The Michigan Trauma Quality Improvement Program

Boyne Mountain, MI
May 17, 2017

Disclosures

- Salary Support for MTQIP from BCBSM/BCN
  - Mark Hemmila
  - Judy Mikhail
  - Jill Jakubus
  - Anne Cain-Nielsen

Evaluations

- Paper
  - This meeting only
  - Turn in at end of day

Introductions

- Chris Tignanelli, MD
  - University of Michigan Surgical Critical Care Fellow
  - Grade 3 Liver Injuries
  - ACS-COT Activation Status
- Jerry Jurkovich, MD
  - Vice Chairman, Department of Surgery, UC Davis
  - Mo Henig Lecturer
- Todd Maxson, MD
  - ACS-COT VRC Chair
  - TMD Arkansas Children's Hospital

Introductions

- Mike Englesbe, MD
  - University of Michigan Transplant Surgeon
  - MSQC Co-director
  - Michigan OPEN
- Ben Jacobs
  - University of Michigan General Surgery Resident
  - EAST VTE Paper

Data Submission

- Data submitted April 7, 2017
  - DI - 15 centers
  - CDM - 10 centers
  - Lancet – 1 center
  - Available in ArborMetrix site on 5/3/2017
- Next data submission
  - June 2, 2017

Future Meetings

- Spring (Registrars and MCR's)
  - Tuesday June 6, 2017
  - Ann Arbor, NCRC
- Fall
  - Tuesday October 10, 2017
  - Ypsilanti, EMU Marriott
- Winter
  - Tuesday February 13, 2018
  - Ypsilanti, EMU Marriott

MTQIP/Orthopedic Surgery Meeting

- Fall 2017
  - Thursday October 26, 2017
  - Rochester, MI
- Suggestions
  - Topics
  - Planning

Data Analytics Update

Jill Jakubus, PA-C MHSA

Meeting Reports

Contents

Description of Cohorts 2
Statistical Methods 8
Mortality Graphs 9
Trends 20
Outcomes 21
Resource Utilization 29
System Efficiency – New Section 34
Process Measures 37
CQI Performance Index – New Section 39

Dashboard

MTQIP Dashboard

M·TQIP

11/1/14 - 1/31/17
Cohort 2
Exclude DOA

Outcome	Center	MTQIP	95% CI
Failure to Rescue			
Superficial SSI			
Deep SSI			
Organ/Space SSI			
Wound Disruption			
Abd. Fascia Left Open			
Acute Lung Injury/ARDS			
Pneumonia			

11/1/14 - 1/31/17
Cohort 2
Exclude DOA

Mortality	Center	MTQIP	95% CI
Dead			
Dead or Hospice			
Cohort 2 (Admit to Trauma Service)			
Cohort 3 (Blunt Multi-System)			
Cohort 4 (Blunt Single-System)			
Cohort 5 (Penetrating)			
Age16-24			
Age 25-44			

2017 Performance Index Scorecard
5/17/17
XX

M·TQIP

PARTICIPATION POINTS 3

Data Validation 2017 — 0 / 10 points

%

Data Submission — 0 / 10 points

Feb submission	complete
June submission	pending
Oct submission	pending

Meeting Attendance — 3 / 10 points

Feb meeting	present
May meeting	pending
June meeting	pending
Oct meeting	pending

PERFORMANCE POINTS 48.3

VTE Prophy Timing ≤ 48 hrs — 10 / 10 points

Admit to trauma - cohort 2
1/1/16 - 1/31/17

VTE Prophy Type - LMWH — 7 / 10 points

Admit to trauma - cohort 2
1/1/16 - 1/31/17

RBC/FFP Ratio — 7.3 / 10 points

All - cohort 1
1/1/16 - 1/31/17

Serious Complications Z-score — 7 / 10 points

Admit to trauma - cohort 2
7/1/14 - 1/31/17

Mortality Z-score — 7 / 10 points

Admit to trauma - cohort 2
7/1/14 - 1/31/17

IVC Filter Placement — 10 / 10 points

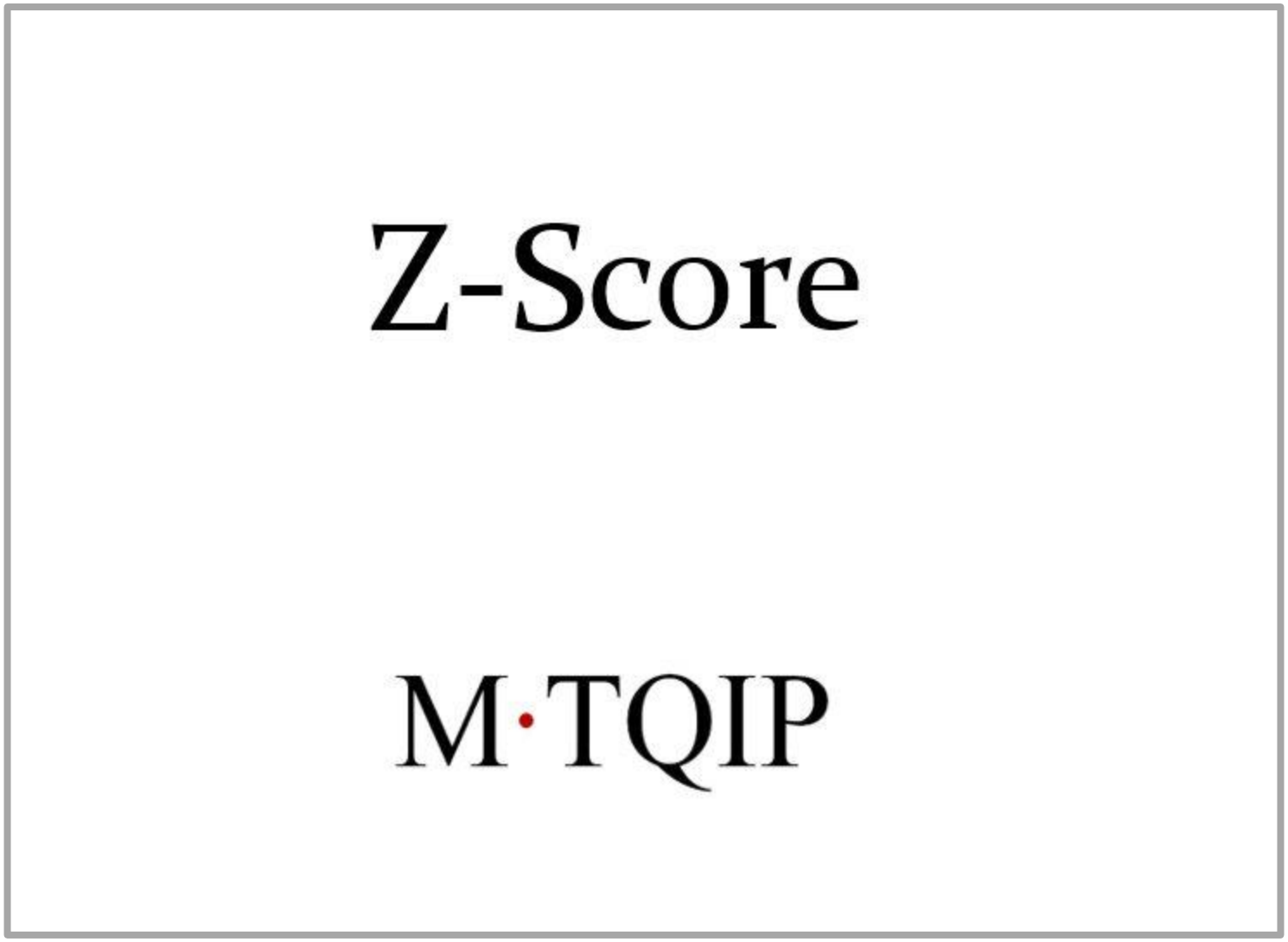
All - cohort 1
7/1/16 - 1/31/17
Collaborative total

PI Project — 0 / 10 points

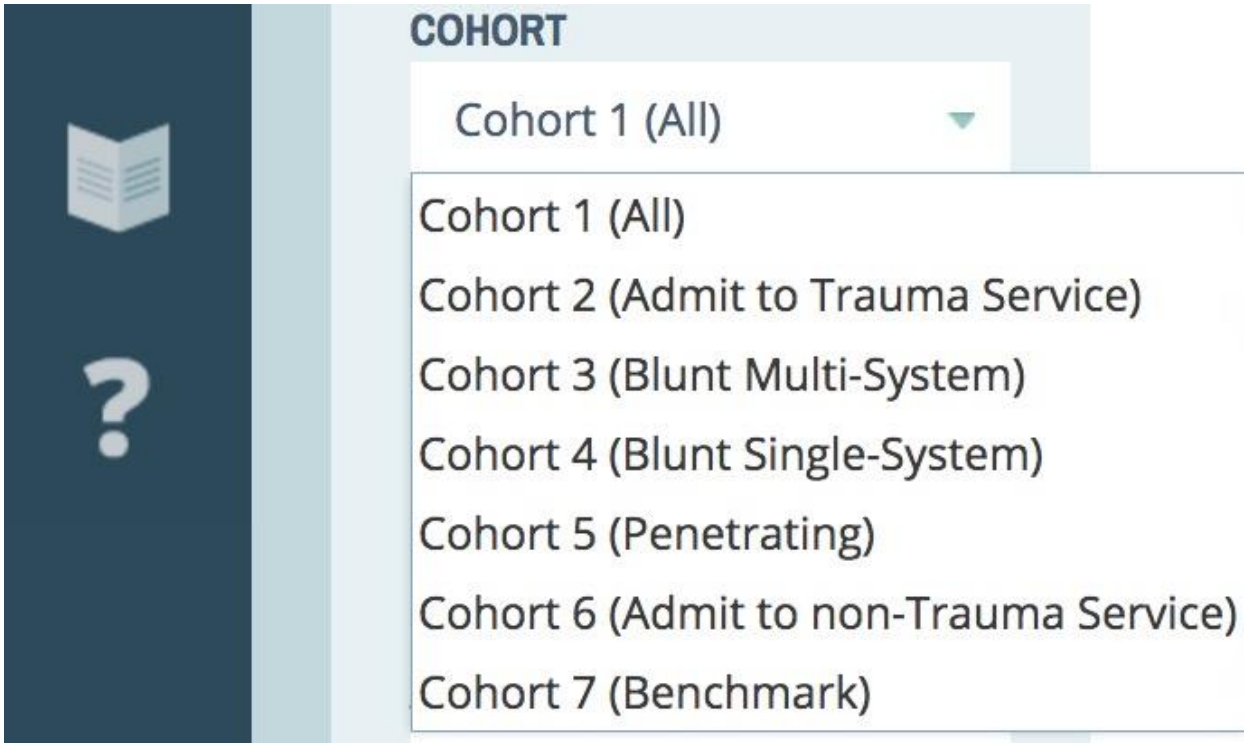
Met or exceeded target (10 pts)
Improved, but did not meet target (7 pts)
No improvement (0 pts)

TOTAL POINTS 51.3

New Video Resource



Analytics



- Cohort 8 (Isolated Hip Fracture)

Analytics

TQIP Isolated Hip Fractures (IHF):

- ~~Age 65 years or older~~
- Injury mechanism of fall, derived from submitted External Cause Code
- At least one of the following AIS 98 codes:
  - 851810.3 Femur, Fracture, Intertrochanteric
  - 851812.3 Femur, Fracture, Neck
  - 851818.3 Femur, Fracture, Subtrochanteric
  - 853171.3 Femur, Fracture, Femoral head
- Any other injuries are in AIS external body region (i.e., bruise, abrasion, or laceration)

Updates – Complication Grades

- Reviewed by MTQIP Advisory Board
- Changes based on mortality and clinical acuity
- Implementation 7/1/17

Complication	N died w Comp	N Comp	Mortality	MTQIP Revise	MTQIP Serious	ACSTQIP	Change from
Cardiac arrest				3	Serious	Major	
Acute renal failure (dialysis)				3	Serious	Major	
ARDS				3	Serious	Major	
MI				3	Serious	Major	
Unplanned intubation				3	Serious		2
Stroke/CVA				3	Serious	Major	
Systemic sepsis				3	Serious	Major	
Renal insufficiency				3	Serious		None
Return to ICU				2	Serious	Major	1
Pneumonia				2	Serious	Major	
Return to OR				2	Serious	Major	
DVT UE				2	Serious		
Decubitus ulcer				2	Serious	Major	
C. diff colitis				2	Serious		1
Pulmonary embolism				2	Serious	Major	
DVT LE				2	Serious		
EC fistula				2	Serious		
Extremity compartment syndrome				2	Serious		
Superficial ssi				1			
Wound disruption				1			
Deep ssi				1		Major	
CRBSI/CLABSI				1		Major	
UTI				1			
Organ space ssi				1		Major	
Alcohol or drug withdrawal				1			
Osteomyelitis				1			
Graft failure				exclude			1
Abdominal compartment syndrome				exclude			
Abdominal fascia left open				exclude			

Updates – Remote Validation

RAA Received	RAA Not Received
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
18.	
19.	

Due Oct 2, 2017
$2K withheld for non-receipt or inability to fulfill

Resources

What does this cohort mean?

DATA RESOURCES

COHORT FORMATION

Cohort Formation
Filter Index

DATA DICTIONARY

2017 MTQIP Data Dictionary - Variables and Definitions
2016 MTQIP Data Dictionary - Variables and Definitions
2015 MTQIP Data Dictionary - Variables and Definitions
2014 MTQIP Data Dictionary - Variables and Definitions
2013 MTQIP Data Dictionary - Variables and Definitions
2012 MTQIP Data Dictionary - Variables and Definitions

DATA ELEMENTS

2017 MTQIP Custom Data Elements
2016 MTQIP Custom Data Elements
2015 MTQIP Custom Data Elements
2014 MTQIP Custom Data Elements
2013 MTQIP Custom Data Elements
2012 MTQIP Custom Data Elements
MTQIP Sample Report

Resources

What does this cohort mean?

Description of Cohorts

Cohort 1 (All)

1) Mechanism = Blunt or penetrating
2) Age ≥ 18, Age ≥ 16 starting 1/1/13
3) ISS ≥ 5
4) Hospital LOS ≥ 1 day or dead

Cohort 1 (All) w/o DOA's

1) Mechanism = Blunt or penetrating
2) Age ≥ 18, Age ≥ 16 starting 1/1/13
3) ISS ≥ 5
4) Hospital LOS ≥ 1 day or dead
5) Exclude patients who had no signs of life

2 (Admit trauma)

1) Mechanism = Blunt or penetrating
2) Age ≥ 18, Age ≥ 16 starting 1/1/13
3) ISS ≥ 5
4) Hospital LOS ≥ 1 day or dead
5) Admit to trauma service if ED disposition not death

Resources

How is this metric calculated?

ANALYTICS DICTIONARY
Contains descriptions of measures and reports

Uploaded: **04/17/2017**

RELEASE NOTES
Latest release notes

Uploaded: **04/26/2016**

Complication Severity

Some outcomes are tracked but not included in complications totals (any morbidity, serious morbidity, severity grade).

- Abdominal Compartment Syndrome
- Abdominal Fascia Left Open
- Other

Any Complications	Denominator: All cases meeting the MTQIP analytic inclusion criteria.
	Numerator: Grade 1 + Grade 2 + Grade 3 (excluding death)
Serious Complications	Denominator: All cases meeting the MTQIP analytic inclusion criteria.
	Numerator: Cases with a Complication Severity Grade of 2 or 3.
	Denominator: All cases meeting the MTQIP analytic inclusion criteria.
	Numerator: Cases with a Complication Severity Grade of I. Specifically Non-life-threatening complications: • Catheter-related Bloodstream Infection • C. Diff Colitis

MTQIP Publications Update

Judy Mikhail, PhD

M·TQIP

Home | Membership | Calendar | Resources | Leadership | Contact Us

ADMINISTRATIVE RESOURCES

ADMINISTRATIVE RESOURCES

AGREEMENTS

Business Associate Agreement
Data Use Agreement
Data Use Agreement Attachment A
Membership Application Form
Remote Access Agreement

STAFFING

MCR Job Description
MTQIP Emergency General Surgery Survey
MTQIP Hospital Survey

PERFORMANCE INDEX

2017 Performance Index
2016 Performance Index
2015 Performance Index
2014 Performance Index
2013 Performance Index
2012 Performance Index
2011 Performance Index

EXPECTATIONS & POLICIES

Collaborative Expectations
Confidentiality Statement
Data Request Processing
Guest Policy
Publications Policy
Publication Proposal Form
Site Specific Project Form

PROCESSES

Data Standardization Process
Data Validation Case Selection
Data Validation Remote
Data Validation On-Site

EXPECTATIONS & POLICIES

Collaborative Expectations

Confidentiality Statement

Data Request Processing

Guest Policy

Publications Policy

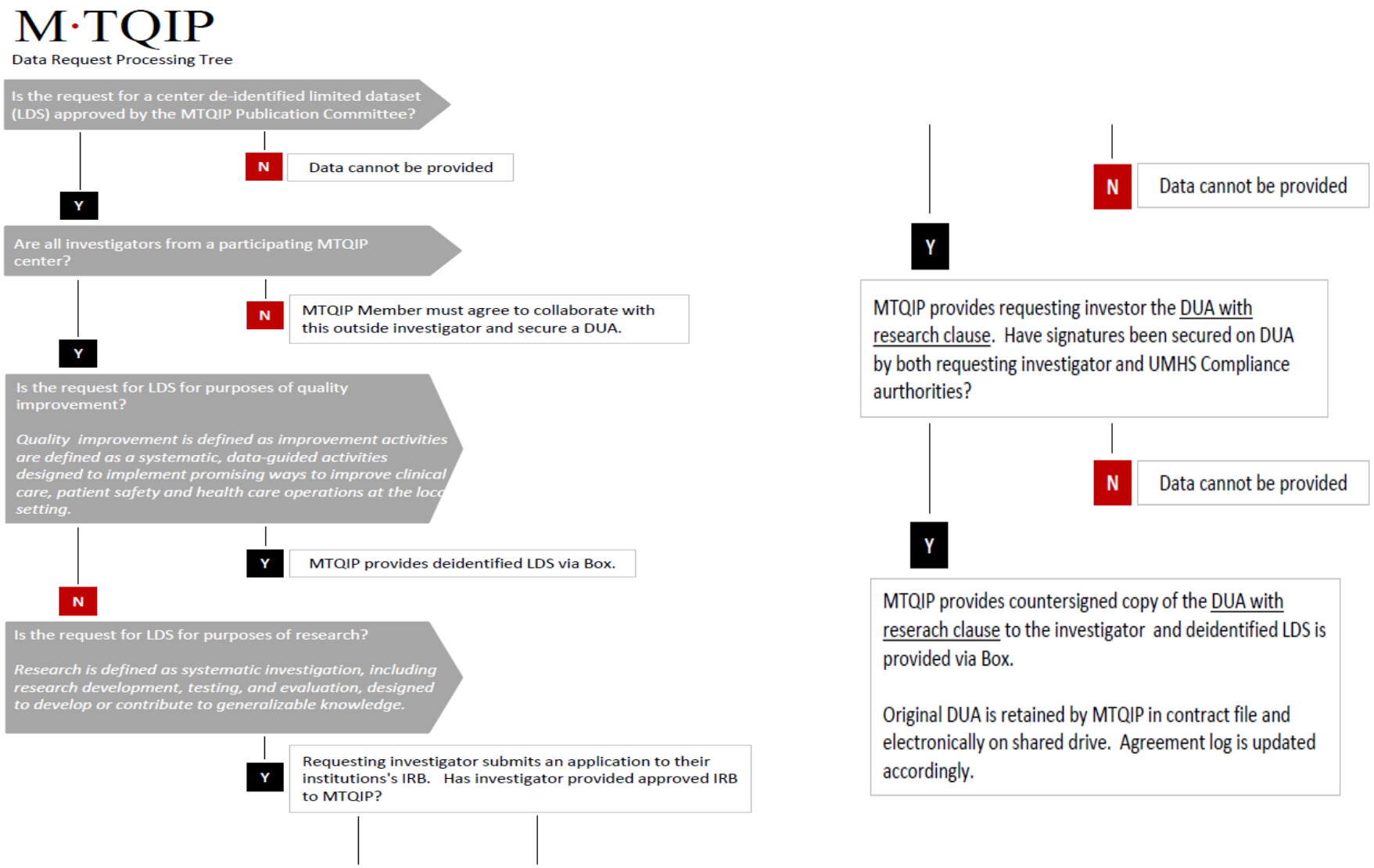
Publication Proposal Form

Site Specific Project Form

Research Proposal Form

Date submitted	
Working title	
Study type	☐ **Research** – Defined as systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. ☐ **Quality Improvement** – Defined as improvement activities as a systematic, data-guided activities designed to implement promising ways to improve clinical care, patient safety, and health care operations at the local setting.
IRB #/ name ***Required for research study**	
Researcher names/institution	
Working hypothesis	
Inclusion criteria	
Exclusion criteria	
Major outcomes	
Basic stat analysis outline	

Data Request Processing Tree



MTQIP Publications Policy

Committee

1. David Share, MD (BCBSM)
2. John Kepros, MD
3. Wendy Wahl, MD
4. Judy Mikhail, PhD, RN

- Review abstracts
- Ensure consistency with MTQIP mission
- Manage any conflicts
- Recommend approval to Dr. Hemmila, Program Director

Liver Injuries
Activation
Coming – December 2017

Chris Tignanelli, MD

M·TQIP

MTQIP Data

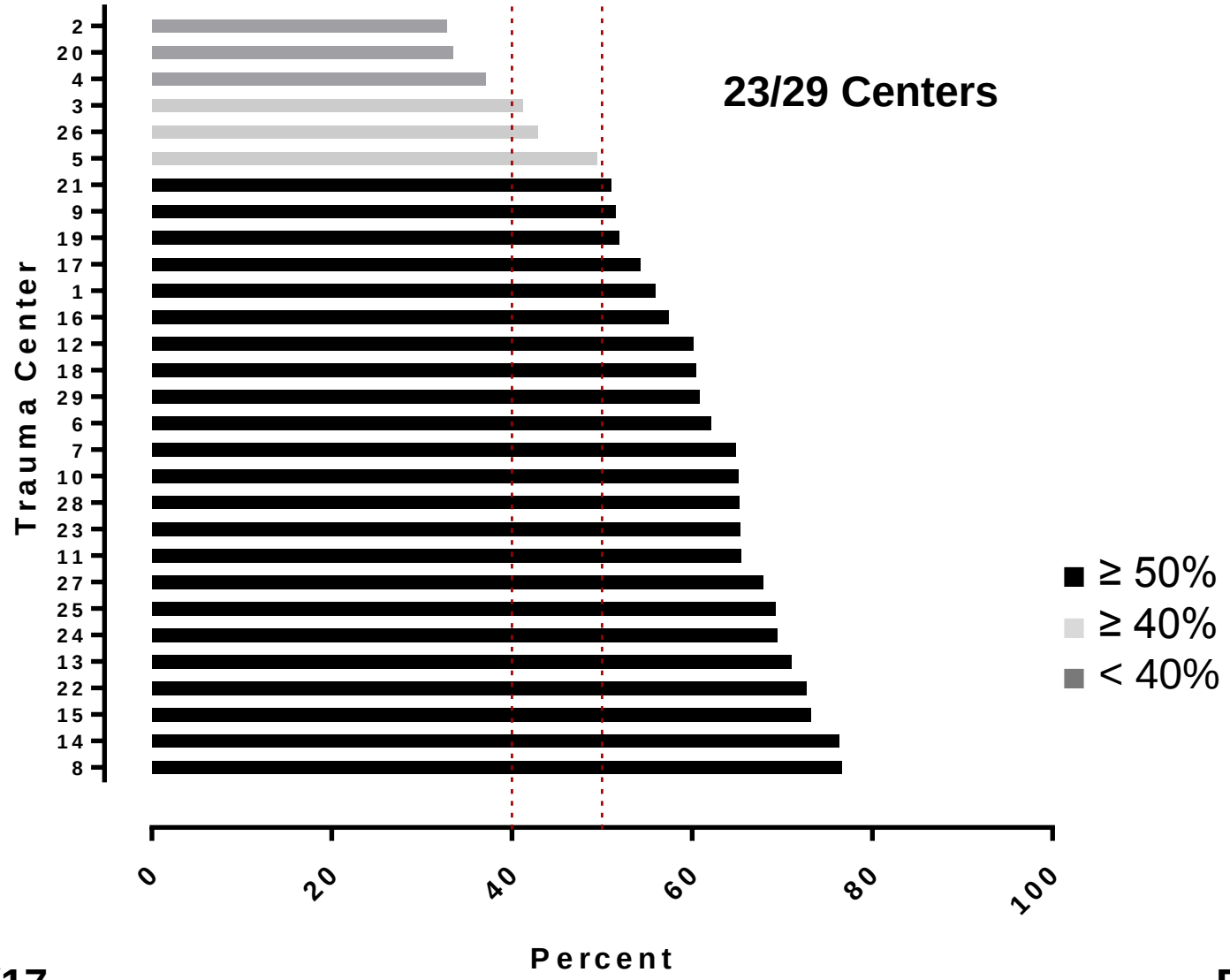
Mark Hemmila, MD

#4 VTE Prophylaxis Initiated ≤ 48 hrs

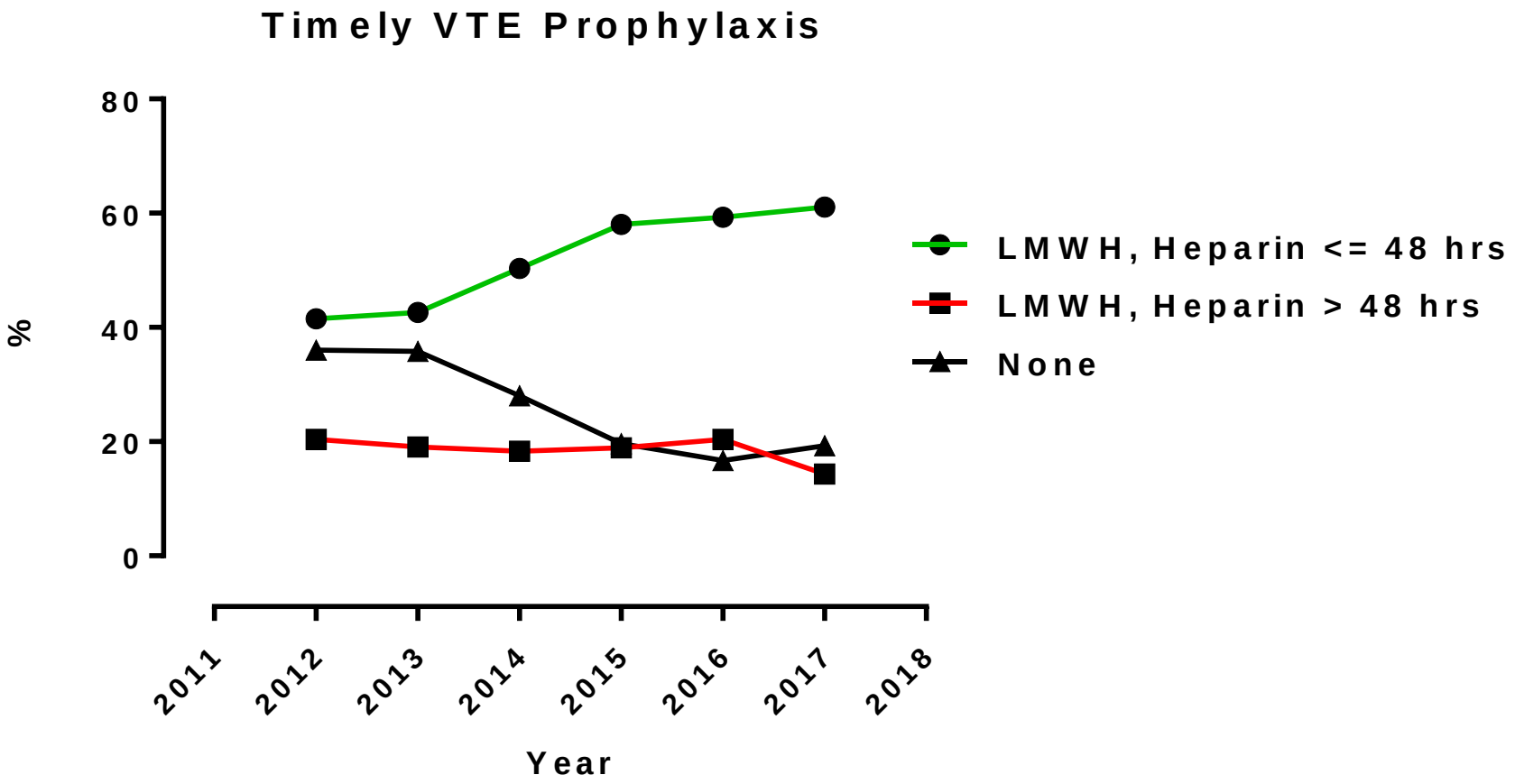
- Website
  - Practices > VTE Prophylaxis Metric
  - Cohort = Cohort 2 (admit to Trauma)
  - No Signs of Life = Exclude DOAs
  - Transfers Out = Exclude Transfers Out
  - Default Period = Set for CQI Index time period
- Heparin, LMWH <= 48 Hours
  - Hospital - Unadj %

VTE Prophylaxis Timing ≤ 48 hrs

1/1/16 - 1/31/17



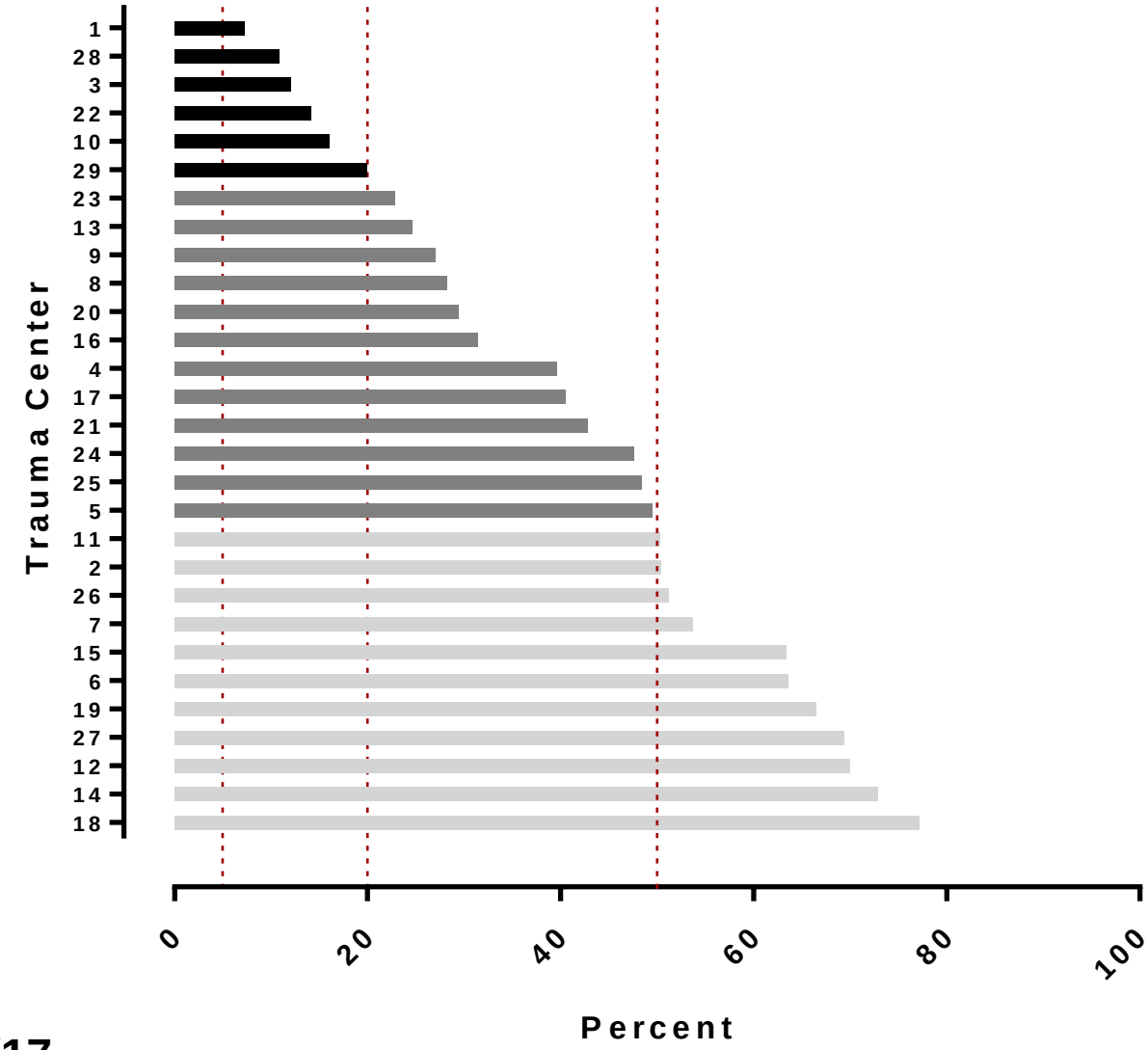
1/1/16-1/31/17

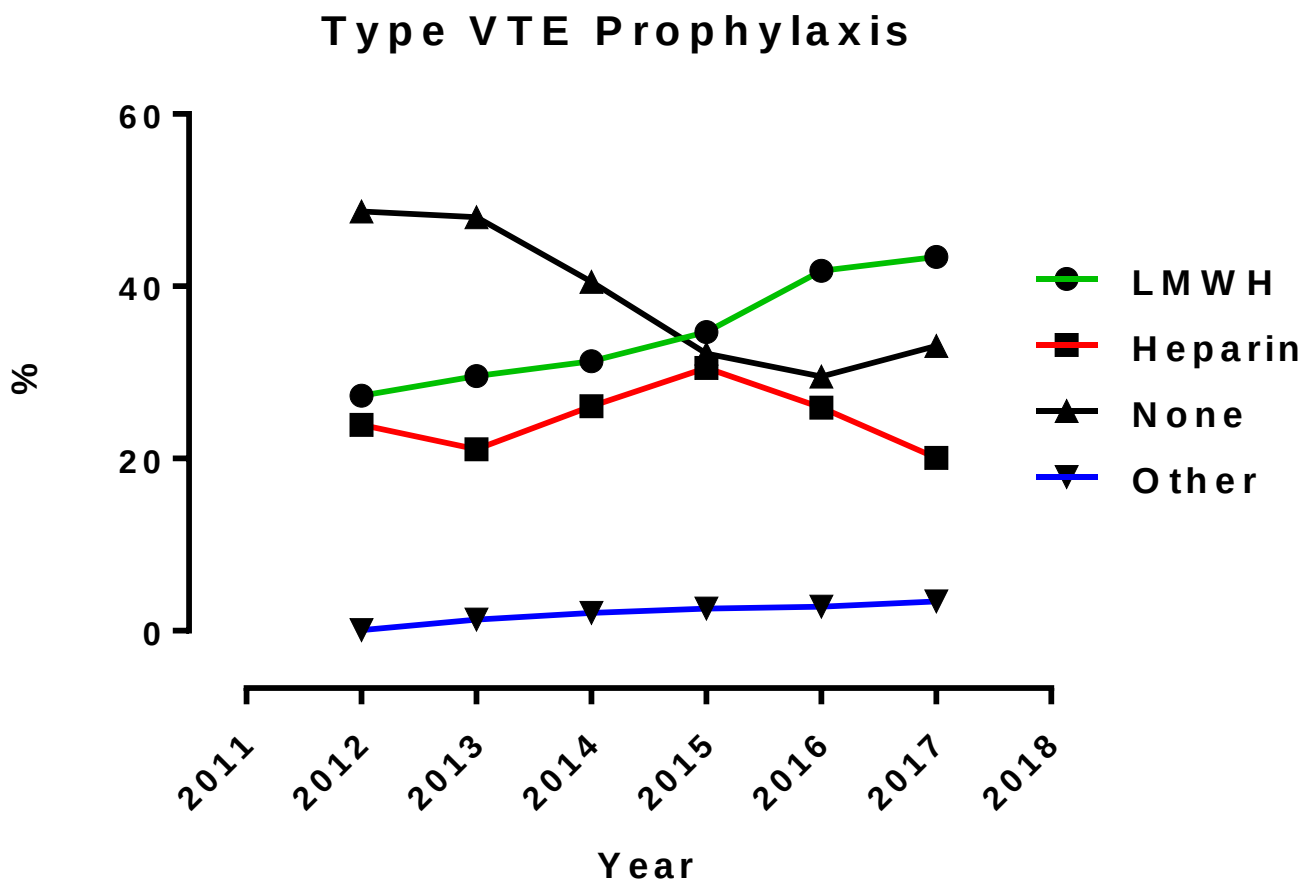

Timely VTE Prophylaxis
80
60
40
20
0
%
2011
2012
2013
2014
2015
2016
2017
2018
Year
LMWH, Heparin <= 48 hrs
LMWH, Heparin > 48 hrs
None

#5 VTE Prophylaxis with LMWH

- Website
  - Practices > VTE Prophylaxis Type
  - Cohort = Cohort 2 (admit to Trauma)
  - No Signs of Life = Exclude DOAs
  - Transfers Out = Exclude Transfers Out
  - Default Period = Set for CQI Index time period
- LMWH (Type)
  - Hospital - Unadj %

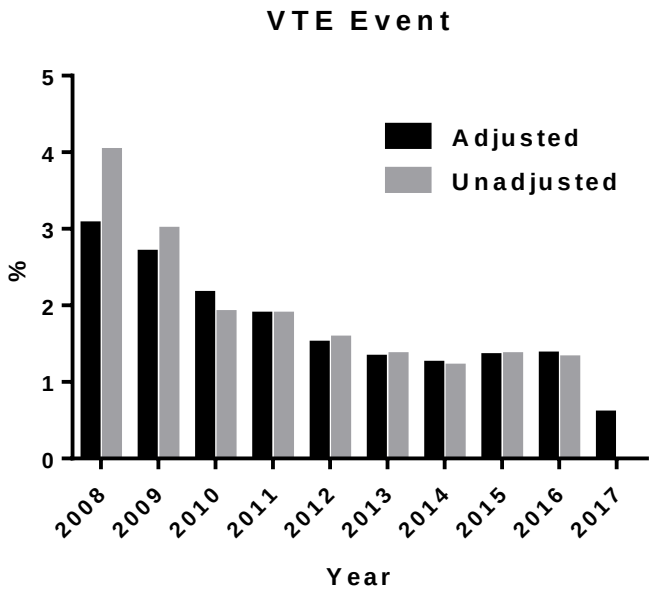
VTE Prophylaxis Type - LMWH
1/1/16 - 1/31/17




Type VTE Prophylaxis
60
40
20
0
%
2011
2012
2013
2014
2015
2016
2017
2018
Year
LMWH
Heparin
None
Other

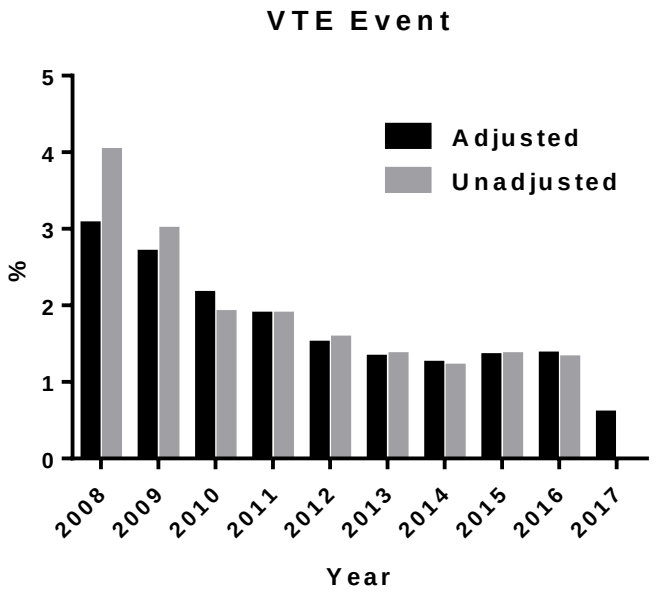
MTQIP VTE Prophylaxis

- VTE
  - VTE Rate
    - Begin = 2.5 %
    - Previous = 1.3 %
    - Current = **1.3 %**
    - Target = 1.5 %
  - 48 hr VTE Prophylaxis Rate
    - Begin = 38 %
    - Previous = 59 %
    - Current = **61 %**
    - Target = 50 %



MTQIP VTE Prophylaxis

- VTE
  - VTE Rate
    - Begin = 2.5 %
    - Previous = 1.3 %
    - Current = **1.3 %**
    - Target = 1.5 %
  - VTE Prophylaxis with LMWH
    - Begin = 27 %
    - Previous = 41 %
    - Current = **43 %**
    - Target = 50 %



#6 PRBC to Plasma ratio in Resuscitation

- Website
  - Practices > Hemorrhage
  - Cohort = Cohort 1
  - No Signs of Life = Include DOAs
  - Transfers Out = Include Transfers Out
  - Default Period = Set for CQI Index time period
- N, Eligible patients
  - List
  - PRBC/FFP Ratio

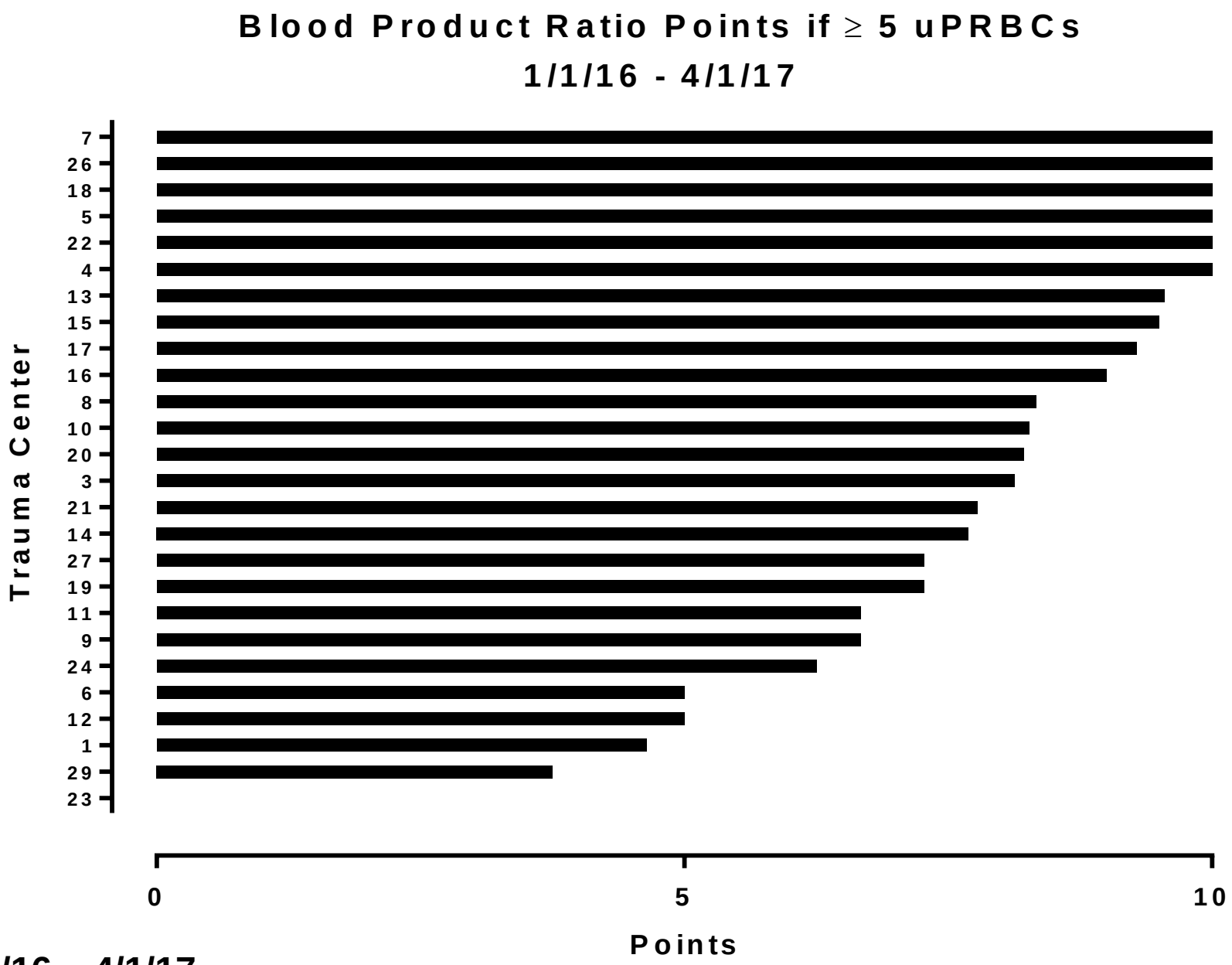
MTQIP 2016 Collaborative-Wide PI Projects

- Hemorrhage (≥ 5 u PRBC's first 4 hrs)
  - 1/1/2016 to 1/31/2017
  - % of patients with 4hr PRBC/FFP ratio ≤ 2.5
    - 2013 = 65 %
    - Current = **85 %** (190/223)
  - % of patients with 4hr PRBC/FFP ratio ≤ 2.0
    - 2013 = 55 %
    - Current = **79 %** (177/223)
    - Target = 80 %

Massive Transfusion Ratio

- Massive Transfusion
  - ≥ 5 units PRBC's in first 4 hrs
  - Average of tier points score for each patient
  - 0 units FFP places patient in tier 4
  - 3/1/14 – 5/31/16

Ratio PRBC/FFP	Tier	Points
< 1.5	1	10
1.6 – 2.0	2	10
2.1 – 2.5	3	5
> 2.5	4	0


Blood Product Ratio Points if ≥ 5 uPRBCs
1/1/16 - 4/1/17
Trauma Center
7
26
18
5
22
4
13
15
17
16
8
10
20
3
21
14
27
19
11
9
24
6
12
1
29
23
0
5
10
Points

1/1/16 – 4/1/17

POP QUIZ

Ventilator Days

Patient is trached, continuously on ventilator in CPAP mode with pressure support of 10, PEEP 5, FiO2 60%

Ventilator Days

Is this counted as a ventilator day?

TOTAL VENTILATOR DAYS

The cumulative amount of time spent on the ventilator. Each partial or full day should be measured as one calendar day.

- Excludes mechanical ventilation time associated with OR procedures.
- Non-invasive means of ventilatory support (CPAP or BIPAP) should not be considered in the calculation of ventilator days.
- Recorded in full day increments with any partial calendar day counted as a full calendar day.
- The calculation assumes that the date and time of starting and stopping Ventilator episode are recorded in the patient's chart.
- The null value "Not Known/Not Recorded" is used if any dates are missing.
- At no time should the Total Vent Days exceed the Hospital LOS.
- The null value "Not Applicable" is used if the patient was not on the ventilator according to the above definition.

ANSWER: YES

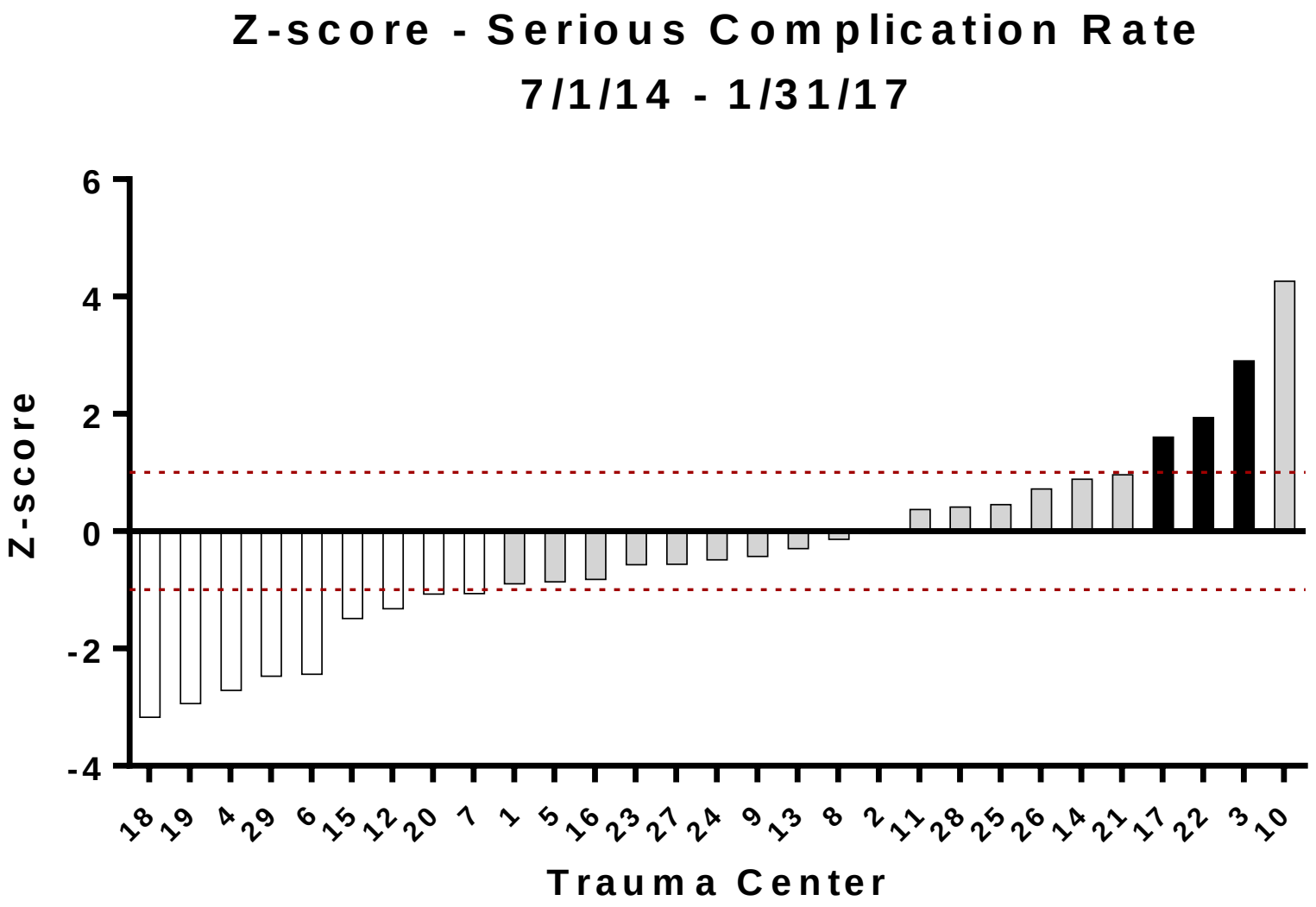
Z-score

- Measure of trend in outcome over time
- Hospital specific
  - Compared to yourself
- Standard deviation
- >1 getting worse
- 1 to -1 flat
- < -1 getting better

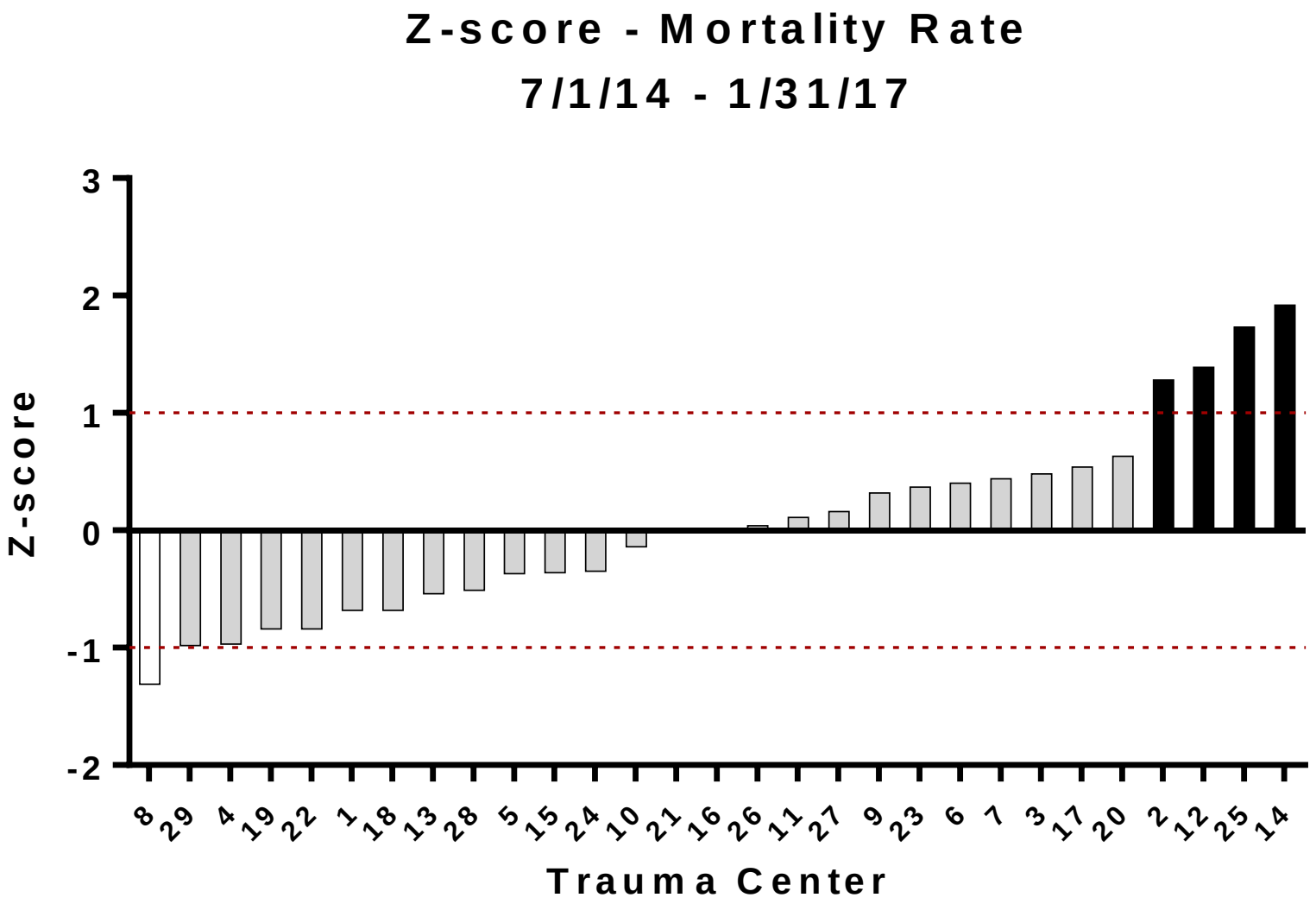
Z-score

- Time: 7/1/2014 to 1/31/17
- Cohort 2
- Exclude if no signs of life
- Exclude transfers out

#7 Serious Complication Rate (Z-score)



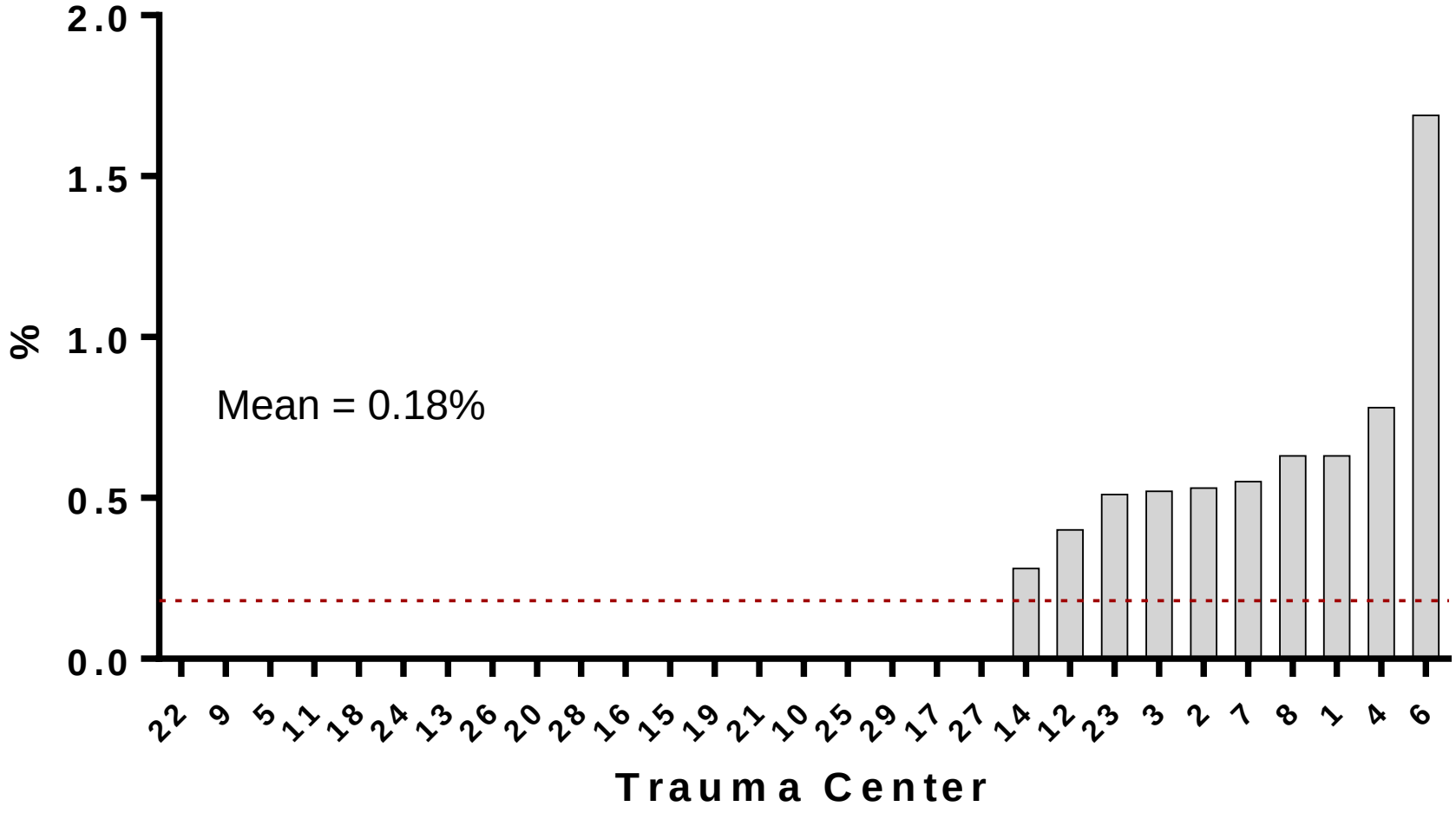
8 Mortality Rate (Z-score)



#9 IVC Filter Use

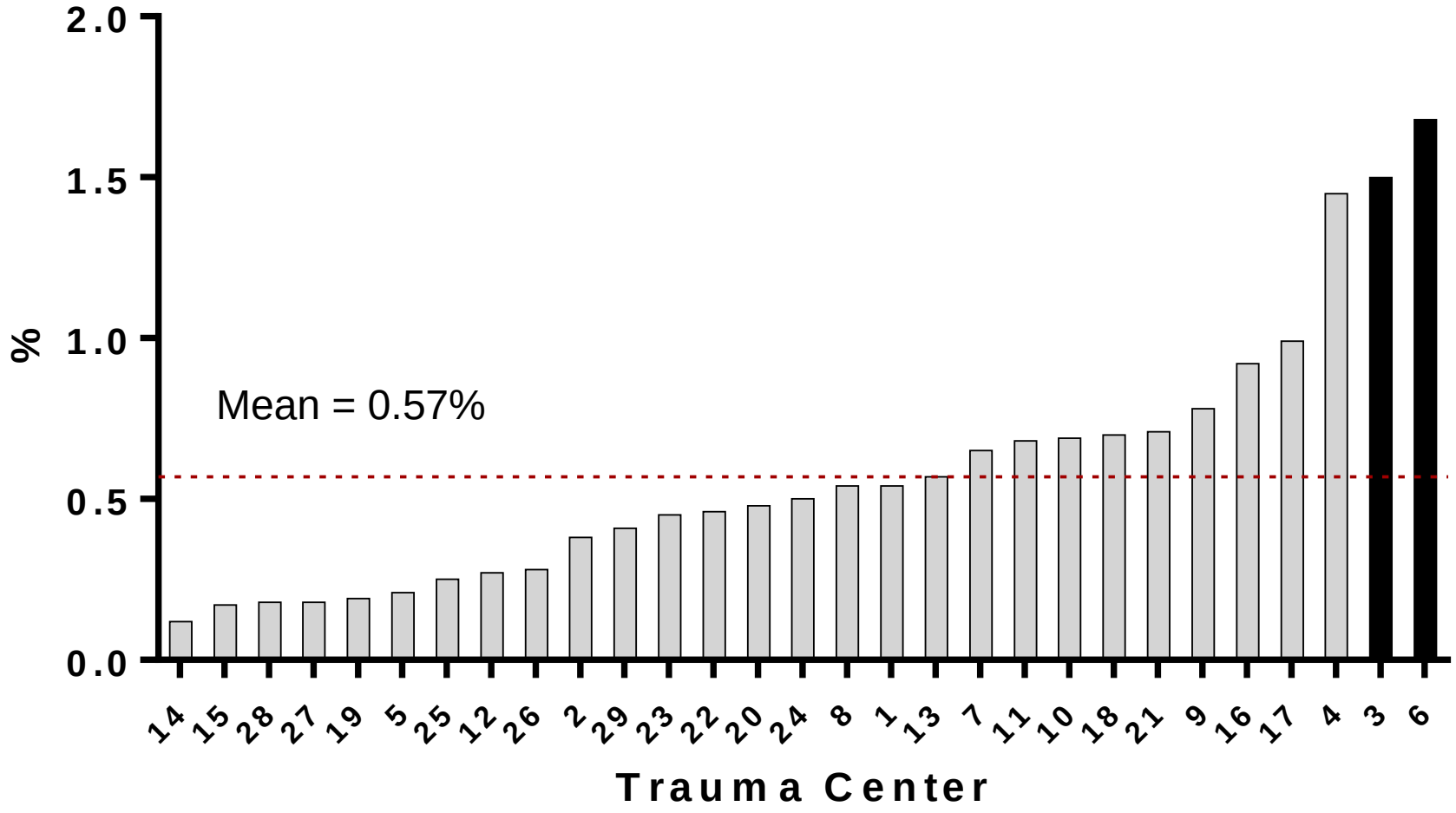
- Website
  - Practices > IVC Summary
  - Cohort = Cohort 1
  - No Signs of Life = Exclude DOAs
  - Transfers Out = Exclude Transfers Out
  - Default Period = Set for CQI Index time period
- IVC Filter Use
  - Group - Unadj %

Unadjusted IVC Filter Use
7/1/16 - 1/31/17



7/1/16 – 1/31/17

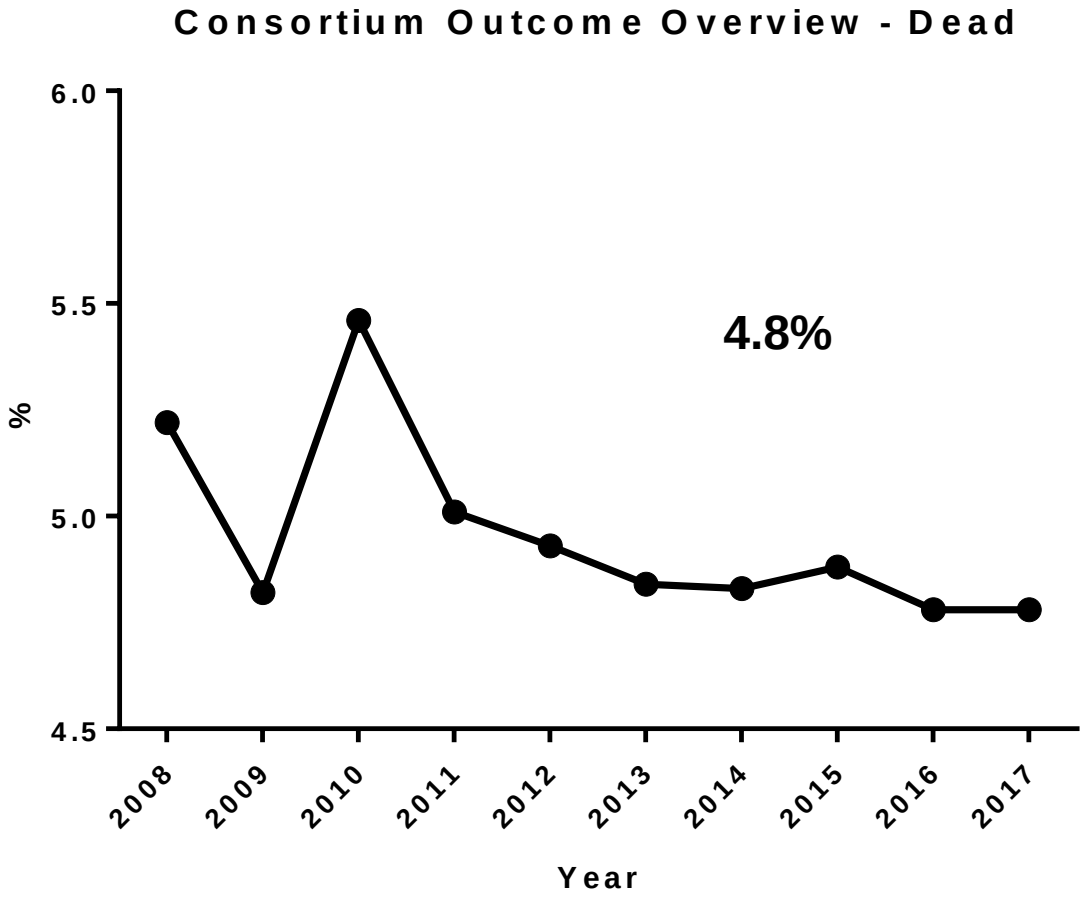
Unadjusted IVC Filter Use
11/1/14 - 1/31/17

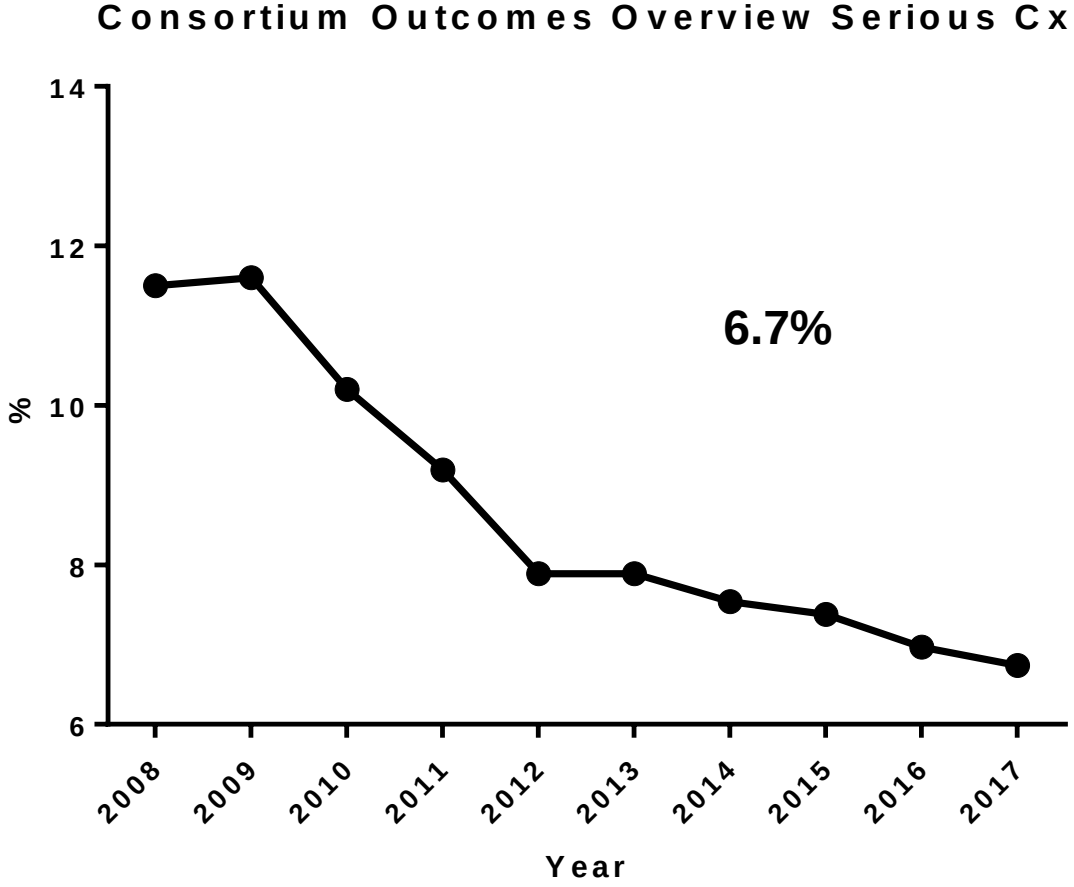


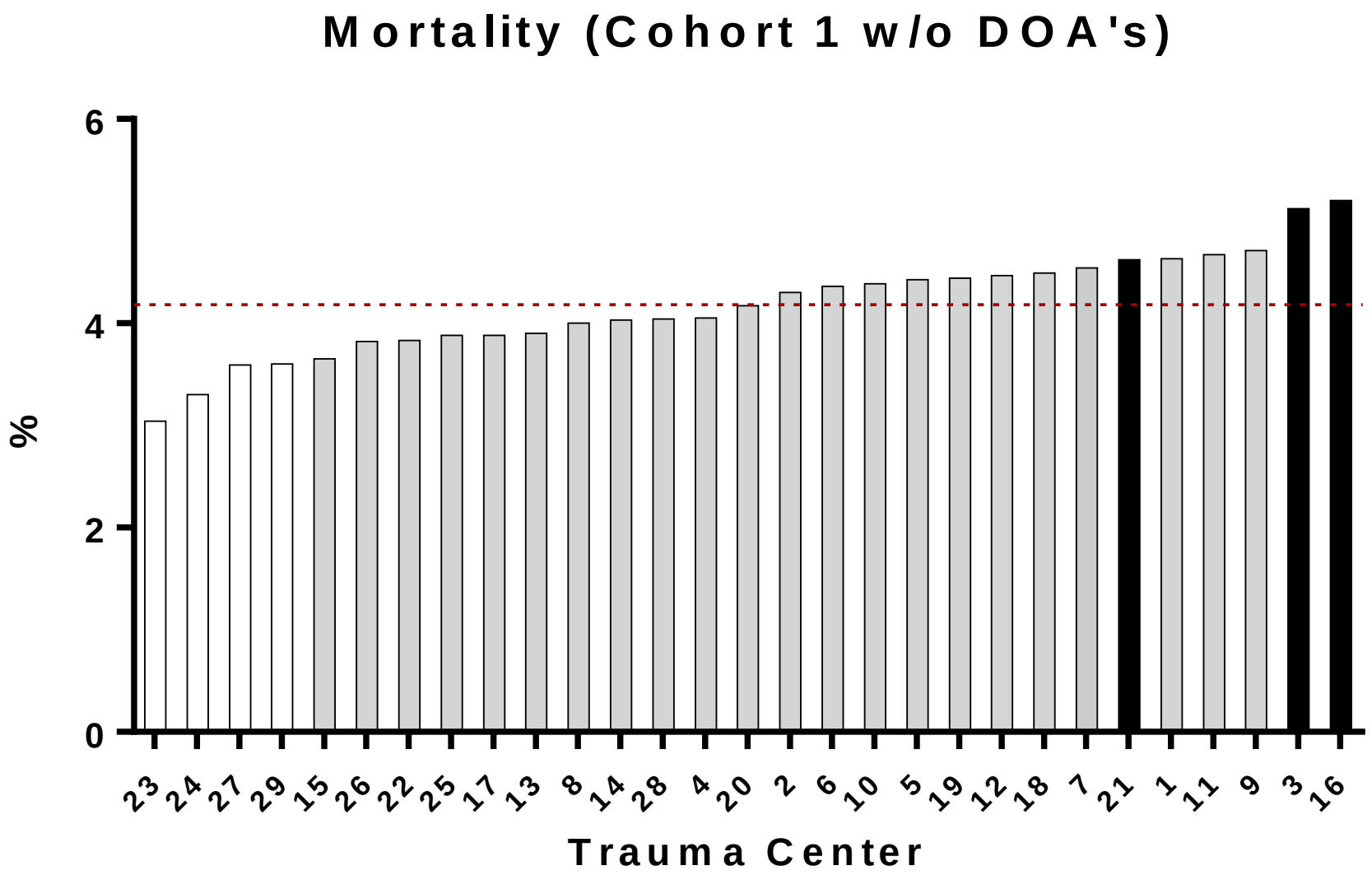
1/1/14 – 1/31/17

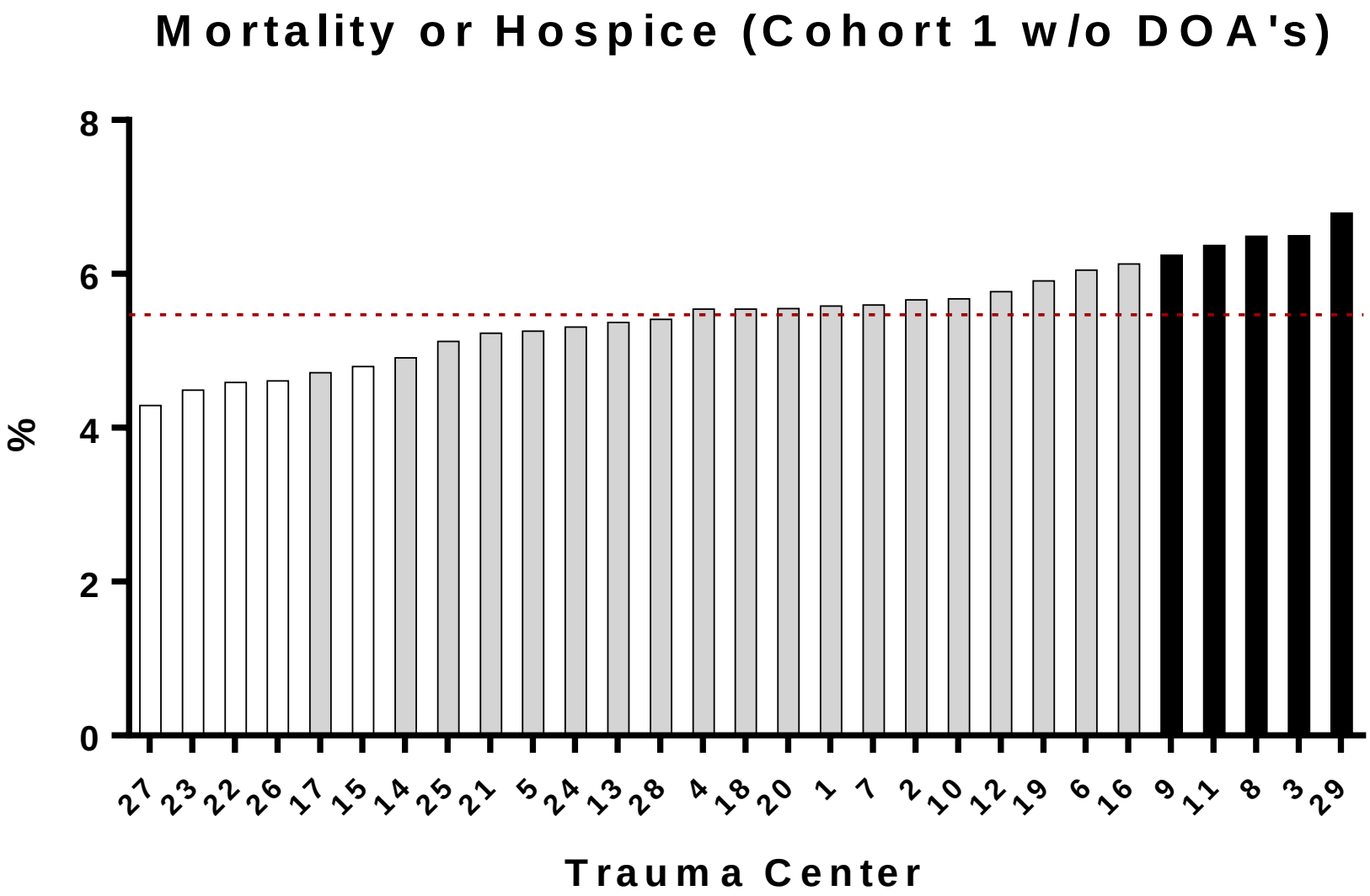
MTQIP Outcomes

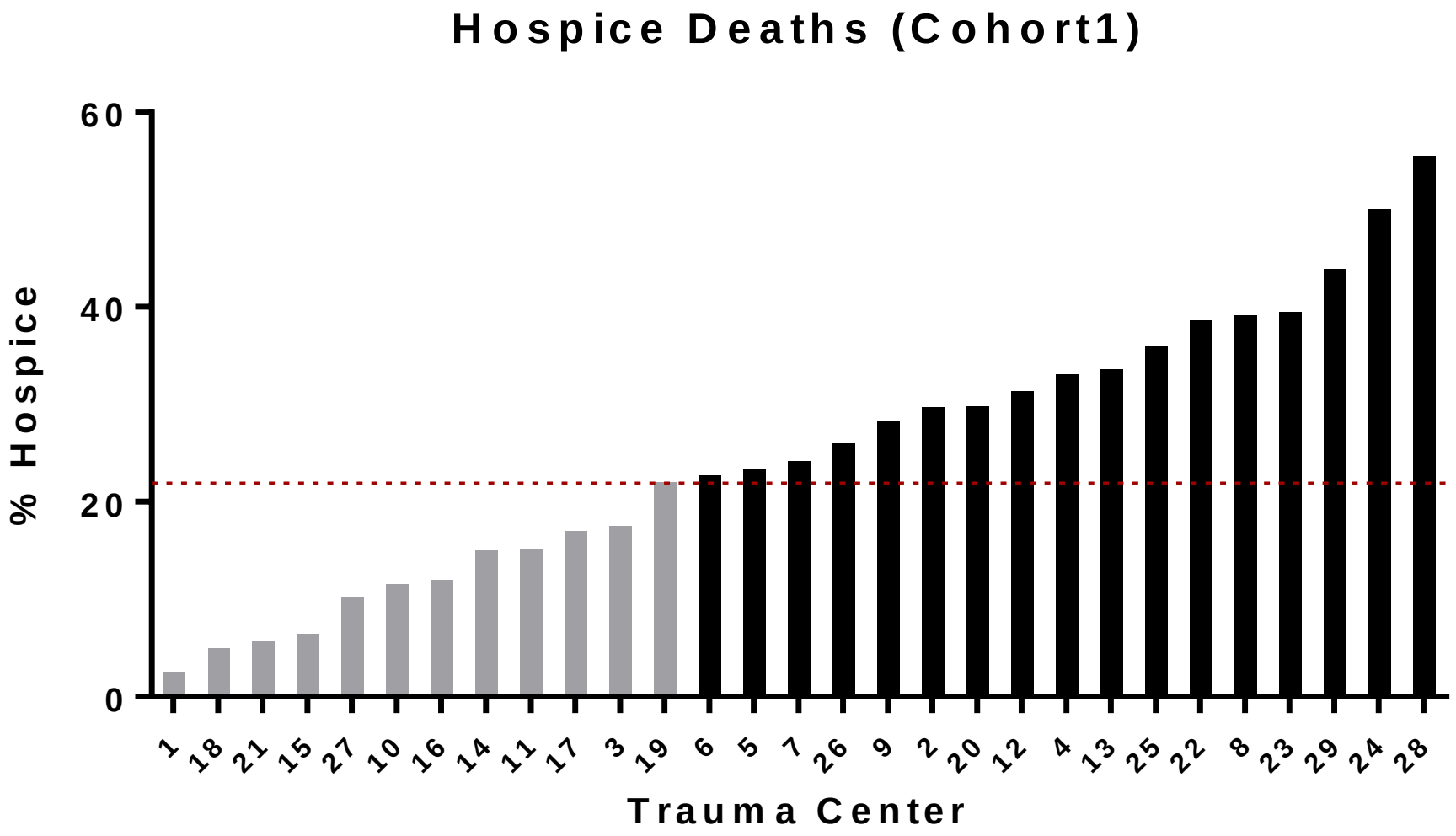
- Web-Site Report
  - 11/1/2014 to 1/31/2017
- Rates
  - Risk and Reliability-adjusted
  - Red dash line is collaborative mean
- Legend
  - □ Low-outlier status (better performance)
  - ▒ Non-outlier status (average performance)
  - ■ High-outlier status (worse performance)


Consortium Outcome Overview - Dead
6.0
5.5
5.0
4.5
%
4.8%
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Year

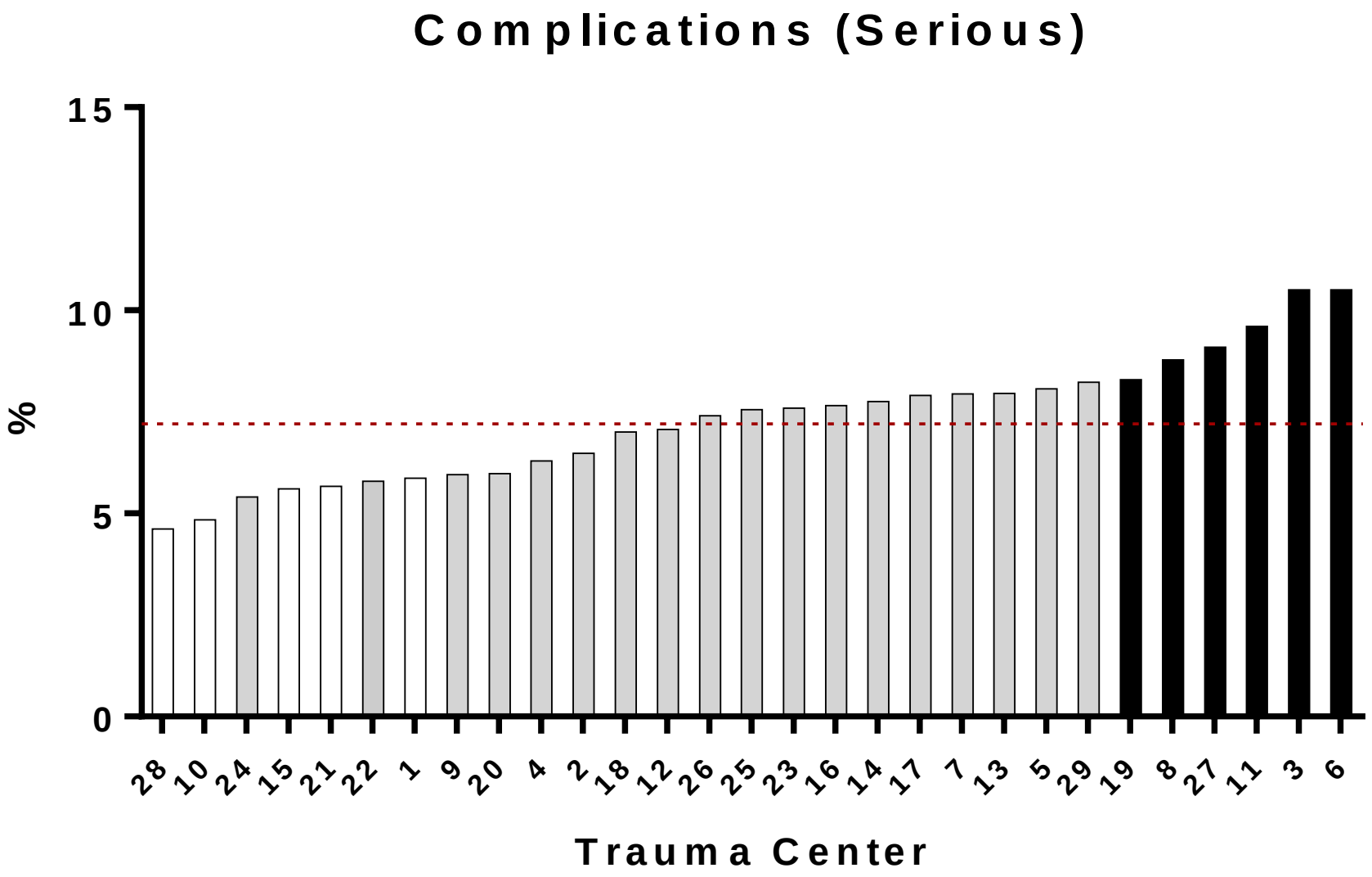

Consortium Outcomes Overview Serious Cx
14
12
10
8
6
%
6.7%
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Year


Mortality (Cohort 1 w/o DOA's)
6
4
2
0
%
23 24 27 29 15 26 22 25 17 13 8 14 28 4 20 2 6 10 5 19 12 18 7 21 1 11 9 3 16
Trauma Center


Mortality or Hospice (Cohort 1 w/o DOA's)
%
8
6
4
2
0
27 23 22 26 17 15 14 25 21 5 24 13 28 4 18 20 1 7 2 10 12 19 6 16 9 11 8 3 29
Trauma Center

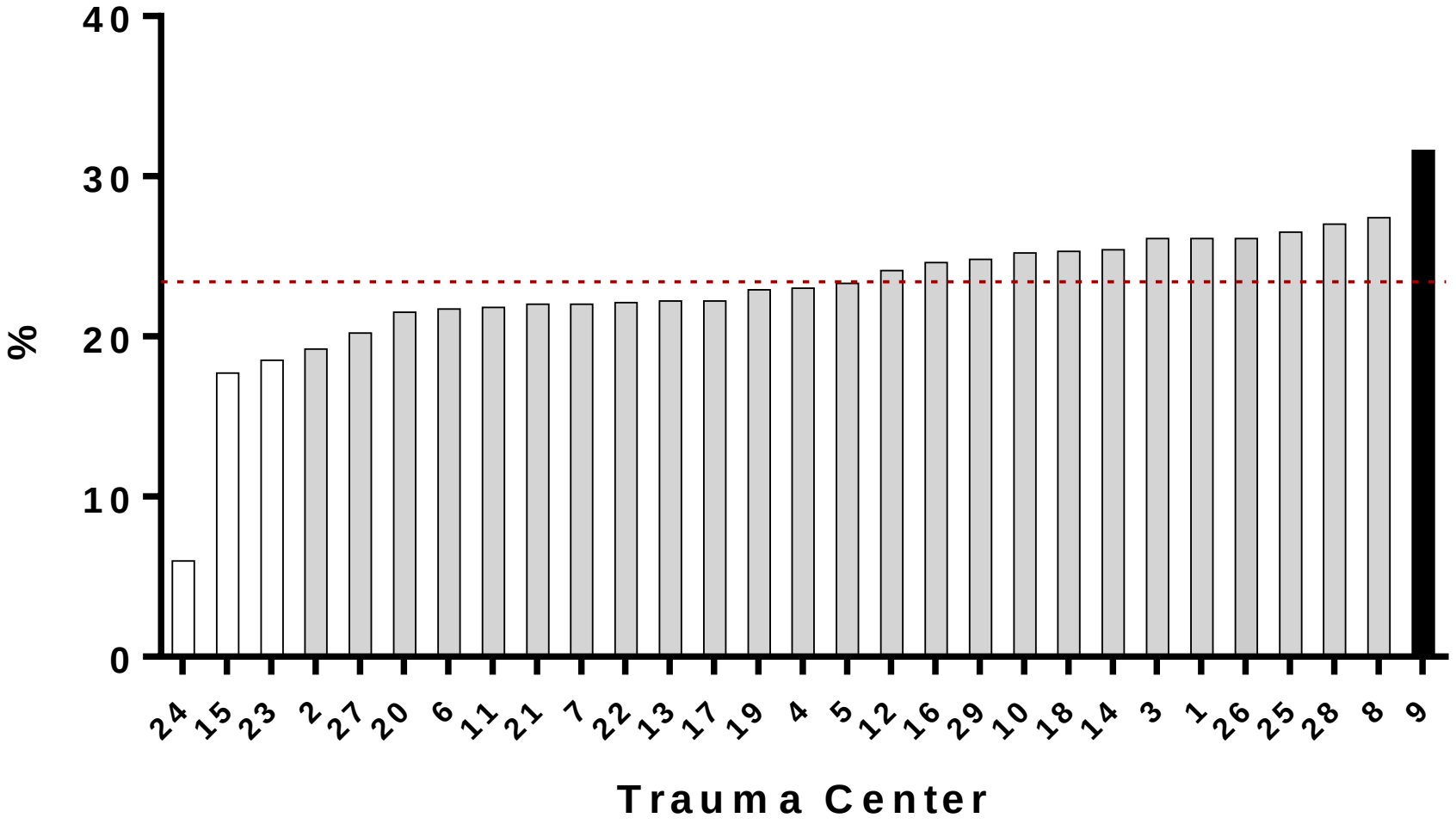

Hospice Deaths (Cohort1)
% Hospice
60
40
20
0
1 18 21 15 27 10 16 14 11 17 3 19 6 5 7 26 9 2 20 12 4 13 25 22 8 23 29 24 28
Trauma Center

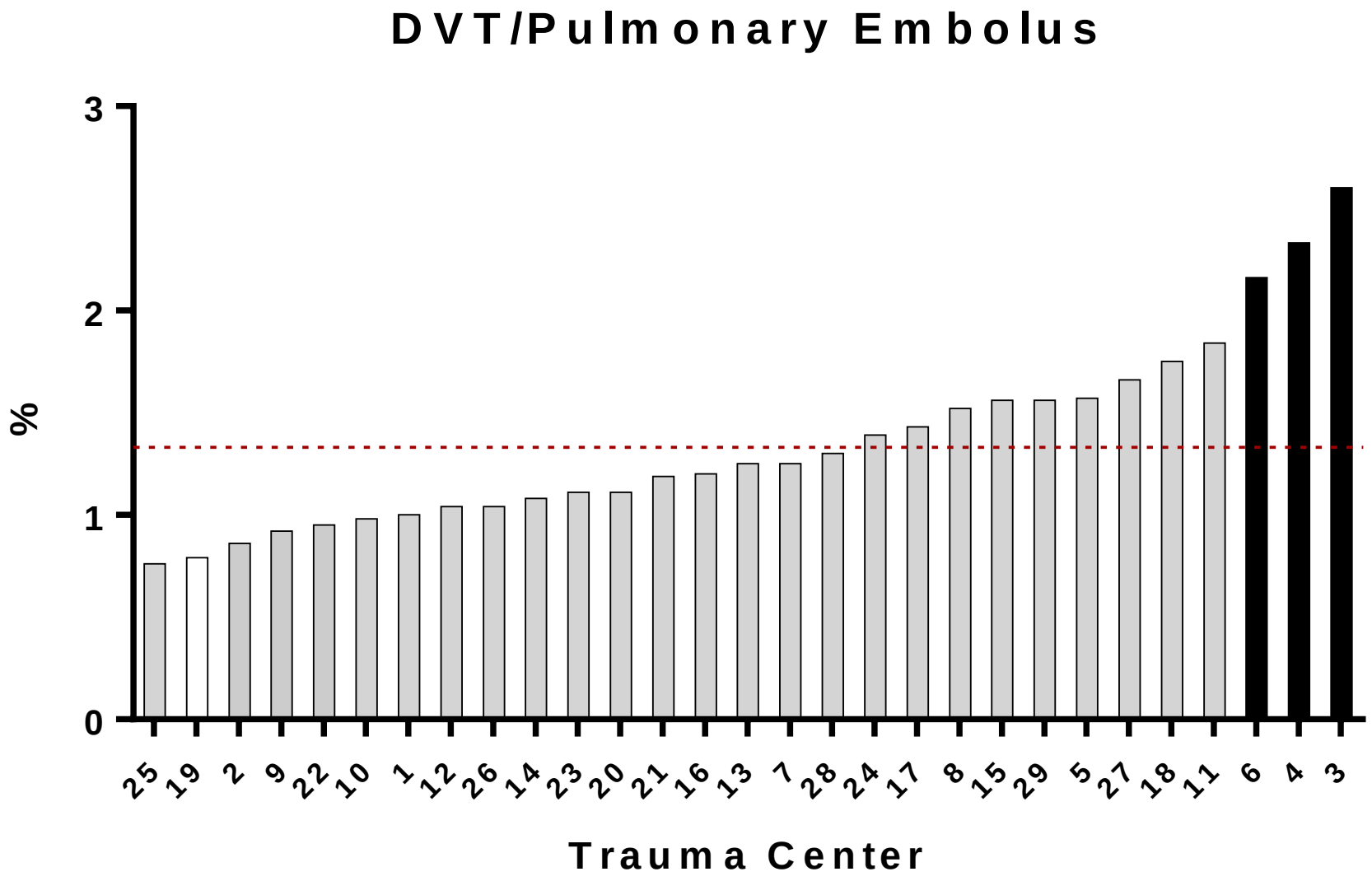
Admit to Trauma Service

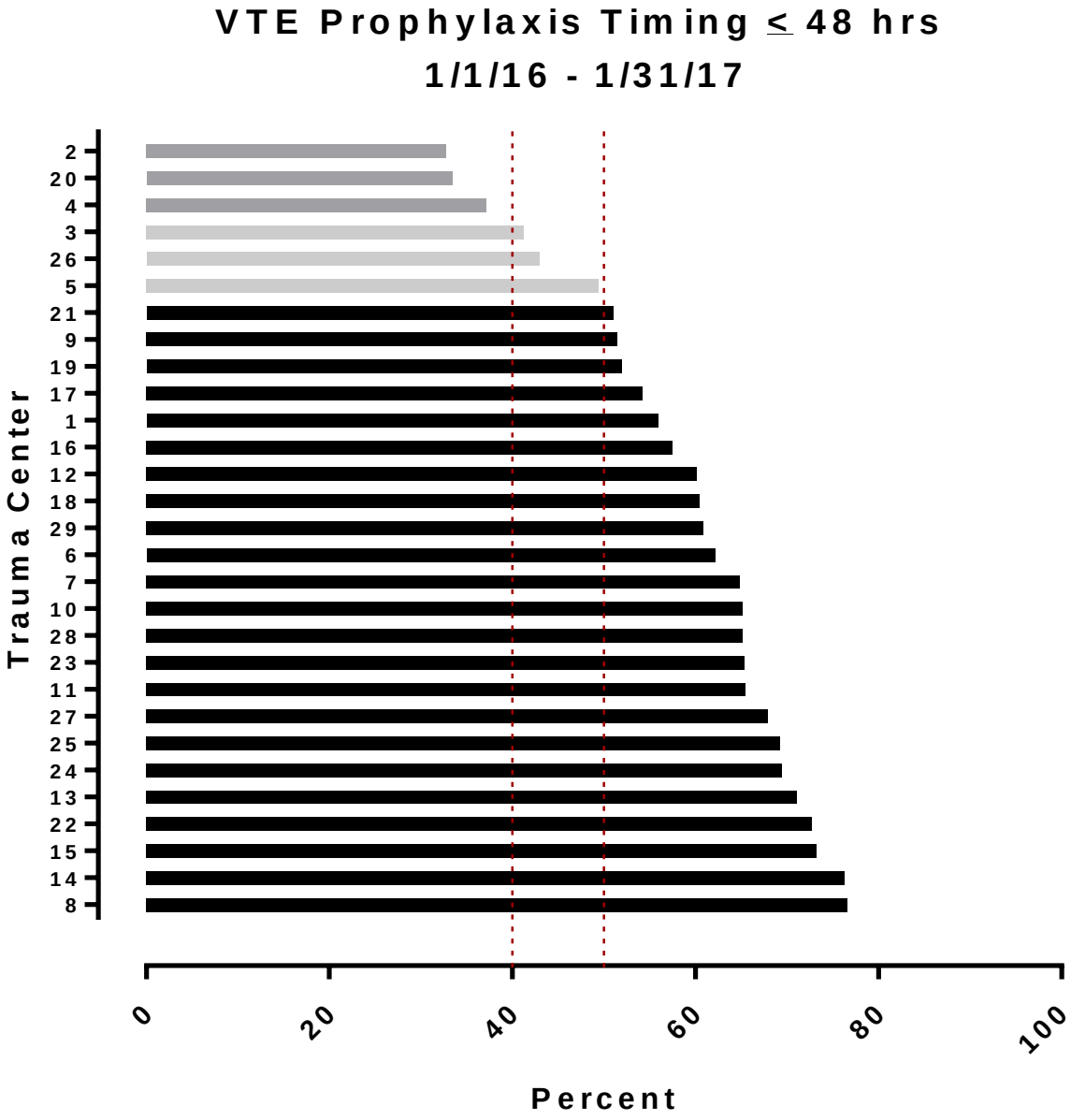


Admit to Trauma Service

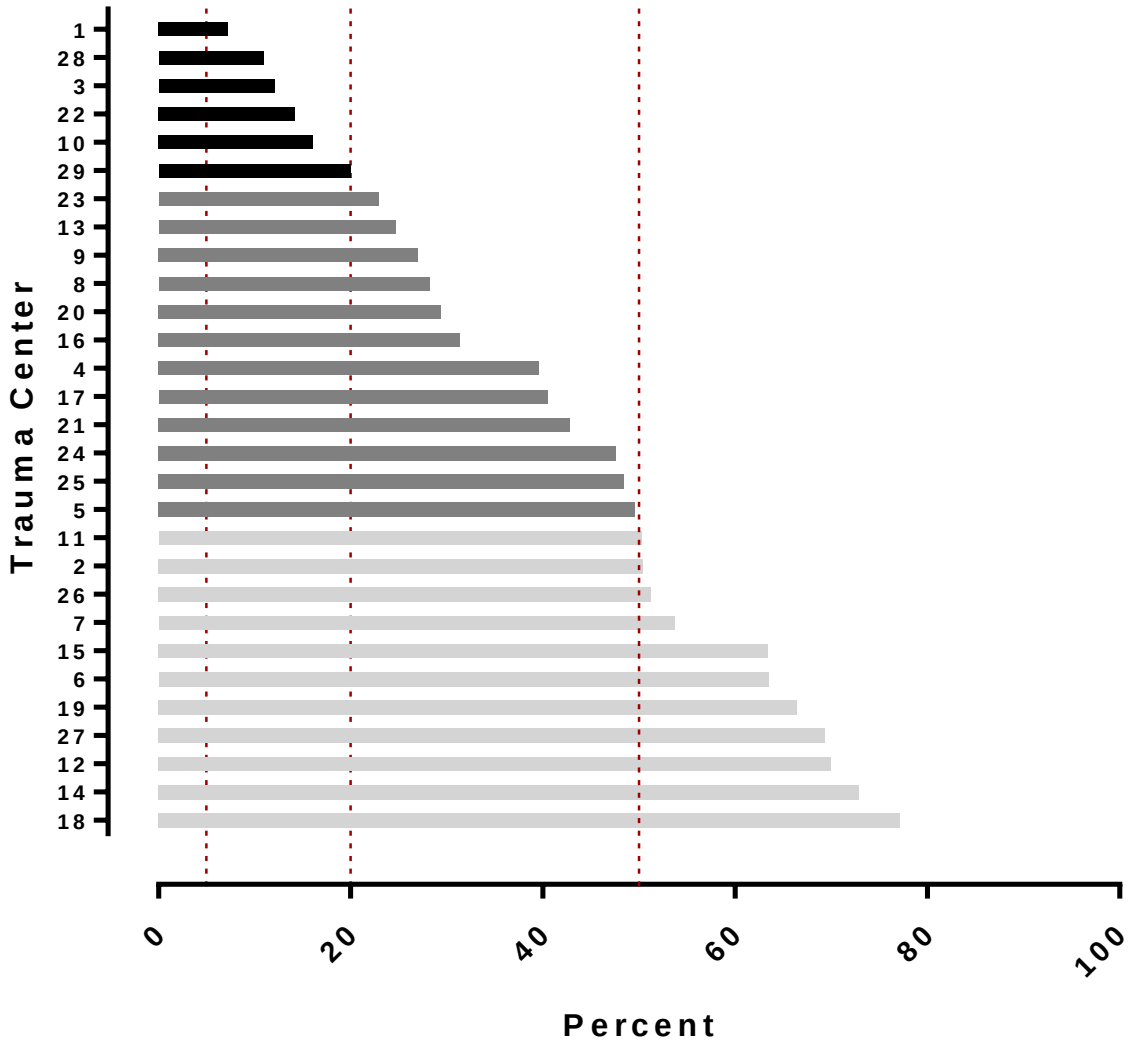
Failure to Rescue

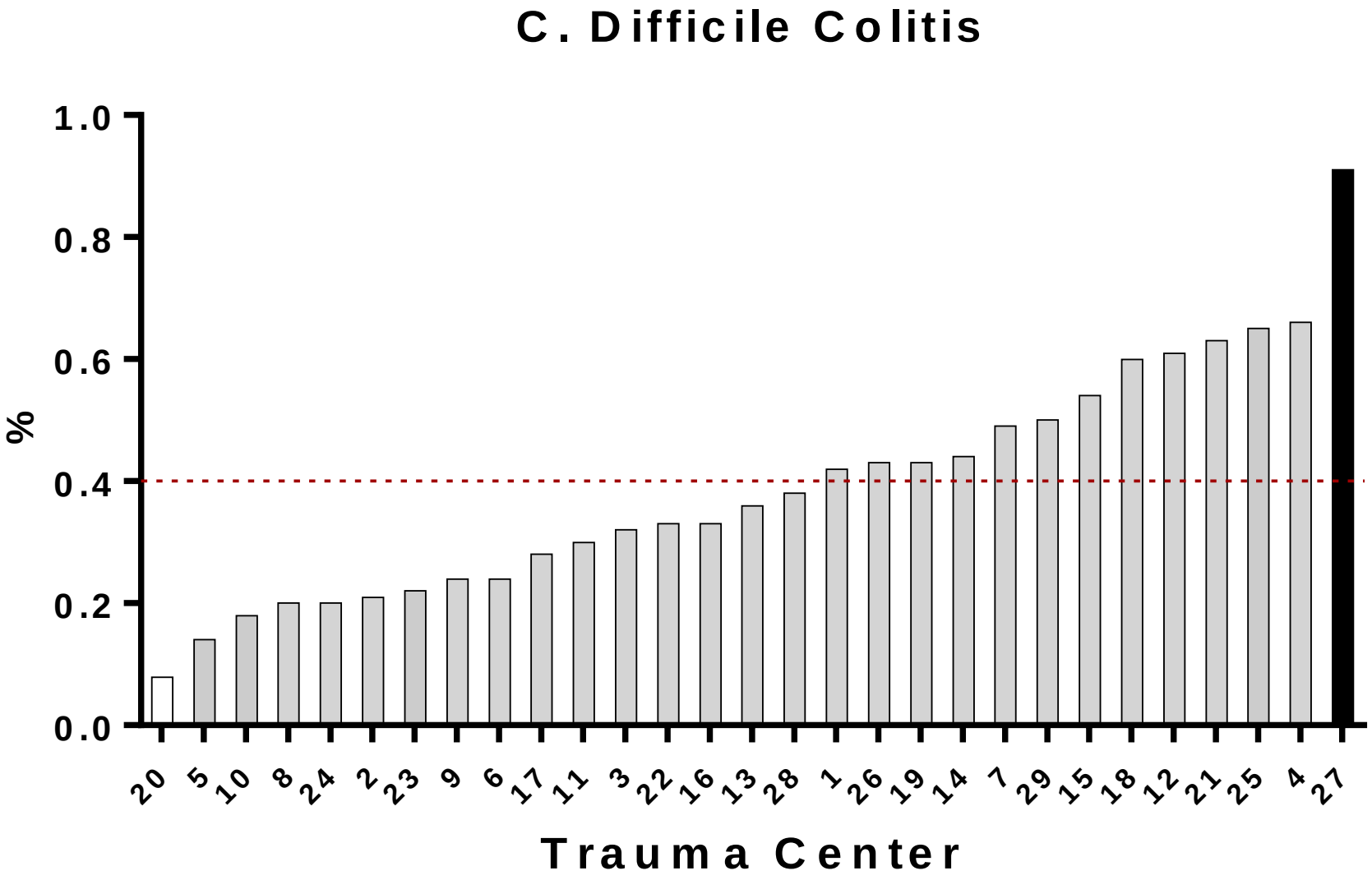


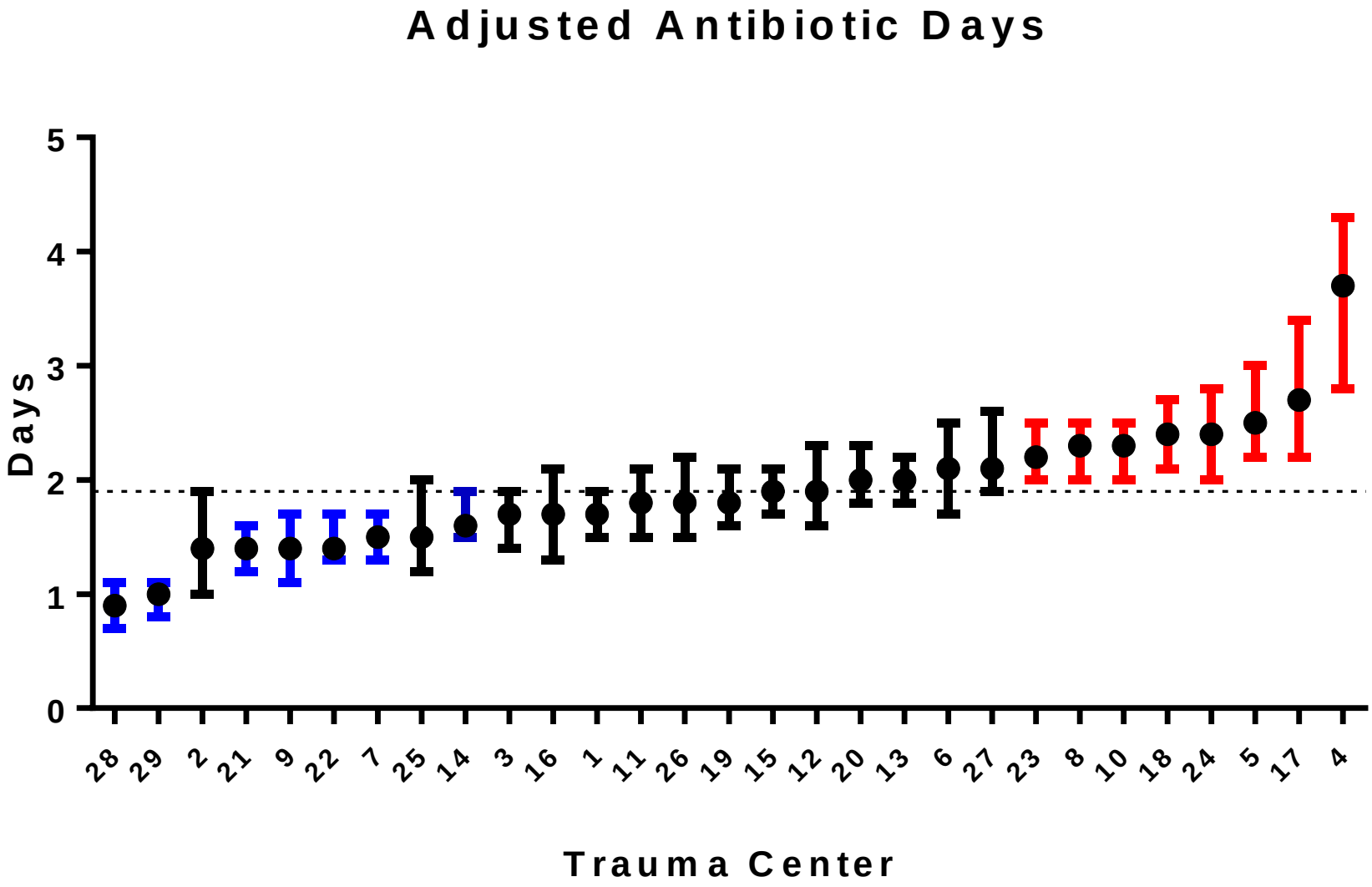

DVT/Pulmonary Embolus
3
2
1
0
%
25 19 2 9 22 10 1 12 26 14 23 20 21 16 13 7 28 24 17 8 15 29 5 27 18 11 6 4 3
Trauma Center


VTE Prophylaxis Timing ≤ 48 hrs
1/1/16 - 1/31/17
Trauma Center
2
20
4
3
26
5
21
9
19
17
1
16
12
18
29
6
7
10
28
23
11
27
25
24
13
22
15
14
8
0
20
40
60
80
100
Percent

VTE Prophylaxis Type - LMWH
1/1/16 - 1/31/17




C. Difficile Colitis
1.0
0.8
0.6
0.4
0.2
0.0
%
20 5 10 8 24 2 23 9 6 17 11 3 22 16 13 28 1 26 19 14 7 29 15 18 12 21 25 4 27
Trauma Center


Adjusted Antibiotic Days
Days
0
1
2
3
4
5
28 29 2 21 9 22 7 25 14 3 16 1 11 26 19 15 12 20 13 6 27 23 8 10 18 24 5 17 4
Trauma Center

State of Michigan

- Proposal submitted and verbally accepted
- Scope
  - Level 1 and 2
    - Data submission
    - Reporting: Center, State, Region
    - Education
  - Level 3
    - Data submission
    - Report development
    - Education
  - EMS Data

Panel Discussion

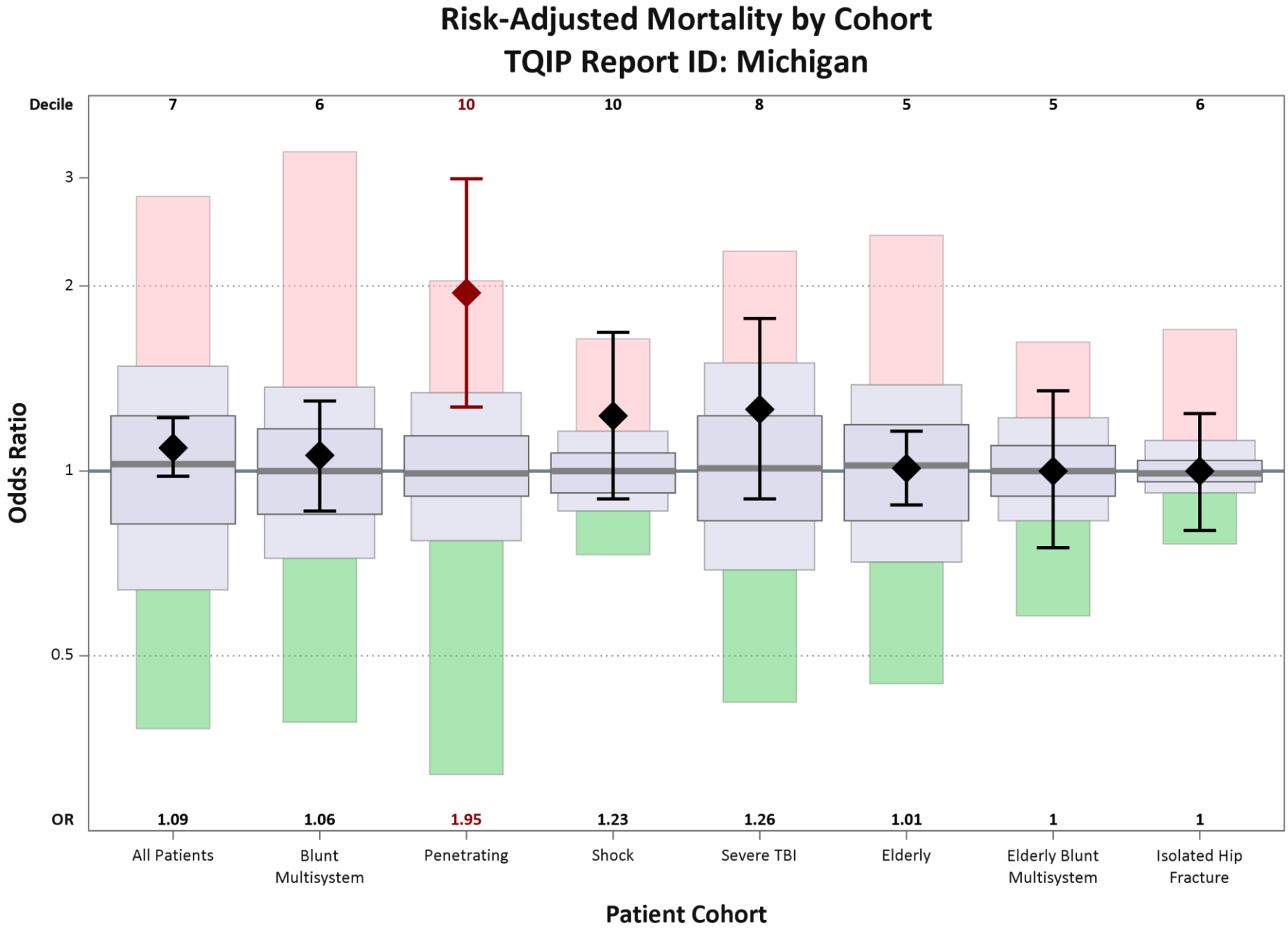
Jerry Jurkovich, MD
Todd Maxson, MD
Amy Koestner, RN

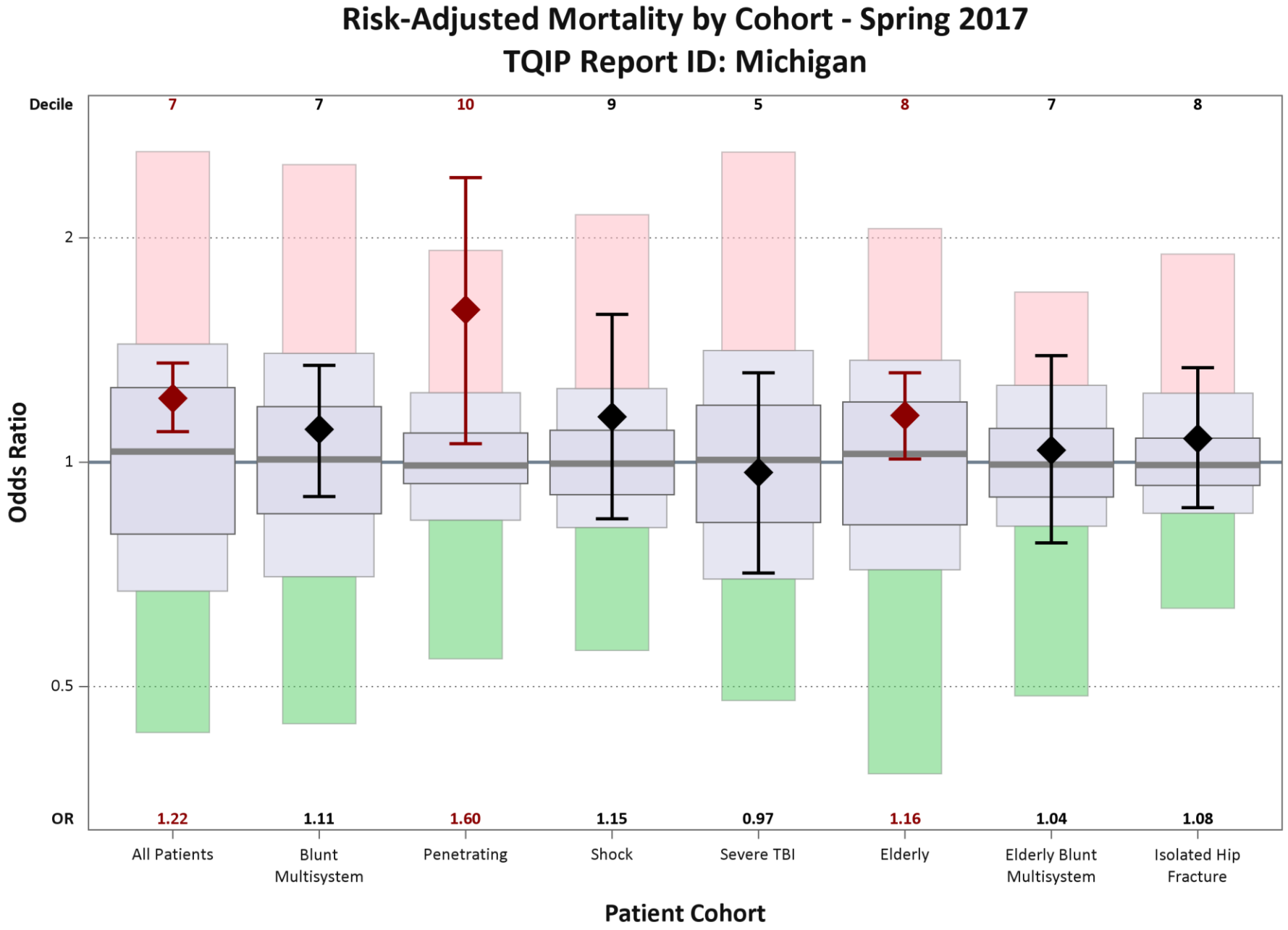
Break

Back at 3:30 pm

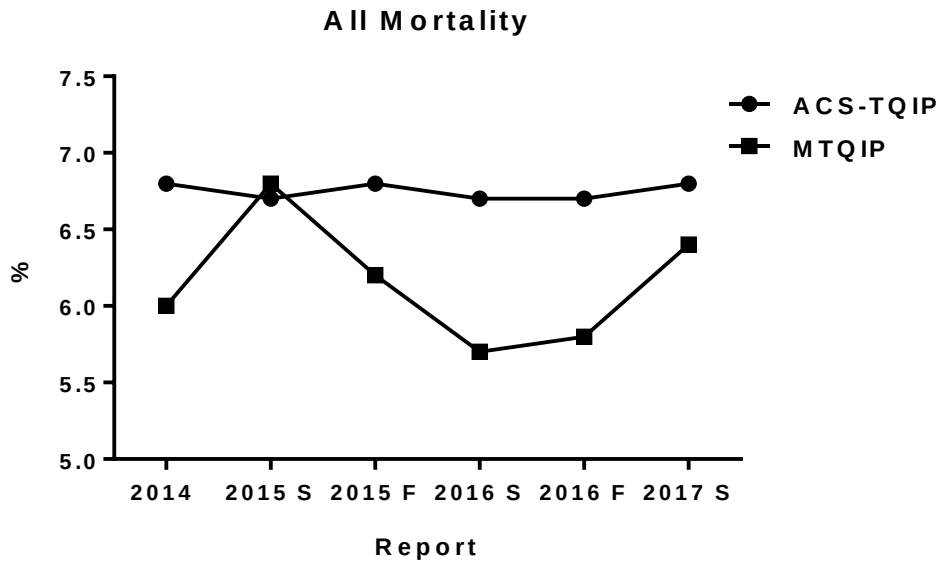
ACS-TQIP Michigan Report

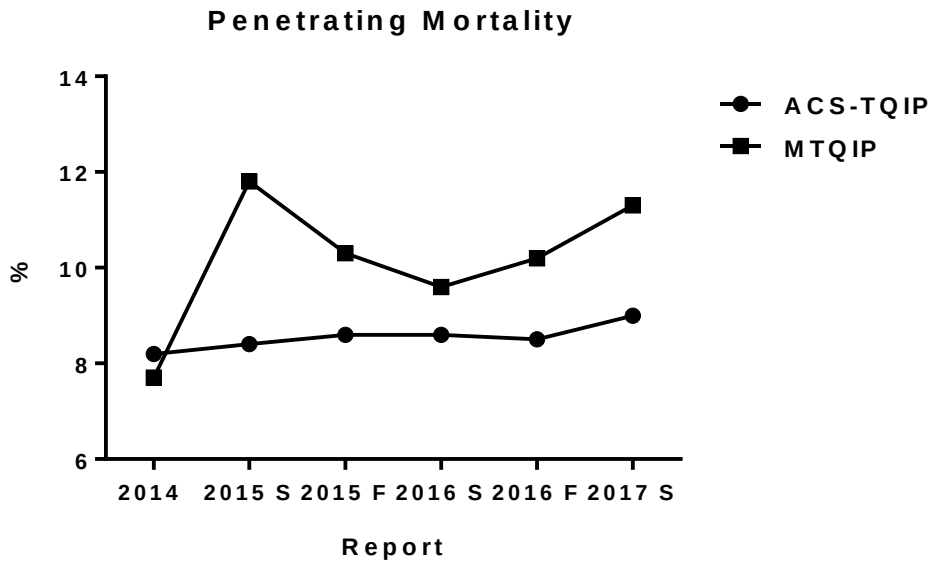
Mark Hemmila


Risk-Adjusted Mortality by Cohort
TQIP Report ID: Michigan
Decile
7
6
10
10
8
5
5
6
Odds Ratio
3
2
1
0.5
OR
1.09
1.06
1.95
1.23
1.26
1.01
1
1
All Patients
Blunt Multisystem
Penetrating
Shock
Severe TBI
Elderly
Elderly Blunt Multisystem
Isolated Hip Fracture
Patient Cohort


Risk-Adjusted Mortality by Cohort - Spring 2017
TQIP Report ID: Michigan
Decile
7
7
10
9
5
8
7
8
Odds Ratio
2
1
0.5
OR
1.22
1.11
1.60
1.15
0.97
1.16
1.04
1.08
All Patients
Blunt Multisystem
Penetrating
Shock
Severe TBI
Elderly
Elderly Blunt Multisystem
Isolated Hip Fracture
Patient Cohort


Odds Ratios by TQIP Hospital; Mortality
OR Ranges:
Low = None
Average = 0.55-1.81
High = 1.60-1.60
Odds Ratio
5
4
3.5
3
2.5
2
1.5
1
0.5
0.25
0.12
Cohort = Penetrating


All Mortality
7.5
7.0
6.5
6.0
5.5
5.0
%
2014
2015 S
2015 F
2016 S
2016 F
2017 S
Report
ACS-TQIP
MTQIP


Penetrating Mortality
14
12
10
8
6
%
2014
2015 S
2015 F
2016 S
2016 F
2017 S
Report
ACS-TQIP
MTQIP

What we know?

- Michigan, less sick
- AIS 2005/08 is crosswalked to AIS98
- Lagging patients are included
- Lot's of hospice
- DNR/Advance directive
  - Dropped
  - 85% live in MTQIP data
- Analyst (Anne)
  - Problems - CI, size of centers

Table 1: Patient Inclusion by Month and Year

Month and Year	NTDB (N)	TQIP (N)	TQIP (%)
January 2015	2,707	19	0.7
February 2015	2,185	9	0.4
March 2015	2,407	2	0.1
April 2015	2,422	21	0.9
May 2015	2,942	12	0.4
June 2015	2,863	0	0.0
July 2015	3,249	69	2.1
August 2015	3,161	102	3.2
September 2015	2,803	111	4.0
October 2015	2,914	1,244	42.7
November 2015	2,387	1,043	43.7
December 2015	2,288	985	43.1
January 2016	2,815	1,154	41.0
February 2016	2,849	1,164	40.9
March 2016	2,808	1,146	40.8
April 2016	3,026	1,162	38.4
May 2016	3,614	1,383	38.3
June 2016	3,649	1,428	39.1

Month and Year	NTDB (N)	TQIP (N)	TQIP (%)
July 2016	3,180	1,308	41.1
August 2016	2,850	1,163	40.8
September 2016	2,368	1,037	43.8

List of Patients

- Requested from ACS-TQIP
  - Your DUA does not allow
  - How could we change?
- U of M
  - Obtained off NTDB/TQIP report site
  - Matched to MTQIP data
- Request from centers
  - 5 CQI points, by July 7
  - Benchmark report
  - Patient list

2018 CQI Scoring

Mark Hemmila

CQI Scoring

- Approach
  - Generate ideas
  - Advisory committee
  - Suggestion to change target
  - Suggestion to add
  - Suggestions to drop
- Timing
  - Finalize CQI scoring index at May meeting
  - July 1, 2017 start

Michigan Trauma Quality Improvement Program (MTQIP)
2017 Performance Index January 1, 2017 to December 31, 2017

Measure	Weight	Measure Description			Points	
#1	10	**Data Submission (Partial/Incomplete Submissions No Points)**				PARTICIPATION (30%)
		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	10	**Meeting Participation All Disciplines *Surgeon represents 1 hospital only**				
		Surgeon, and (TPM or MCR) Participate in 3 of 3 Collaborative meetings (9 pts)			0-10	
		Surgeon, and (TPM or MCR) Participate in 2 of 3 Collaborative meetings (6 pts)				
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		Registrar, and/or MCR Participate in the Data Abstractor Meeting (1 pt)				
#3	10	**Data Accuracy**	**1st Validation Visit-Error Rate**	**≥2 Validation Visits-Error Rate**		
		5 Star Validation	0-4.5%	0-4.0%	10	
		4 Star Validation	4.6-5.5%	4.1-5.0%	8	
		3 Star Validation	5.6-8.0%	5.1-6.0%	5	
		2 Star Validation	8.1-9.0%	6.1-7.0%	3	
		1 Star Validation	>9.0%	>7.0%	0	
#4	10	**Venous Thromboembolism (VTE) Prophylaxis Initiated Within 48 Hours of Arrival in Trauma Service Admits with ≥ 2 Day Length of Stay (18 Mo's: 1/1/16-6/30/17)**				PERFORMANCE (70%)
		≥ 50%			10	
		≥ 40%			5	
		< 40%			0	
#5	10	**Low Molecular Weight Heparin (LMWH) Venous Thromboembolism (VTE) Prophylaxis Use in Trauma Service Admits (18 Mo's: 1/1/16-6/30/17)**				
		≥ 50%			10	
		21-49%			7	
		5-20%			5	
		< 5%			0	
#6	10	**Red Blood Cell to Plasma Ratio (Weighted Mean Points) of Patients Transfused ≥5 Units in 1st 4 Hours (18 Mo's: 1/1/16-6/30/17)**				
		10 pts: Tier 1: ≤ 1.5			0-10	
		10 pts: Tier 2: 1.6-2.0				
		5 pts: Tier 3: 2.1-2.5				
		0 pts: Tier 4: >2.5				
#7	10	**Serious Complication Rate-Trauma Service Admits (3 years: 7/1/14-6/30/17)**				
		Z-score: < -1 (major improvement)			10	
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#9	10	**Inferior Vena Cava Filter Use (All Admits) (Collaborative Wide) (7/1/16-6/30/17)**				
		≤ 1.2			10	
		> 1.2			0	
#10	10	**Site Specific Quality Improvement Project (July 2016-December 2017)**				
		Implemented, and met or exceeded target			10	
		Implemented, showed improvement, but did not meet target			7	
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				Total (Max Points) =	100	

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			Total (Max Points) =	100	

≥ 55% 10
≥ 50% 8
≥ 40% 5
< 40% 0

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			Total (Max Points) =	100	

≥ 55% 10
≥ 50% 8
≥ 40% 5
< 40% 0

≥ 50% 10
37-49% 7
25-36% 5
20-24% 3
<20% 0

Michigan Trauma Quality Improvement Program (MTQIP)
2017 Performance Index January 1, 2017 to December 31, 2017

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		On time and complete 2 of 3 times	5	
		On time and complete 1 of 3 times	0	
#2	10	**Meeting Participation All Disciplines *Surgeon represents 1 hospital only**		
		Surgeon, and (TPM or MCR) Participate in 3 of 3 Collaborative meetings (9 pts)	0-10	
		Surgeon, and (TPM or MCR) Participate in 2 of 3 Collaborative meetings (6 pts)		
		Surgeon, and (TPM or MCR) Participate in 1 of 3 Collaborative meetings (3 pts)		
		Surgeon, and (TPM or MCR) Participate in 0 of 3 Collaborative meetings (0 pts)		
		Registrar, and/or MCR Participate in the Data Abstractor Meeting (1 pt)		
#3	10	**Data Accuracy** / **1st Validation Visit-Error Rate** / **≥2 Validation Visits-Error Rate**		
		5 Star Validation / 0-4.5% / 0-4.0%	10	
		4 Star Validation / 4.6-5.5% / 4.1-5.0%	8	
		3 Star Validation / 5.6-8.0% / 5.1-6.0%	5	
		2 Star Validation / 8.1-9.0% / 6.1-7.0%	3	
		1 Star Validation / >9.0% / >7.0%	0	
#4	10	**Venous Thromboembolism (VTE) Prophylaxis Initiated Within 48 Hours of Arrival in Trauma Service Admits with ≥ 2 Day Length of Stay (18 Mo's: 1/1/16-6/30/17)**		PERFORMANCE (70%)
		≥ 50%	10	
		≥ 40%	5	
		< 40%	0	
#5	10	**Low Molecular Weight Heparin (LMWH) Venous Thromboembolism (VTE) Prophylaxis Use in Trauma Service Admits (18 Mo's: 1/1/16-6/30/17)**		
		≥ 50%	10	
		21-49%	7	
		5-20%	5	
		< 5%	0	
#6	10	**Red Blood Cell to Plasma Ratio (Weighted Mean Points) of Patients Transfused ≥5 Units in 1st 4 Hours (18 Mo's: 1/1/16-6/30/17)**		
		10 pts: Tier 1: ≤ 1.5	0-10	
		10 pts: Tier 2: 1.6-2.0		
		5 pts: Tier 3: 2.1-2.5		
		0 pts: Tier 4: >2.5		
#7	10	**Serious Complication Rate-Trauma Service Admits (3 years: 7/1/14-6/30/17)**		
		Z-score: < -1 (major improvement)	10	
		Z-score: -1 to 1 or serious complications low-outlier (average or better rate)	7	
		Z-score: > 1 (rates of serious complications increased)	5	
#8	10	**Mortality Rate-Trauma Service Admits (3 years: 7/1/14-6/30/17)**		
		Z-score: < -1 (major improvement)	10	
		Z-score: -1 to 1 or mortality low-outlier (average or better rate)	7	
		Z-score: > 1 (rates of mortality increased)	5	
#9	10	**Inferior Vena Cava Filter Use (All Admits) (Collaborative Wide) (7/1/16-6/30/17)**		
		≤ 1.2	10	
		> 1.2	0	
#10	10	**Site Specific Quality Improvement Project (July 2016-December 2017)**		
		Implemented, and met or exceeded target	10	
		Implemented, showed improvement, but did not meet target	7	
		Implemented, but showed no improvement	0	
		Total (Max Points) =	100	

Maintenance

≥ 55% 10
≥ 50% 8
≥ 40% 5
< 40% 0

≥ 50% 10
37-49% 7
25-36% 5
20-24% 3
<20% 0

Michigan Trauma Quality Improvement Program (MTQIP)
2017 Performance Index January 1, 2017 to December 31, 2017

Measure	Weight	Measure Description	Points	
#1	10	**Data Submission (Partial/Incomplete Submissions No Points)** On time and complete 3 of 3 times On time and complete 2 of 3 times On time and complete 1 of 3 times	 10 5 0	PARTICIPATION (30%)
#2	10	**Meeting Participation All Disciplines *Surgeon represents 1 hospital only** Surgeon, and (TPM or MCR) Participate in 3 of 3 Collaborative meetings (9 pts) Surgeon, and (TPM or MCR) Participate in 2 of 3 Collaborative meetings (6 pts) Surgeon, and (TPM or MCR) Participate in 1 of 3 Collaborative meetings (3 pts) Surgeon, and (TPM or MCR) Participate in 0 of 3 Collaborative meetings (0 pts) Registrar, and/or MCR Participate in the Data Abstractor Meeting (1 pt)	0-10	
#3	10	**Data Accuracy** / **1st Validation Visit-Error Rate** / **≥2 Validation Visits-Error Rate** 5 Star Validation: 0-4.5% / 0-4.0% — 10 4 Star Validation: 4.6-5.5% / 4.1-5.0% — 8 3 Star Validation: 5.6-8.0% / 5.1-6.0% — 5 2 Star Validation: 8.1-9.0% / 6.1-7.0% — 3 1 Star Validation: >9.0% / >7.0% — 0		
#4	10	**Venous Thromboembolism (VTE) Prophylaxis Initiated Within 48 Hours of Arrival in Trauma Service Admits with ≥ 2 Day Length of Stay (18 Mo's: 1/1/16-6/30/17)** ≥ 50% ≥ 40% < 40%	 10 5 0	PERFORMANCE (70%)
#5	10	**Low Molecular Weight Heparin (LMWH) Venous Thromboembolism (VTE) Prophylaxis Use in Trauma Service Admits (18 Mo's: 1/1/16-6/30/17)** ≥ 50% 21-49% 5-20% < 5%	 10 7 5 0	
#6	10	**Red Blood Cell to Plasma Ratio (Weighted Mean Points) of Patients Transfused ≥5 Units in 1st 4 Hours (18 Mo's: 1/1/16-6/30/17)** 10 pts: Tier 1: ≤ 1.5 10 pts: Tier 2: 1.6-2.0 5 pts: Tier 3: 2.1-2.5 0 pts: Tier 4: >2.5	0-10	
#7	10	**Serious Complication Rate-Trauma Service Admits (3 years: 7/1/14-6/30/17)** Z-score: < -1 (major improvement) Z-score: -1 to 1 or serious complications low-outlier (average or better rate) Z-score: > 1 (rates of serious complications increased)	 10 7 5	
#8	10	**Mortality Rate-Trauma Service Admits (3 years: 7/1/14-6/30/17)** Z-score: < -1 (major improvement) Z-score: -1 to 1 or mortality low-outlier (average or better rate) Z-score: > 1 (rates of mortality increased)	 10 7 5	
#9	10	**Inferior Vena Cava Filter Use (All Admits) (Collaborative Wide) (7/1/16-6/30/17)** ≤ 1.2 > 1.2	 10 0	
#10	10	**Site Specific Quality Improvement Project (July 2016-December 2017)** Implemented, and met or exceeded target Implemented, showed improvement, but did not meet target Implemented, but showed no improvement	 10 7 0	
		Total (Max Points) =	100	

Maintenance

Drop

≥ 55% 10
≥ 50% 8
≥ 40% 5
< 40% 0

≥ 50% 10
37-49% 7
25-36% 5
20-24% 3
<20% 0

Summary

- 3 with Changes
- 2 Drop
- Need 2 New

Open Fracture

- Define group of AIS codes
  - Femur, Tib-fib, other?
  - Record date, time, antibiotic given
  - Scoring, need all 3 of above
    - ≥ 90 % patients = 10 points
    - ≥ 80 % patients = 7 points
    - ≥ 70 % patients = 5 points
    - < 70 % patients = 0 points
  - Allow for determination of baseline % given within 60 minutes
  - New targets based on collected data

Head Injury on Anticoagulation

- Head CT date, time in anticoagulated patient
  - Anticoagulated patient, Head AIS≥1
  - Record date, time, Head CT
  - Scoring, need all 3 of above
    - ≥ 90 % patients = 10 points
    - ≥ 80 % patients = 7 points
    - ≥ 70 % patients = 5 points
    - < 70 % patients = 0 points
  - Allow for determination of baseline time to CT scan
  - New targets based on collected data

Head Injury on Anticoagulation

- Add data elements for 2018
- Collect on head injury patient with
  - Coumadin
  - NOAC
  - Plavix
  - Aspirin (Antiplatelet)
- What data to collect
  - Handout
  - Pilot with Excel
- Grow project iteratively

Site Specific Projects

Judy Mikhail, RN PhD

Beaumont HEALTH

Unplanned ICU Admissions

Beaumont Farmington Hills

Michael Rebock, DO TMD
Barb Smith, RN, TPM
Cathy Levinson, RN, MCR
Shauna Di Pasquo, RN, Registrar
Corinna Azar, RN, Registrar

Background

- Site specific PI project for 2017
- Outlier on MTQIP and TQIP Benchmark Reports
-
-
- Cohort 4 Blunt single, All ISS, All ages

Barriers

- No Intermediate Care Unit
- High population of elderly traumas
- Many with multiple comorbidities and functionally dependent

Actions Taken

- Reviewed all cases back to 2015 for trends
- Discussed at TOPIC and PIPS
- Physician review of preventable cases
- Exploring elderly guidelines/management
- Reviewing ETOH withdrawal policies

FINDINGS

- Atrial Fibrillation
- Hypoxia
- Chronic medical disease

SOLUTIONS

- Better use of respiratory therapy and high flow O2
- Better use of Rapid Response Team
- ICU Nurse Practitioner now rounds on patient the day after transfer
- Closer look at vitals 24 hours prior to transfer
- Patients converted to oral cardiac meds prior to transfer

Outcomes

Time-Period	
Dec 2016 Baseline	Date Range UnadjRate Numerator/Denominator Num or DataPts = #Patients
Apr 2017	Date Range UnadjRate Numerator/Denominator Num or DataPts = #Patients
Aug 2017	Date Range UnadjRate Numerator/Denominator Num or DataPts = #Patients
Dec 2017 Final	Date Range UnadjRate Numerator/Denominator Num or DataPts = #Patients
Decrease "By" What Percent? Target Decrease "To" UnadjRate	

Moving Forward

- NICHE program
- Continue to work on Step-down proposal
- TCAR classes for RN's
- Continuing to review each case at daily rounds
- Monitoring trends

ED to ICU Length of Stay

Sinai Grace Hospital

Lazslo Hoesel, MD MTQIP Liaison
Gwyneth Navas, RN Trauma Program Manager
Melissa Keller, PA-C Trauma Physician Assistant
Patricia Danhoff, Registrar
Tijuan Davis, Registrar
Danielle Finn, Registrar

Background

- The problem?
  - Excess LOS in ED prior to ICU admission
- How long have you had it?
  - 5 years
- What are the barriers in your institution?
  - High volume trauma patients (approx 2000/year)
  - High volume of General Surgery, Neurosurgery, Vascular Surgery and Orthopedic Surgery
  - High occupancy of SICU beds
  - Staffing

Actions Taken

- What have you done to address it?
  - Tracked time from order to ED disposition
  - Met with ED/SICU nursing leadership and SICU attending's
  - Reported variances at our Trauma Systems Meeting

MTQIP E.D. L.O.S. Time

Outcomes

December 2016 Baseline	
April 2017	

Moving Forward

- Next steps?
  - Use staffing grids to improve coverage for increased number of patients and variances including use of agency nurses
- Future actions?
  - Monitor and determine other barriers if our numbers don’t continue to improve
- How will you sustain the change?
  - Continued monitoring through our monthly Trauma Systems Meeting

Future Directions

- Goal is decrease by the end of 2017
- The Unadjusted rate will be hours
- End goal is to meet the MTQIP average of 4 hours

Unplanned Admission to ICU

UNIVERSITY OF MICHIGAN
SARA SAMBORN, MSN, RN
MTQIP CLINICAL REVIEWER

Identified problems and barriers

- High outlier
- Associated complications
- Understanding of definition
- Team engagement

High Outlier

Associated Complications

- Pneumonia
- Unplanned Intubation

Intervention

- Patient list drill down
- Identified risk factors
- Data presented to trauma team
  - Faculty
  - Residents/Fellows
  - NPs and PAs
  - Trauma ICU and floor RNs and staff

What we know

Moving forward

- 2018 PI Project?
- Buy in from the trauma team
- Create a system to identify at risk patients

Michigan OPEN

Mike Englesbe, MD

How can we combat the opioid epidemic

Jenn Waljee

Chad Brummett
Mike Englesbe

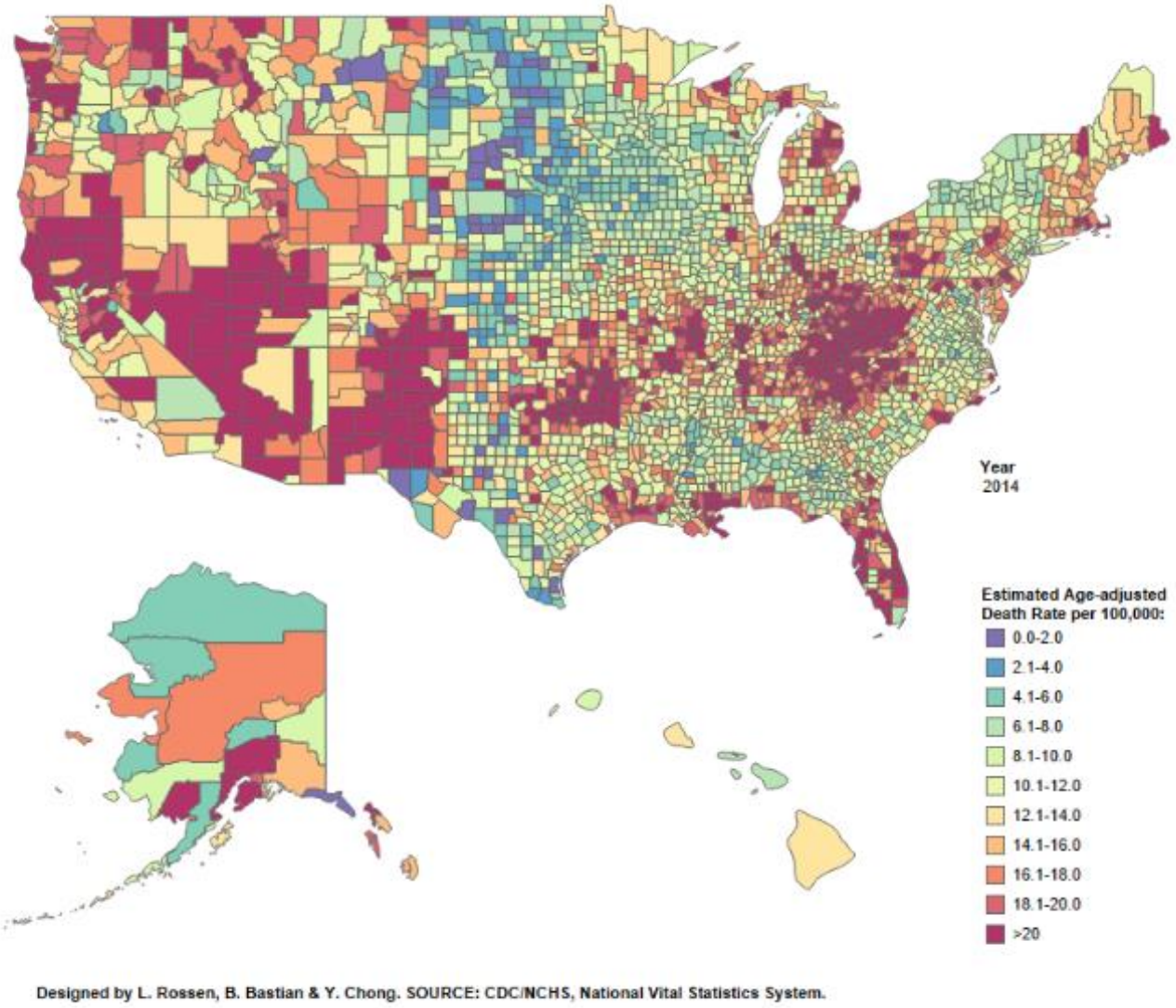
OPEN
Opioid Prescribing Engagement Network
engaging patients, educating providers, protecting communities

Opioid dependence is the most significant public health threat in the United States.

How can we fix this problem

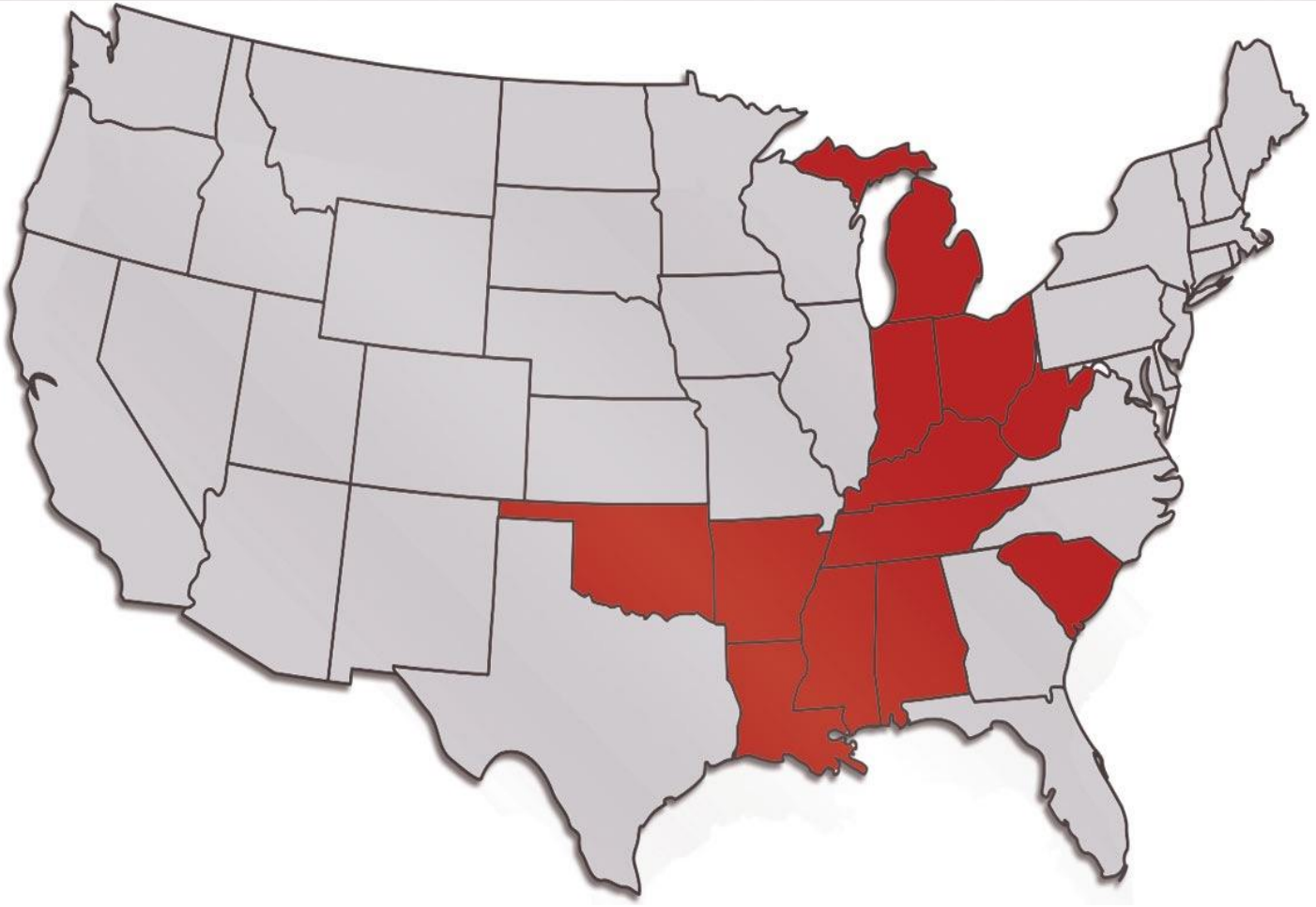
Who owns this problem

Drug Poisoning Mortality: 2014

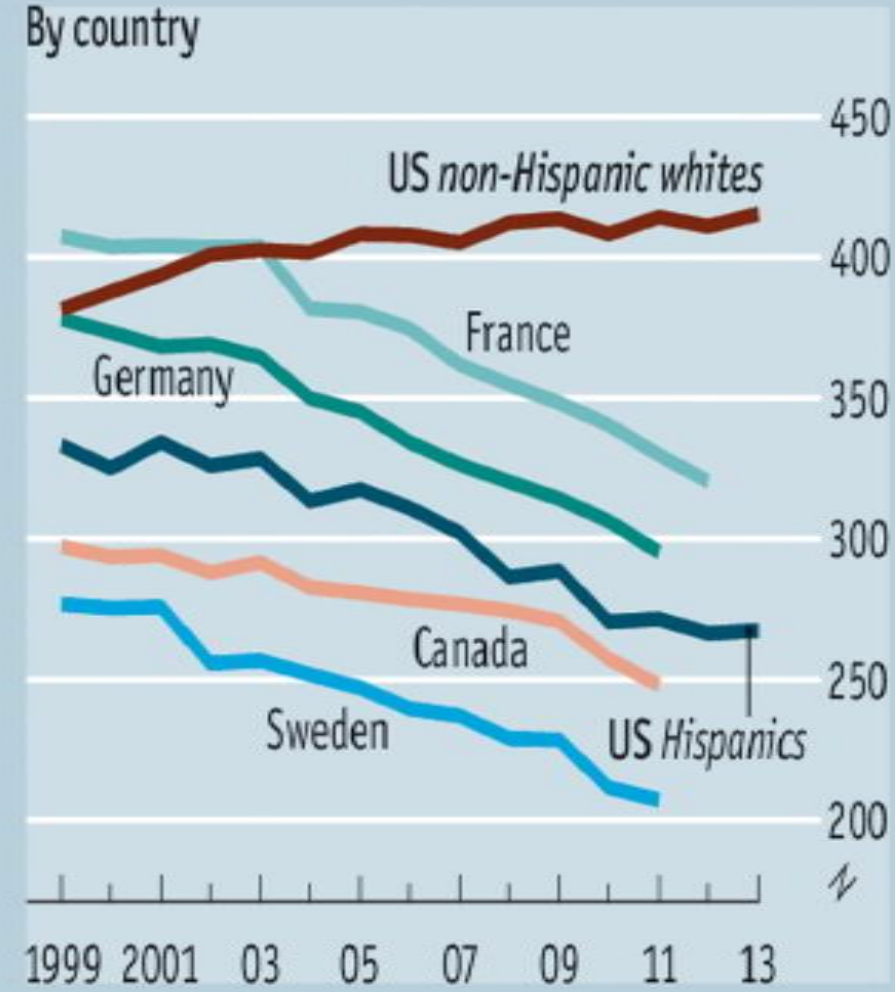


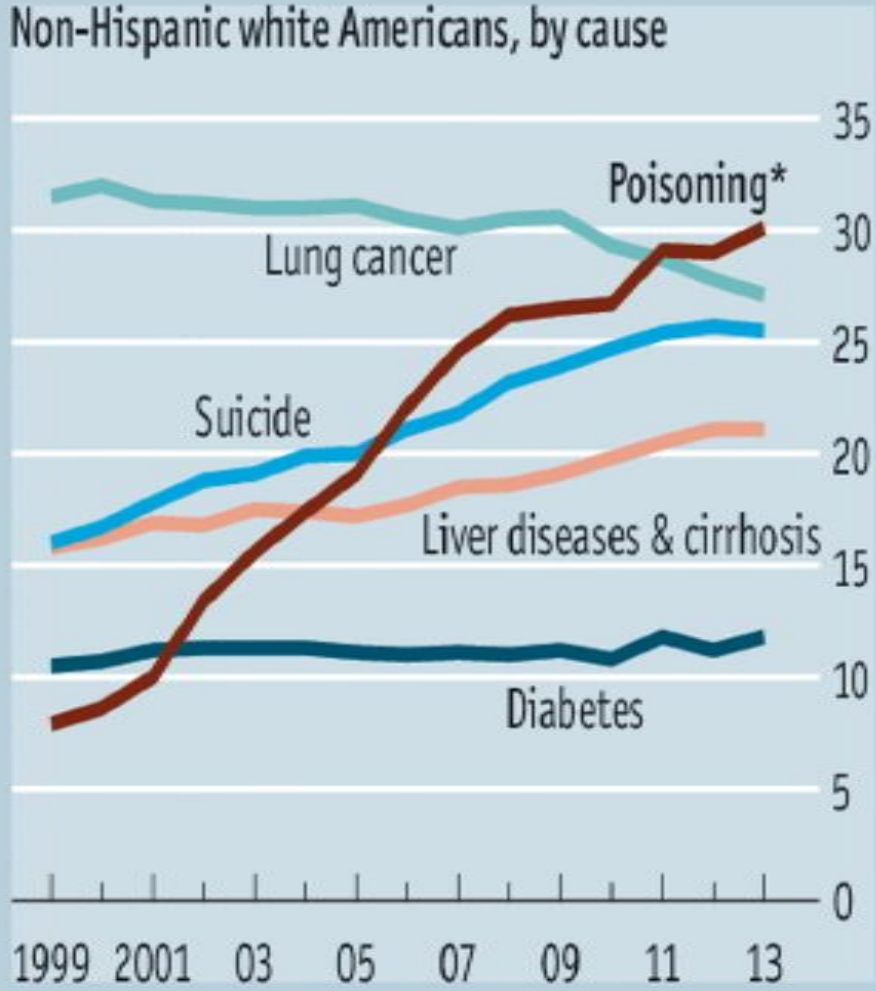
Obtained from https://blogs.cdc.gov/nchs-data-visualization/drug-poisoning-mortality/

12 STATES HAVE MORE PAINKILLER PRESCRIPTIONS THAN PEOPLE



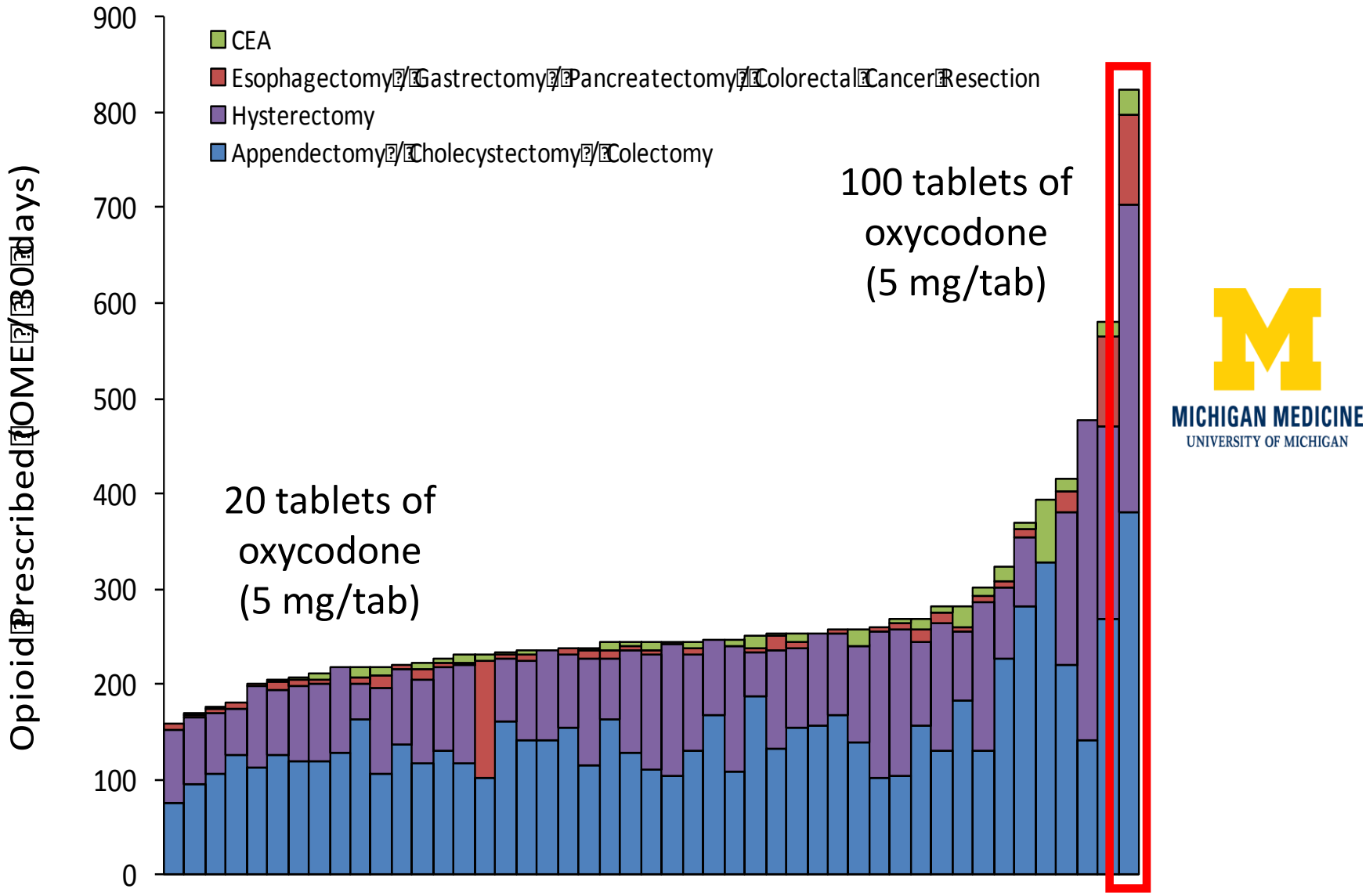
Deaths per 100,000 population, aged 45-54





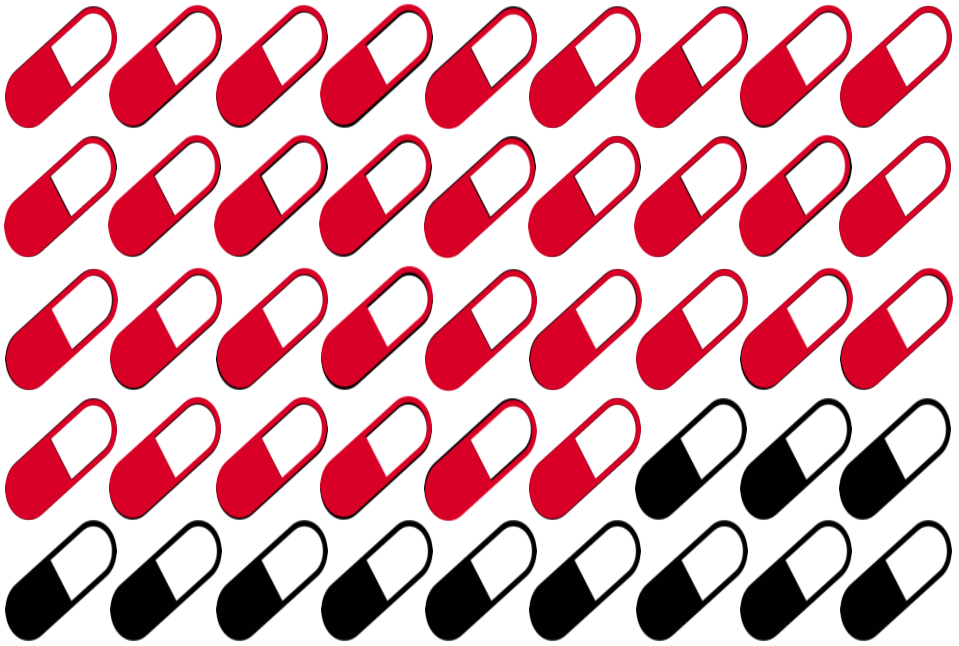
Source: "Rising morbidity and mortality in midlife among white non-Hispanic Americans in the 21st century", by Anne Case and Angus Deaton

*Drug-related overdoses, etc.



MICHIGAN MEDICINE
UNIVERSITY OF MICHIGAN

45 tablets of Norco (5/325)

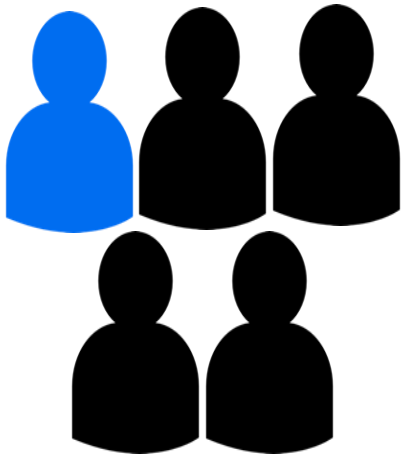


70 – 75% unused

Hill MV, McMahon ML, Stucke RS, Barth RJ, Jr. Wide Variation and Excessive Dosage of Opioid Prescriptions for Common General Surgical Procedures. Ann Surg. 2017;265(4):709-714.

Surgeons facilitate DIVERSION

Share Opioids



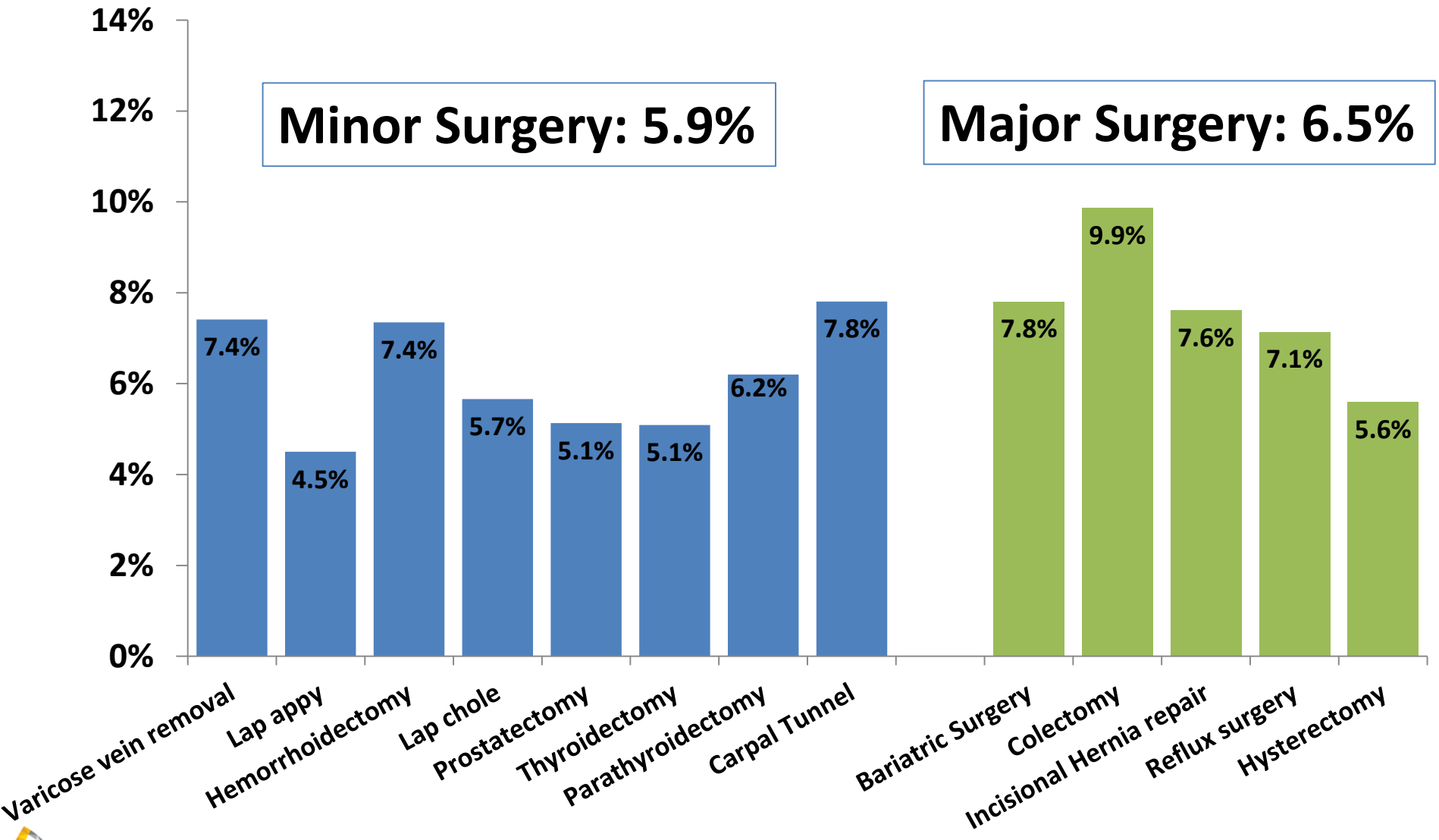
30%

Kennedy-Hendricks A, Gielen A, McDonald E, McGinty EE, Shields W, Barry CL. Medication Sharing, Storage, and Disposal Practices for Opioid Medications Among US Adults. JAMA Intern Med. 2016;176(7):1027-1029.

62 Million unused pills a year in Michigan

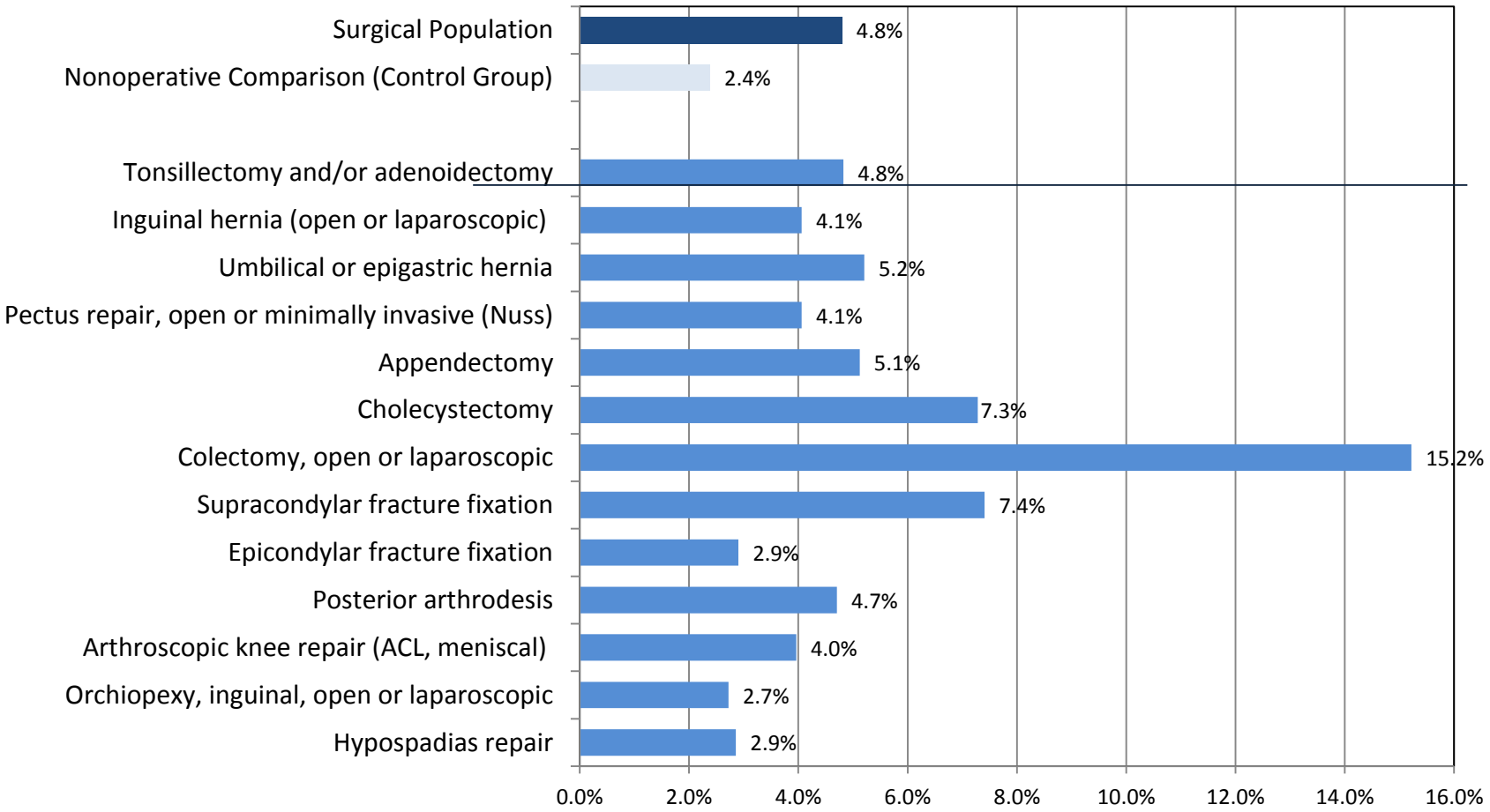
1. HCUP Fast Stats. Healthcare Cost and Utilization Project (HCUP). March 2017. Agency for Healthcare Research and Quality, Rockville, MD.
2. HCUP Central Distributor SASD File Composition. Healthcare Cost and Utilization Project (HCUP). March 2017. Agency for Healthcare Research and Quality, Rockville, MD.

New Persistent Use



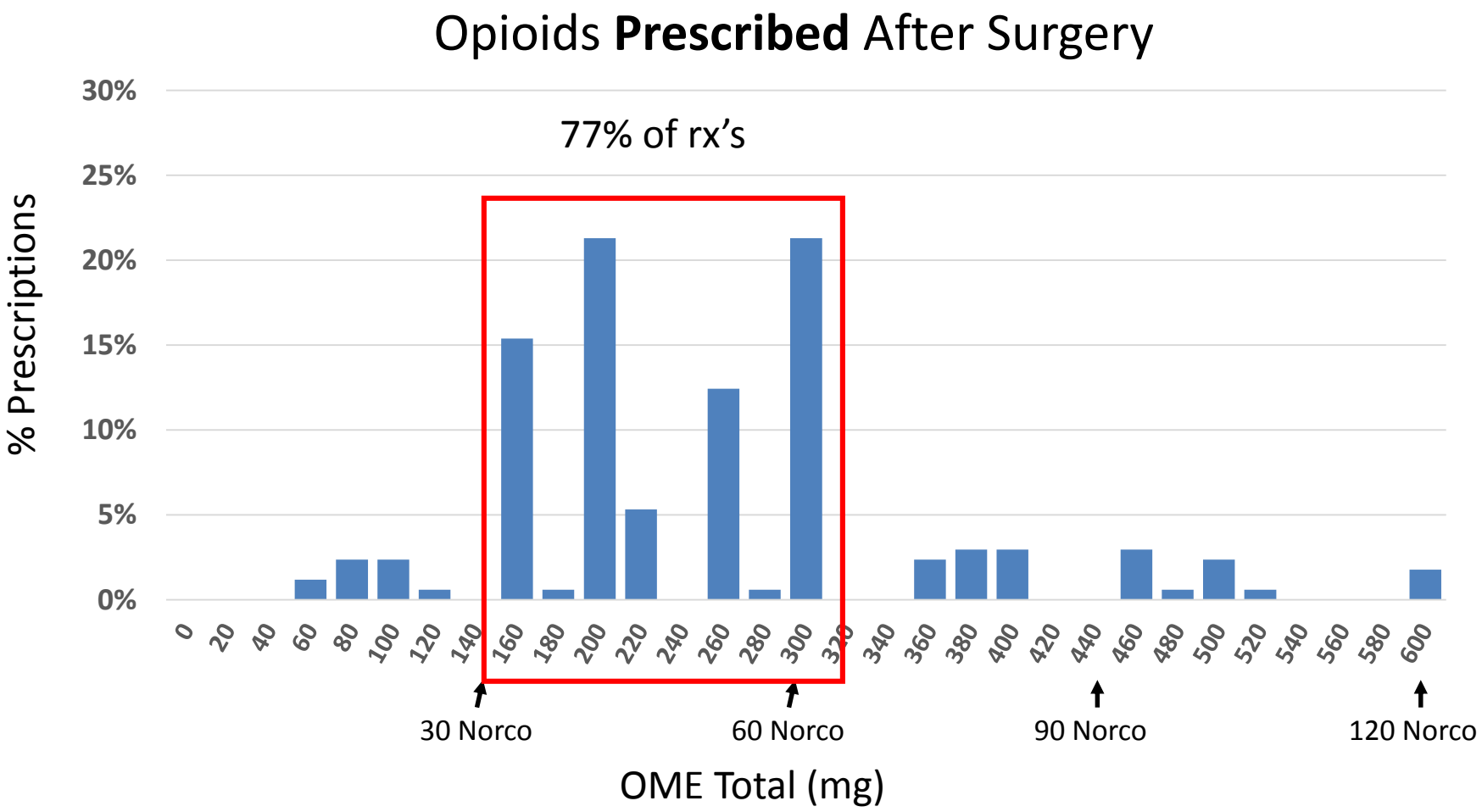
OPTUMInsight™

Postoperative opioid dependence happens in pediatric patients

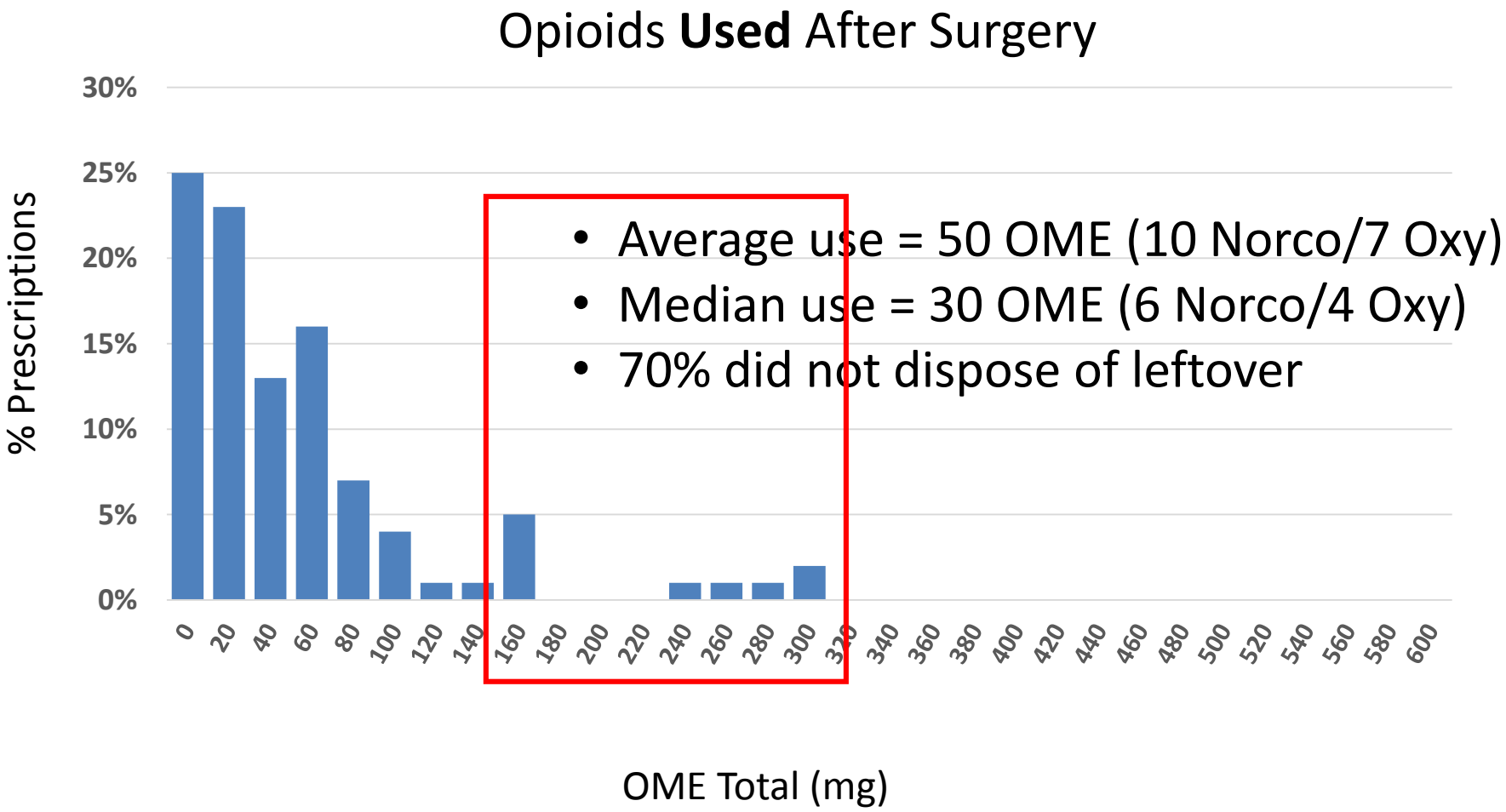


Opioid Prescribing Guidelines: Laparoscopic Cholecystectomy

Laparoscopic Cholecystectomy



Laparoscopic Cholecystectomy

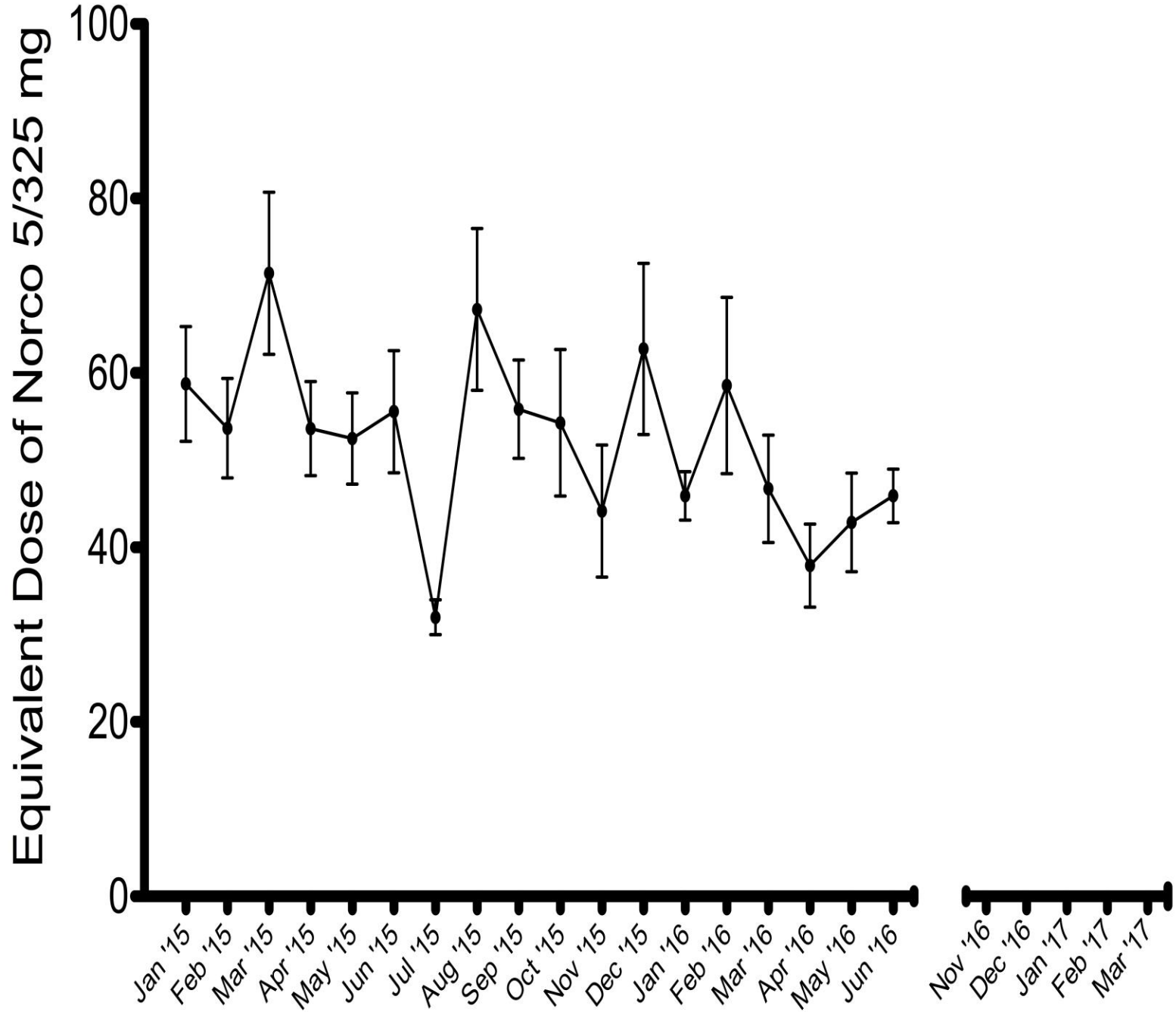


Let’s get smart about prescribing

15 Oxycodone 5 mg **1q4-6 PRN**

15 Norco 5/325 mg **1q4-6 PRN**

+ Tylenol AND Motrin


Equivalent Dose of Norco 5/325 mg
100
80
60
40
20
0
Jan '15
Feb '15
Mar '15
Apr '15
May '15
Jun '15
Jul '15
Aug '15
Sep '15
Oct '15
Nov '15
Dec '15
Jan '16
Feb '16
Mar '16
Apr '16
May '16
Jun '16
Nov '16
Dec '16
Jan '17
Feb '17
Mar '17

Some examples of recognizing excess and creating a guideline

Procedure	Avg rx	Avg taken	Recommendation
Lap chole	30	10	**15**
Lap inguinal hernia repair	30	5	**15**
Open inguinal hernia repair	30	10	**15**
Partial mastectomy w/ SLNB	20	5	**10**
Partial mastectomy	20	3	**5**

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Opioid Recovery Drives

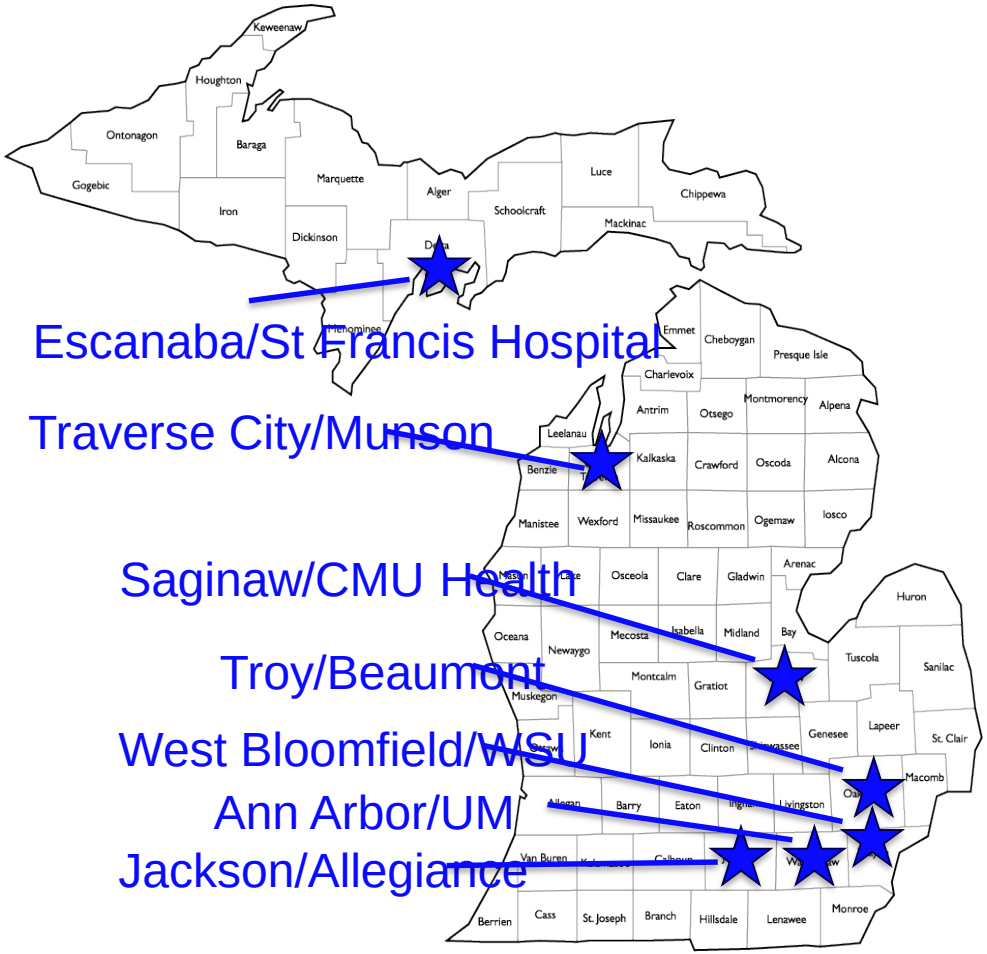
PRECISION HEALTH
UNIVERSITY OF MICHIGAN

Medication Take-Back Day

Saturday, May 20, 2017
10 a.m. – 2 p.m.

Total number of people	349
Pills	
Estimated weight of pills	181.6 lb
Estimated total number pills	139,658.5
Opioid pills	13,784
Most common - Hydrocodone	5,714
Other medications of interest	
Benzodiazepines and sedatives	3,002
Anti-depressants	6,401
Stimulants	623
Muscle relaxants	565
Anti-epileptics	4,156
Additional information	
Oldest opioid date (by year)	1981
Second oldest opioid (different person)	1985
Most common reason for opioid	Surgery

Opioid Recovery Drive – May 20, 2017



https://medicine.umich.edu/dept/pain-research/pain-medication-take-back-program

14 bills in Michigan for 2017-2018

Document	Type	Description
SB 0167 of 2017	Senate Bill	Health occupations; physicians; physicians failing to report to Michigan automated prescription system (MAPS) prescriptions of any schedule II-V substances; require to attend certain classes, and provide for sanctions under certain circumstances. Amends secs. 16221 & 16226 of 1978 PA 368 (MCL 333.16221 & 333.16226). TIE BAR WITH: SB 0166'17
SB 0218 of 2017	Senate Bill	Appropriations; other; executive recommendation; provide for omnibus bill. Creates appropriations act.
SB 0236 of 2017	Senate Bill	Health; controlled substances; prescription drug and opioid abuse commission; require to provide recommendations for the instruction of pupils on prescription opioid drug abuse. Amends 1978 PA 368 (MCL 333.1101 - 333.25211) by adding sec. 7113a. TIE BAR WITH: SB 0237'17
SB 0237 of 2017	Senate Bill	Education; curriculum; require instruction on prescription opioid drug abuse prevention. Amends 1976 PA 451 (MCL 380.1 - 380.1852) by adding sec. 1503. TIE BAR WITH: SB 0236'17
SB 0272 of 2017	Senate Bill	Health; controlled substances; requirement for a patient or the patient's representative to sign a form when being prescribed opioids indicating that the patient has received certain information; provide for. Amends 1978 PA 368 (MCL 333.1101 - 333.25211) by adding sec. 7303b.
SB 0273 of 2017	Senate Bill	Health occupations; physicians; physicians to provide information on substance use disorder services to patients being treated for opioid-related overdoses; require. Amends 1978 PA 368 (MCL 333.1101 - 333.25211) by adding secs. 17019 & 17519.
SB 0274 of 2017	Senate Bill	Health; controlled substances; prescription for opioids; limit, and require prescribers to prescribe an opioid antagonist under certain circumstances. Amends sec. 17744b of 1978 PA 368 (MCL 333.17744b) & adds sec. 7333b.
HB 4074 of 2017	House Bill	Insurance; health insurers; abuse-deterrent opioid analgesic drug; require coverage. Amends 1956 PA 218 (MCL 500.100 - 500.8302) by adding sec. 3406u.
HB 4170 of 2017	House Bill	Health; other; physician orders for scope of treatment forms; allow. Amends sec. 20919 of 1978 PA 368 (MCL 333.20919) & adds pt. 56B & sec. 20192a. TIE BAR WITH: HB 4171'17, HB 4173'17, HB 4174'17
HB 4368 of 2017	House Bill	Appropriations; other; executive recommendation; provide for omnibus bill. Creates appropriation act.
HB 4403 of 2017	House Bill	Human services; medical services; acute treatment services and clinical stabilization services for opioid addiction as a covered medical service; allow. Amends sec. 109 of 1939 PA 280 (MCL 400.109).
HB 4406 of 2017	House Bill	Health; controlled substances; prescription drug and opioid abuse commission; require to provide recommendations for the instruction of pupils on prescription opioid drug abuse. Amends 1978 PA 368 (MCL 333.1101 - 333.25211) by adding sec. 7113a. TIE BAR WITH: HB 4407'17
HB 4407 of 2017	House Bill	Education; curriculum; health curriculum; instruction on prescription opioid drug abuse prevention; require. Amends 1976 PA 451 (MCL 380.1 - 380.1852) by adding sec. 1503. TIE BAR WITH: HB 4406'17
HB 4408 of 2017	House Bill	Health; pharmaceuticals; parental consent when prescribing a controlled substance containing an opioid; require under certain circumstances. Amends secs. 16221 & 16226 of 1978 PA 368 (MCL 333.16221 & 333.16226) & adds sec. 7303b.

6% 30%

M·TQIP

VALUE Partnerships
Improving Health Care in Michigan

Blue Cross Blue Shield of Michigan is a nonprofit corporation and independent licensee of the Blue Cross and Blue Shield Association

ASPIRE
Anesthesiology Performance Improvement and Reporting Exchange

MSQC
Michigan Surgical Quality Collaborative

MVC
Michigan Value Collaborative

MARCQI
MICHIGAN ARTHROPLASTY REGISTRY
COLLABORATIVE QUALITY INITIATIVE

Nonprofit corporations and independent licensees of the Blue Cross and Blue Shield Association

RICK SNYDER, GOVERNOR | NICK LYON, DIRECTOR

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Opioid Prescribing Engagement Network

engaging patients, educating providers, protecting communities

Contact us

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7349040287

OPEN
Opioid Prescribing Engagement Network
engaging patients, educating providers, protecting communities

Conclusion

- Evaluations
  - Fill out and turn in
- Questions?
- See you in October