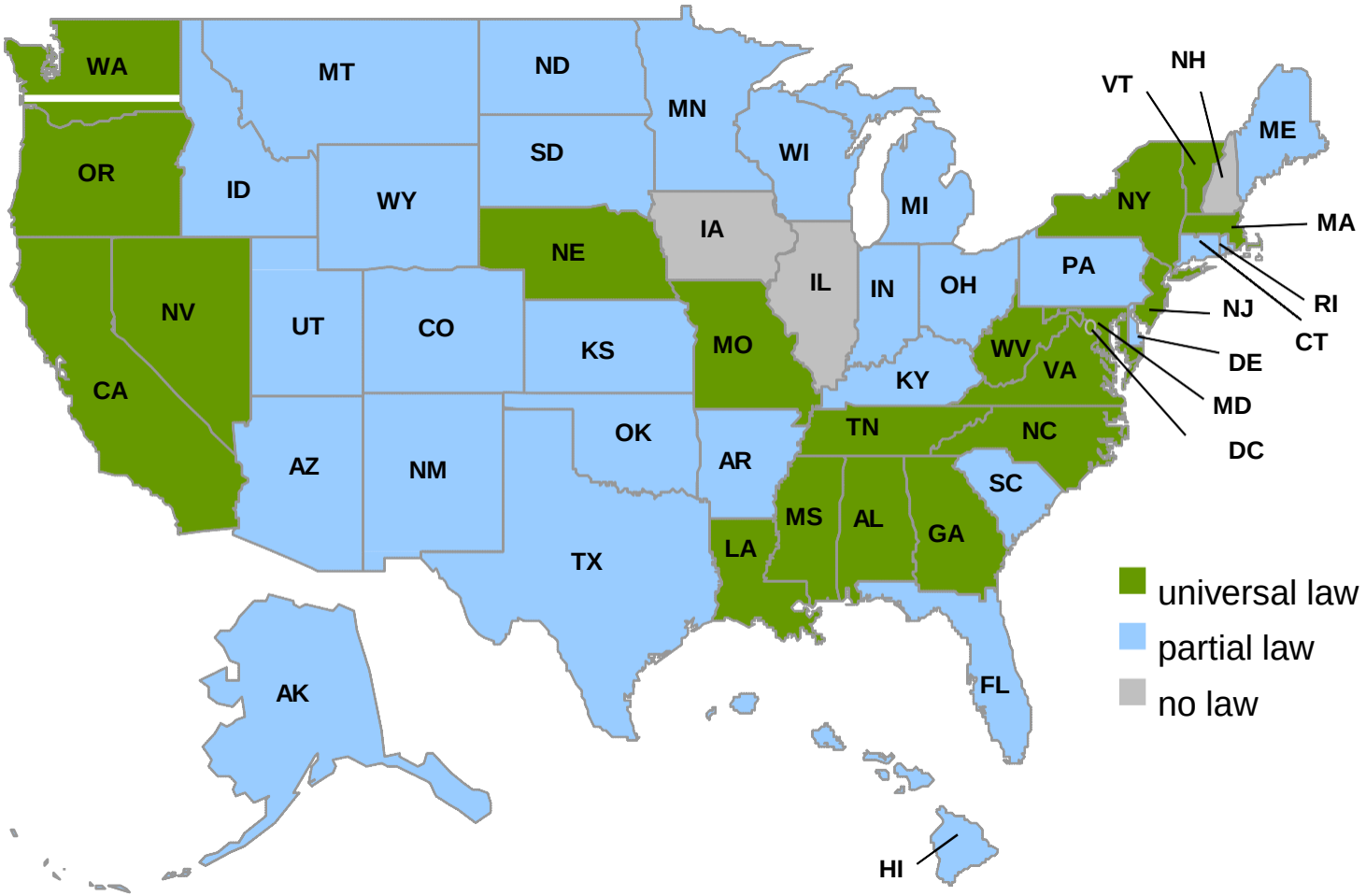
National picture

Deaths of motorcyclists and vehicle occupants in the US



Map of motorcycle helmet laws

March 2014



April 12, 2012

"Michigan law now allows motorcyclists to decide for themselves, if certain conditions are met, whether or not to wear a helmet.

To legally not wear a helmet, a motorcycle operator must:

- Be at least 21 years old.
- Have at least $20,000 in first-party medical benefits.
- Have held a motorcycle endorsement for at least two years, or have passed an approved motorcycle safety course."

Secretary of State, Department of State

http://www.michigan.gov/sos/0,4670,7-127-1585_50413-277037--,00.html

Project aims

- Examine impact of repeal of motorcycle helmet law:
  - crash data
  - trauma data
  - observation study

Trauma Registry Data

- From consortium, The Michigan Trauma Quality Improvement Program (MTQIP)
- 23 adult Level 1 and 2 Trauma Centers
- De-identified individual patient-level data
- Most complete source for a statewide assessment of hospital data

Michigan State Police (MSP) crash records

- Crashes:
  - occur on a public roadway
  - involve a personal injury or property damage of >$1000 or more.
- Record a measure of crash severity: fatal, disabling, nondisabling, possible injury, property damage only. Fatal crashes are within 30 days.
- Includes: location, circumstances, description of the crash, the vehicle, and occupants

Key definitions

- Motorcycle: two- / three-wheeled, motorized, with minimum engine size of 50cc road-legal vehicle
- Helmet: Identified in crash or trauma data as wearing a helmet

- Dataset dates: Jan 1, 2011 to Dec 31, 2013

Benefits to data linkage

- More complete picture – incorporates what happens at the scene and hospital
- Allows an understanding of where the crashes occur, the outreach of a hospital
- Allows us to examine change in deaths at the scene compared deaths in ED
- Allows validation of data – e.g. helmet wearing rates

Data linkage

- Used probabilistic linkage
- Includes all motorcyclists or moped riders
- Linked on age, sex, hour of crash (within 1hr)
- Included when one trauma record matches only one crash record
- Excludes motorcyclists who crashed and died at scene or were not transported to a Level-1/Level-2 hospital

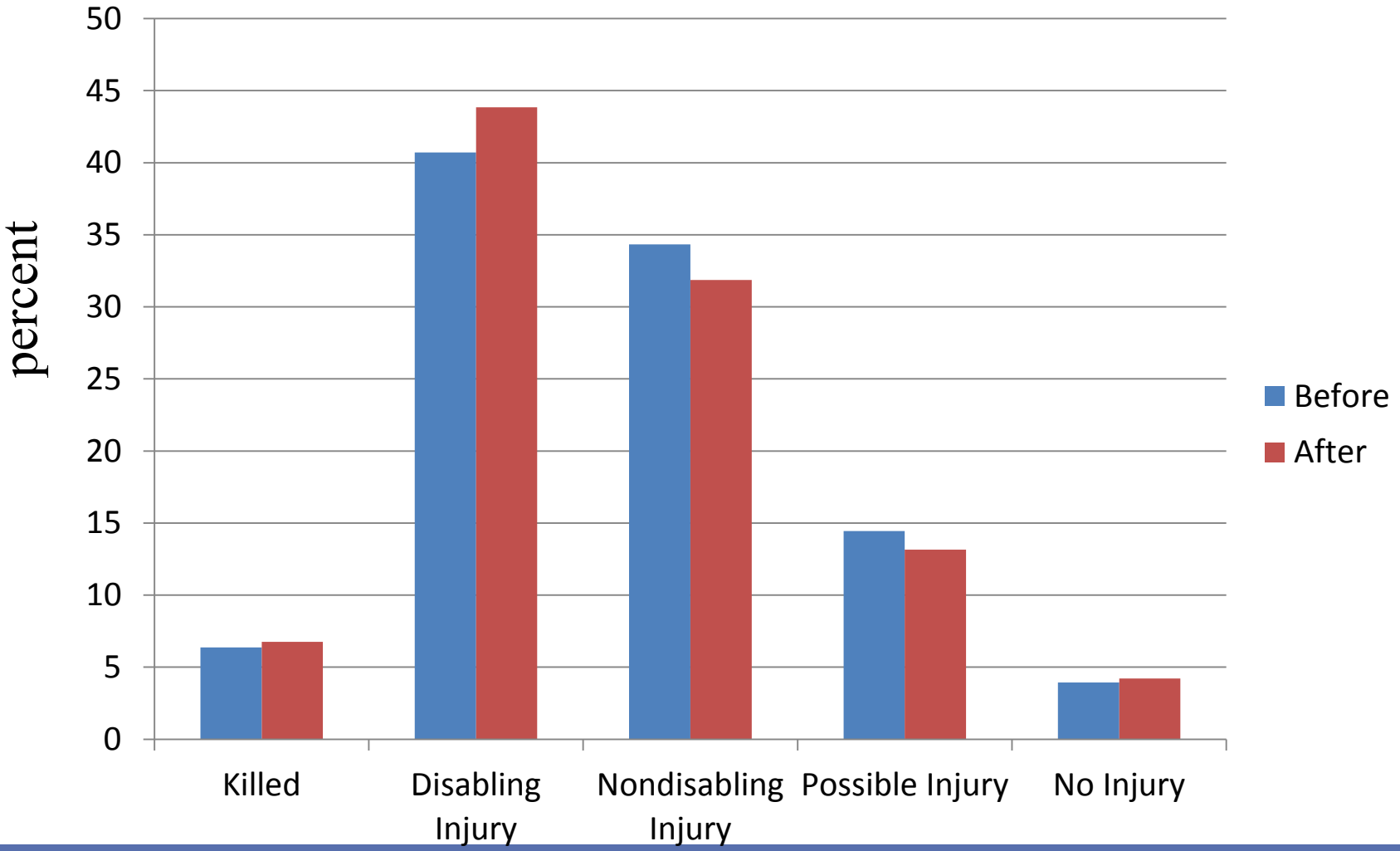
Data Linkage Challenges

- Transfer patients
  - there is a separate entry for each hospital case and need to link each person.
  - As transfer patients are not a random sample of injured motorcyclists it was important to link them.
  - Needed to hand code each transfer case.
- Ties – e.g. same crash, two motorcyclists, same year of birth.

Sample Demographics & Helmet Use

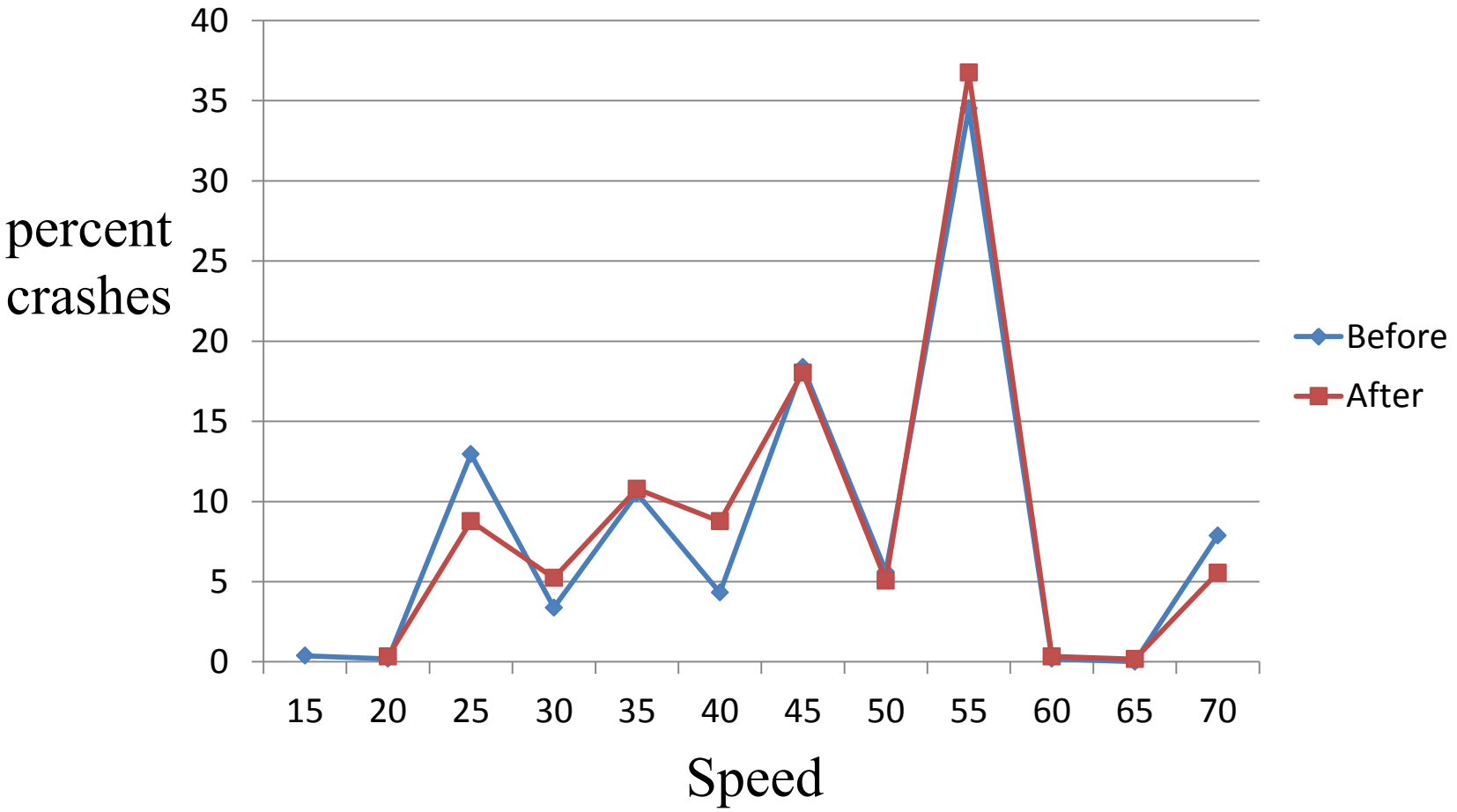
	Before	After
Mean age (years)	44.75	44.33
Percent helmet wearing	91.97	62.90
Males percent helmet wearing	85.08	63.73
Females percent helmet wearing	92.98	57.83

Crash Severity – Police Reported



UMTRI

Percent of crashes by speed limit



UMTRI

Fatality Rates

Percent	Before	After
Discharge from ED as death	3.00	2.19
Discharge from Hospital as death	5.82	5.39
Overall Crash data (includes death within 30 days of crash)	6.38	6.75

ISS Score, GCS Score, Surgical/ Operative Intervention

	Before	After
Mean ISS	15.18	15.19
% GCS >8	88.19	88.32
% Surgery	31.78	39.29

Clinical Case Definition (CDC)

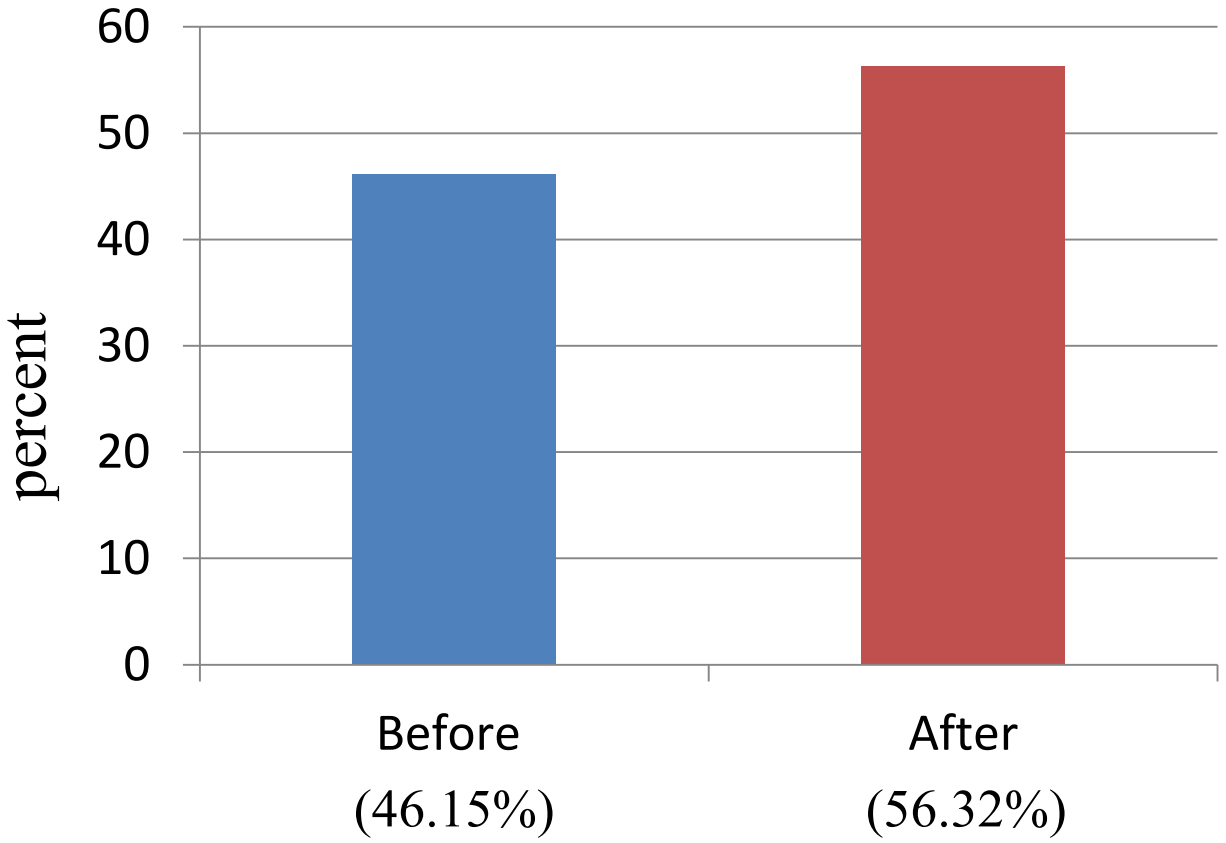
Occurrence of injury to the head with one or more of:

- Observed or self-reported decreased consciousness (i.e. Concussion)
- Amnesia
- Skull fracture
- Objective neurological or neuropsychological abnormality
- Diagnosed intracranial lesion (e.g. Epidural, Subdural, SAH, Intracerebral)

ICD-9 Codes

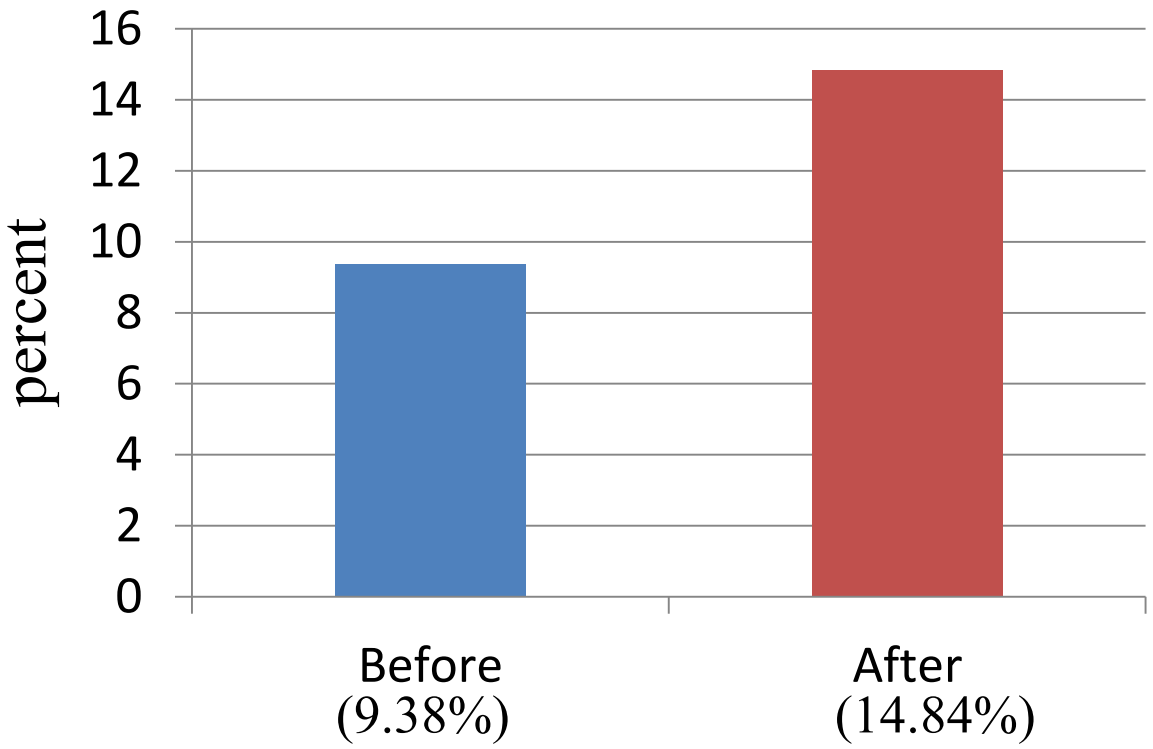
- 800.0-801.9 - Fracture of the vault or base of the skull
- 803.0-804.9 - Other and unqualified and multiple fractures of the skull
- 850.0-854.1 - Intracranial injury, including concussion, contusion, laceration, and hemorrhage.
- Additional TBI cases from death certificates: 873.0-873.9 Other open wound of head.

Overall head injury



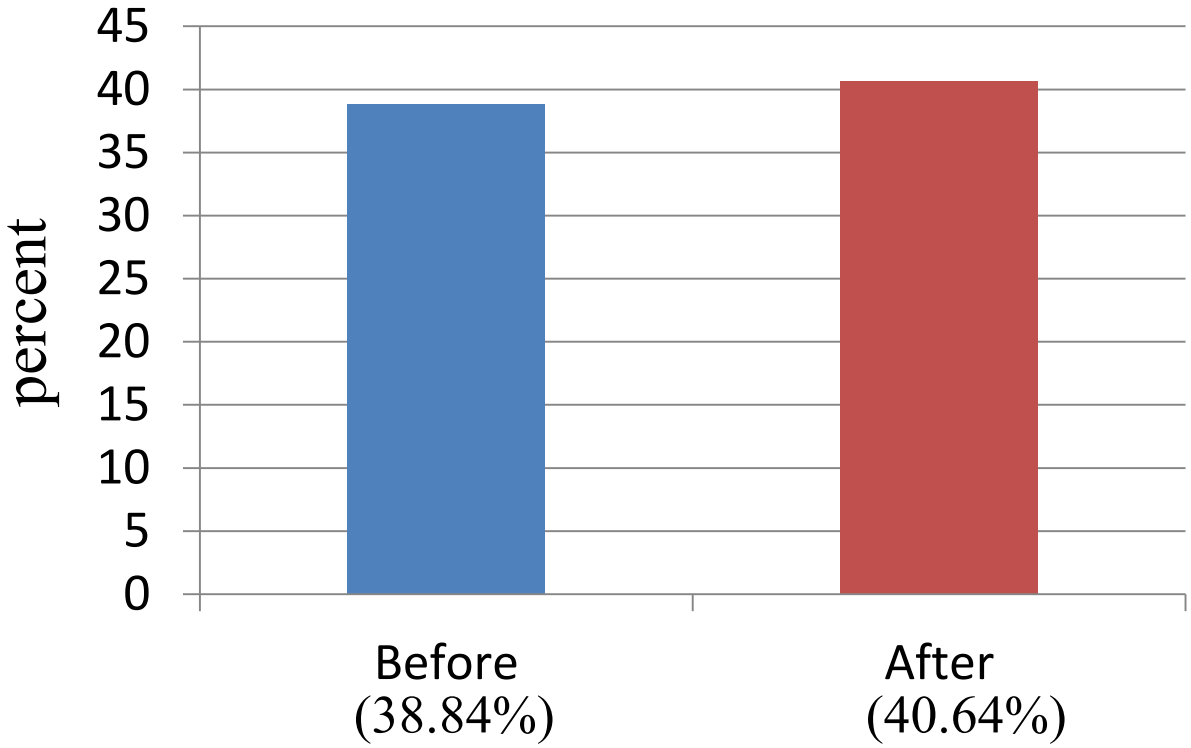
UMTRI

Skull fracture



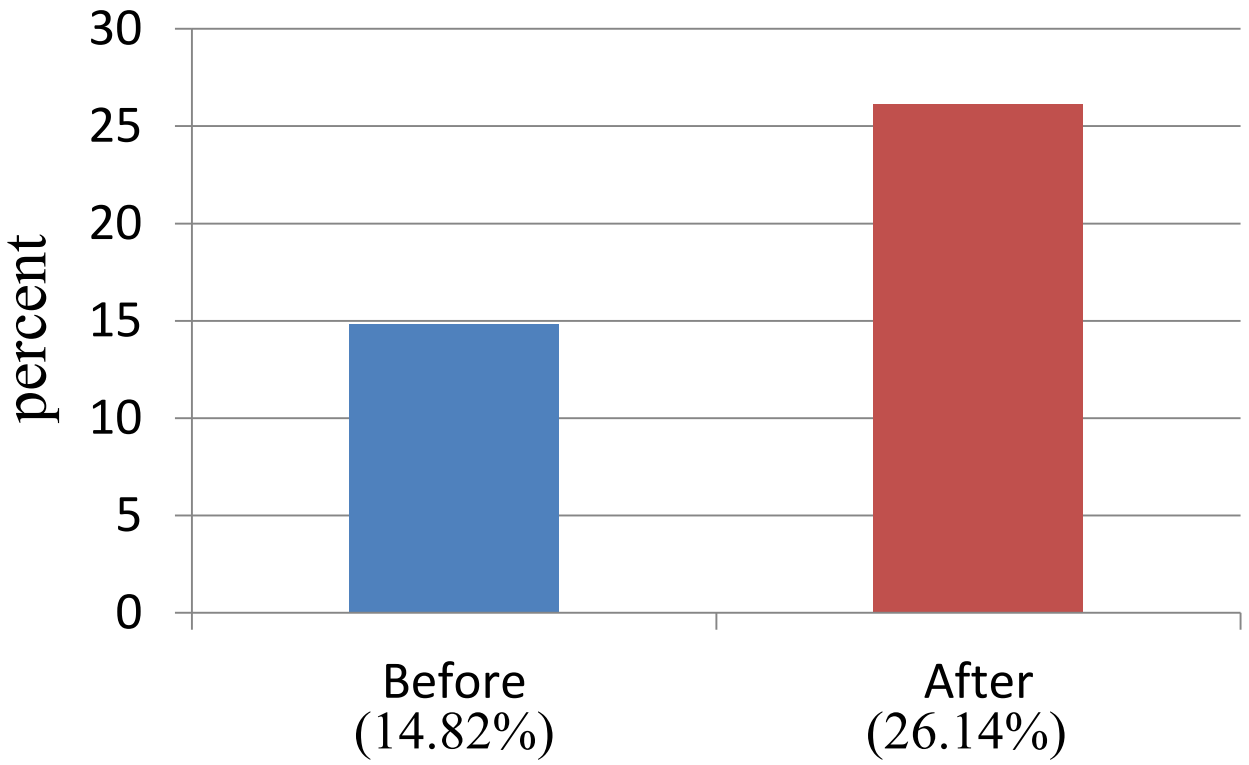
UMTRI

Intracranial injury



UMTRI

Open head wound



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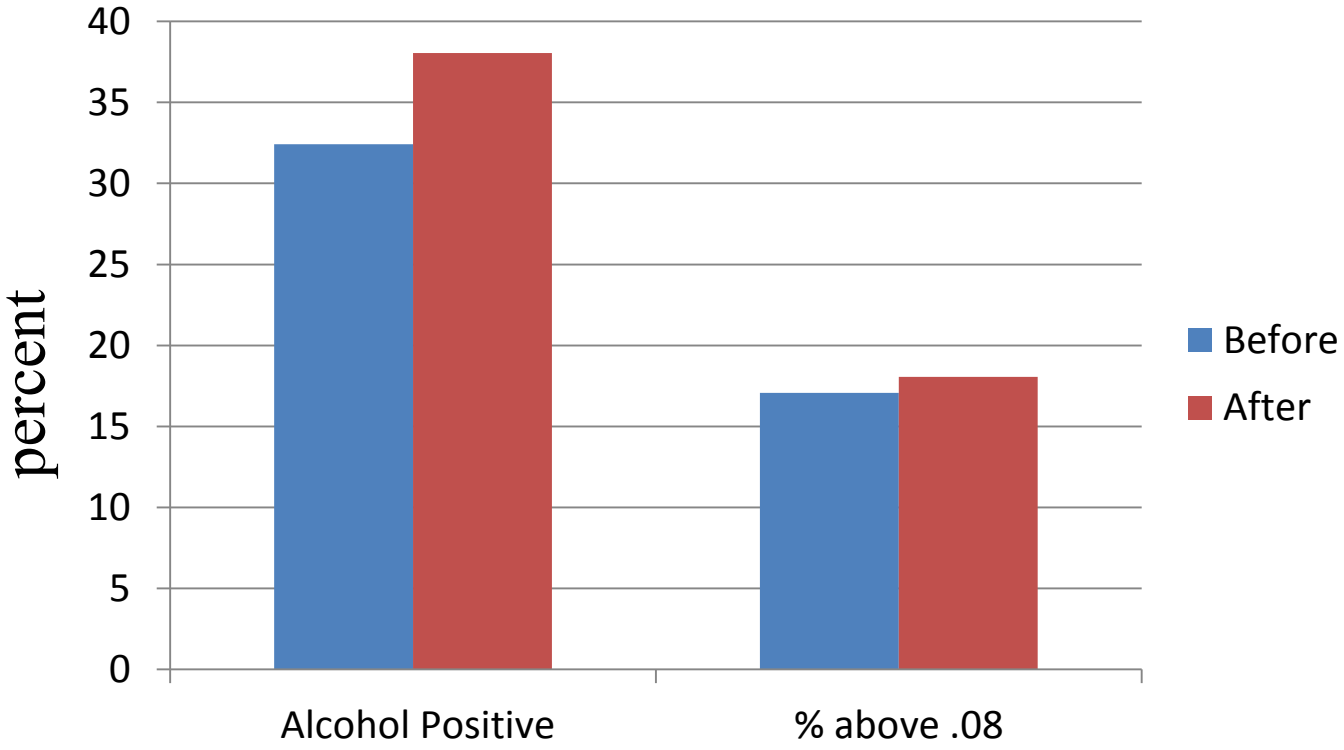
ICU & Ventilator Days

	Mean No. of Days	
	Before	After
ICU	2.604	2.897
Ventilator	1.465	1.582

Alcohol Involved Crashes



- Mean BAC when alcohol positive: Before=.0449; After=.0529

Odds of head injury type with non-helmet use

	Odds Ratio	Confidence Interval
Any head injury	3.38	(2.42-4.69)
Intracranial injury	1.93	(1.44-2.59)
Skull fracture	3.79	(2.56-5.59)
Open head wound	3.12	(2.23-4.33)

- Alcohol is also a significant predictor of head injury

Head Injury by Rider Helmet Use and BAC Before and After Repeal

	Before (N=369)		After (N=434)	
	BAC ≤ 0.08 (n = 283)	BAC > 0.08 (n = 86)	BAC ≤ 0.08 (n = 332)	BAC > 0.08 (n = 102)
Helmet	94.7%	76.7%	65.6%	51.0%
No Helmet	5.3%	23.3%	34.4%	49.0%

UMTRI

Next steps

- In-depth examination of head injuries
- Evaluate in- vs. out-of-hospital mortality
  - Prior literature has reported possible shift in fatalities from hospital environment to out-of-hospital with helmet law repeal
- Explore whether those already at high-risk before repeal (i.e. drunk riders) are now population shifting to unhelmeted drunk riders explaining lack of change in mortality

Thank you

lisadb@umich.edu

Michigan Helmet Law Repeal: Early Clinical Impacts

Rachel Titus MD, Alistair J Chapman MD, Hannah Ferenchick MD
Alan Davis PhD, Carlos Rodriguez MD

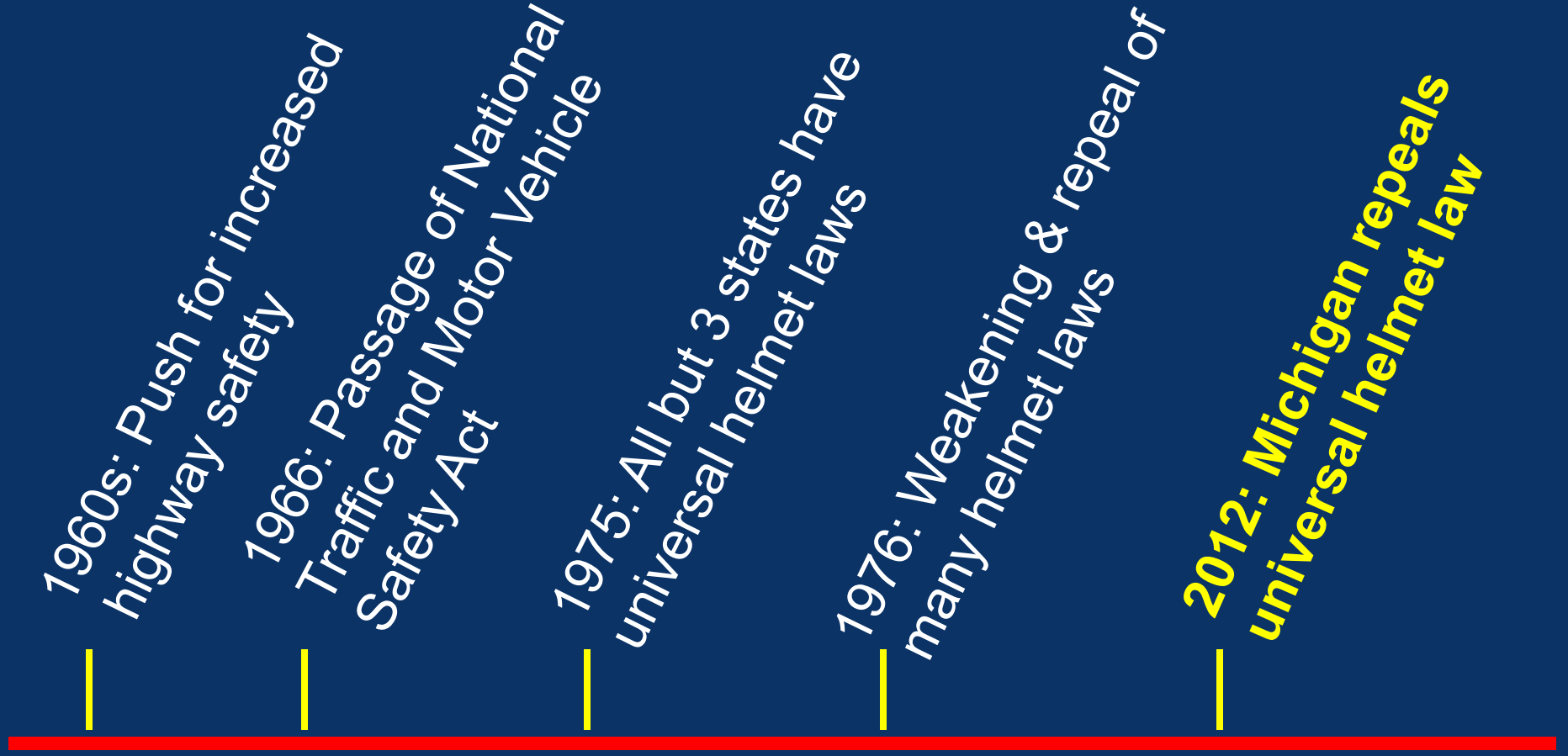
Grand Rapids Medical Education Partners
Michigan State University
Spectrum Health Division of Trauma Surgery

MICHIGAN STATE UNIVERSITY
College of Human Medicine

SPECTRUM HEALTH

The authors have no financial disclosures or conflicts of interest

History of Helmet Laws in the United States



Effect of motorcycle helmet laws

Law	Helmet Use	Mortality
Universal Helmet Law	**90%**	**4.3%**
Partial Helmet Law	**61%**	**4.8%**
No helmet law	**53%**	**5.9%**

Unhelmeted motorcyclists: Mortality 6.7%, more severe brain injuries, longer ICU stay, consumption of resources, likely uninsured

76,944 patients - National Trauma Data Base (2002-2007)

Croce et al. *Ann Surg*. 2009; 250:390-4.

Effect of motorcycle helmet laws

Unhelmeted

- Higher mortality (1-4)
- Increased incidence of head injuries (5-7)
- More likely to be intoxicated (4,10)
- Less frequently insured (2,10)
- Longer ICU and overall hospital stay (5,8,9)

1. Kelly et al. *Ann Emerg Med*. 1991; 20:852-856.
2. Croce et al. *Ann Surg*. 2009; 250: 390-394.
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4. Hundley et al.*J Trauma*. 2004; 57:944-949.
5. Fleming and Becker. *Med Care.* 1992; 30:832-845.
6. Mertz and Weiss. *Am J Public Health*. 2008; 98:1464-1467.
7. Lin et al. *J Trauma*. 2001; 50-24-30.
8. McSwain et al. *J Trauma*. 1990;30: 1189-1199.
9. Offner et al. *J Trauma.* 1992; 32:636-642.
10. Brown et al. *J Emerg Med*. 2011 Oct; 41(4):441-6.

Goal:

To study the early clinical and financial impacts of Michigan's motorcycle helmet law repeal on a Level 1 trauma center in West Michigan.

Methods

- Retrospective cohort study
- Motorcycle crash patients (192)
- Two motorcycle seasons included:
  - **April 13, 2011- November 13, 2011 (before)**
  - **April 13, 2012- November 13, 2012 (after)**
- Exclusion criteria:
  - Unknown helmet status
- Fatalities prior to hospital: Region 6

Methods

- Patient Demographics
- Helmet Status
- Mortality
- Toxicology
- Prior to Arrival Fatalities
- Injury Severity Score
- Abbreviated Injury Scale Head
- Glasgow Coma Scale
- ICU Length of Stay
- Hospital Length of Stay
- Ventilator Time
- Cost of Hospital Stay
- Disposition Location
- Insurance Status

Results

	2011	2012	p-value
Male (%)	68/79 (86.1%)	97/113 (85.8%)	0.963
Age (y)	41.7±15	43.7±15	0.324
Unhelmeted Riders	6/79 (7%)	33/113 (29%)	0.001
Mortality	2/79 (2.5%)	4/113 (3.5%)	0.156
Unhelmeted Crash Scene Fatalities	1/7 (14%)	10/13 (77%)	0.007

Results

	Helmeted	Unhelmeted	p-value
Male (%)	130/153 (85.0%)	35/39 (89.7%)	0.587
Age (y)	42.2	45.8	0.234
Hospital Mortality	5/153 (3.3%)	1/39 (2.6%)	0.162
Injury Severity Score (ISS)	15	16	0.617
AIS Head (AIS)	2	3	0.078
Glasgow Coma Scale (GCS)	14	13	0.118
Hospital Length of Stay (days)	4.8	6.6	0.083

Results

	Helmeted	Unhelmeted	p-value
EtOH (>0.08)	14.3%	47.8%	0.001
ICU Length of Stay (days)	1.5	2.9	0.020
Ventilator Time (days)	0.89	1.87	0.015
Cost of Stay	$21,300	$32,700	0.022

Disposition

	Helmeted	Unhelmeted	p-value
Deceased	5/153 (3.3%)	1/39 (2.6%)	0.821
Hospice	1/153 (0.7%)	0/39 (0%)	0.612
Rehabilitation Hospital	34/153 (22.2%)	13/39 (33.3%)	0.162
Home	113/153 (73.9%)	25/39 (64.1%)	0.227

Insurance

	Helmeted	Unhelmeted	p-value
Auto Insurance	55/153 (36.4%)	16/39 (39.0%)	0.558
Commercial Insurance	75/153 (49.7%)	20/39 (48.8%)	0.801
Medicare / Medicaid	15/153 (9.9%)	3/39 (7.2%)	0.686
Uninsured/Self Pay	6/153 (4.0%)	2/39 (4.9%)	0.780

Conclusions

- Motorcyclists riding without a helmet have increased from **7% to 29%**
- Prior to arrival fatalities among the unhelmeted have increased from **14% to 77%**
- Hospital mortality was **the same**
- **Clinical impacts** among unhelmeted:
  - Longer ICU length of stay
  - Longer ventilator times
  - Increased cost of stay
  - Increased EtOH use

Limitations

- Retrospective design
- Short time period represented (7 months)
- Small population size (n = 192)
- Local geographic analysis (Region 6)
- Cause of crash scene fatalities unknown
- Higher alcohol use among unhelmeted

Thank You

Reliability Adjustment
Anti-Coagulation Reversal

Jill Jakubus, PA-C

Data Dives

Judy Mikhail, MSN MBA

Online Report Cases

Judy Mikhail, MSN MBA
Jill Jakubus, PA-C

Future Meetings

- Tuesday February 10, 2015
  - Location: Ypsilanti (Eagle Crest)
- Wednesday May 13, 2015
  - Location: Port Huron (MCOT)
- Tuesday June 2, 2015
  - Location: Ann Arbor (NCRC)

Conclusion

- Vote
  - Survey Monkey
  - Three Questions
    - Region Reports
    - CME Change
    - Change to FTE support
- Evaluations
  - Fill out and turn in