



**M·TQIP**

**Individual Site Summary Report**

**July 1, 2016 through September 30, 2018**

**Issued February 12, 2019**

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## **Description of Cohorts**

### **Cohort 1 (All)**

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

### **Cohort 1 (All) w/o DOA's**

- 1) Mechanism = Blunt or penetrating
- 2) Age  $\geq$  18, Age  $\geq$  16 starting 1/1/13
- 3) ISS  $\geq$  5
- 4) Hospital LOS  $\geq$  1 day or dead
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)

### **Cohort 2 (Admit trauma)**

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

### **Cohort 2 (Admit trauma) w/o DOA's**

- 1) Mechanism = Blunt or penetrating
- 2) Age  $\geq$  18, Age  $\geq$  16 starting 1/1/13
- 3) ISS  $\geq$  5
- 4) Hospital LOS  $\geq$  1 day or dead
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 6) Admit to trauma service if ED disposition not death

### **Cohort 3 (Blunt Multi-System)**

- 1) Mechanism = Blunt
- 2) Age  $\geq$  18, Age  $\geq$  16 starting 1/1/13
- 3) ISS  $\geq$  5
- 4) Hospital LOS  $\geq$  1 day or dead
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 6) AIS  $\geq$  3 in at least two of the following body regions: head/neck, face, chest, abdomen, extremities, or external.

### **Cohort 4 (Blunt Single-System)**

- 1) Mechanism = Blunt
- 2) Age  $\geq$  18, Age  $\geq$  16 starting 1/1/13
- 3) ISS  $\geq$  5
- 4) Hospital LOS  $\geq$  1 day or dead

- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 6) AIS  $\geq 3$  limited to only one body region with all other body regions having a maximum AIS  $\leq 2$  in the following body regions: head/neck, face, chest, abdomen, extremities, or external.

#### **Cohort 5 (Penetrating)**

- 1) Mechanism = Penetrating
- 2) Age  $\geq 18$ , Age  $\geq 16$  starting 1/1/13
- 3) ISS  $\geq 5$
- 4) Hospital LOS  $\geq 1$  day or dead
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)

#### **Cohort 6 (Admit non-trauma Service)**

- 1) Mechanism = Blunt or Penetrating
- 2) Age  $\geq 18$ , Age  $\geq 16$  starting 1/1/13
- 3) ISS  $\geq 5$
- 4) Hospital LOS  $\geq 1$  day or dead
- 5) Admit to non-trauma service if ED disposition not death
- 6) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)

#### **Cohort 7 (Benchmark)**

- 1) Age  $\geq 16$
- 2) ISS  $\geq 9$
- 3) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 4) Exclude patients who were transferred out
- 5) Exclude patients discharged directly from the ED alive
- 6) Exclude patients with an advanced directive limiting care present prior to injury
- 7) Exclude patients who sustain a hip fracture and fall and age  $\geq 65$

Note: this benchmark may not match your national benchmark report exactly. The MTQIP uses AIS 2005. The national benchmark uses ICD-9 with crosswalk to AIS 1998.

#### **Cohort 8 (Isolated Hip Fracture)**

- 1) Mechanism derived from external cause code = Fall
- 2) Injury codes
  - a. AIS code =
    - i. 851810 (femur fracture intertrochanteric)
    - ii. 851812 (femur fracture neck)
    - iii. 851818 (femur fracture subtrochanteric)
    - iv. 853111 (proximal femur fracture NFS)
    - v. 853112 (proximal femur fracture open NFS)
    - vi. 853151 (proximal femur fracture trochanteric; intertrochanteric)
    - vii. 853152 (proximal femur fracture trochanteric; intertrochanteric open)
    - viii. 853161 (proximal femur fracture femoral neck)

- ix. 853162 (proximal femur fracture femoral neck open)
  - x. 853171 (proximal femur fracture femoral neck)
  - xi. 853172 (proximal femur fracture femoral neck open)
- b. ICD-9 code =
- i. 820.22 (closed fracture of subtrochanteric section of neck of femur)
  - ii. 820.32 (open fracture of subtrochanteric section of neck of femur)
- c. ICD-10 code =
- i. S72.21XA (Displaced subtrochanteric fracture of right femur, initial encounter for closed fracture)
  - ii. S72.21XB (Displaced subtrochanteric fracture of right femur, initial encounter for open fracture type I or II)
  - iii. S72.21XC (Displaced subtrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC)
  - iv. S72.22XA (Displaced subtrochanteric fracture of left femur, initial encounter for closed fracture)
  - v. S72.22XB (Displaced subtrochanteric fracture of left femur, initial encounter for open fracture type I or II)
  - vi. S72.22XC (Displaced subtrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC)
  - vii. S72.23XA (Displaced subtrochanteric fracture of unspecified femur, initial encounter for closed fracture)
  - viii. S72.23XB (Displaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II)
  - ix. S72.23XC (Displaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC)
  - x. S72.24XA (Nondisplaced subtrochanteric fracture of right femur, initial encounter for closed fracture)
  - xi. S72.24XB (Nondisplaced subtrochanteric fracture of right femur, initial encounter for open fracture type I or II)
  - xii. S72.24XC (Nondisplaced subtrochanteric fracture of right femur, initial encounter for open fracture type IIIA, IIIB, or IIIC)
  - xiii. S72.25XA (Nondisplaced subtrochanteric fracture of left femur, initial encounter for closed fracture)
  - xiv. S72.25XB (Nondisplaced subtrochanteric fracture of left femur, initial encounter for open fracture type I or II)
  - xv. S72.25XC (Nondisplaced subtrochanteric fracture of left femur, initial encounter for open fracture type IIIA, IIIB, or IIIC)
  - xvi. S72.26XA (Nondisplaced subtrochanteric fracture of unspecified femur, initial encounter for closed fracture)
  - xvii. S72.26XB (Nondisplaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type I or II)
  - xviii. S72.26XC (Nondisplaced subtrochanteric fracture of unspecified femur, initial encounter for open fracture type IIIA, IIIB, or IIIC)
- 3) All other injuries must be in AIS external body region (i.e., bruise, abrasion or laceration)

### **Mortality or Hospice**

- 1) Mechanism = Blunt or penetrating
- 2) Age  $\geq$  18, Age  $\geq$  16 starting 1/1/13
- 3) ISS  $\geq$  5
- 4) Hospital LOS  $\geq$  1 day or dead
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 6) Outcome is dead or discharge to hospice

### **ISS > 35 Mortality**

- 1) Mechanism = Blunt or penetrating
- 2) Age  $\geq$  18, Age  $\geq$  16 starting 1/1/13
- 3) ISS > 35
- 4) Hospital LOS  $\geq$  1 day or dead
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)

### **Age < 65 Mortality**

- 1) Mechanism = Blunt or penetrating
- 2) Age  $\geq$  18, Age  $\geq$  16 starting 1/1/13 and Age < 65
- 3) ISS  $\geq$  5
- 4) Hospital LOS  $\geq$  1 day or dead
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)

### **Age $\geq$ 65 Mortality**

- 1) Mechanism = Blunt or penetrating
- 2) Age  $\geq$  65
- 3) ISS  $\geq$  5
- 4) Hospital LOS  $\geq$  1 day or dead
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)

### **Mortality Trend**

- 1) Cohort 2
- 2) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)

### **Complications Trend**

- 1) Cohort 2
- 2) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)

### **Complications**

- 1) Cohort 2 w/o DOA's
- 2) Complication severity grade 1
  - a. Definition: Non-life-threatening complications

- b. Complications: superficial SSI, wound disruption, deep SSI, catheter-related bloodstream infection, catheter-associated urinary tract infection, organ/space SSI, drug or alcohol withdrawal syndrome, osteomyelitis
- 3) Complication severity grade 2
  - a. Definition: Potentially life-threatening complications
  - b. Complications: admission to ICU, pneumonia, unplanned return to OR, DVT, decubitus ulcer, C. difficile colitis, pulmonary embolism, enterocutaneous fistula, extremity compartment syndrome
- 4) Complication severity grade 3
  - a. Definition: Life-threatening complications with residual or lasting disability or mortality
  - b. Complications: cardiac arrest with CPR, acute kidney injury, ARDS, myocardial infarction, unplanned intubation, stroke/CVA, severe sepsis, acute renal insufficiency, mortality
- 5) Specific complication groups
  - a. Any complication = Grade 1 + Grade 2 + Grade 3 (excluding death)
  - b. Serious = Grade 2 + Grade 3 (excluding death)
  - c. Cardiac/Stroke = stroke/CVA, cardiac arrest requiring CPR, myocardial infarction
  - d. Pneumonia = pneumonia
  - e. DVT/Pulmonary Embolus = DVT lower extremity, DVT upper extremity, pulmonary embolism
  - f. UTI = urinary tract infection
  - g. Renal Failure = acute kidney injury
  - h. Sepsis = sepsis
  - i. C. Difficile Colitis = C. diff

**Failure to Rescue**

- 1) Mechanism = Blunt or penetrating
- 2) Age  $\geq$  18, Age  $\geq$  16 starting 1/1/13
- 3) ISS  $\geq$  5
- 4) Hospital LOS  $\geq$  1 day or dead
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 6) Admit to trauma service if ED disposition not death
- 7) Exclude patients who did not have a severity grade 2 or 3 complication
- 8) Failure to rescue = n dead with complication / n with complication

Note: A patient can have four possible combinations: dead/no complication, dead/complication, alive/no complication, or alive/complication. Failure to rescue is the percent of patients with an identified complication who go on to die.

**Unplanned Return to OR**

- 1) Cohort 2
- 2) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 3) Unplanned return to OR = Y

### **Unplanned Return to ICU**

- 1) Cohort 2
- 2) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 3) Unplanned return to ICU = Y

### **Hospital Length of Stay**

- 1) Cohort 2
- 2) Exclude all deaths

### **Intensive Care Unit Length of Stay**

- 1) Cohort 2
- 2) Exclude all deaths
- 3) Exclude all patients with ICU LOS < 1

### **Patients Admitted to ICU**

- 1) Cohort 1
- 2) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 3) ICU days > 0

### **Mechanical Ventilator Days**

- 1) Cohort 2
- 2) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 3) Exclude all patients with Mechanical Ventilator Days < 1

### **VAP**

- 1) Cohort 2
- 2) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 3) Exclude patients with Mechanical Ventilator Days < 1

### **Patients on Ventilator**

- 1) Cohort 1
- 2) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 3) Mechanical Ventilator days > 0

### **IVC Filter**

- 1) Cohort 1
- 2) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 3) Op Code 38.7, 06H00DZ, 06H03DZ, 06H04DZ, 06V03DZ, or 06V03ZZ

### **VTE**

- 1) Cohort 2
- 2) Patients who received heparin, LMWH, or no VTE prophylaxis from ED admit date and time
- 3) Exclude all patients who arrived in ED prior to 1/1/12
- 4) Exclude patient who were DOA
- 5) Exclude patients who died in ED
- 6) Exclude patients who received direct thrombin inhibitor, oral Xa inhibitor, Coumadin, or other



### **ICP Monitor and/or Brain Operation**

- 1) Cohort 1
- 2) Mechanism = Blunt
- 3) AIS Head  $\geq 1$ , excluding vascular, scalp, and bony injuries
- 4) Exclude if TBI GCS  $> 8$
- 5) Exclude patients who had no signs of life (ED HR 0, BP 0, GCS 3)
- 6) Exclude patients who were transferred late (Direct admit)

### **Blood**

- 1) Cohort 1
- 2) PRBC 4 hours  $\geq 5$  units




### **Hemorrhage Control Angiography/Operation**

- 1) Cohort 1
- 2) Lowest systolic BP  $\leq 90$  in ED
- 3) Exclude if first angiography/operation  $< 0$  or  $> 24$  hours

### **No Signs of Life**

- 1) Patients will be designated as having arrived at the ED with “no signs of life” if they meet one of the following criteria and die in the ED
- 2) ED SBP 0, HR 0, and GCS 3
- 3) ED SBP 0, HR 0, and mGCS 1
- 4) ED SBP = NK/NR, HR 0, and mGCS 1
- 5) ED SBP 0, HR 0, and mGCS = NK/NR
- 6) ED SBP 0, HR = NK/NR, and mGCS 1
- 7) ED SBP = NK/NR, HR 0, and mGCS = NK/NR

### **Legend**

-  Low-outlier status (better performance)
-  Non-outlier status (average performance)
-  High-outlier status (worse performance)

## Statistical Methods

We performed risk and reliability adjustment using a two-stage approach. Multivariate logistic regression modeling was used to account for differences in baseline characteristics and injury severity, thereby allowing for risk-adjustment at the patient level. Potential predictors of for the outcome of interest were entered into the model. A logit equation was derived based on the significant co-variables using forward selection. Separate models for each outcome were constructed and the order of variable entry was determined by the c-index which measures the ability of a parameter to discriminate outcome. Reliability adjustment used a Bayesian random effects model to account for sample size differences between hospitals. Logit equations resulting from second stage models were used to calculate expected outcome risk. Adjusted rates for each hospital were calculated by multiplying the rate ratio of observed to expected events by the overall collaborative rate

In some instances, specific incidents had missing values for potentially important co-variables (Glasgow Coma Scale (GCS) motor score, systolic blood pressure, and pulse rate). These attributes were identified and managed via the creation an indicator variable where applicable. The final model and analysis included all of the incidents that met MTQIP entry criteria for the cohort being examined.

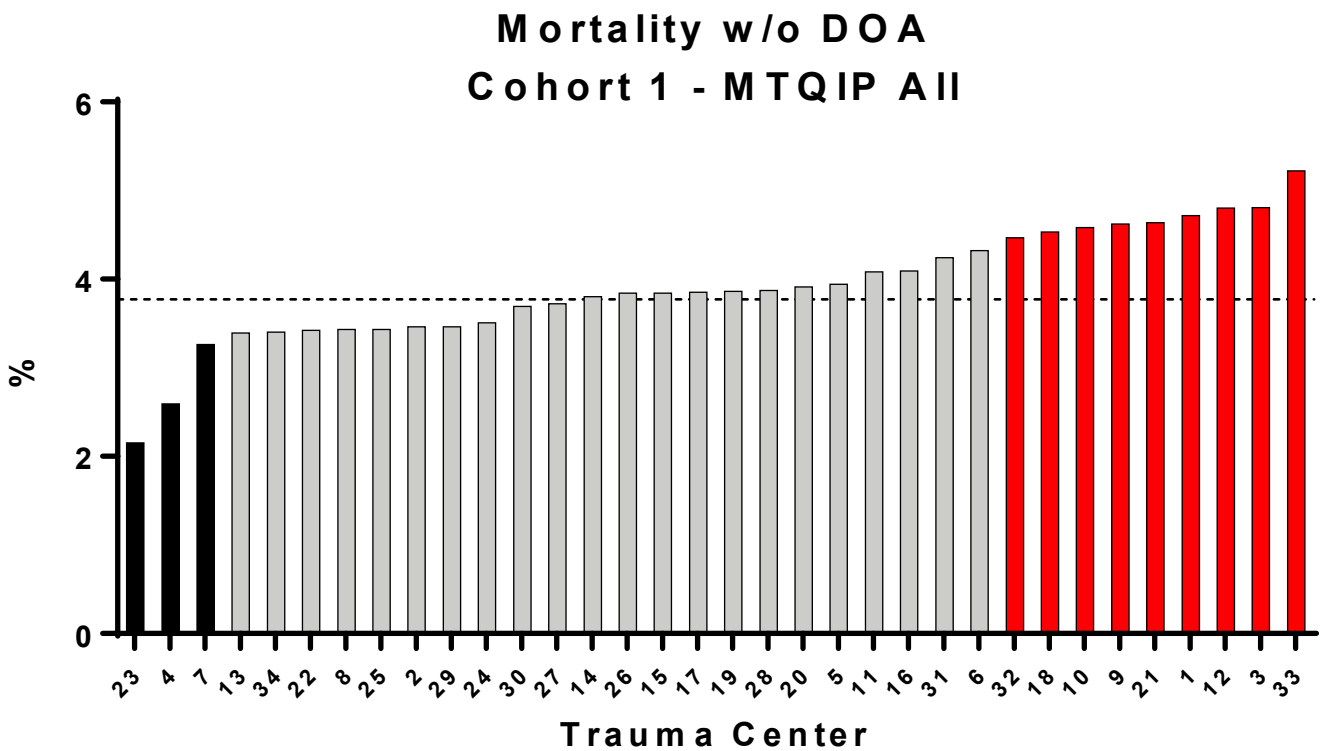
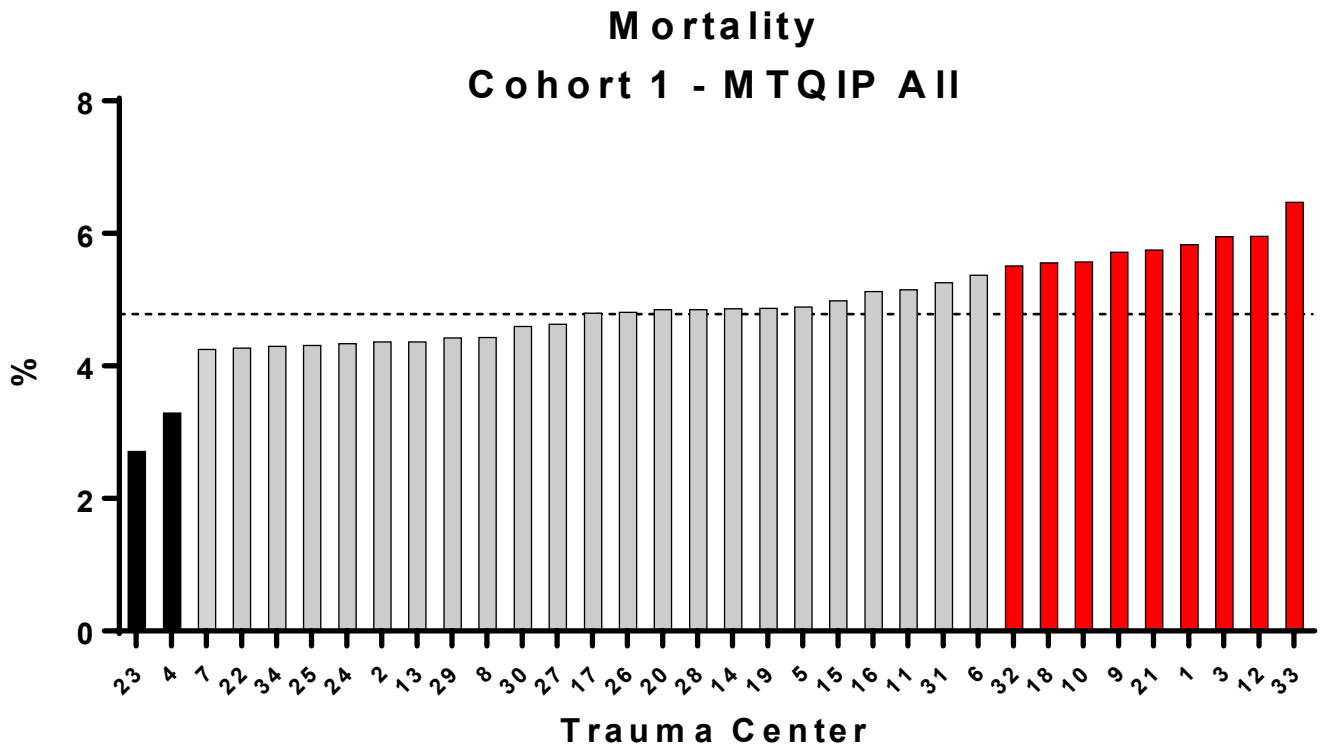
Continuous data exhibiting a right-skewed distribution such as hospital length of stay was natural log-transformed. Multivariate analysis of hospital length of stay, intensive care unit length of stay, and mechanical ventilator days was performed using multiple linear regression and adjusting for significant co-variables. After the regression analysis was conducted the generated coefficient from the regression model was exponentiated to determine the percent increase or decrease in length of stay relative to the risk adjusted mean. Only patients who survived were considered in the hospital and ICU length of stay analysis to simplify this approach. To be included in the ICU length of stay or mechanical ventilator days' analysis, a patient had to have at least one day of use for the resource being investigated.

Eligible = N - Alive w/o intervention - Dead and monitor withheld for reason

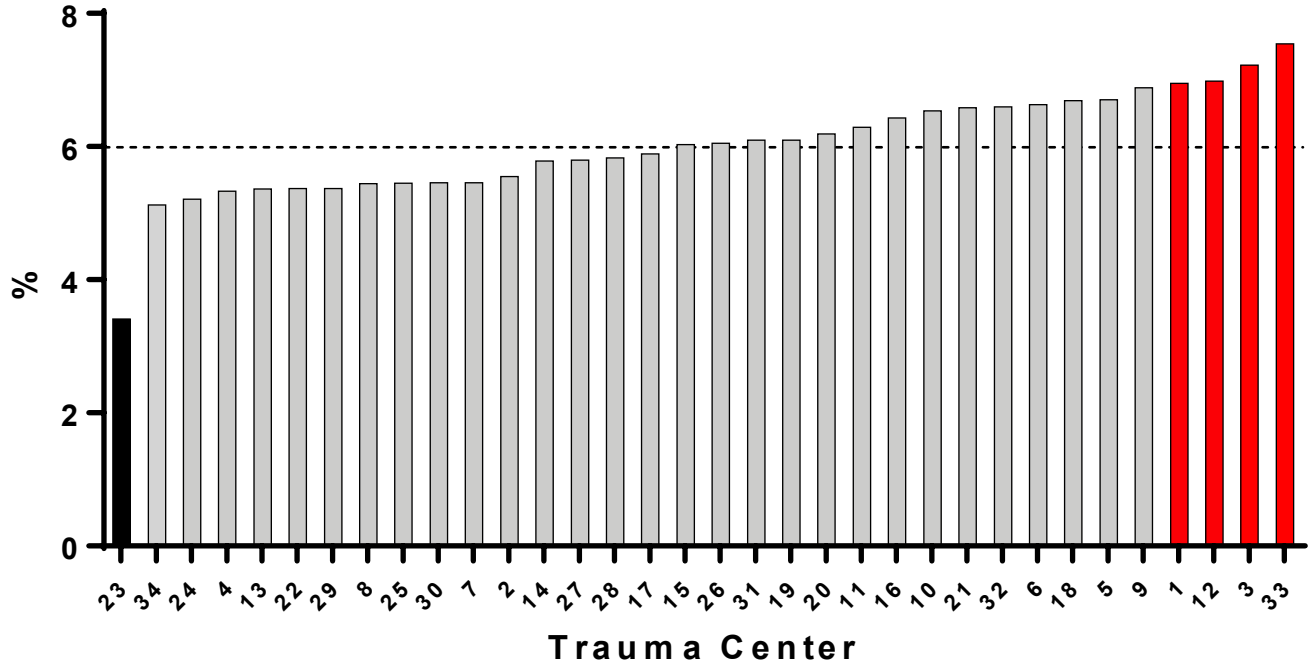
Eligible and no intervention = N - Alive w/o intervention - Alive with intervention - Dead with intervention - Dead and monitor withheld for reason

Timely = Monitor placement or operation  $\leq$  8 hours after ED arrival

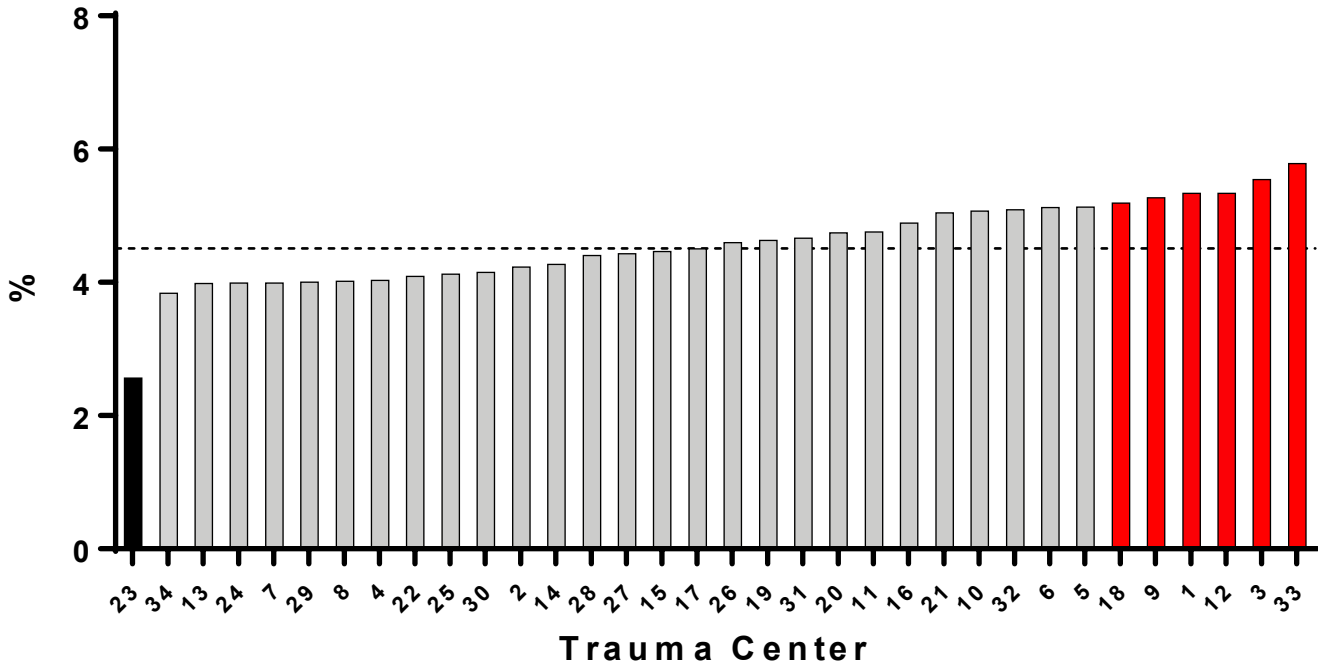
Mortality Graphs



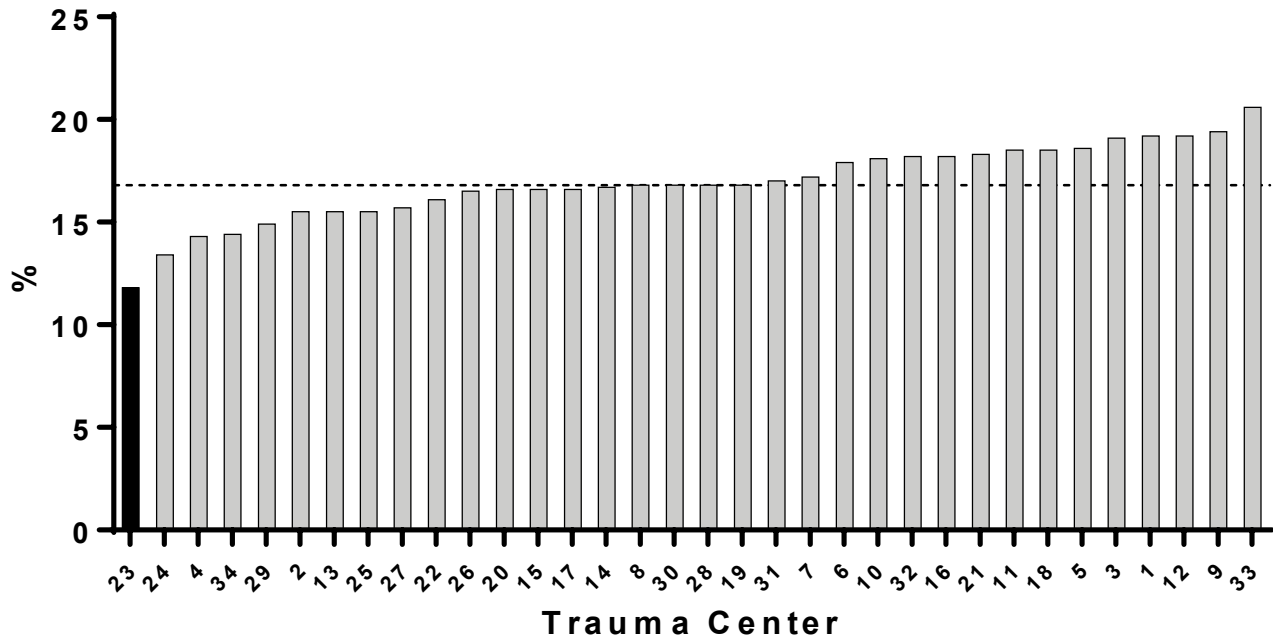
## Mortality Cohort 2 - Admit to Trauma



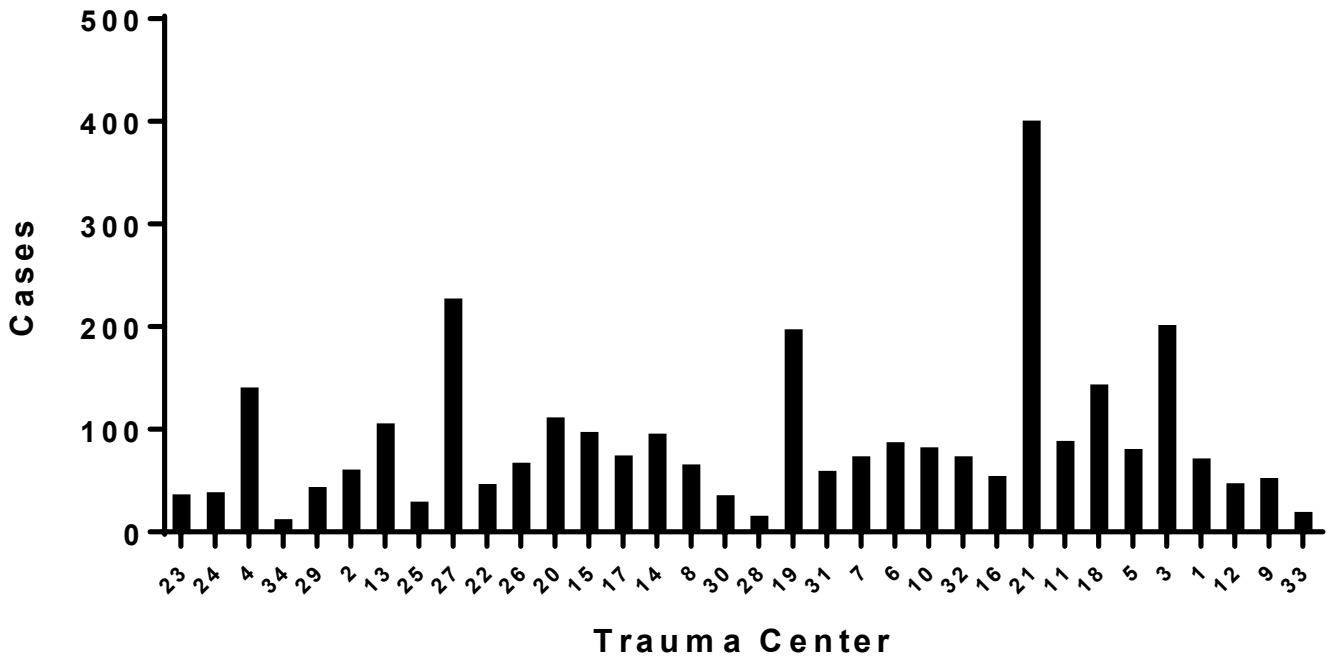
## Mortality w/o DOA Cohort 2 - Admit to Trauma



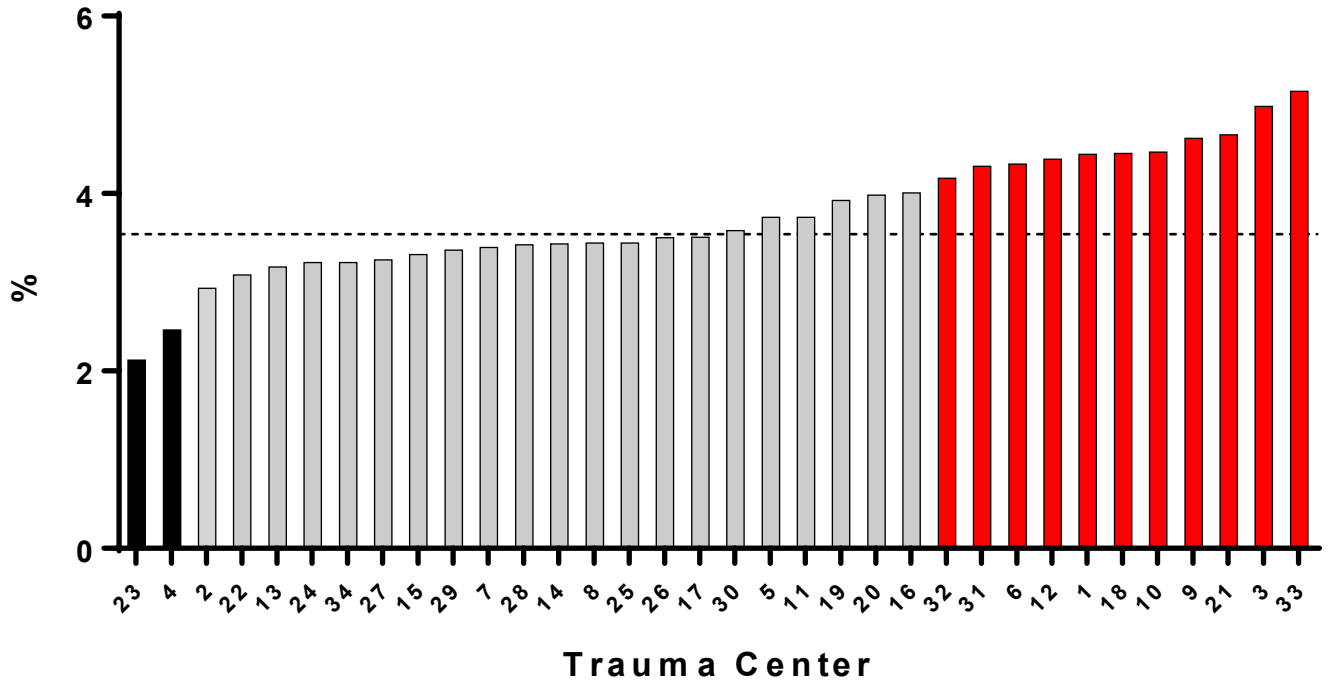
**Mortality w/o DOA  
Cohort 3 - Blunt Multi-System**



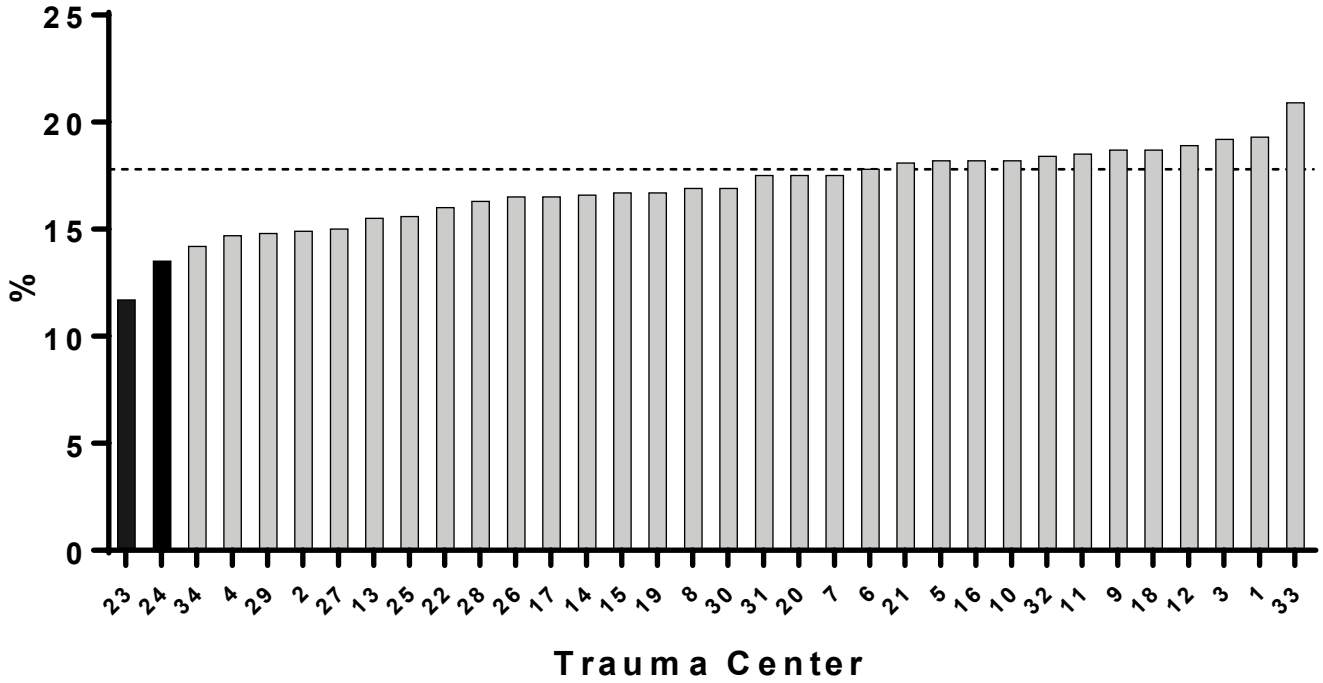
**Mortality Case Volume  
Cohort 3 - Blunt Multi-System**



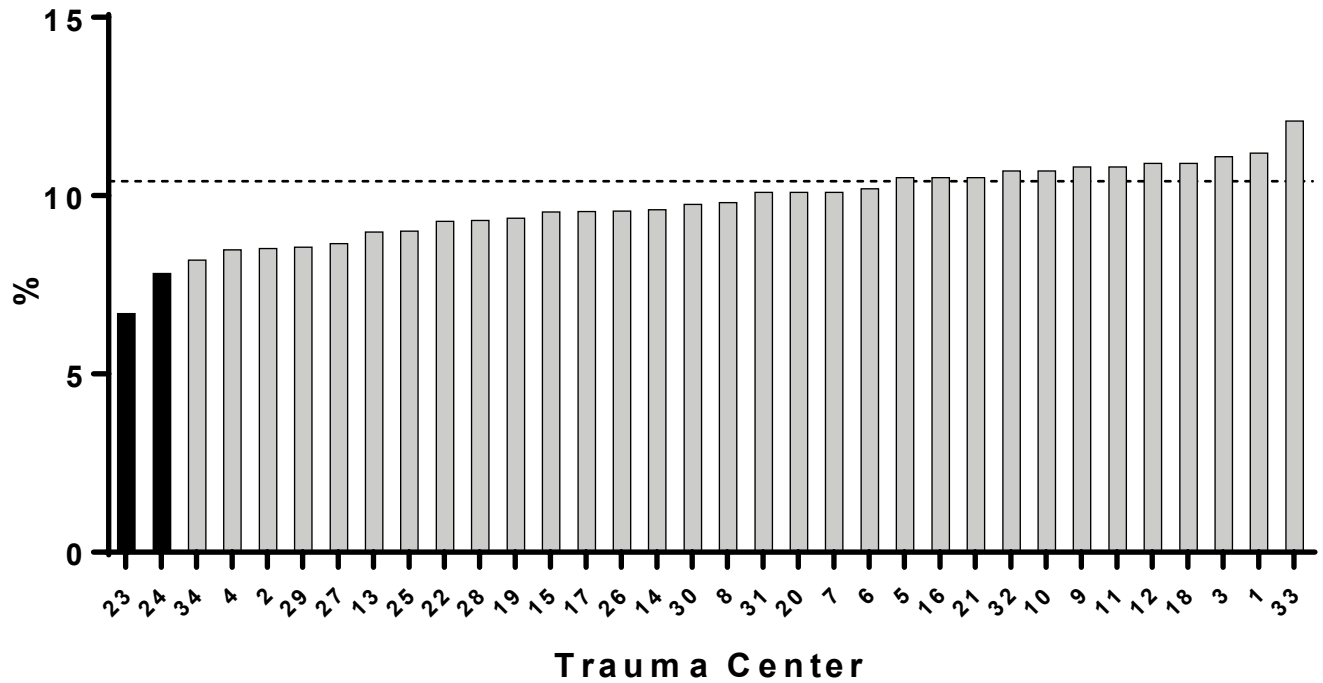
# Mortality w/o DOA Cohort 4 - Blunt Single-System



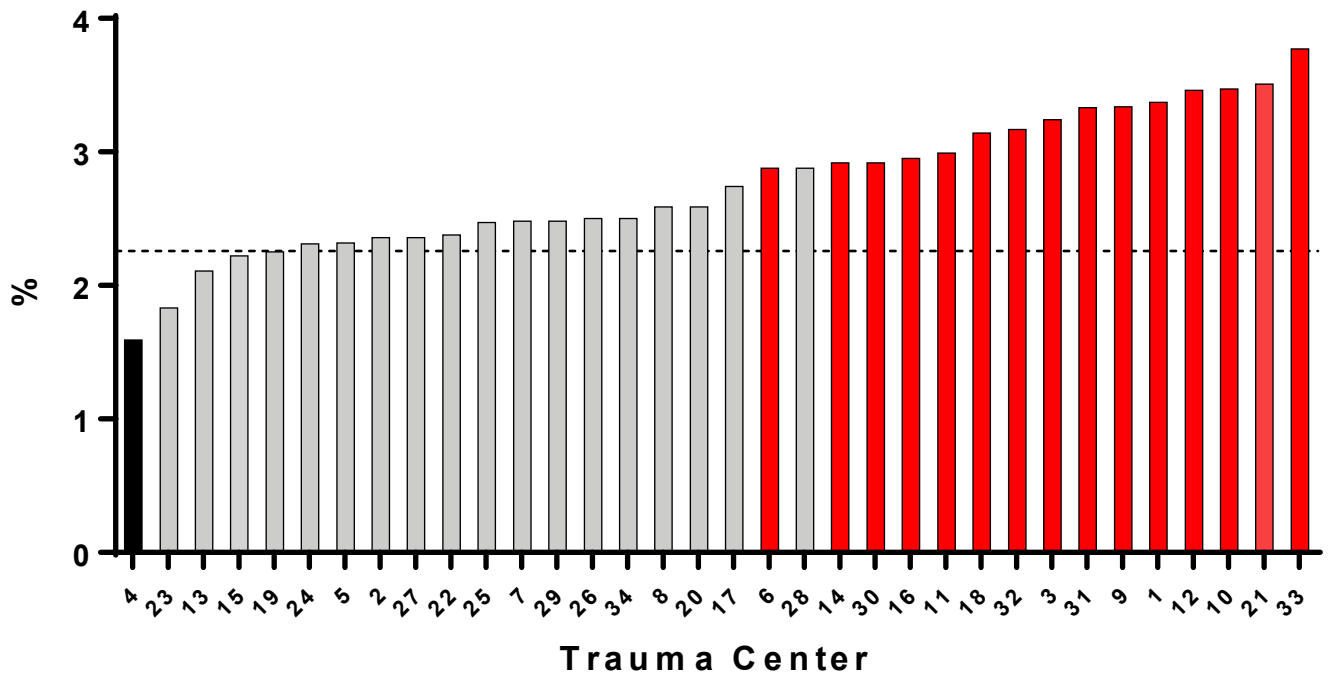
## Mortality Cohort 5 - Penetrating



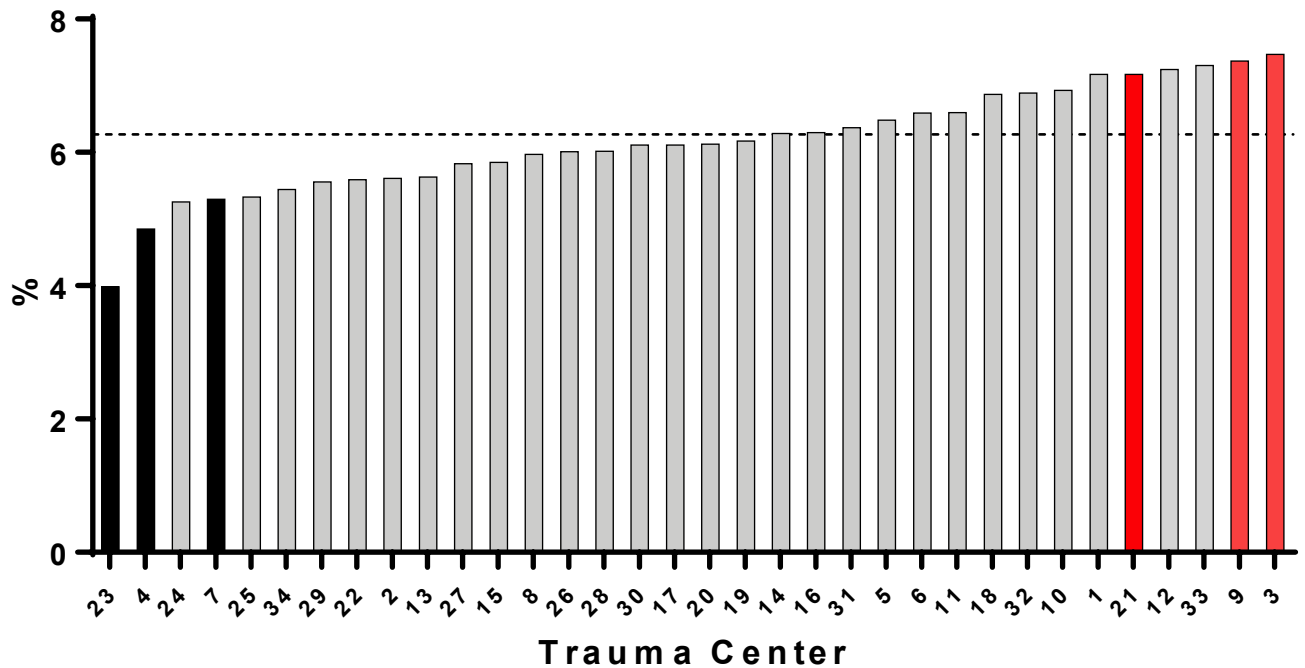
## Mortality w/o DOA Cohort 5 - Penetrating



### Mortality w/o DOA Cohort 6 - Admit to Non-Trauma Service

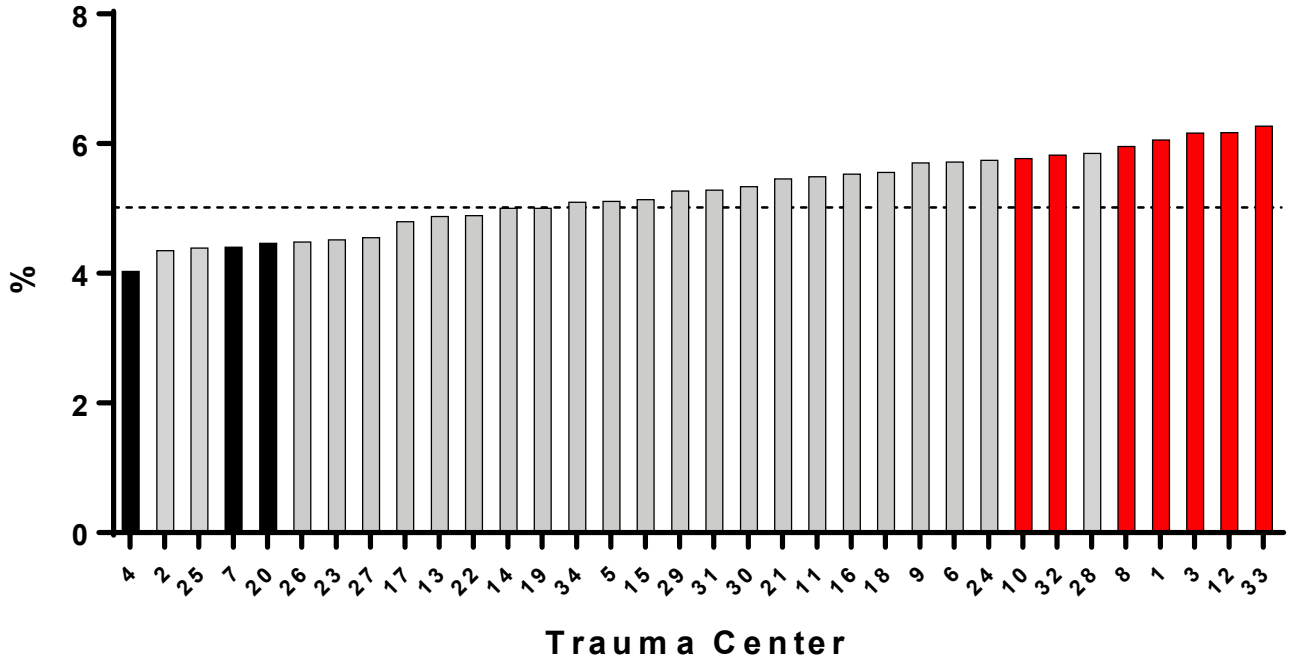


### Mortality Cohort 7 - National Benchmark

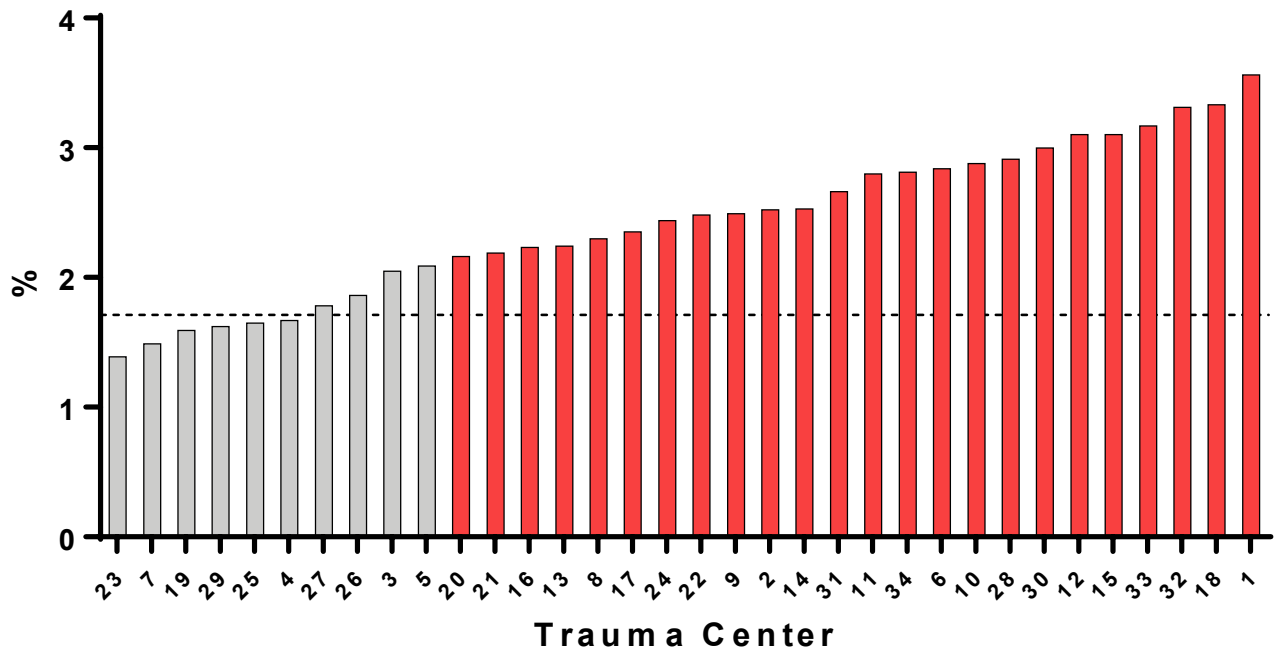




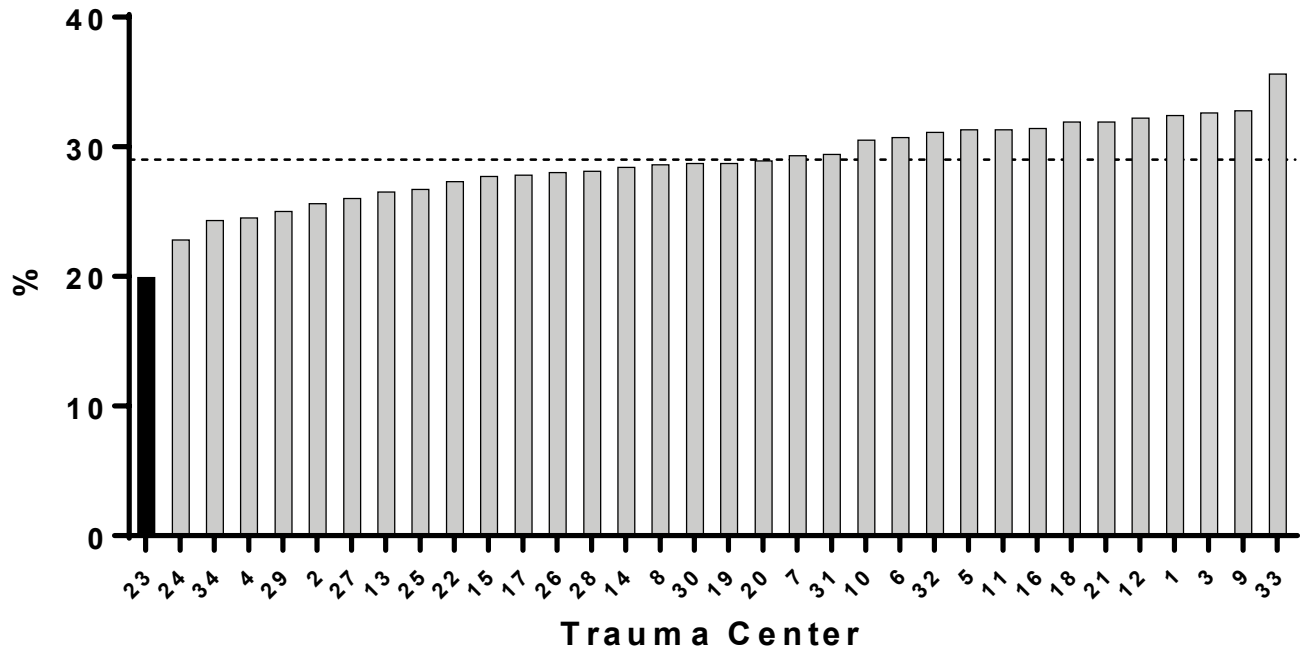
**Mortality or Hospice w/o DOA  
Cohort 1 - MTQIP All**



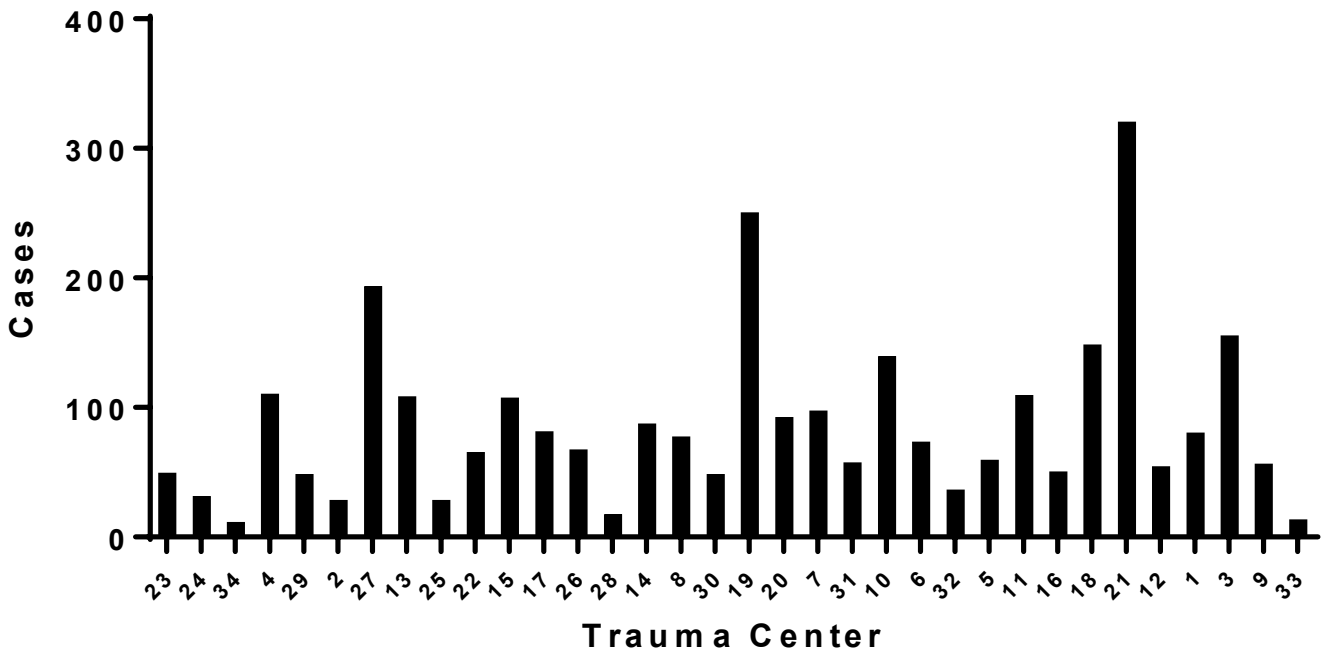
**Mortality Excluding Withdrawal of Care and DOA  
Cohort 1 - MTQIP All**



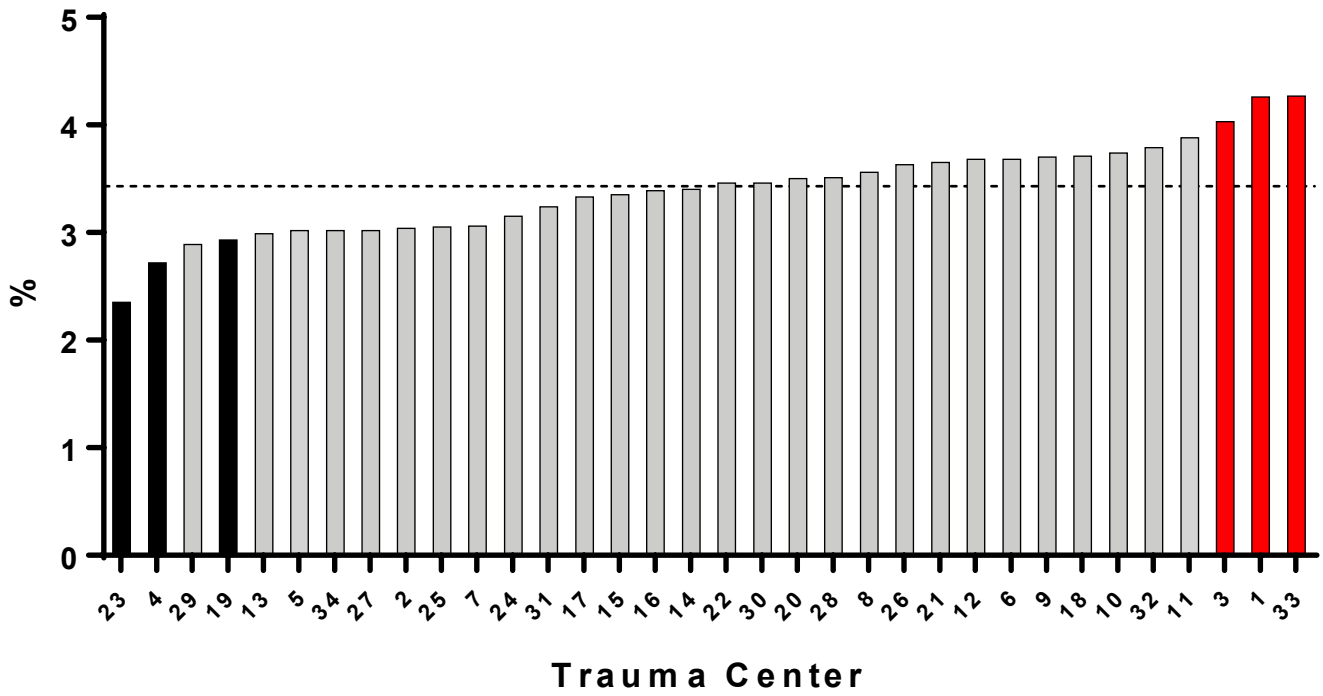
**ISS > 25 Mortality  
Cohort 2 - Admit to Trauma**



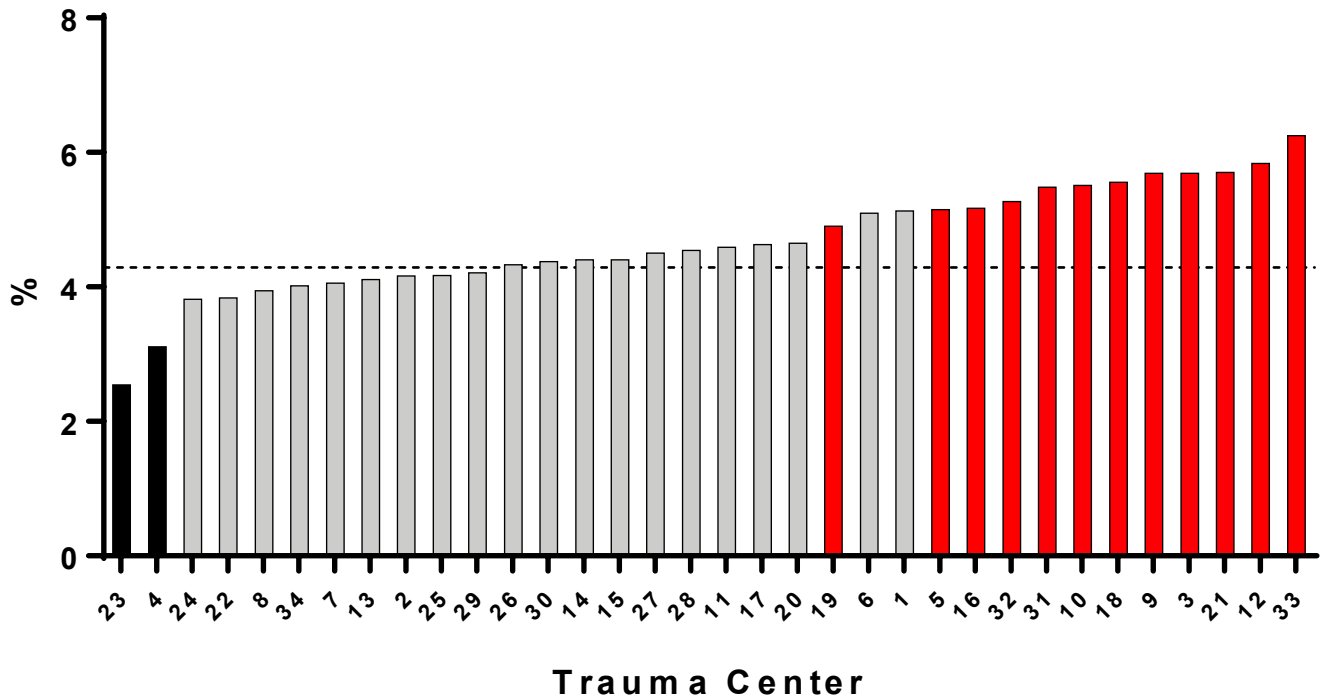
**Case Volume ISS > 25 Mortality  
Cohort 2 - Admit to Trauma**



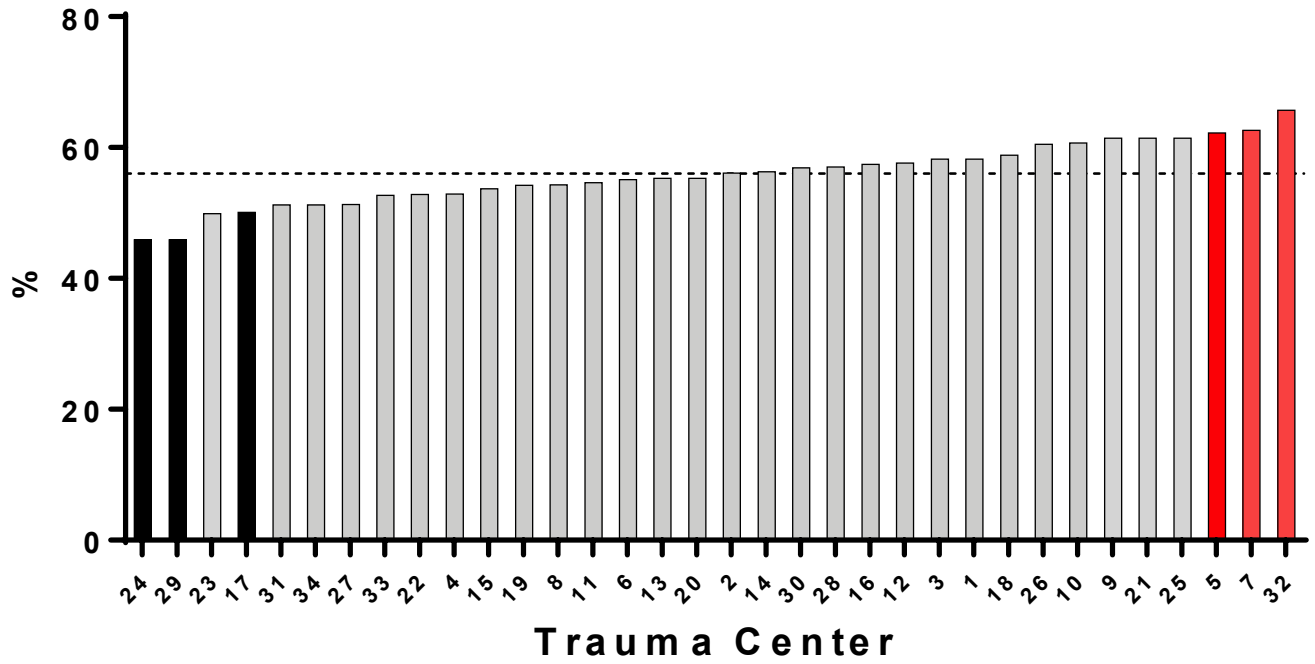
**Mortality - Age < 65 years**  
**Cohort 1 - MTQIP All**



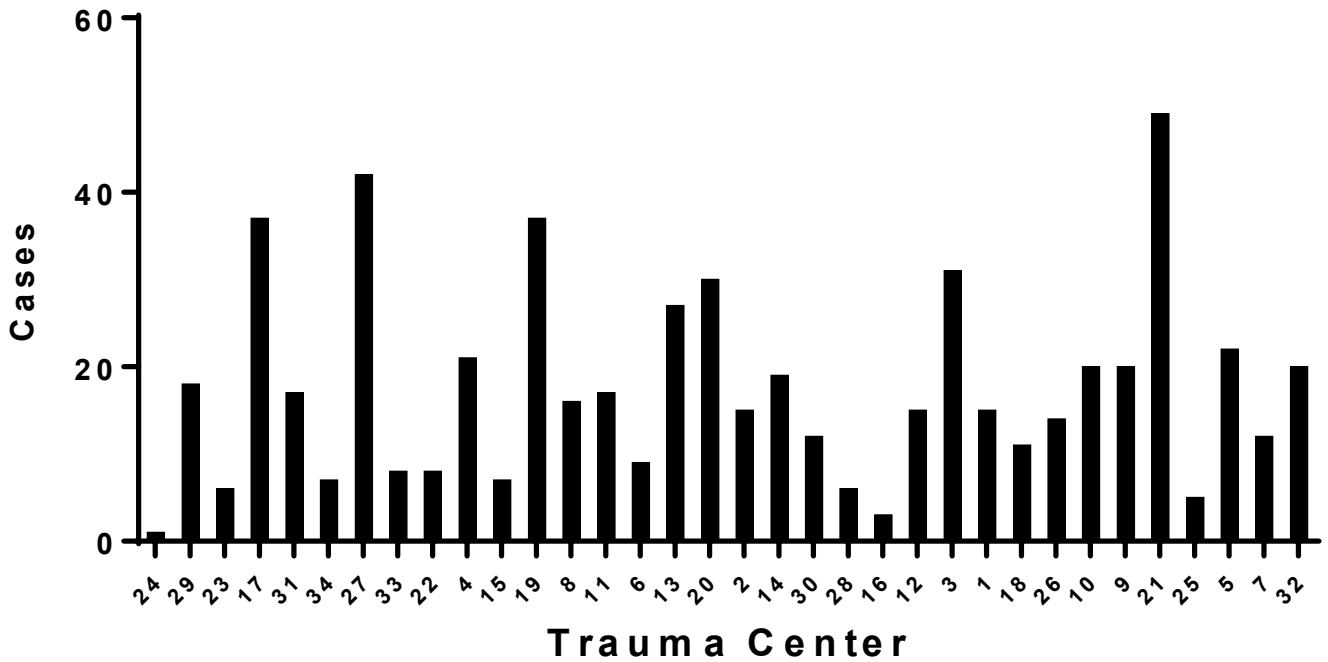
**Mortality - Age ≥ 65 years**  
**Cohort 1 - MTQIP All**



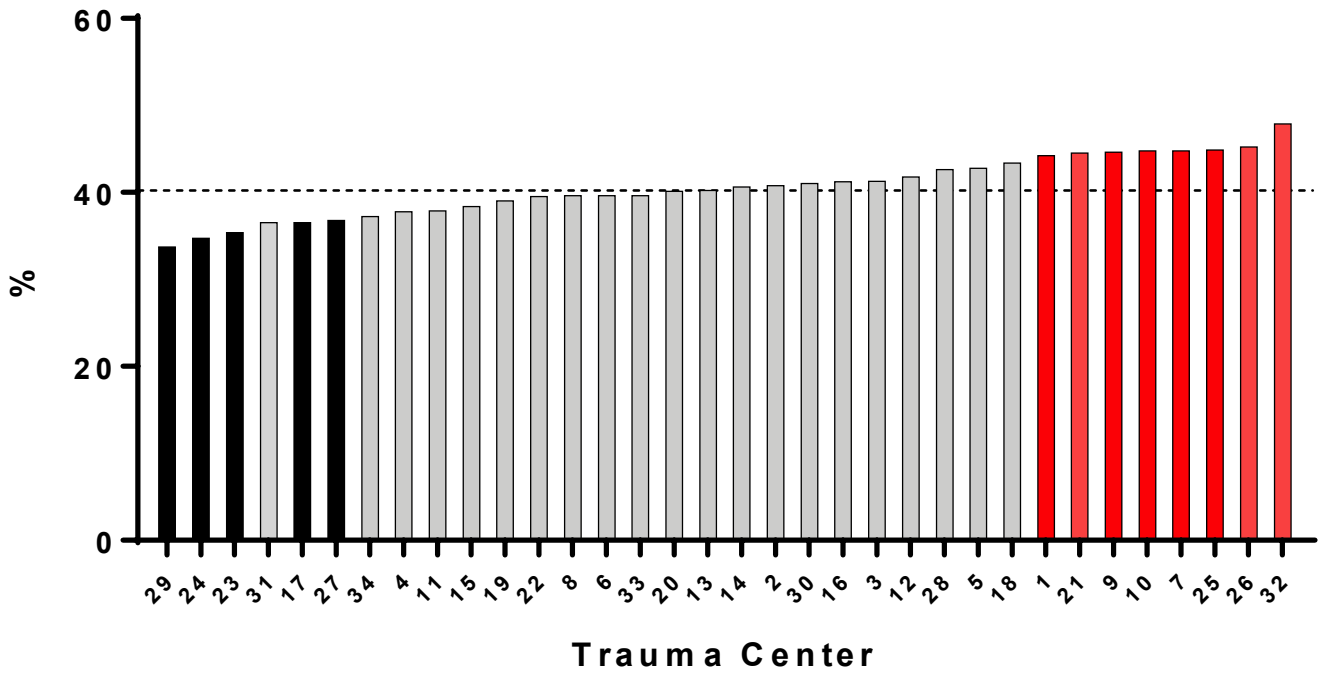
**Mortality GCS 3-8, >= 65 yo**  
**Cohort 1 - MTQIP All**



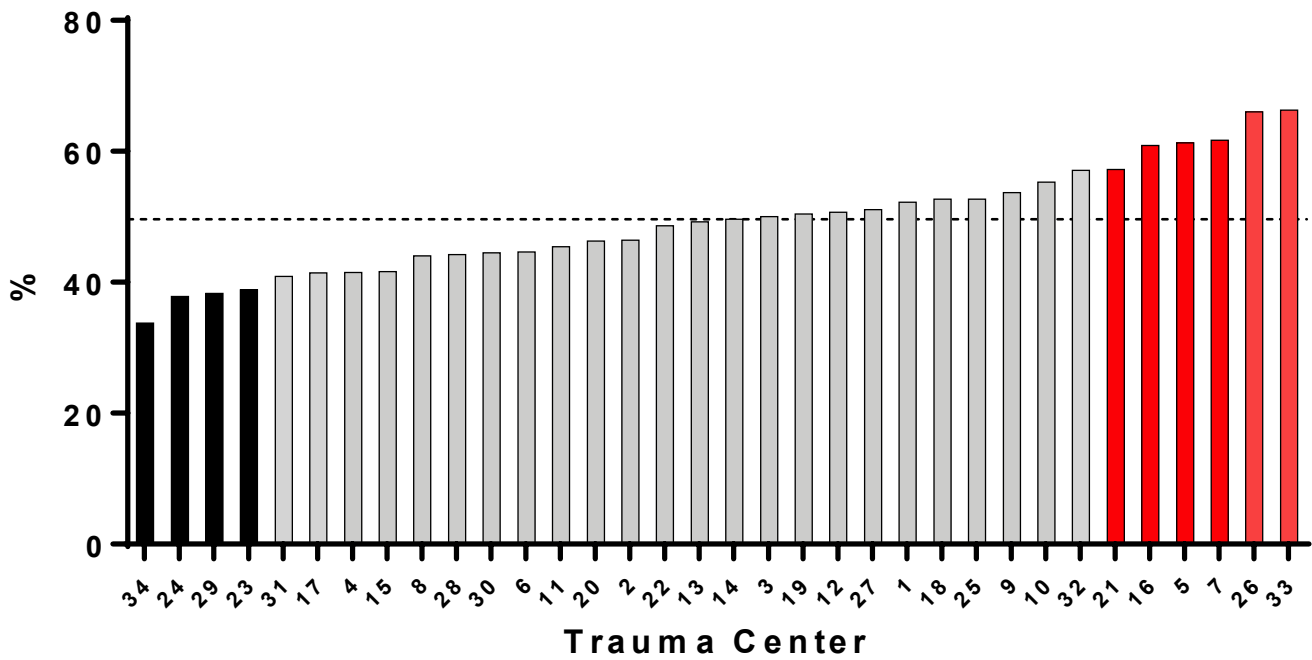
**Case Volume GCS 3-8, >= 65 yo**  
**Cohort 1 - MTQIP All**



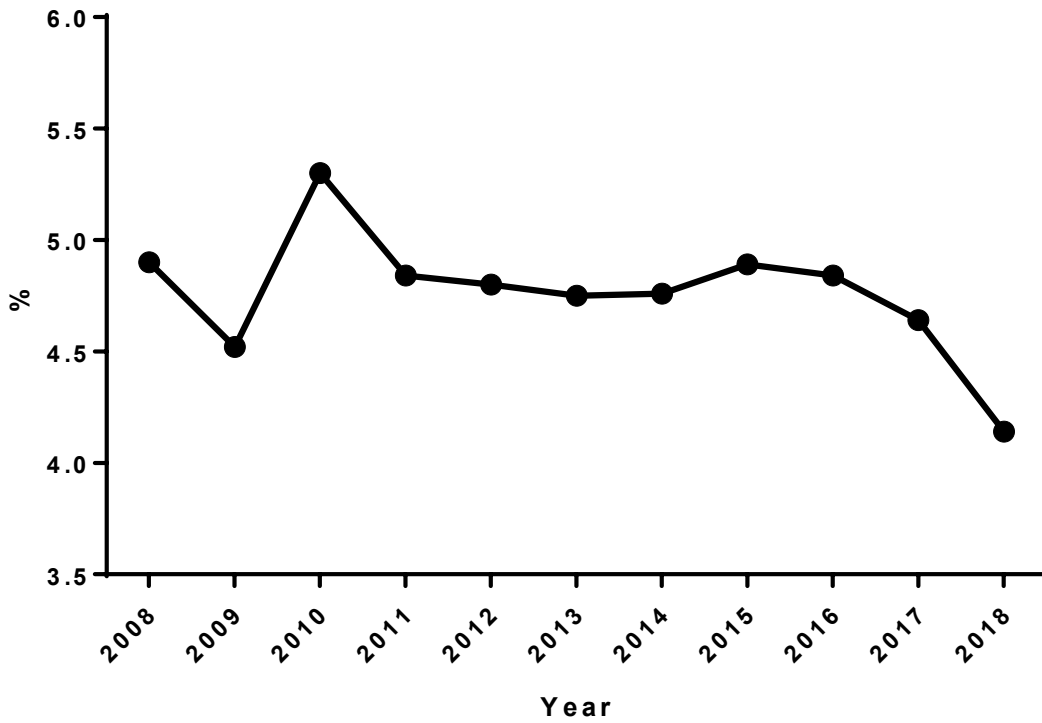
**Mortality GCS 3-8  
Cohort 1 - MTQIP All**



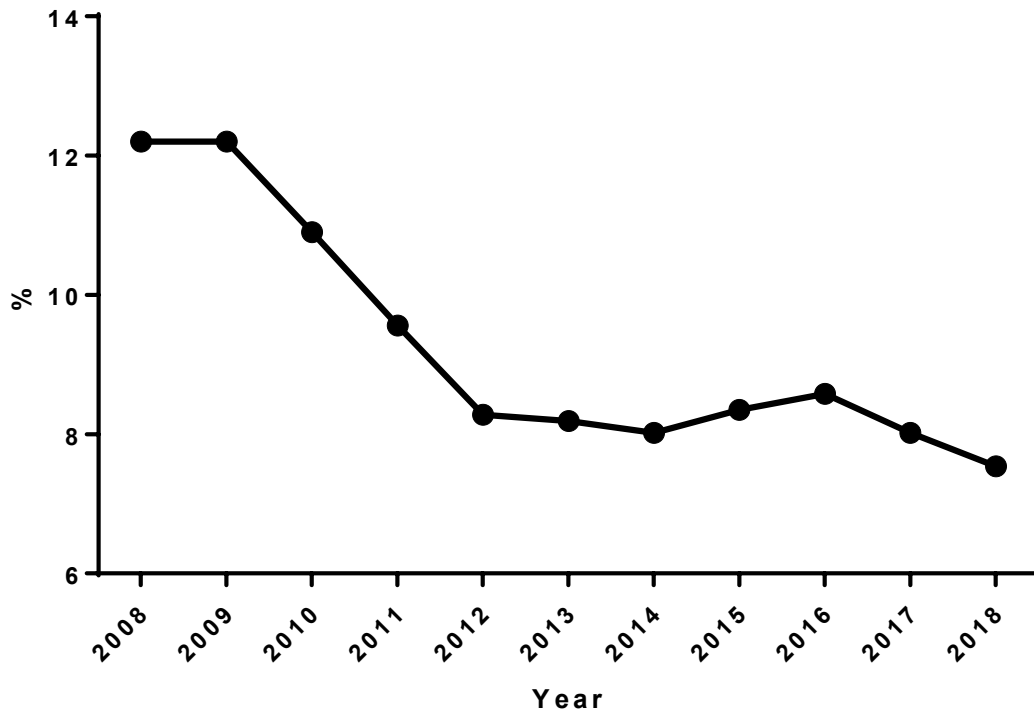
**Adjusted TBI Mortality  
Cohort 1 - MTQIP All**



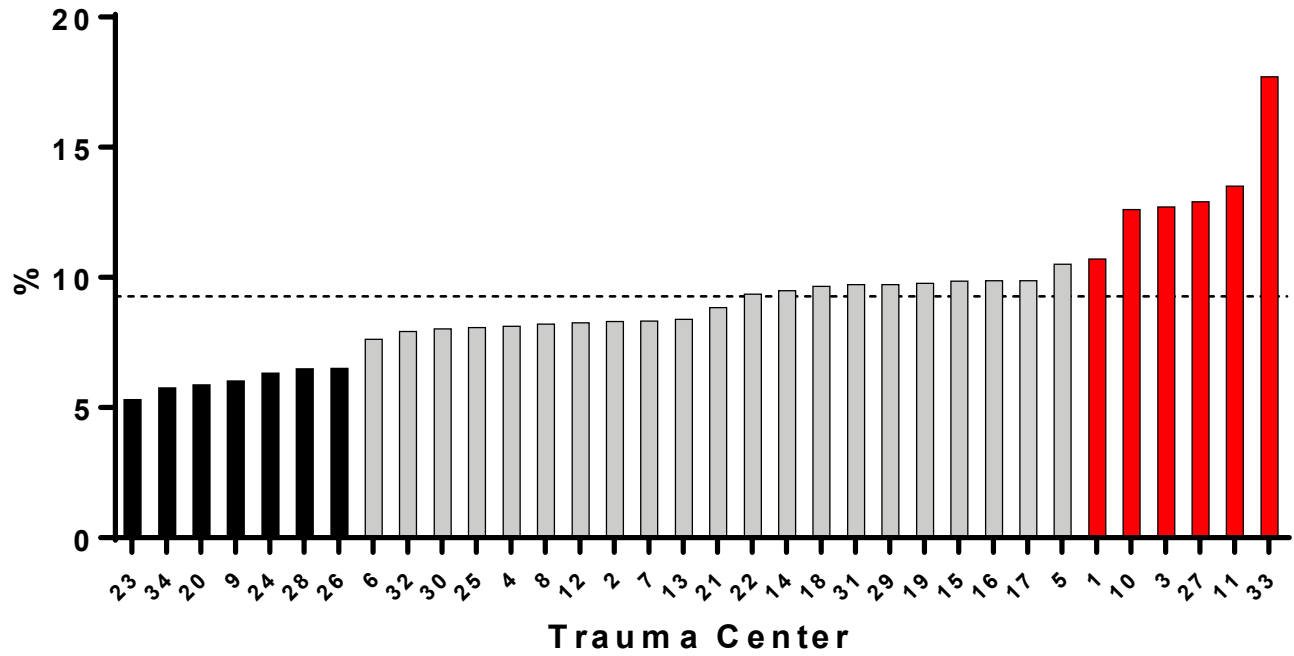
**Collaborative Outcome Overview - Mortality  
Cohort 2 - Admit to Trauma**



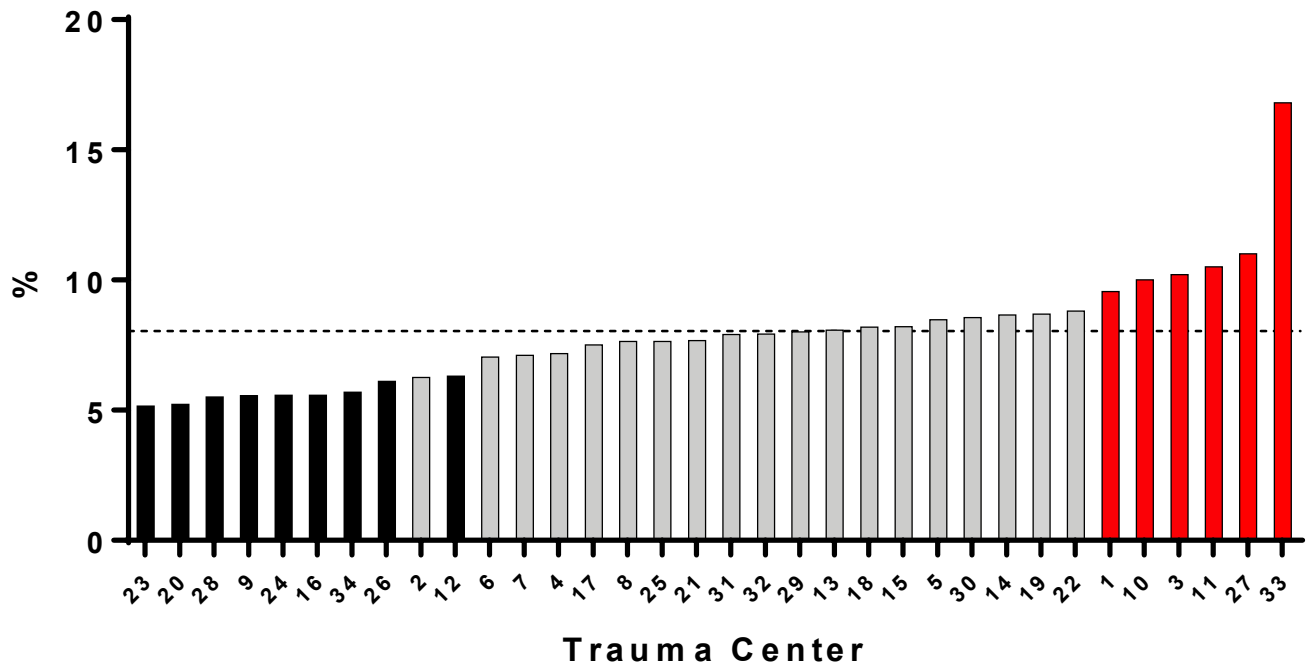
**Collaborative Outcome Overview - Serious Cx  
Cohort 2 - Admit to Trauma**



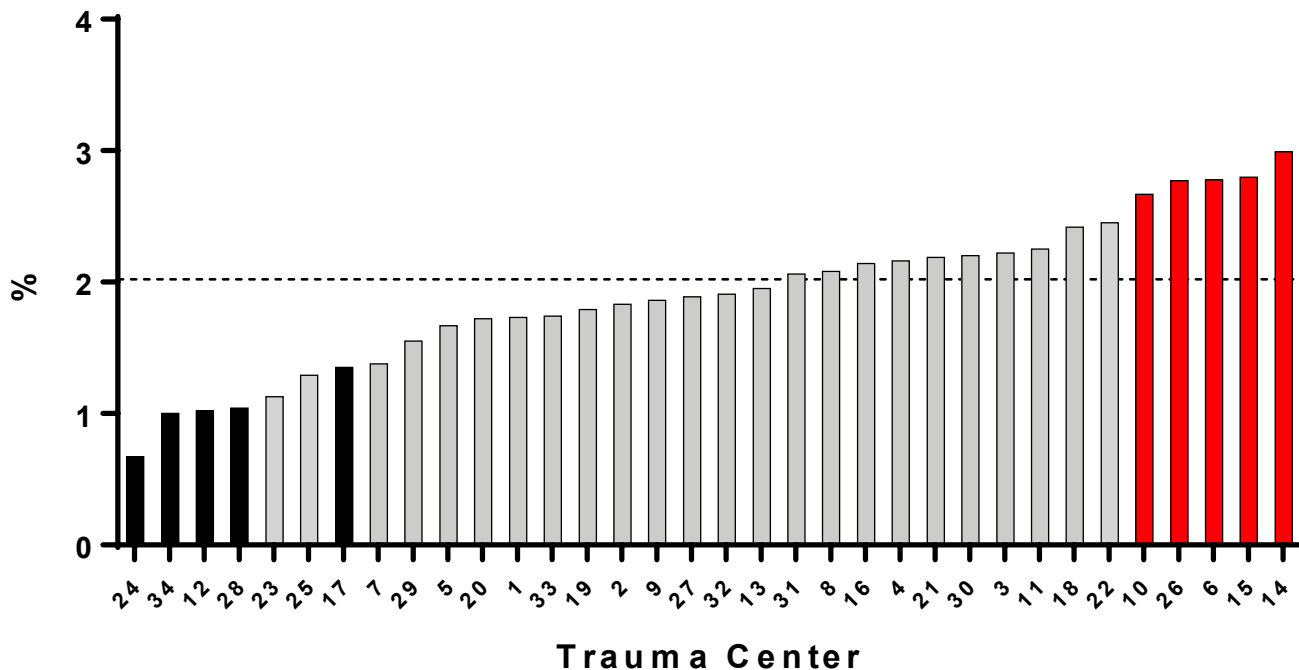
**Complications - Any  
Cohort 2 - Admit to Trauma**



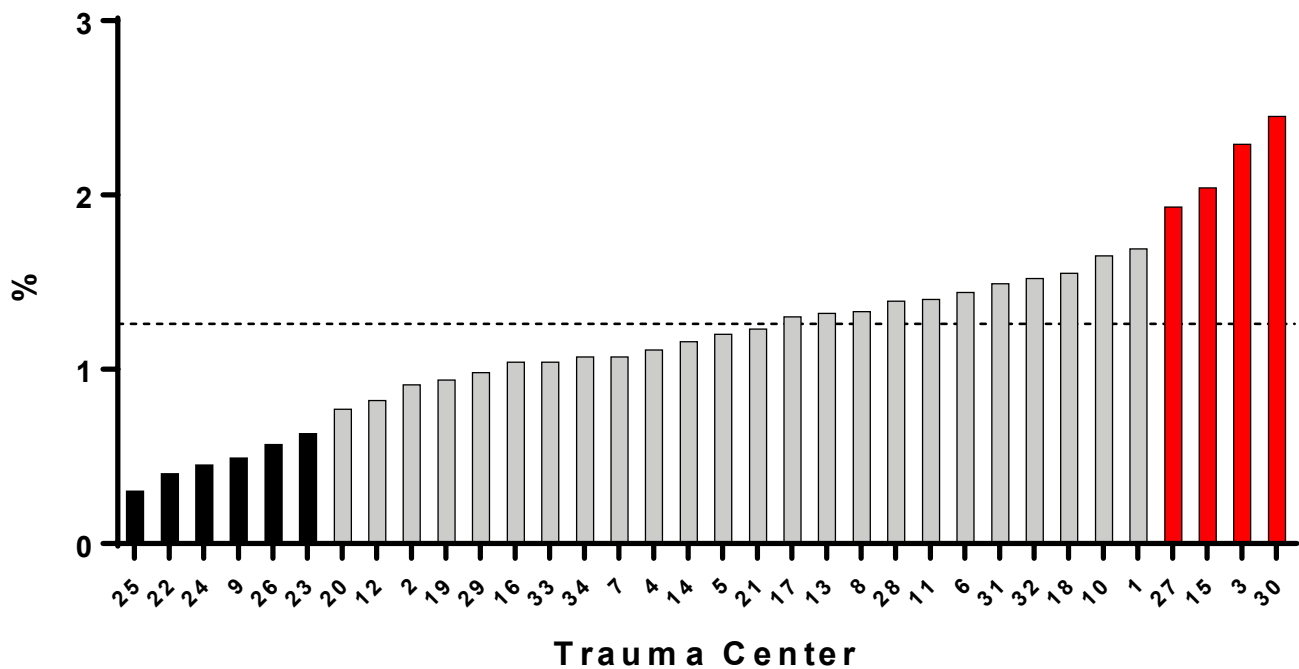
**Complications - Serious  
Cohort 2 - Admit to Trauma**



### Cardiac/Stroke Cohort 2 - Admit to Trauma

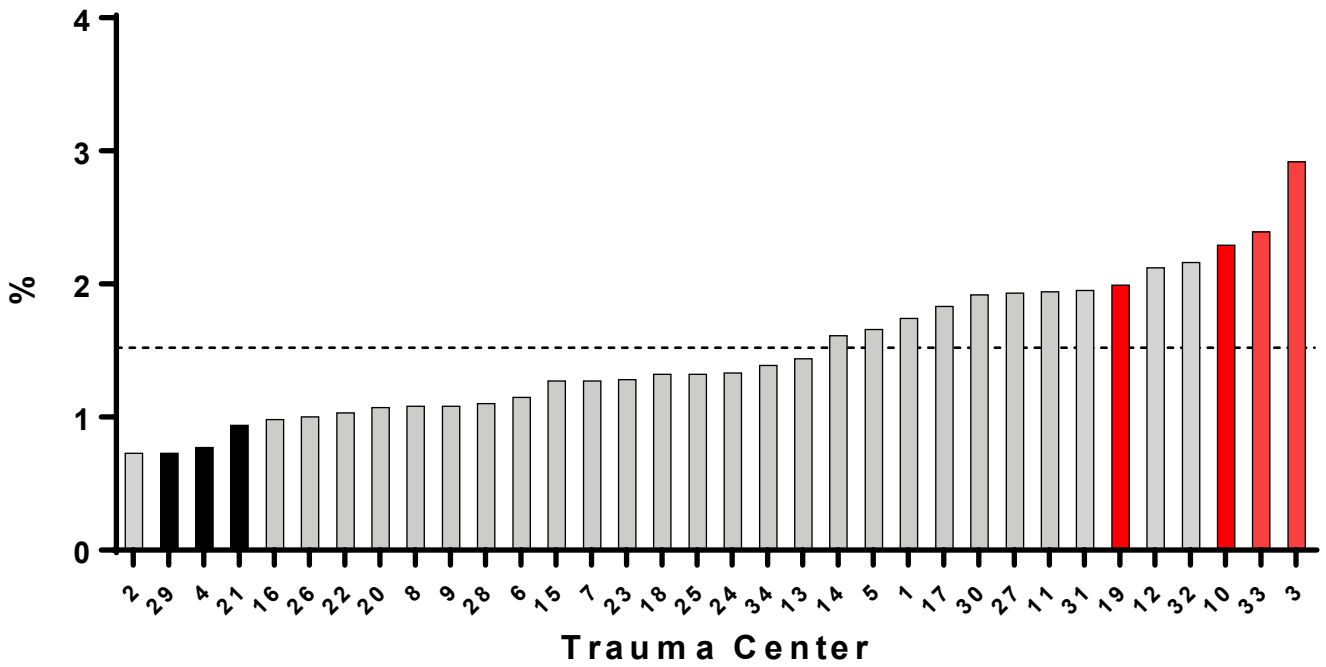


### DVT/Pulmonary Embolus Cohort 2 - Admit to Trauma

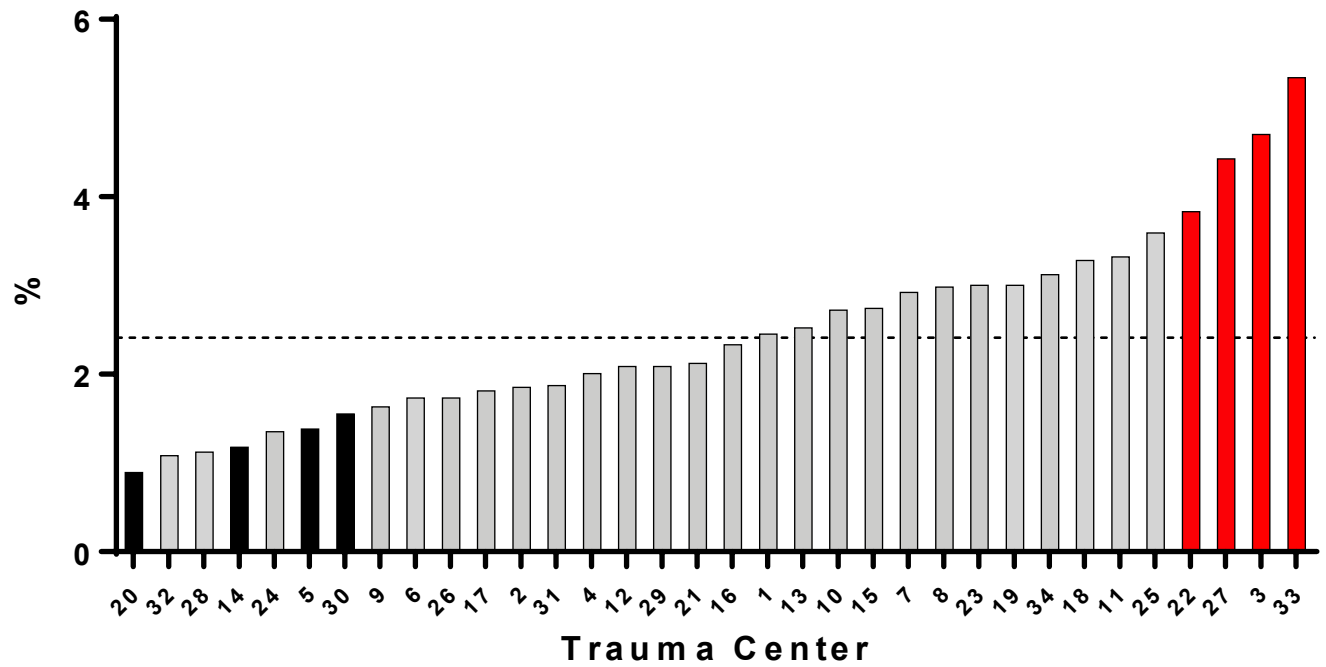




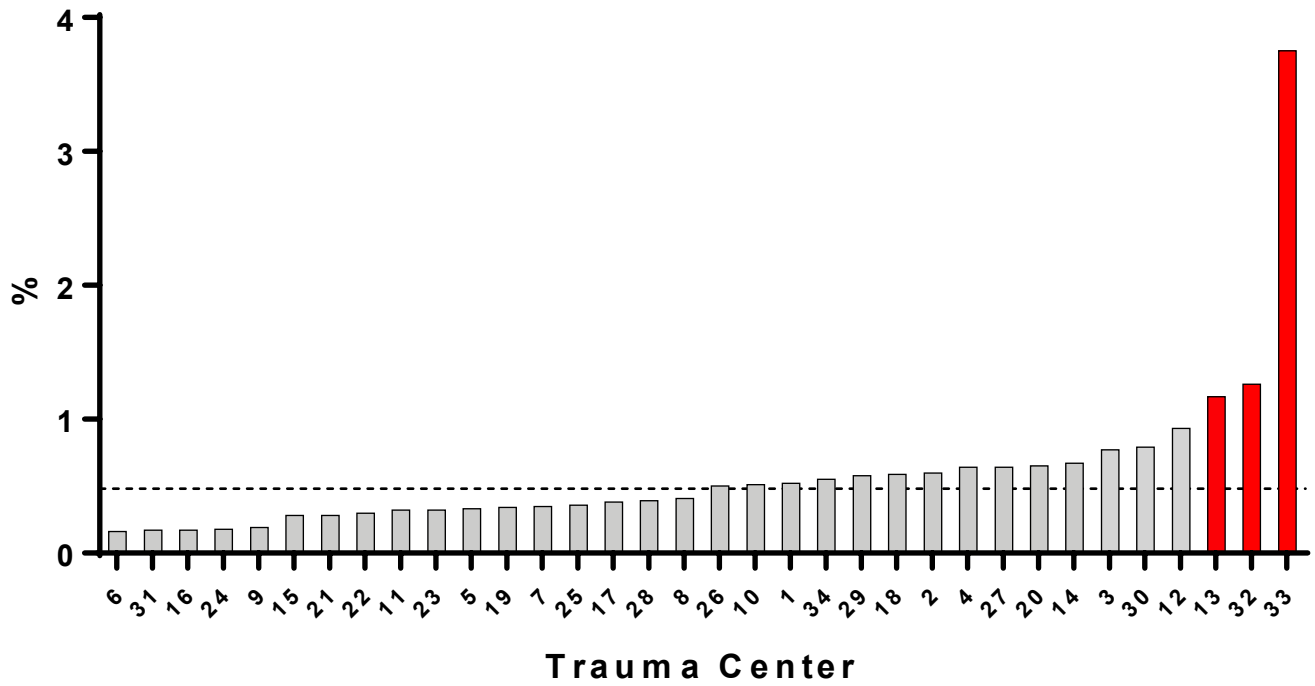
## Unplanned Intubation Cohort 2 - Admit to Trauma



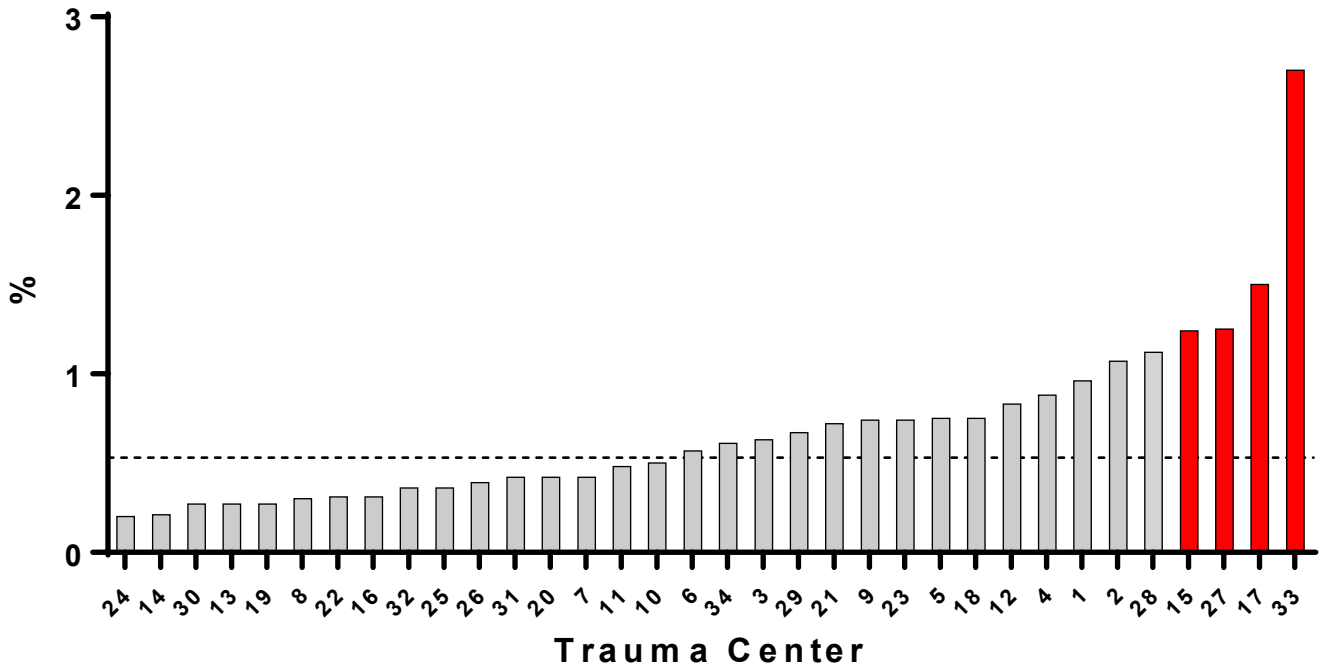
## Pneumonia Cohort 2 - Admit to Trauma



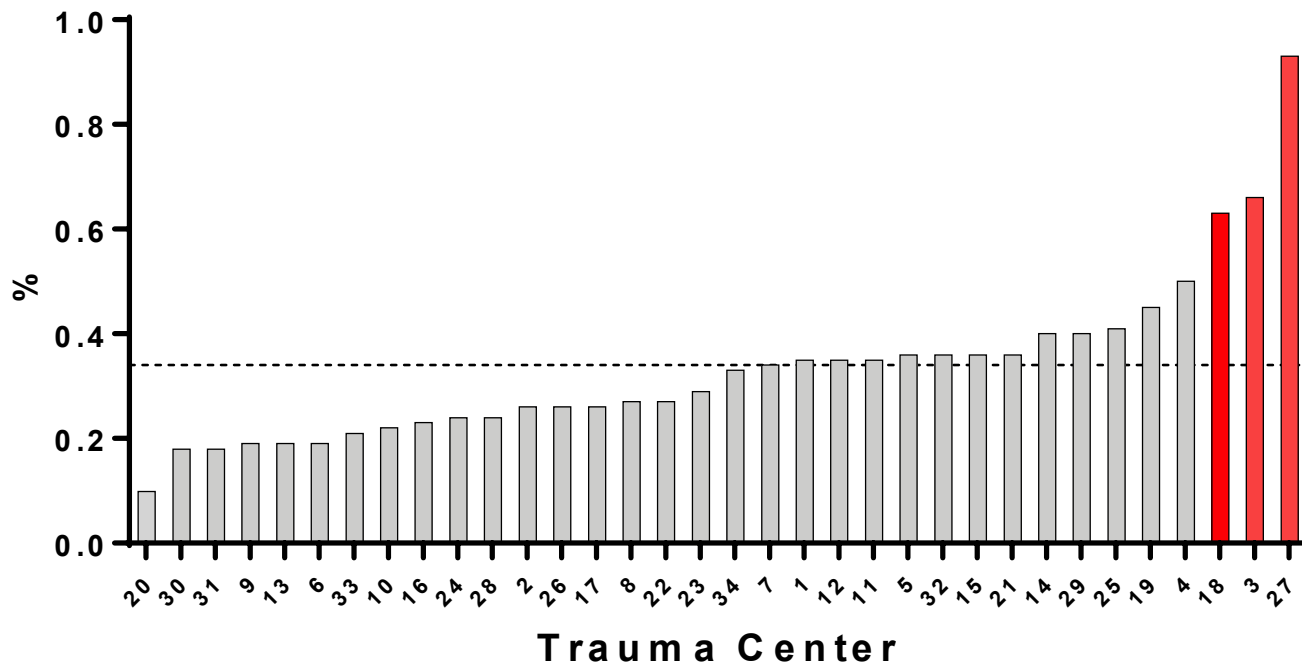
## Renal Failure Cohort 2 - Admit to Trauma



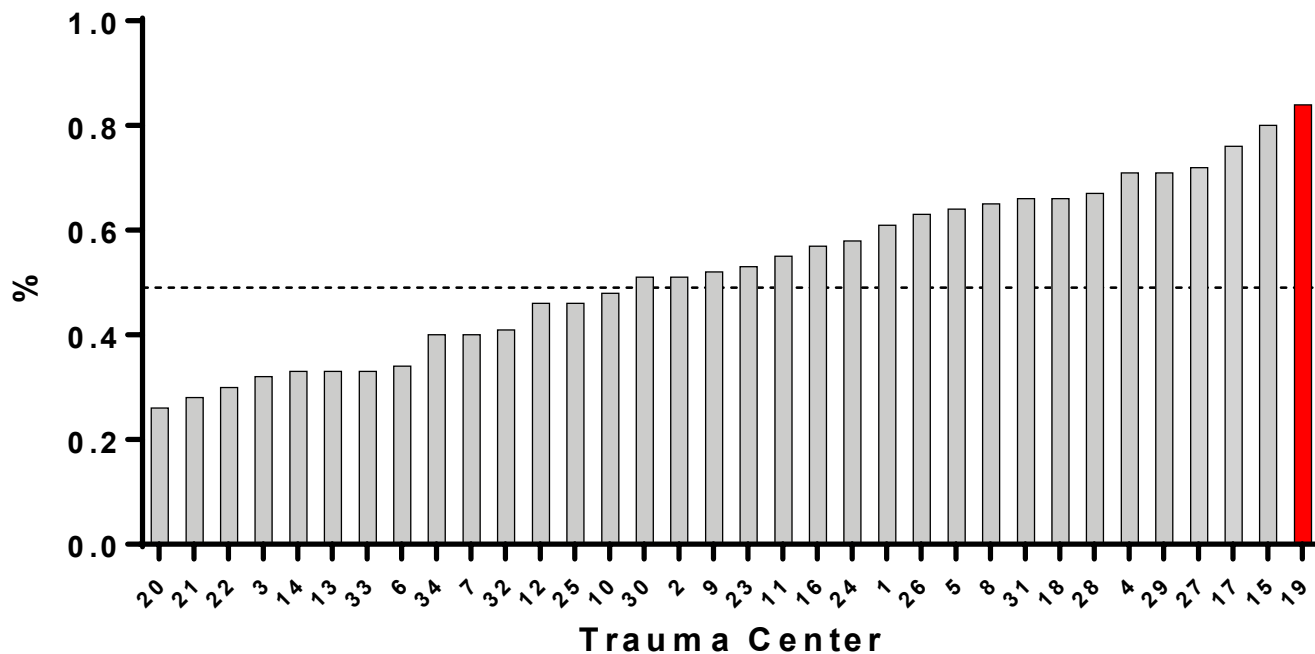
## CAUTI Cohort 2 - Admit to Trauma



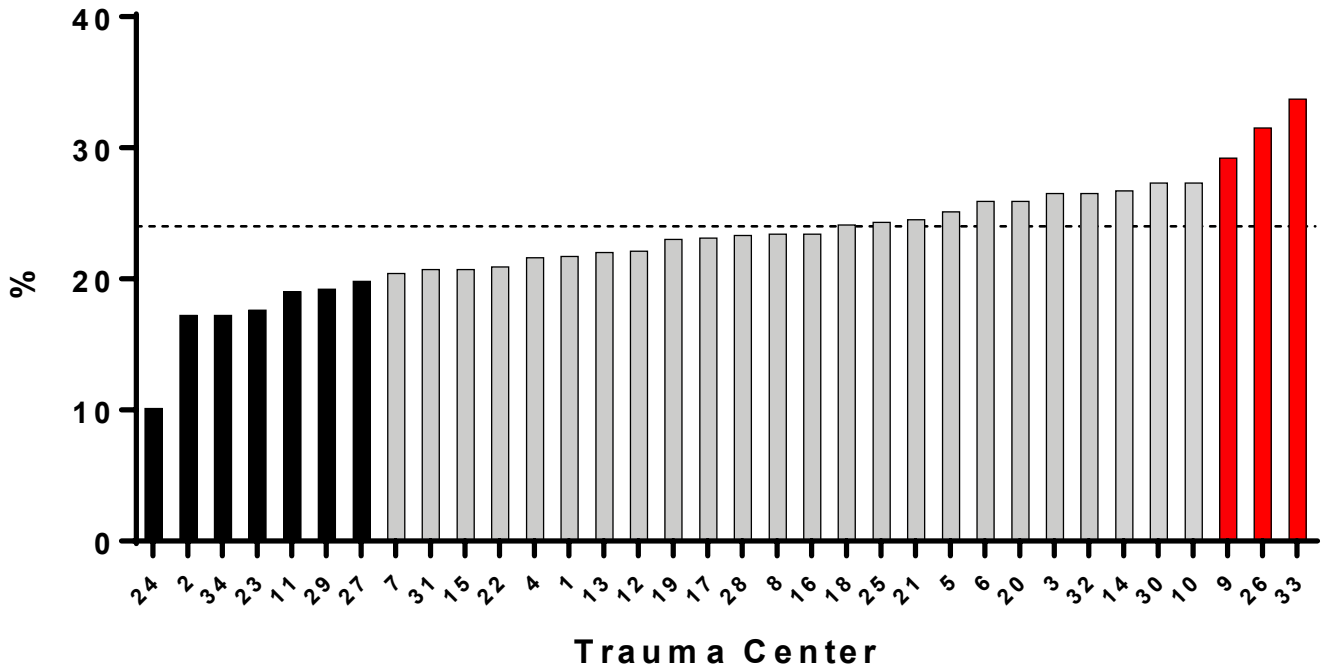
**C. Difficile Colitis**  
**Cohort 2 - Admit to Trauma**



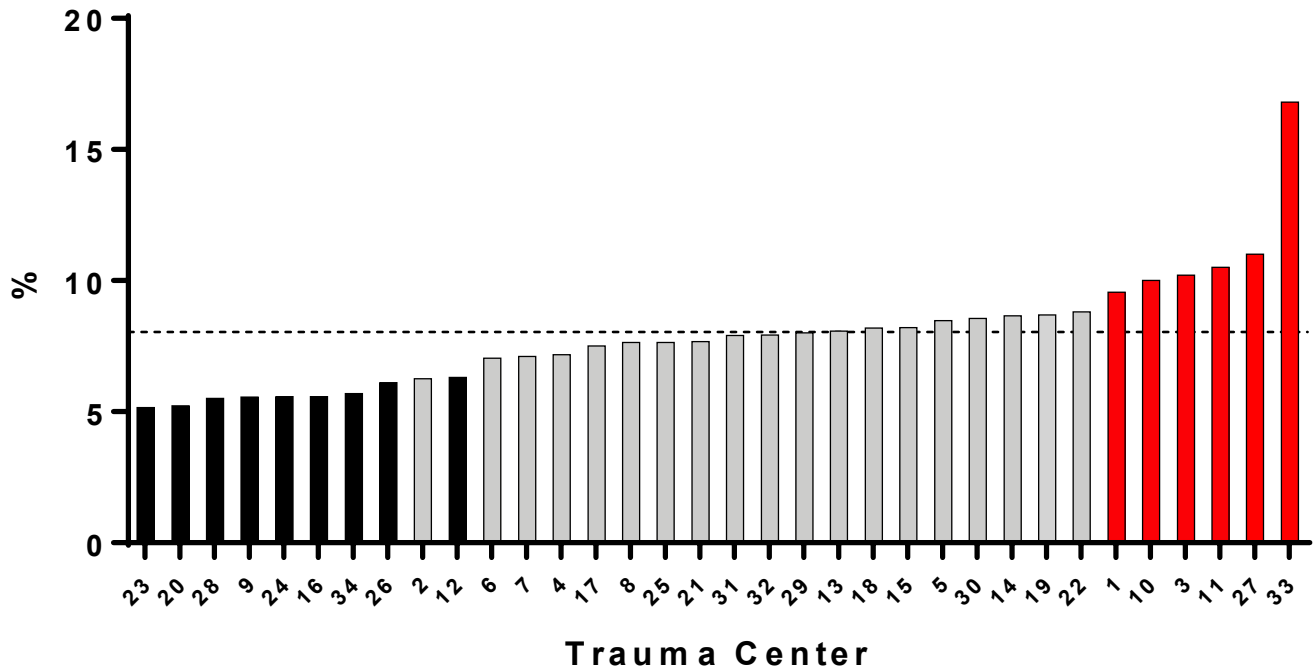
**Sepsis**  
**Cohort 2 - Admit to Trauma**



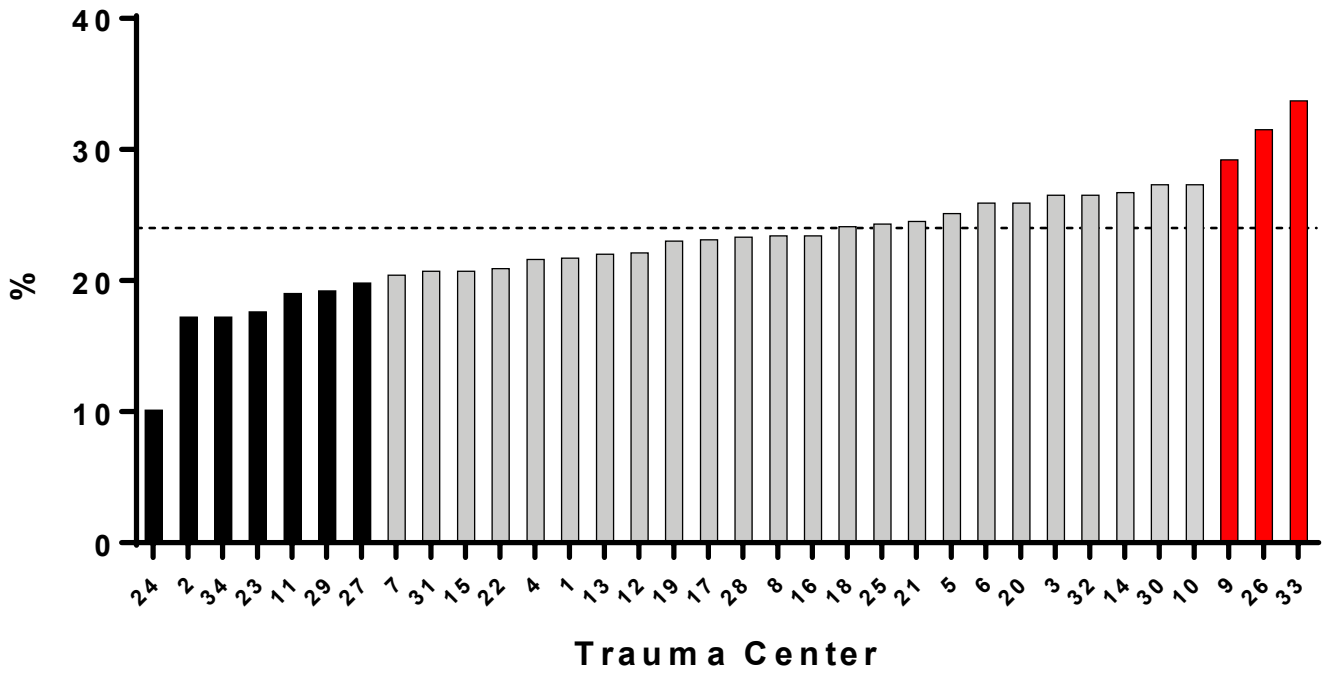
## Failure to Rescue Cohort 2 - Admit to Trauma



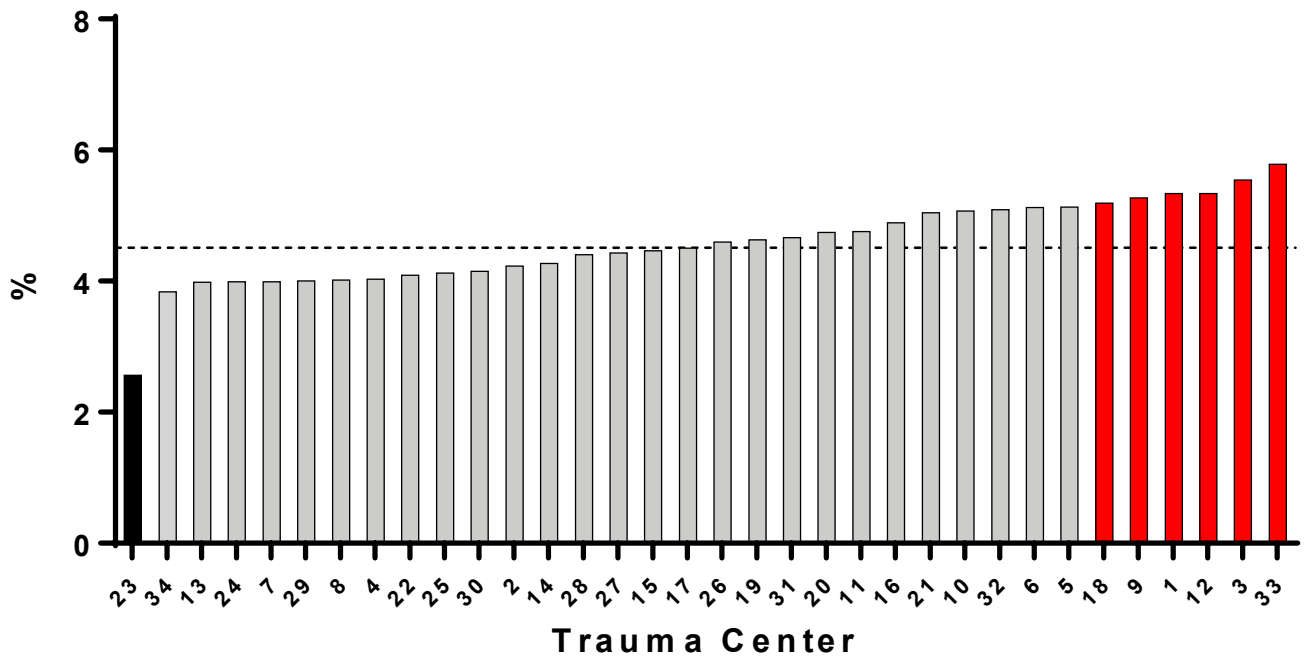
## Complications - Serious Cohort 2 - Admit to Trauma



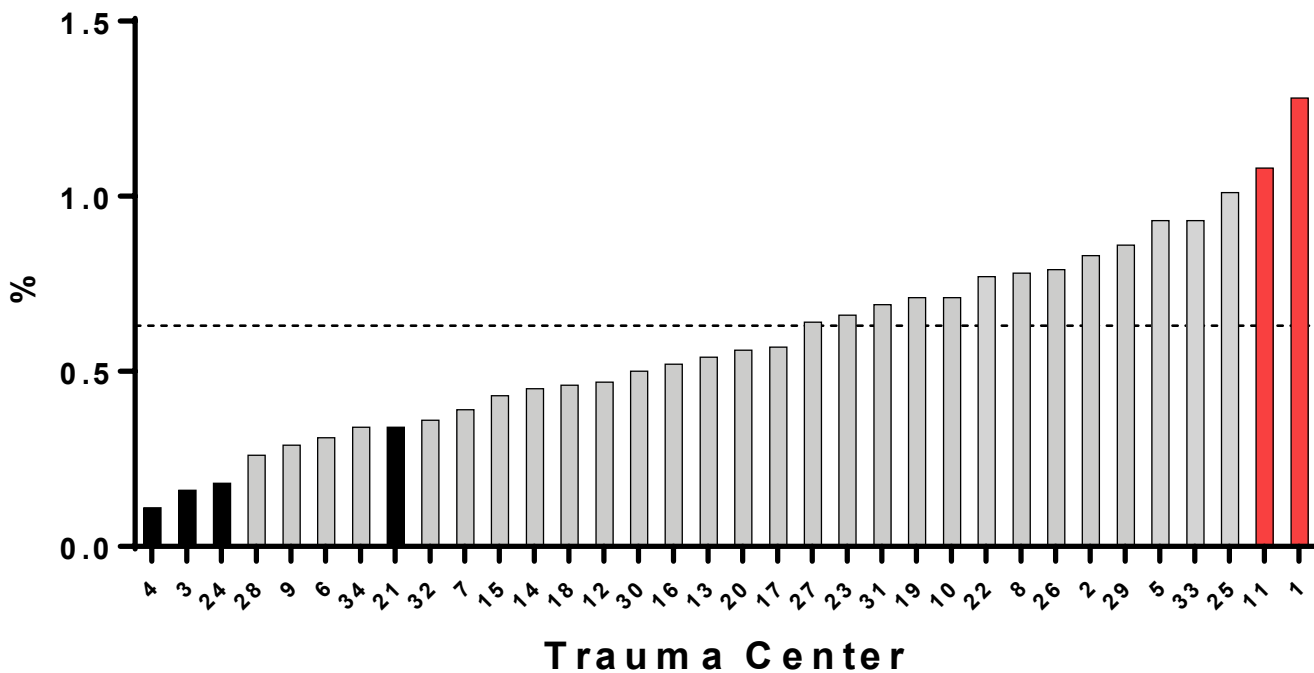
### Failure to Rescue Cohort 2 - Admit to Trauma



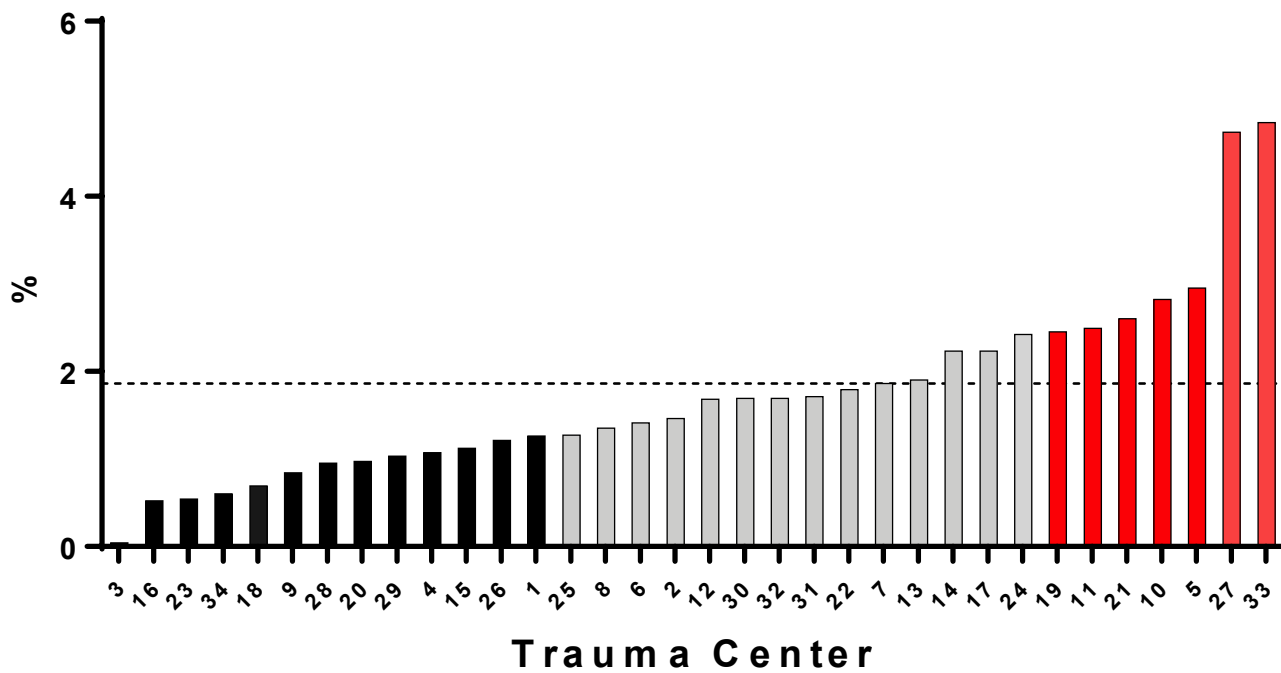
### Mortality w/o DOA Cohort 2 - Admit to Trauma



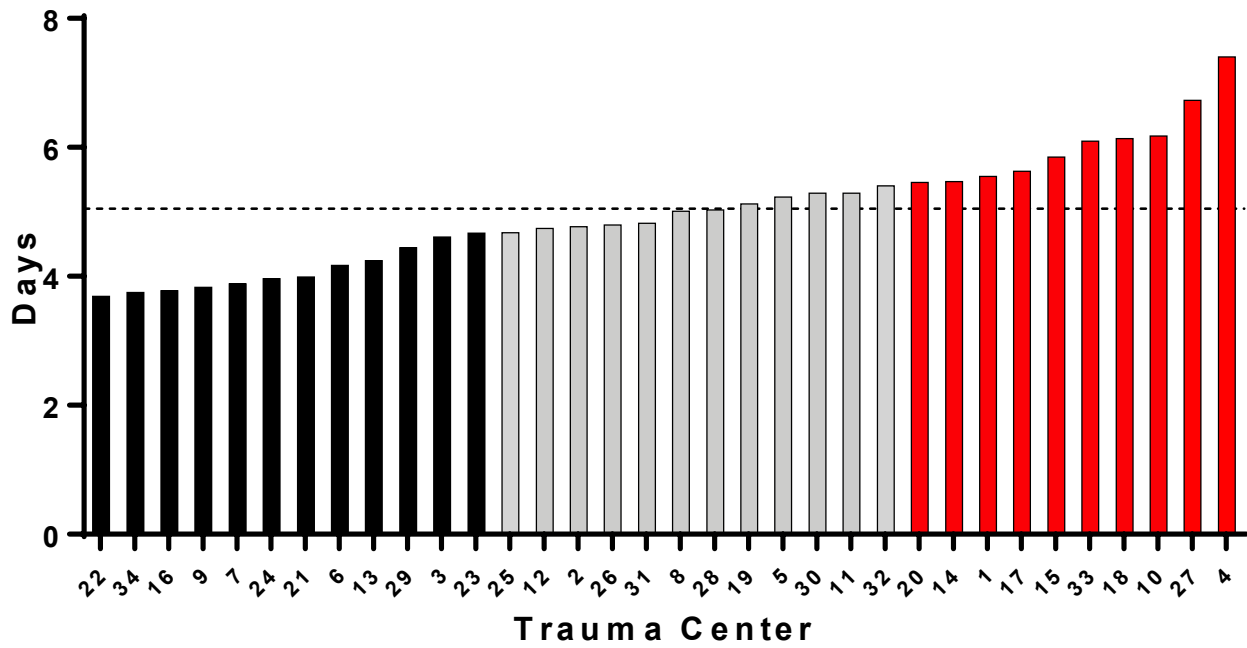
### Unplanned Return to OR Cohort 2 - Admit to Trauma



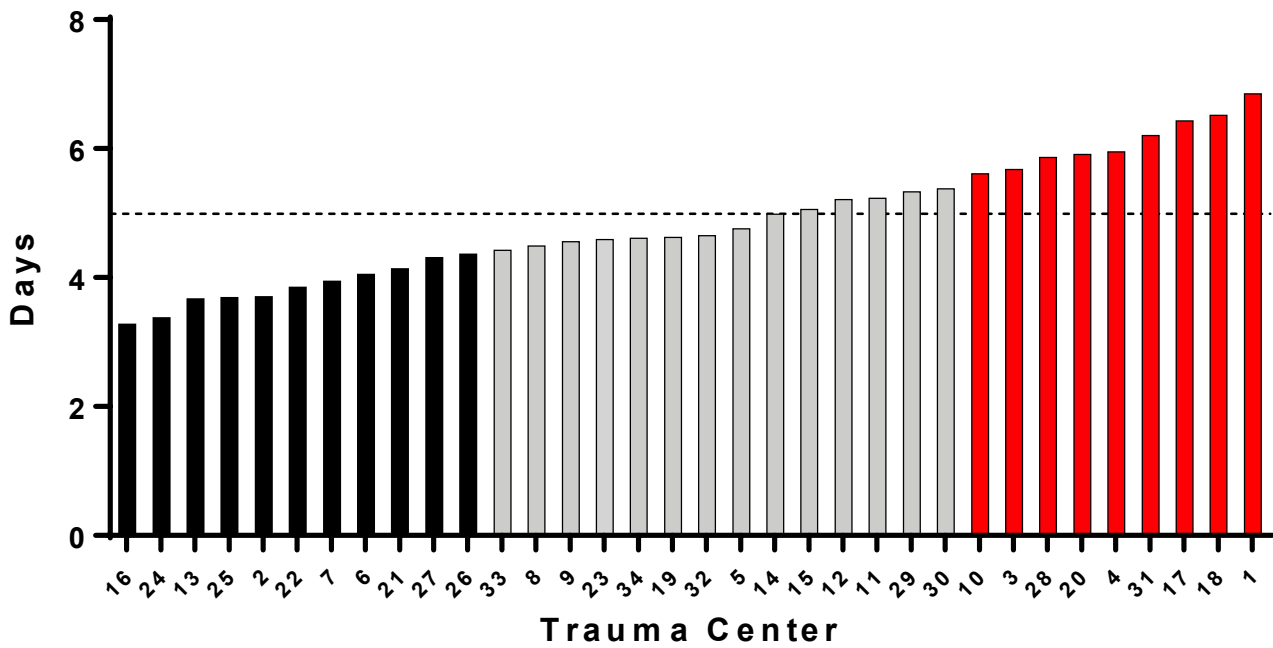
### Unplanned Admit to ICU Cohort 2 - Admit to Trauma



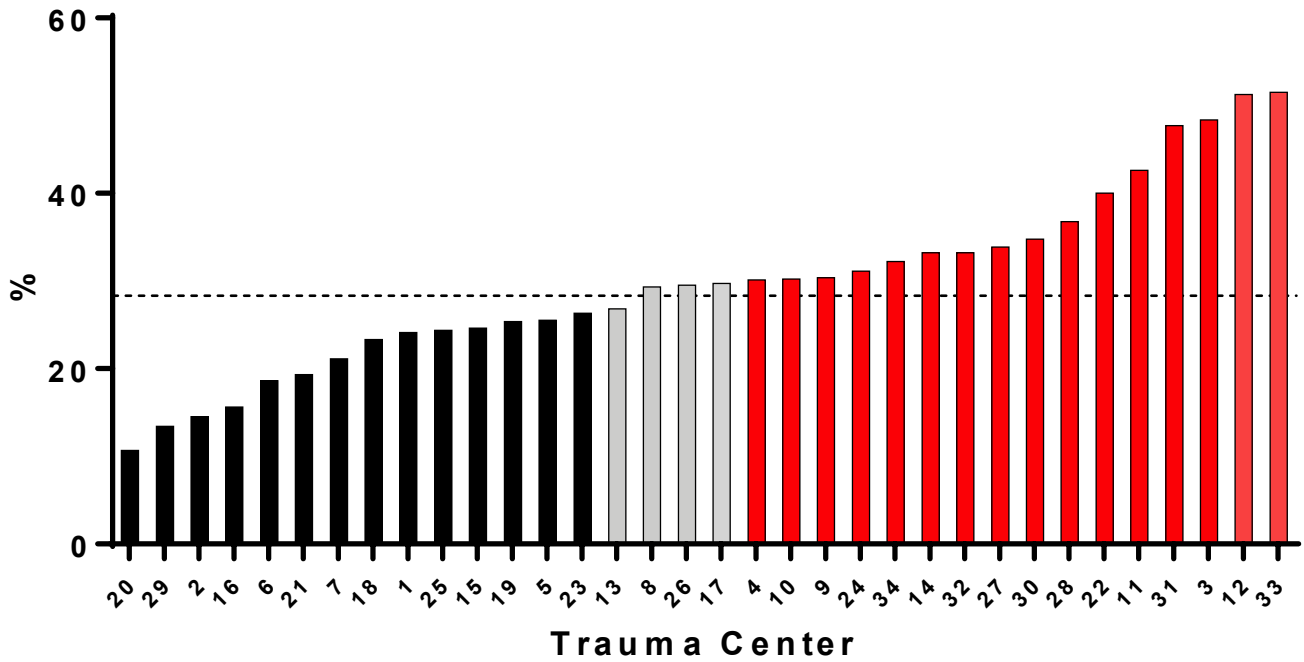
### Adjusted Hospital LOS Cohort 2 - Admit to Trauma



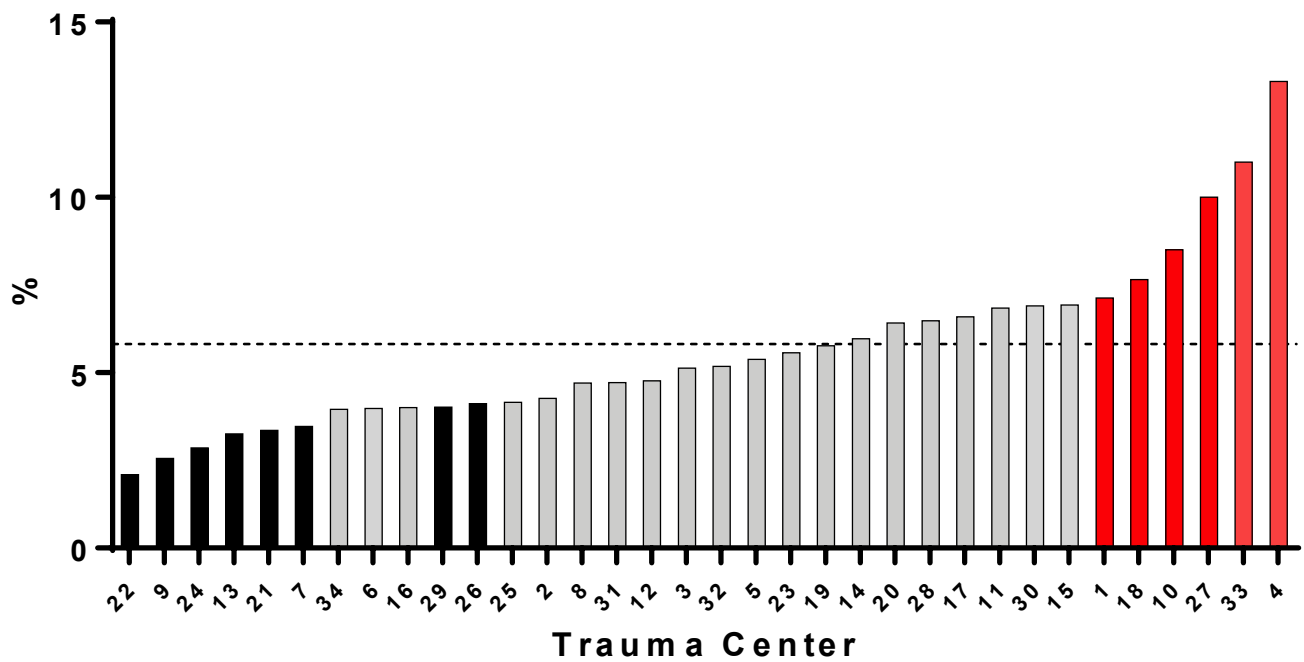
### Adjusted ICU LOS Cohort 2 - Admit to Trauma



**Patients Admitted to ICU  
Cohort 1 - MTQIP All**

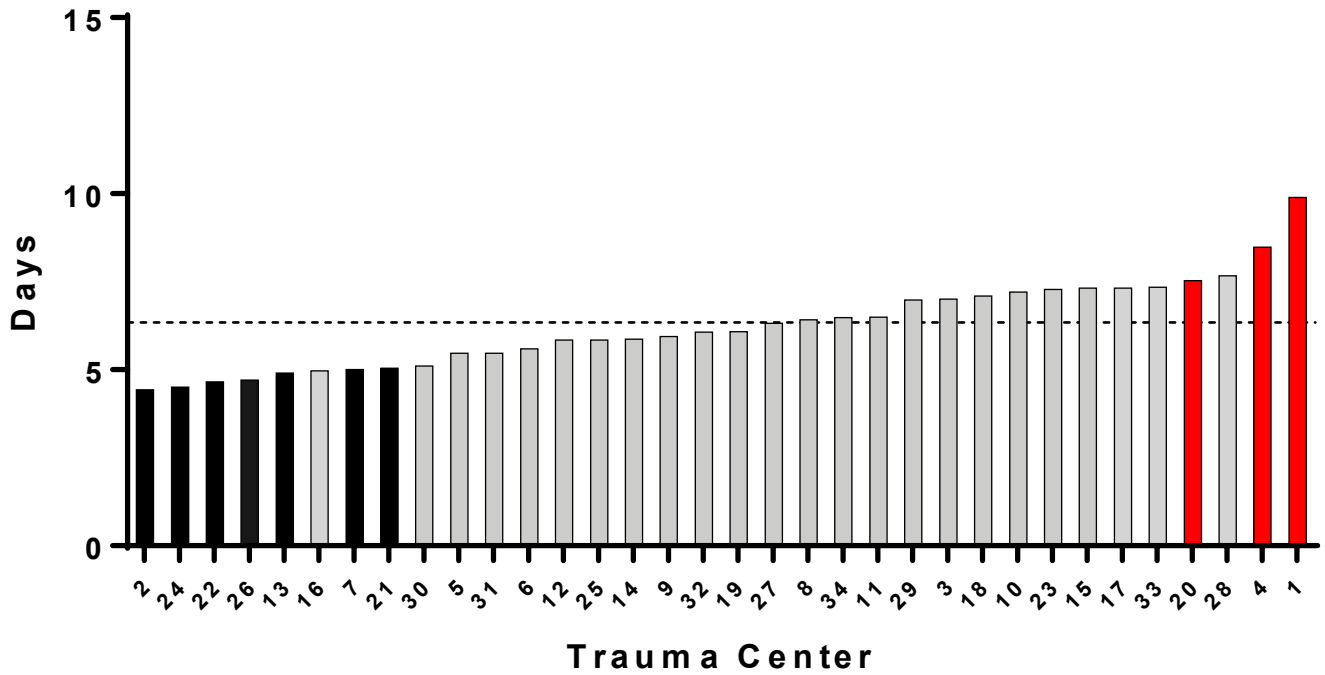


**Extended LOS  
Cohort 2 - Admit to Trauma**

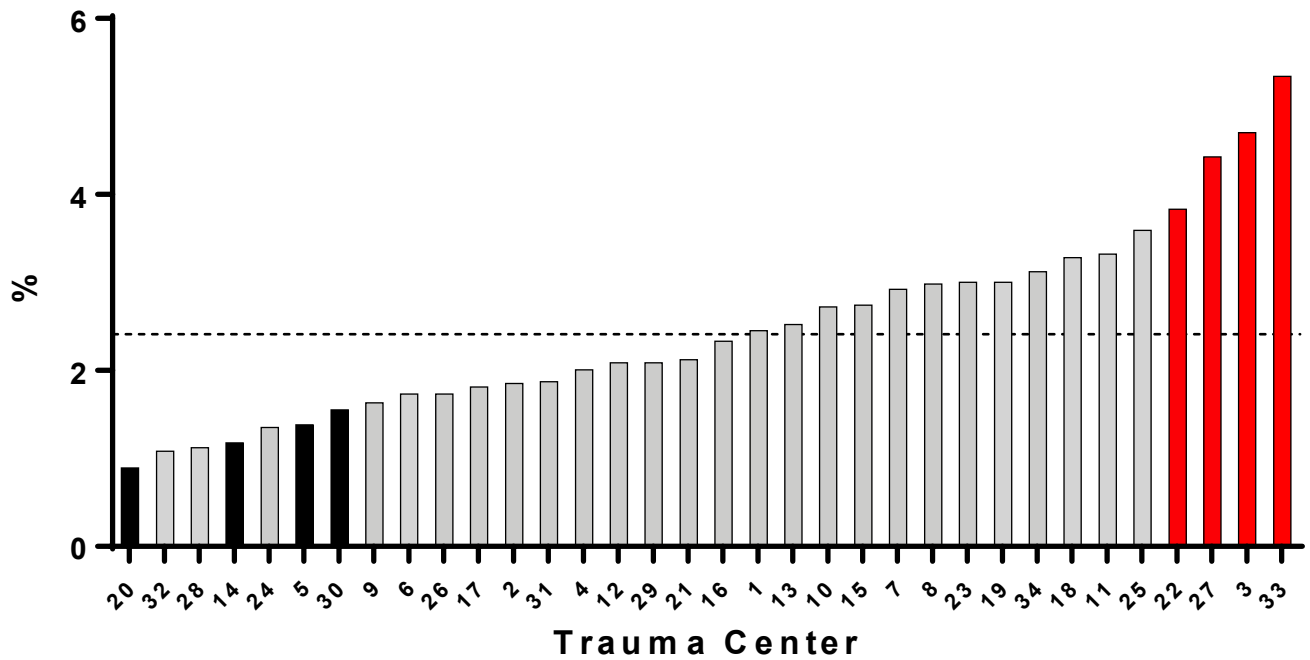




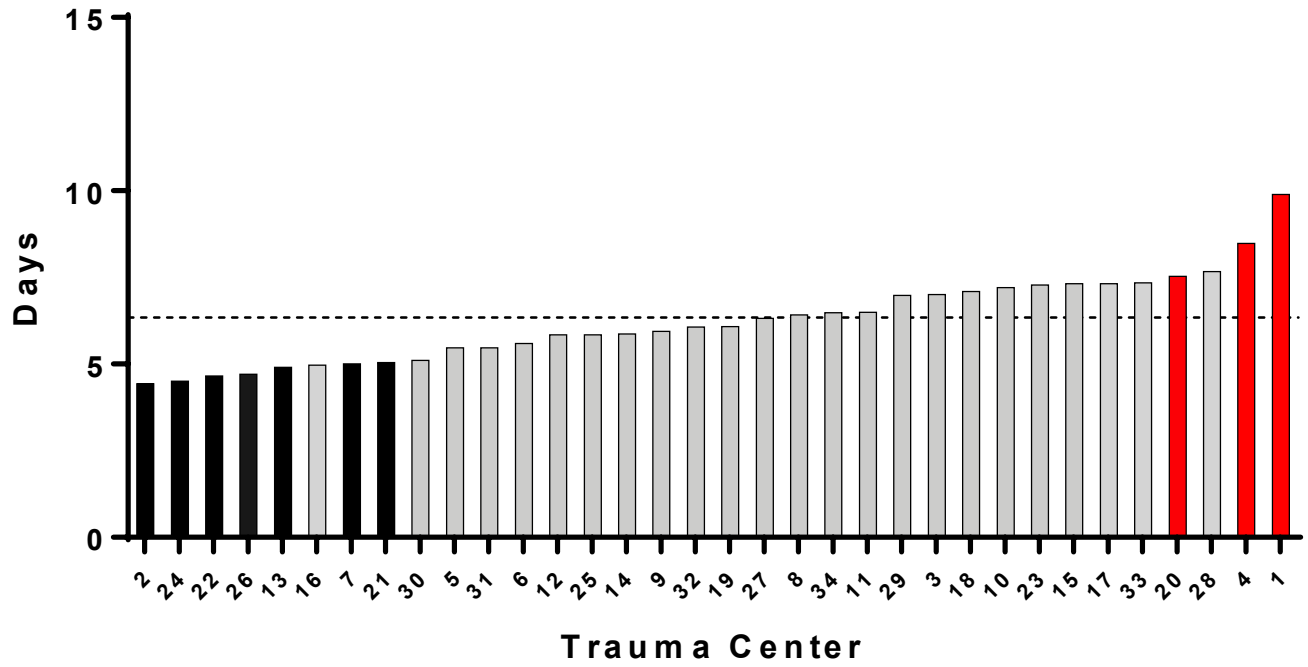
## Adjusted Ventilator Days Cohort 2 - Admit to Trauma



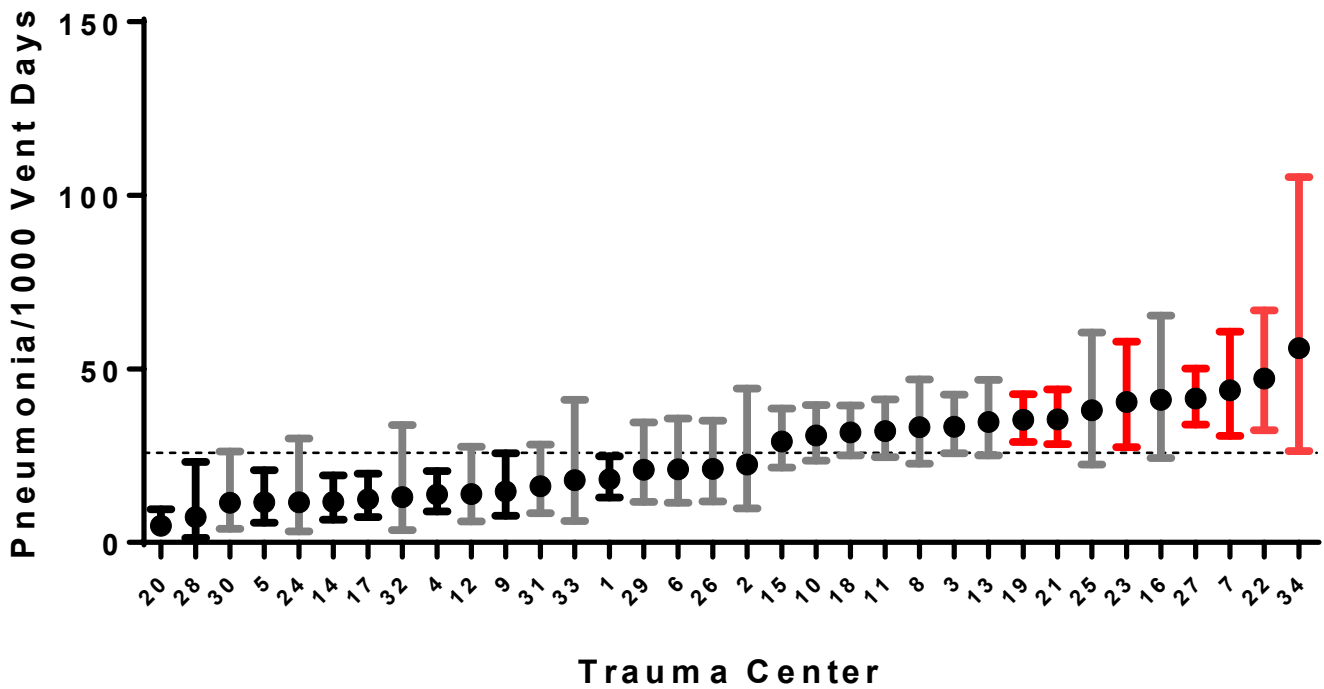
## Pneumonia Cohort 2 - Admit to Trauma



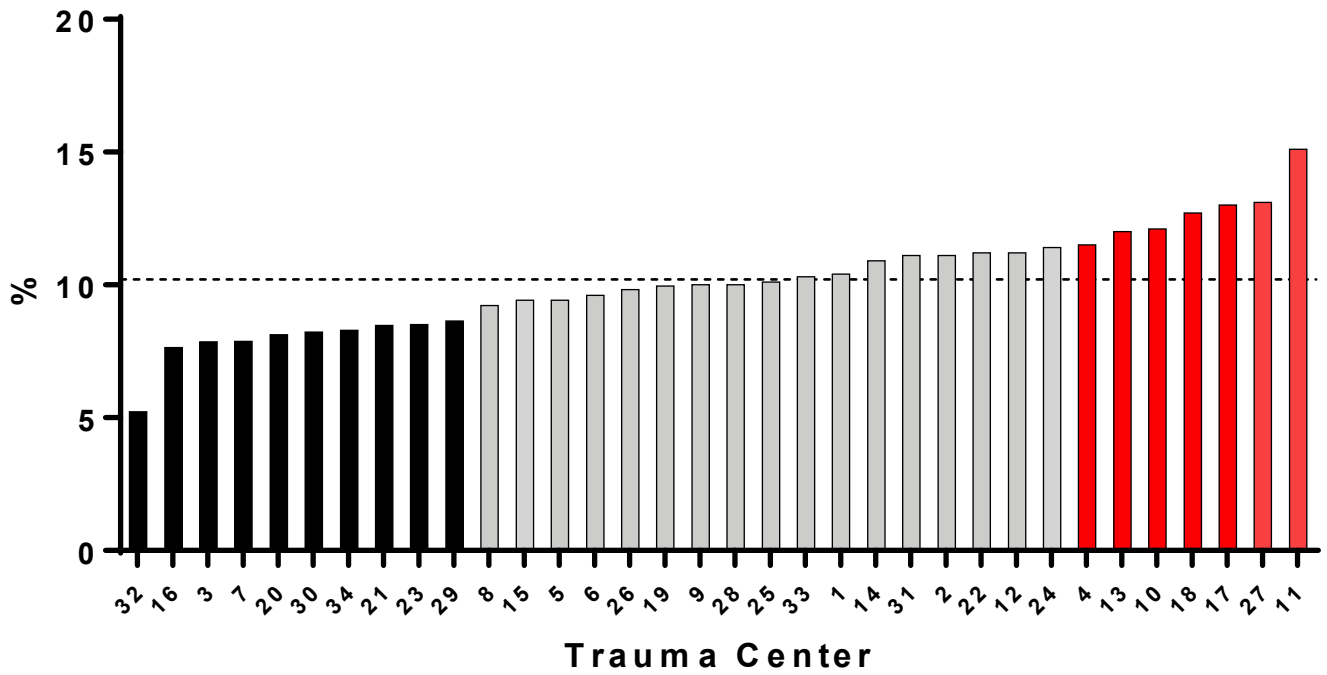
## Adjusted Ventilator Days Cohort 2 - Admit to Trauma



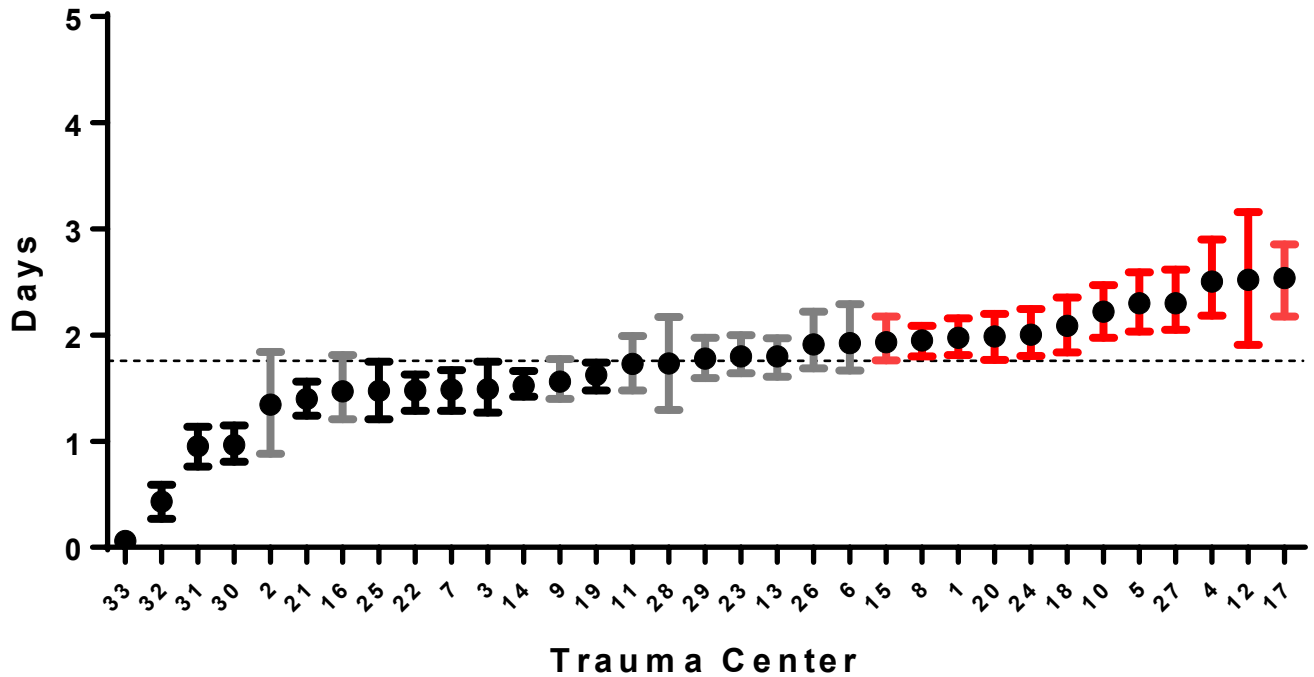
## Adjusted VAP Cohort 2 - Admit to Trauma



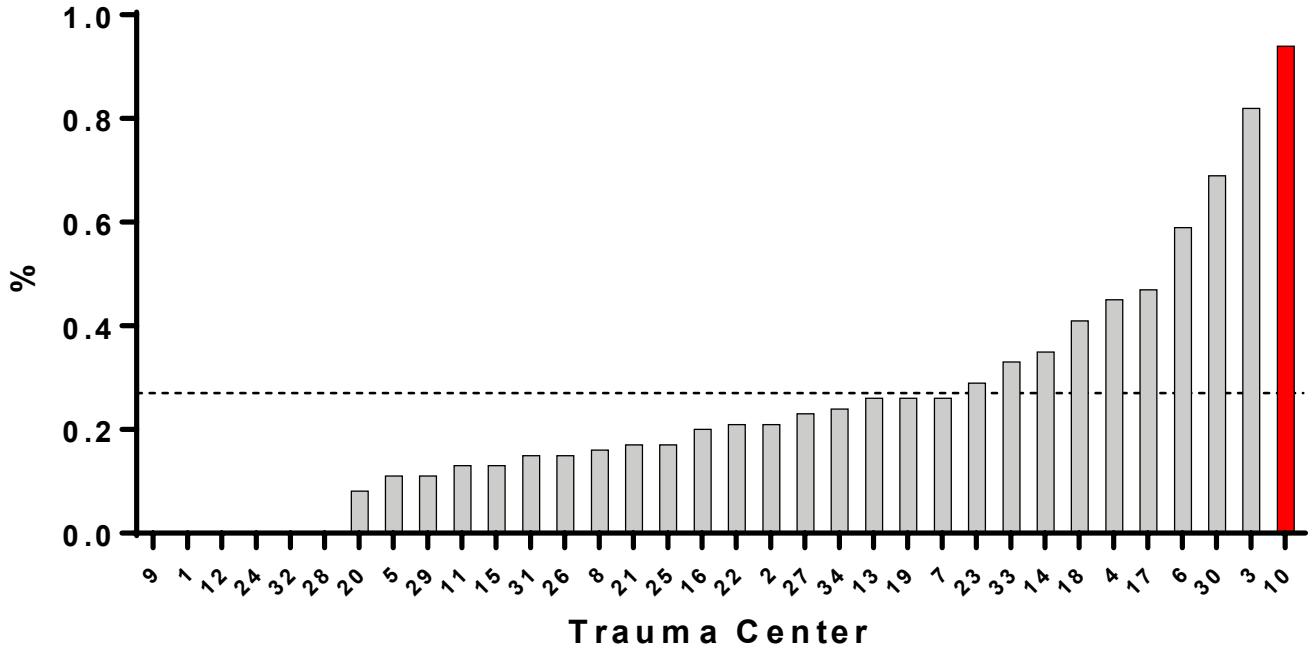
**Patients on Ventilator  
Cohort 1 - MTQIP All**



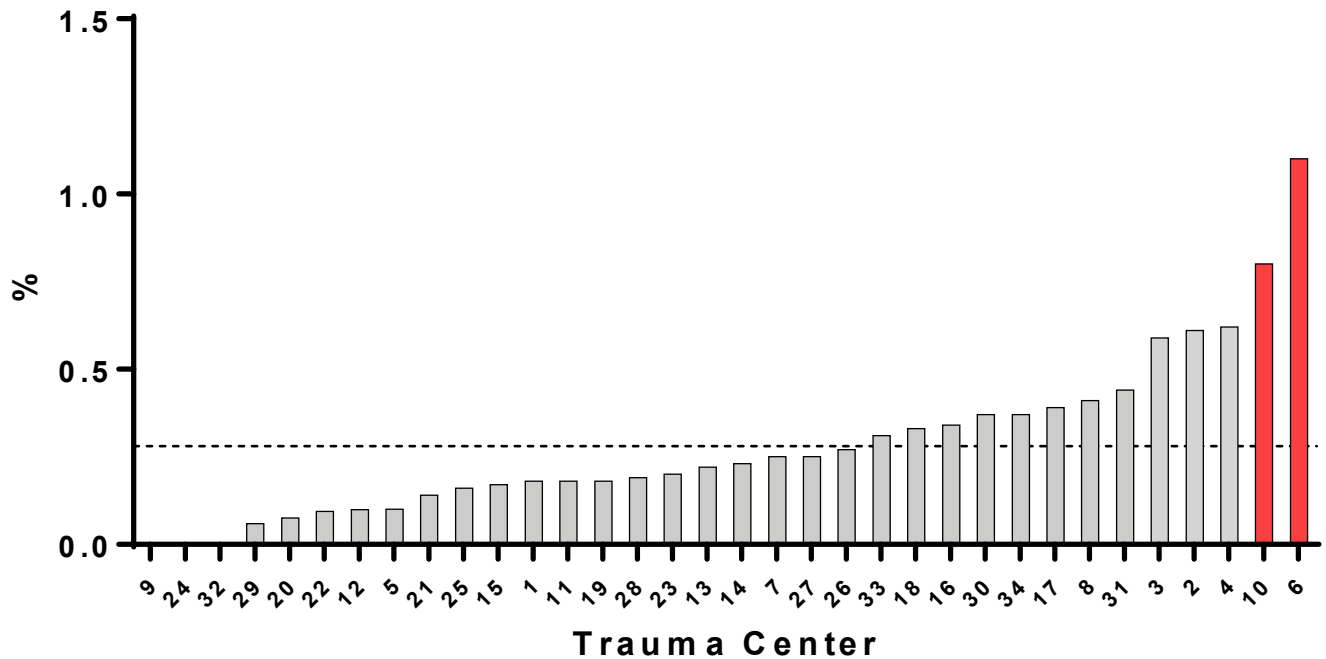
**Adjusted Antibiotic Days  
Cohort 1 - MTQIP All**



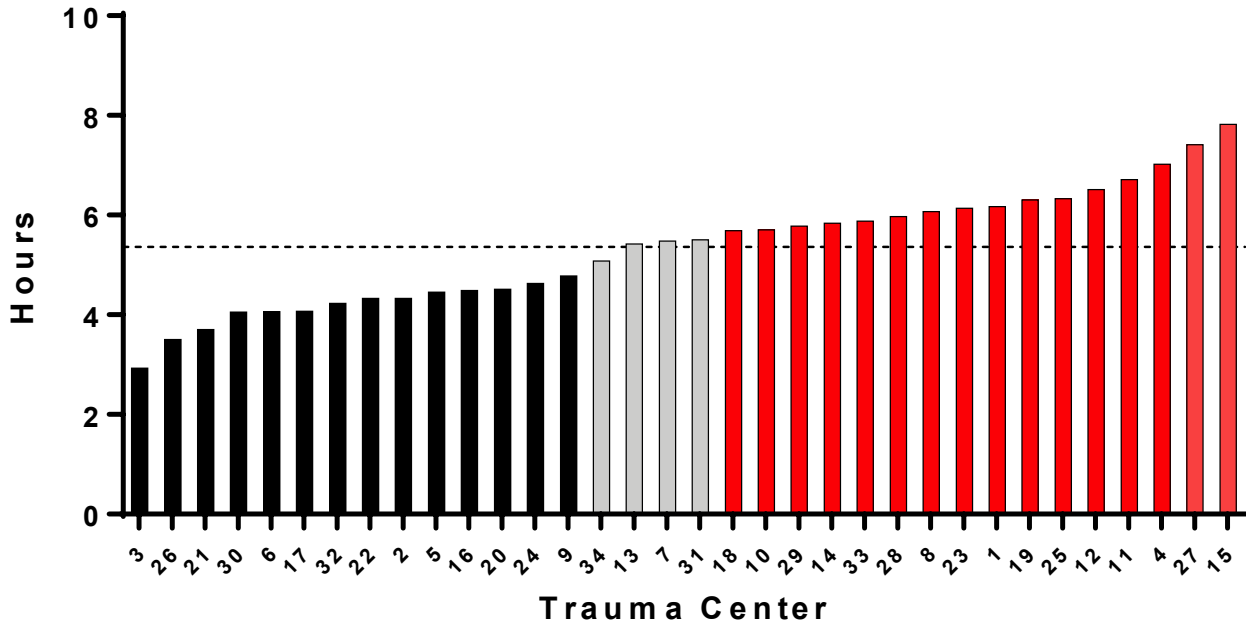
**Unadjusted IVC Filter Use  
Cohort 1 - MTQIP All  
7/1/17 - 6/30/18**



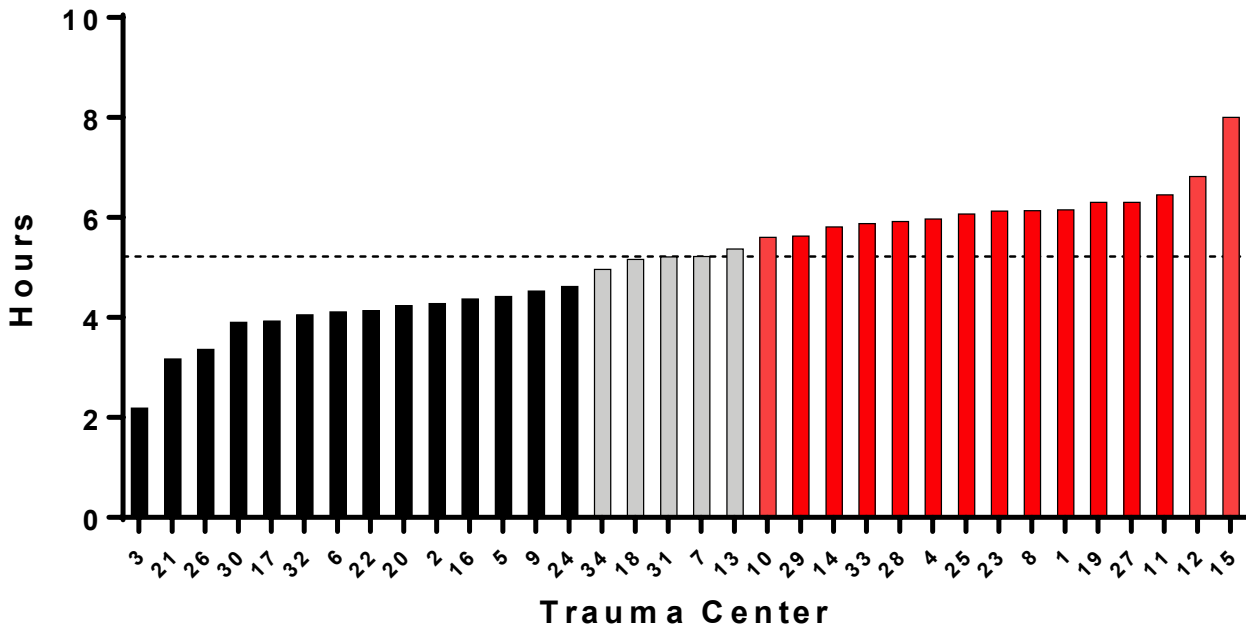
**Unadjusted IVC Filter Use  
Cohort 1 - MTQIP All  
7/1/16 - 9/30/18**



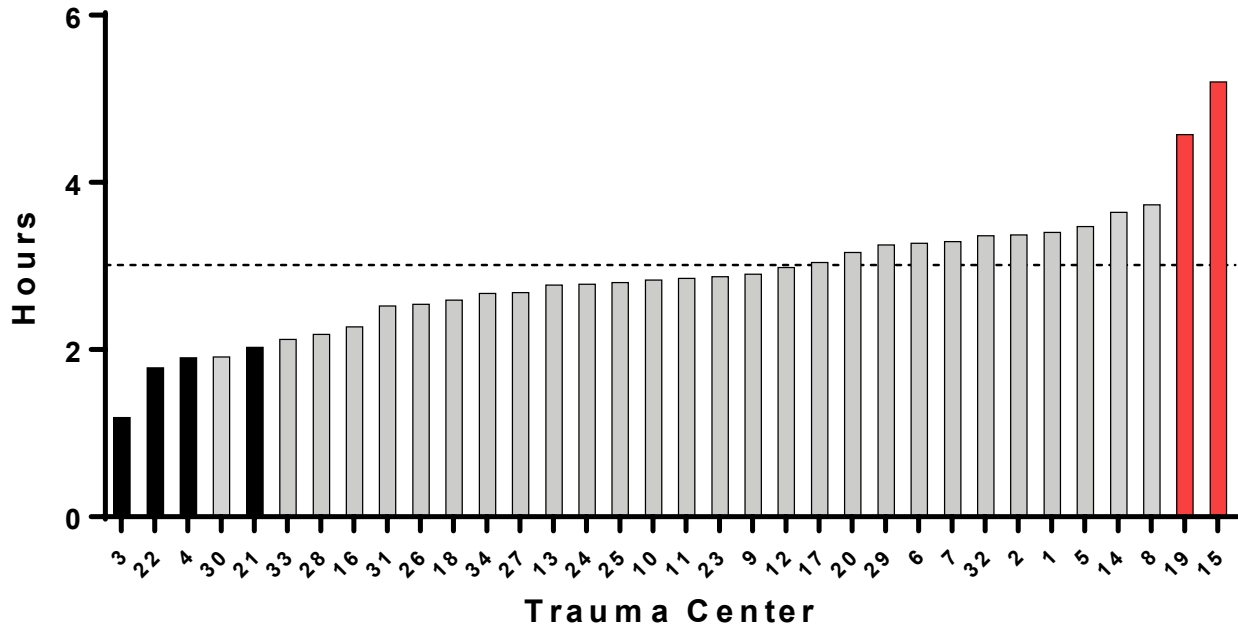
### Mean ED LOS Cohort 1 - MTQIP All



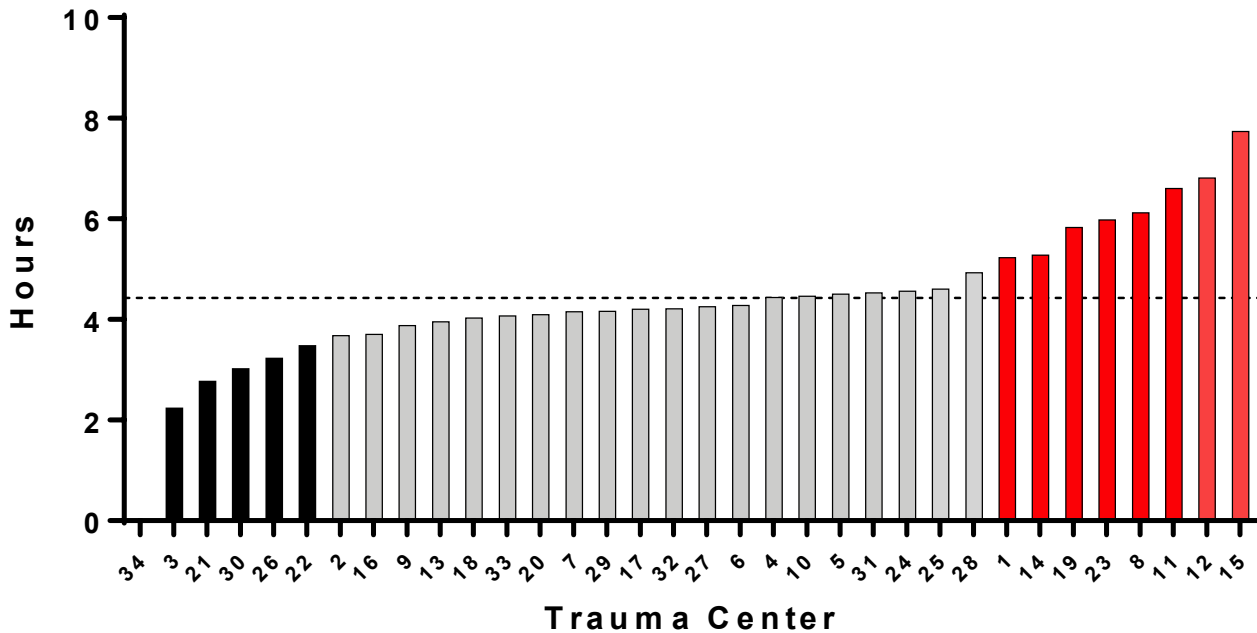
### Mean ED LOS Cohort 2 - Admit to Trauma



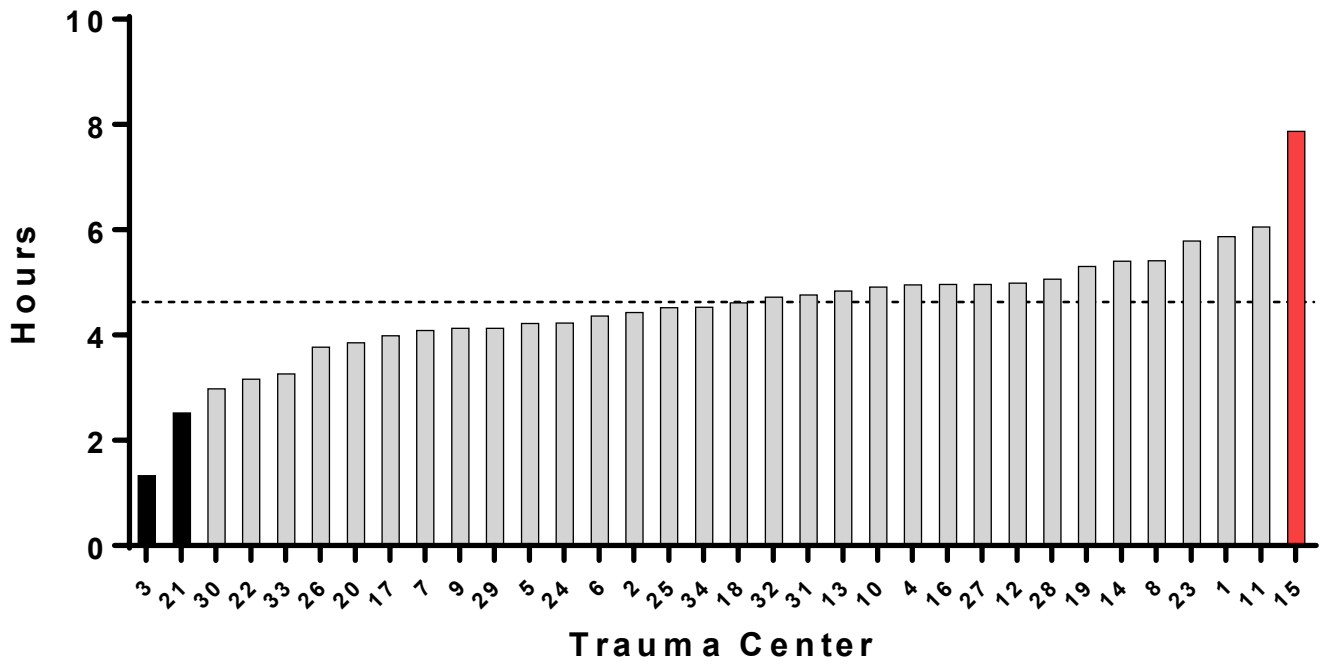
**Mean ED LOS - Full Activations  
Cohort 2 - Admit to Trauma**



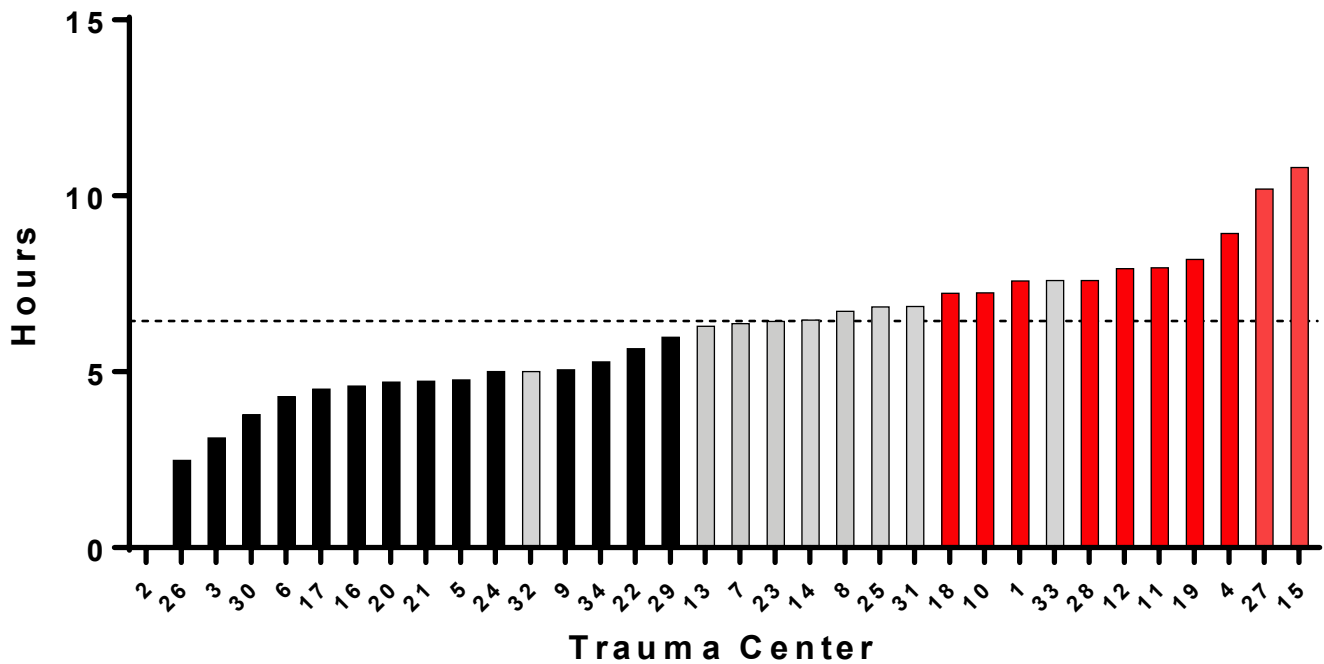
**Mean ED LOS - Disposition to ICU  
Cohort 2 - Admit to Trauma**



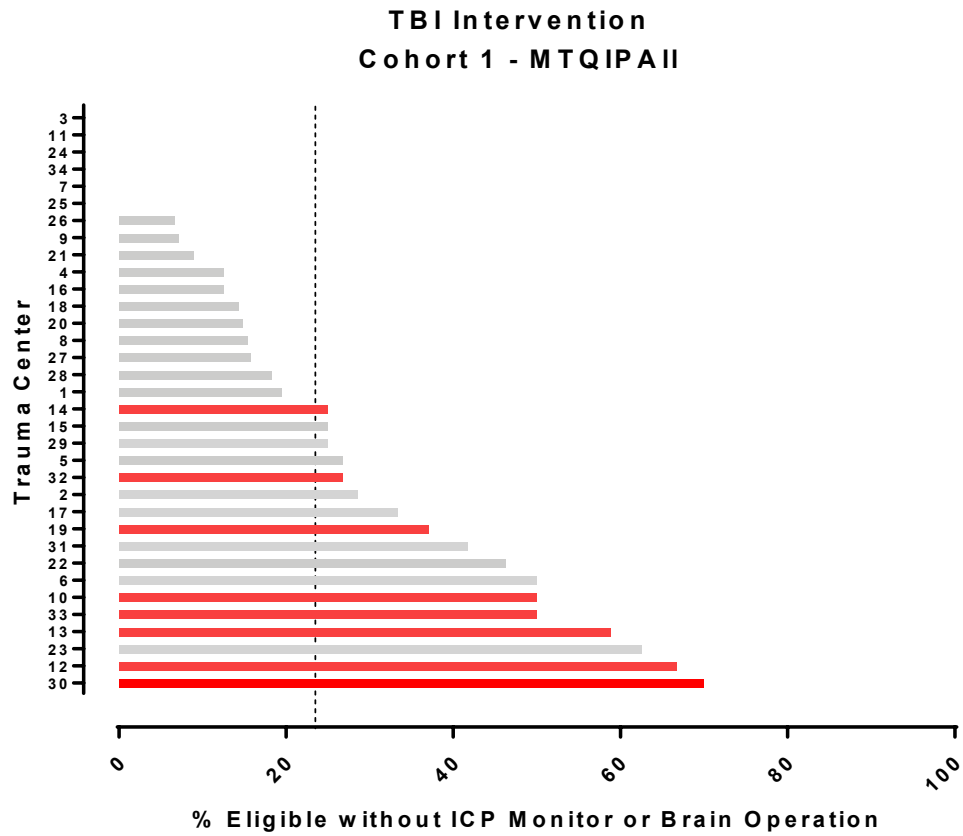
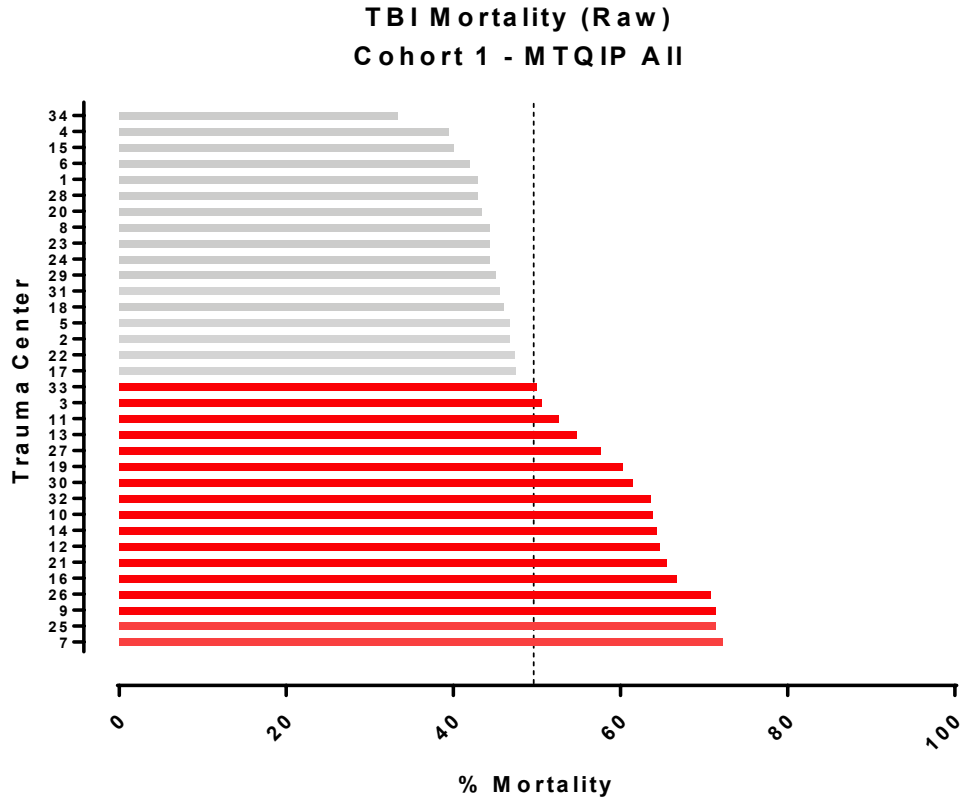
**Mean ED LOS - Partial Activations  
Cohort 2 - Admit to Trauma**



**Mean ED LOS - Consult  
Cohort 2 - Admit to Trauma**

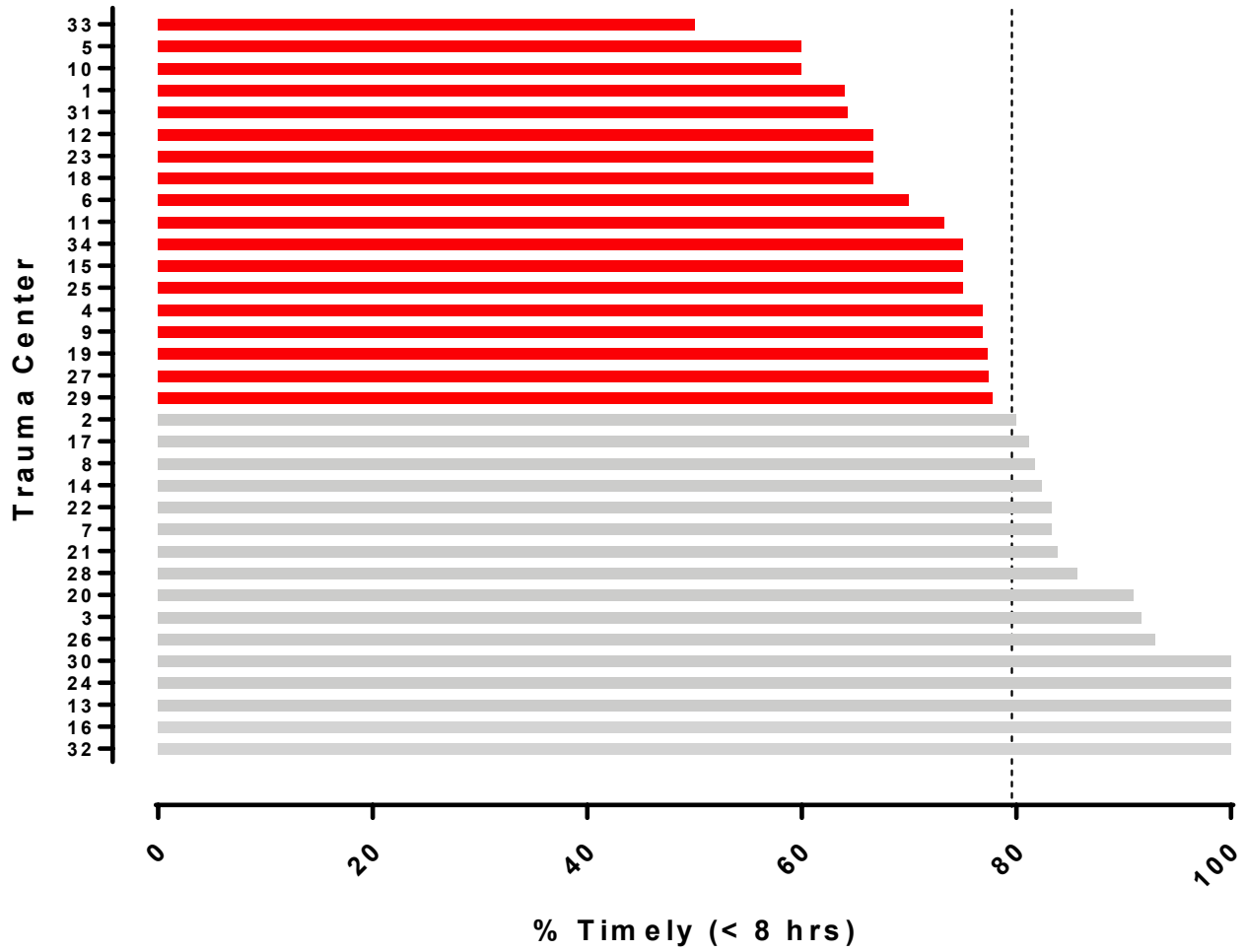


Process Measures

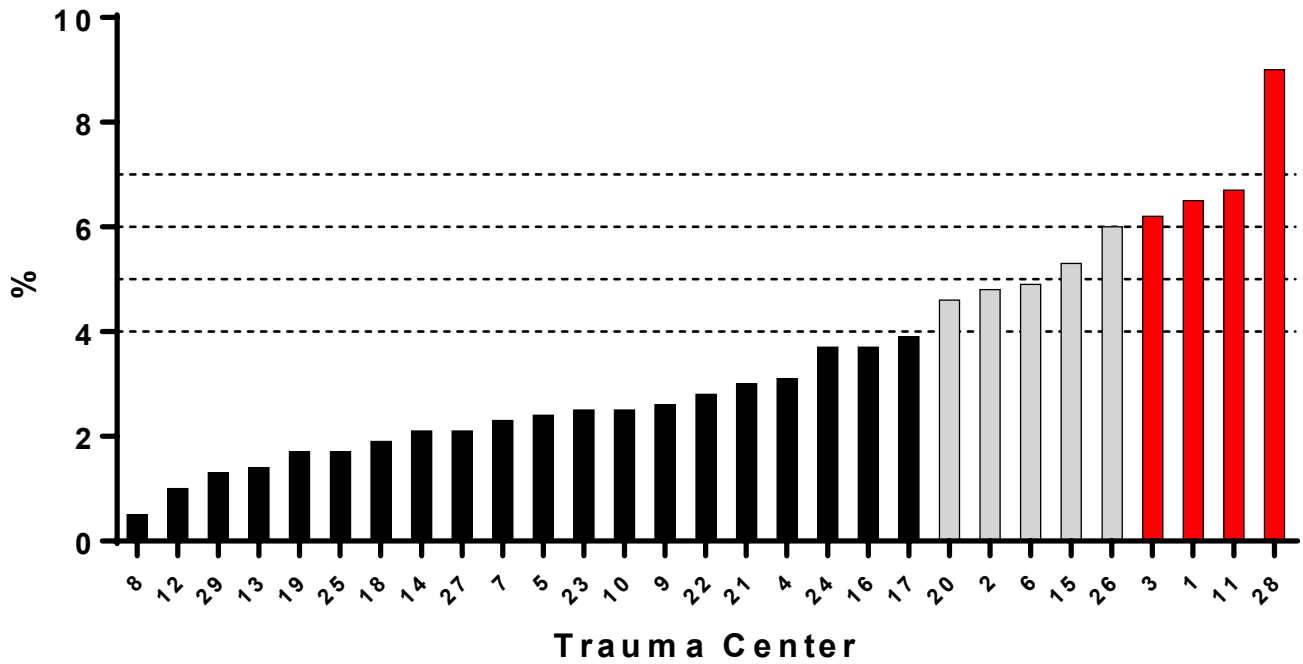




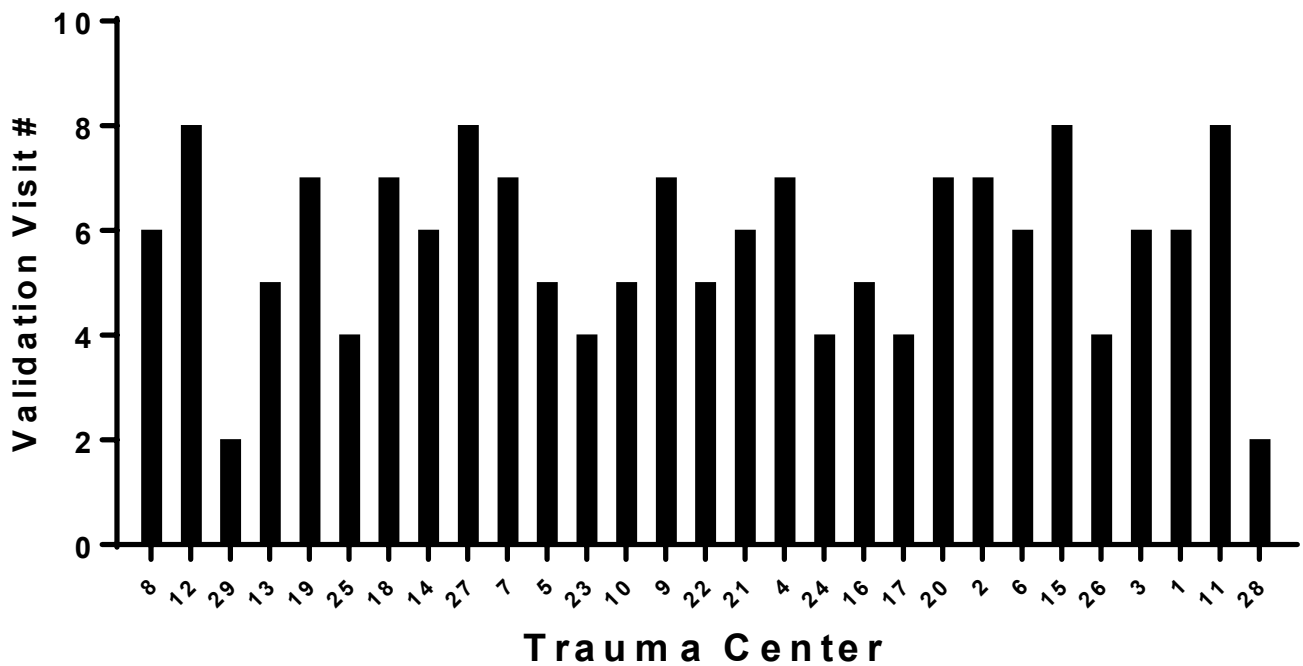
# TBI Intervention Timing Cohort 1 - MTQIP All



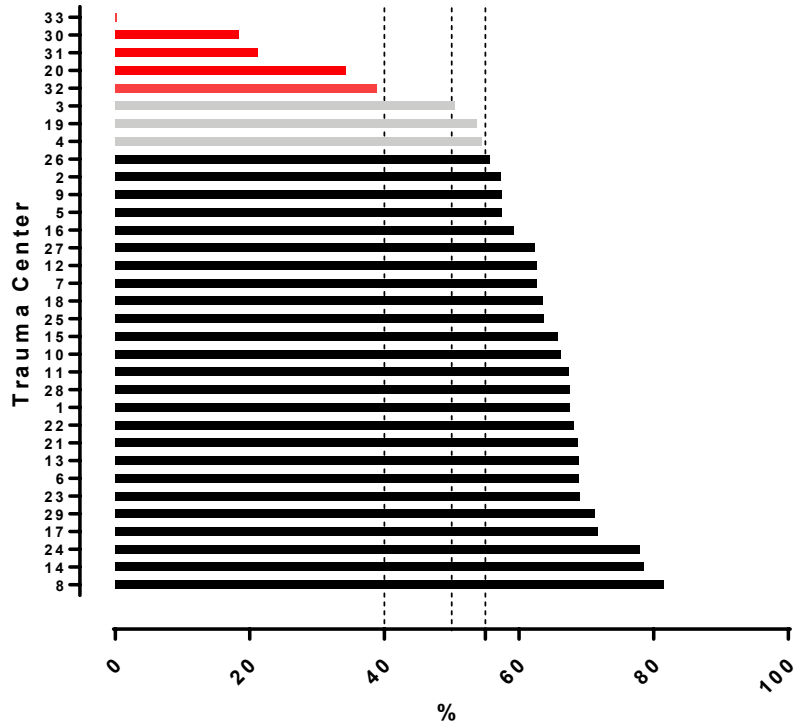
### Data Validation Discrepancy Rate Last Processed Report



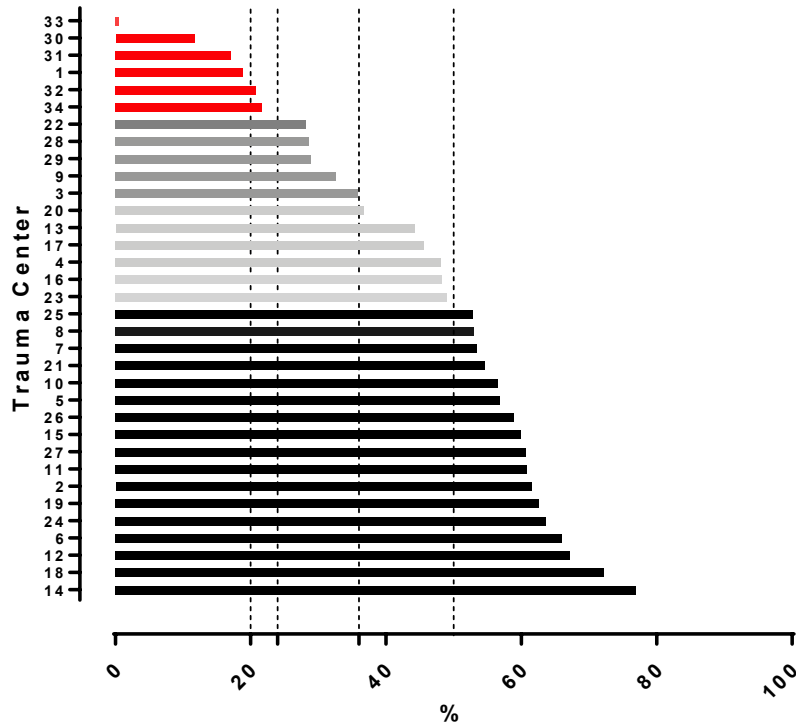
### Total Data Validation Visits



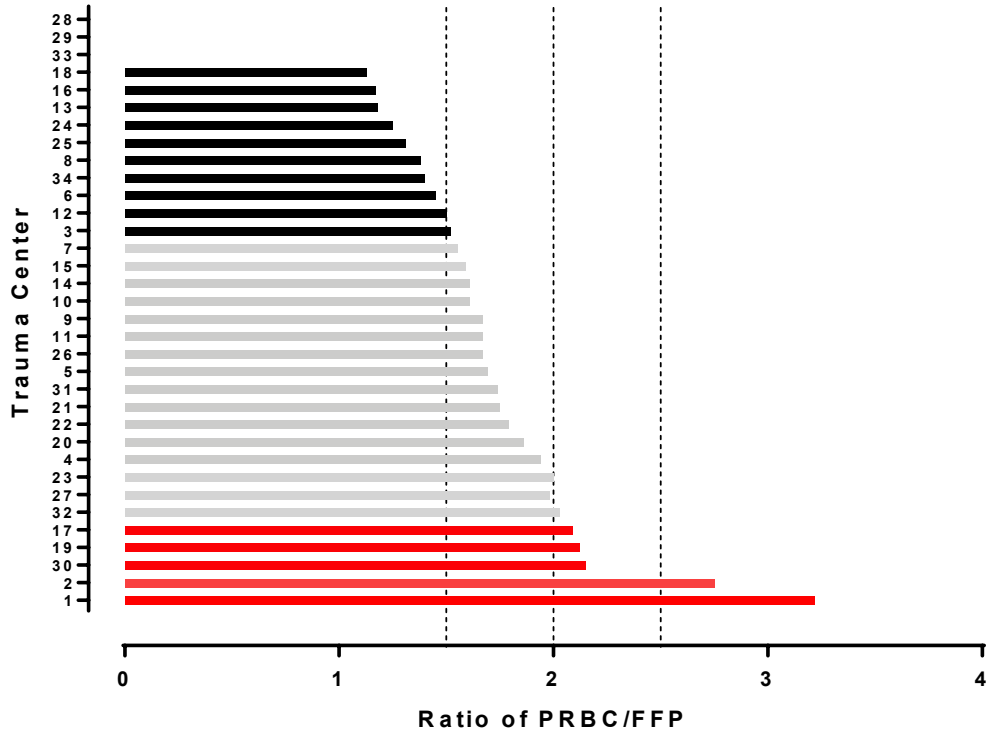
VTE Prophylaxis Timing <= 48 hrs  
 Cohort 2 - Admit to Trauma  
 1/1/17 - 6/30/18



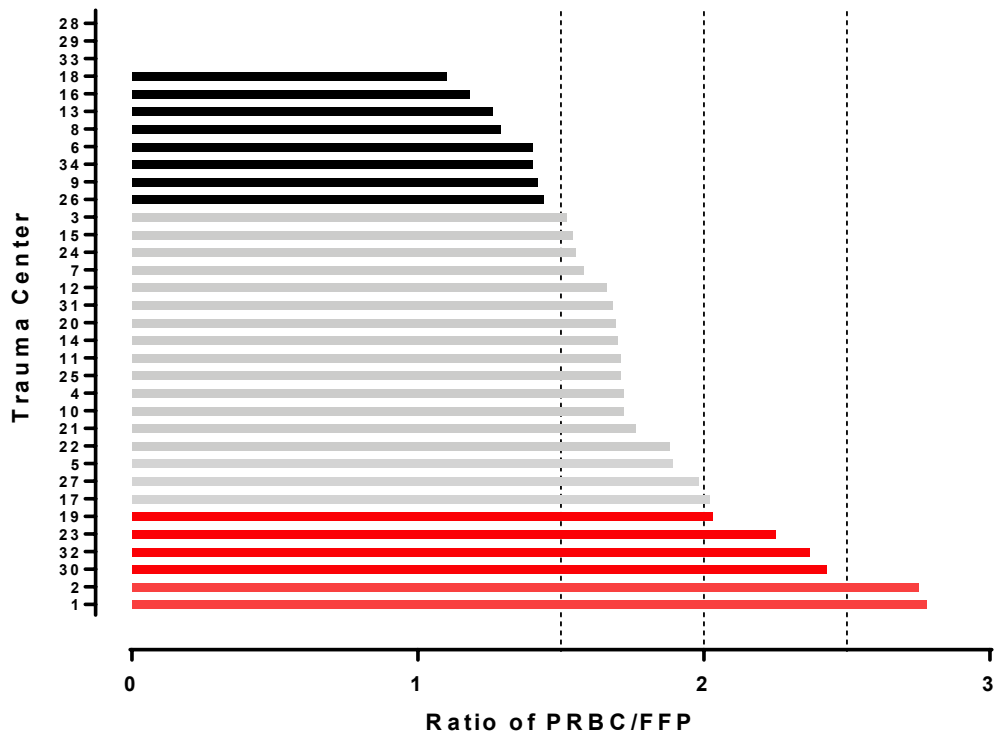
VTE Prophylaxis Type - LMWH  
 Cohort 2 - Admit to Trauma  
 1/1/17 - 6/30/18



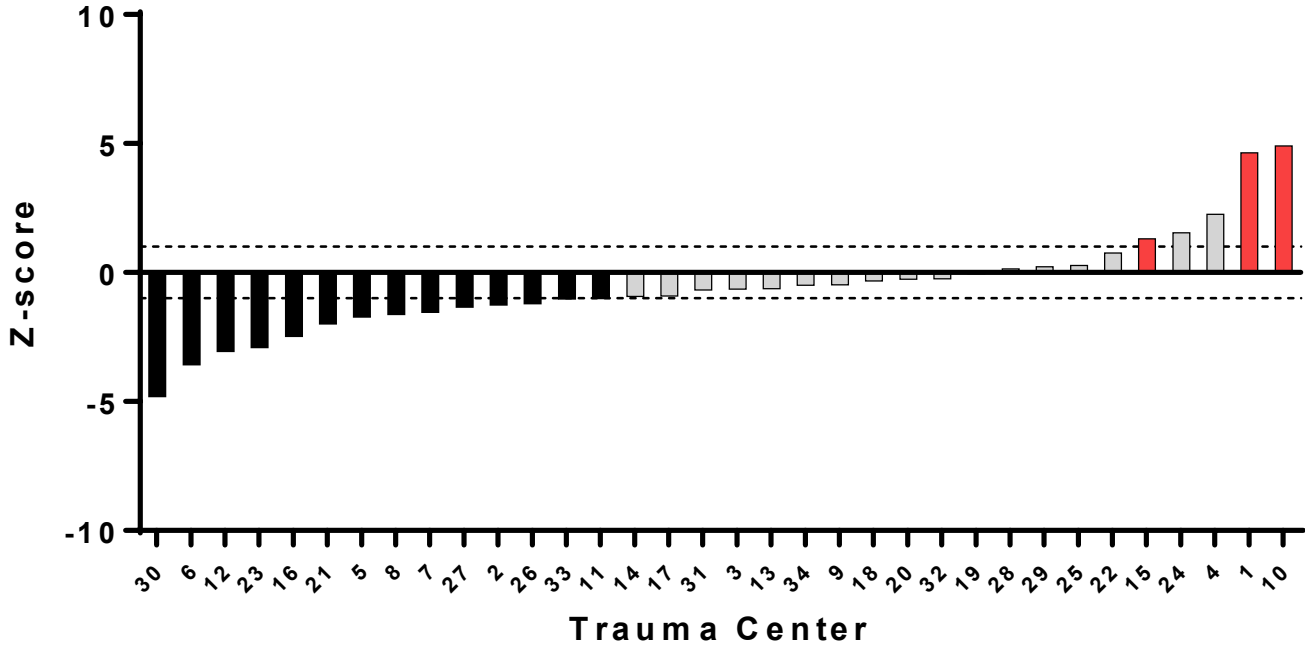
**Blood Product Ratio in first 4 hrs if  $\geq 5$  uPRBCs**  
**Cohort 1 - MTQIP All**  
**1/1/17 - 6/30/18**



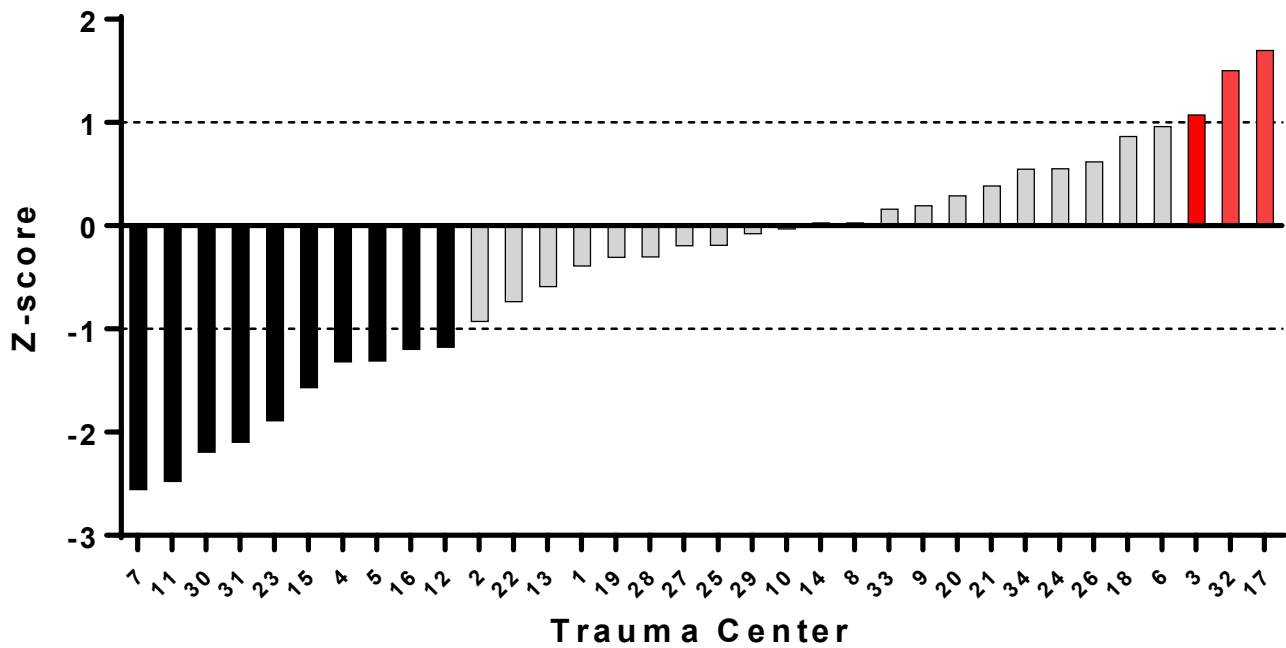
**Blood Product Ratio in first 4 hrs if  $\geq 5$  uPRBCs**  
**Cohort 1 - MTQIP All**



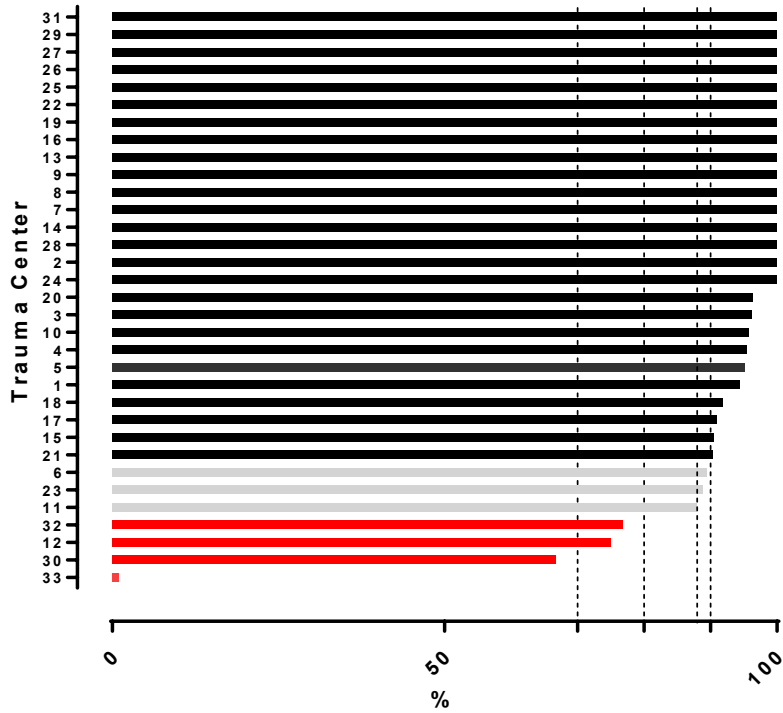
**Z-score - Serious Complication Rate**  
**Cohort 2 - Admit to Trauma**  
**7/1/15 - 6/30/18**



**Z-score - Mortality Rate**  
**Cohort 2 - Admit to Trauma**  
**7/1/15 - 6/30/18**

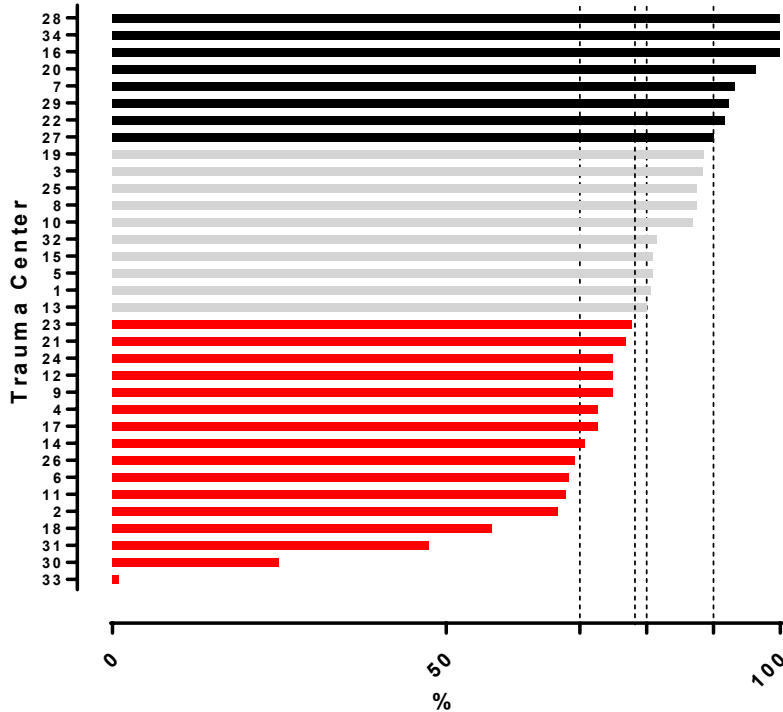


**Open Fracture - Abx Type, Date, Time**  
**Cohort 1 - MTQIP All**  
 7/1/17 - 6/30/18

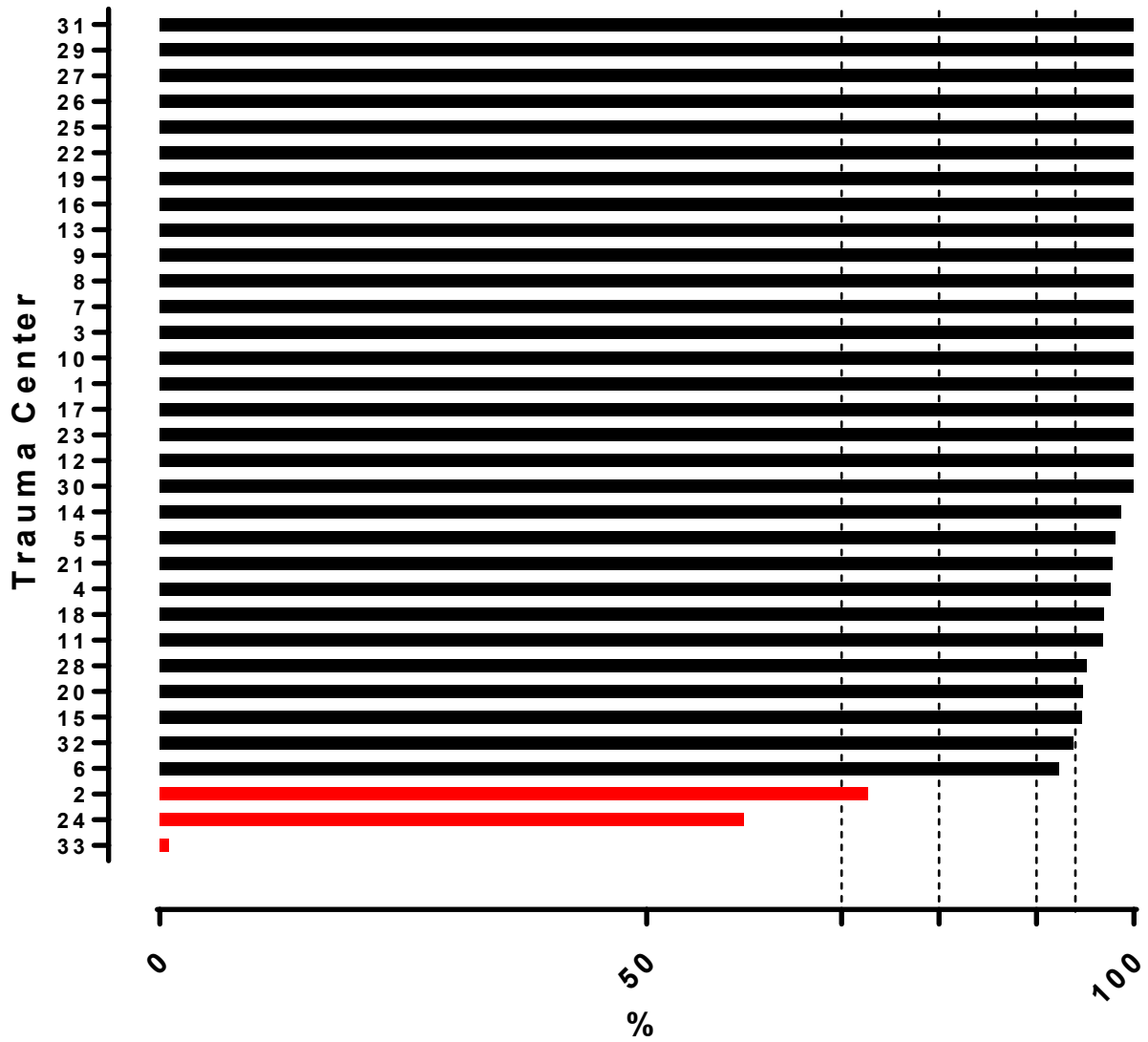


1/1/18 - 6/30/18 AL, MK, TB

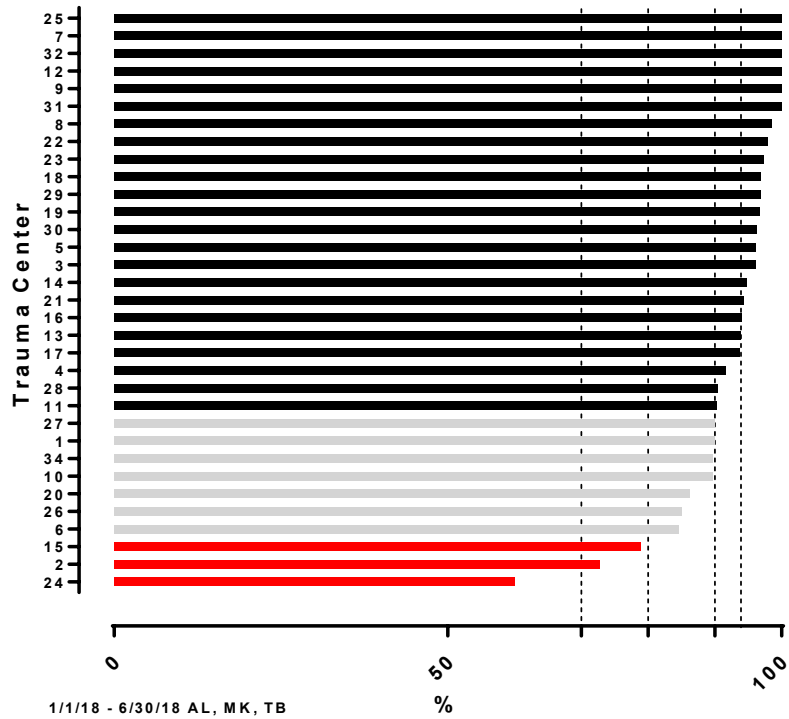
**Open Fracture - Time to Abx ≤ 120 min**  
**Cohort 1 - MTQIP All**  
 7/1/17 - 6/30/18



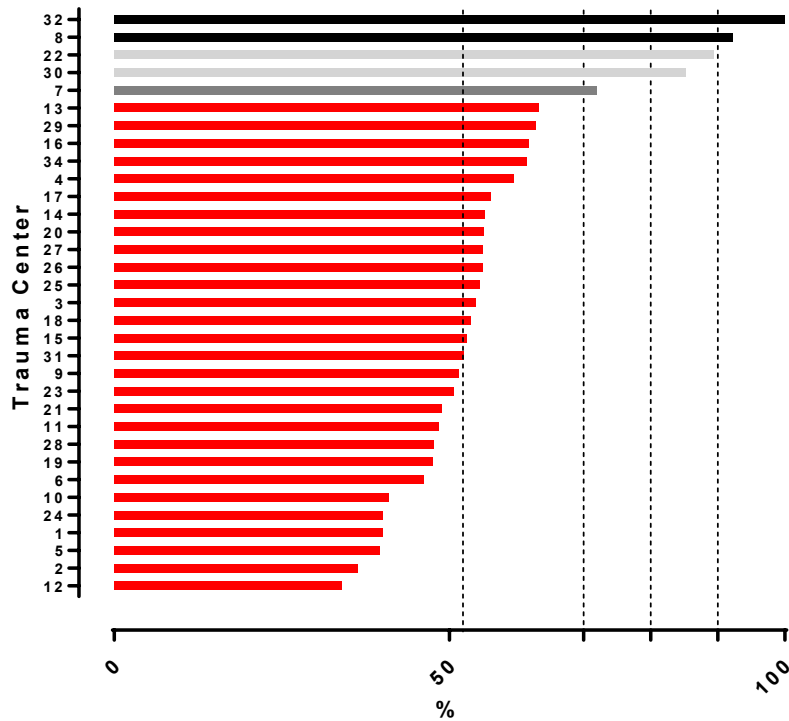
**Head Injury and Anticoagulation - Head CT Date/Time  
Cohort 1 - MTQIP All  
7/1/17 - 6/30/18**



**Head Injury and Anticoagulation - Head CT < 4 hrs**  
**Cohort 1 - MTQIP All**  
**7/1/17 - 6/30/18**



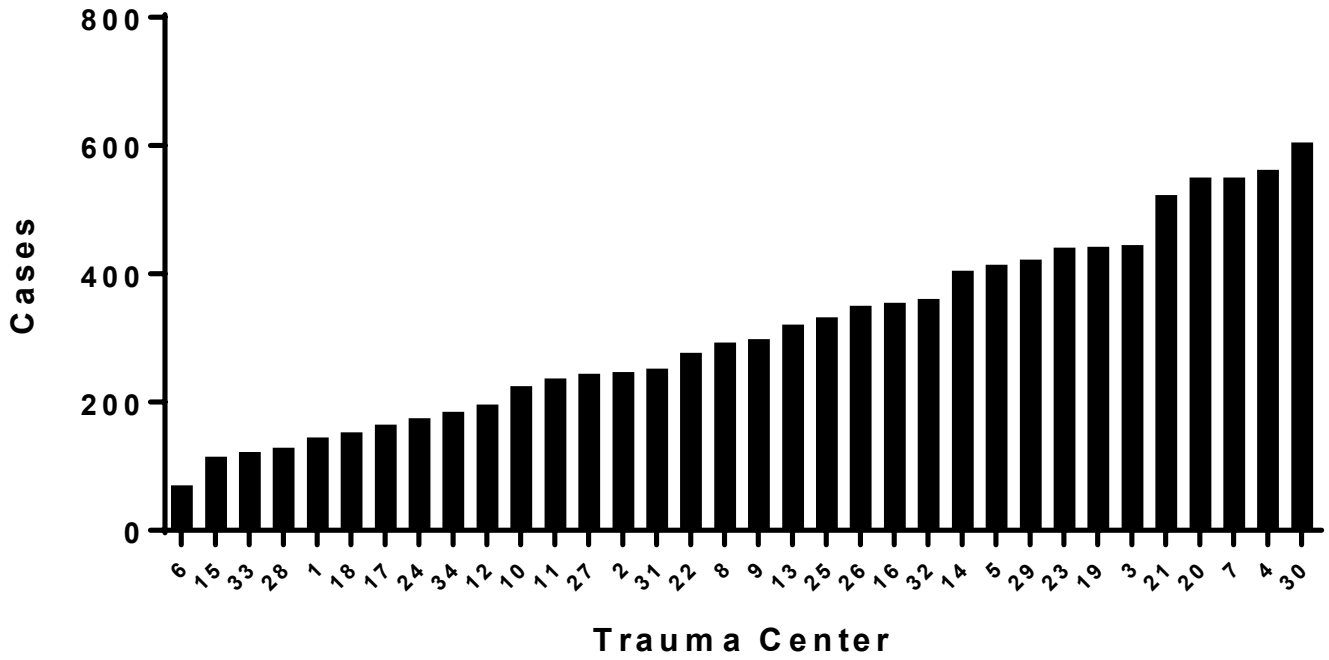
**Head Injury and Anticoagulation - Head CT < 1 hr**  
**Cohort 1 - MTQIP All**  
**7/1/17 - 6/30/18**



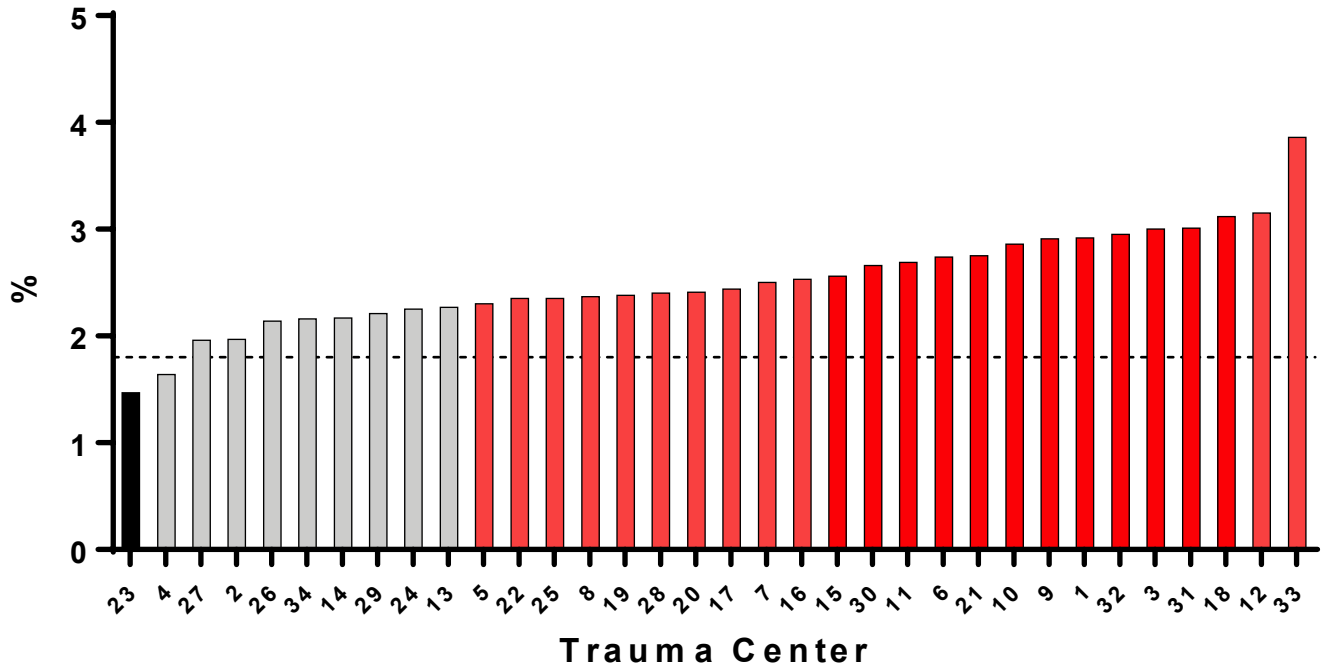


Isolated Hip Fracture

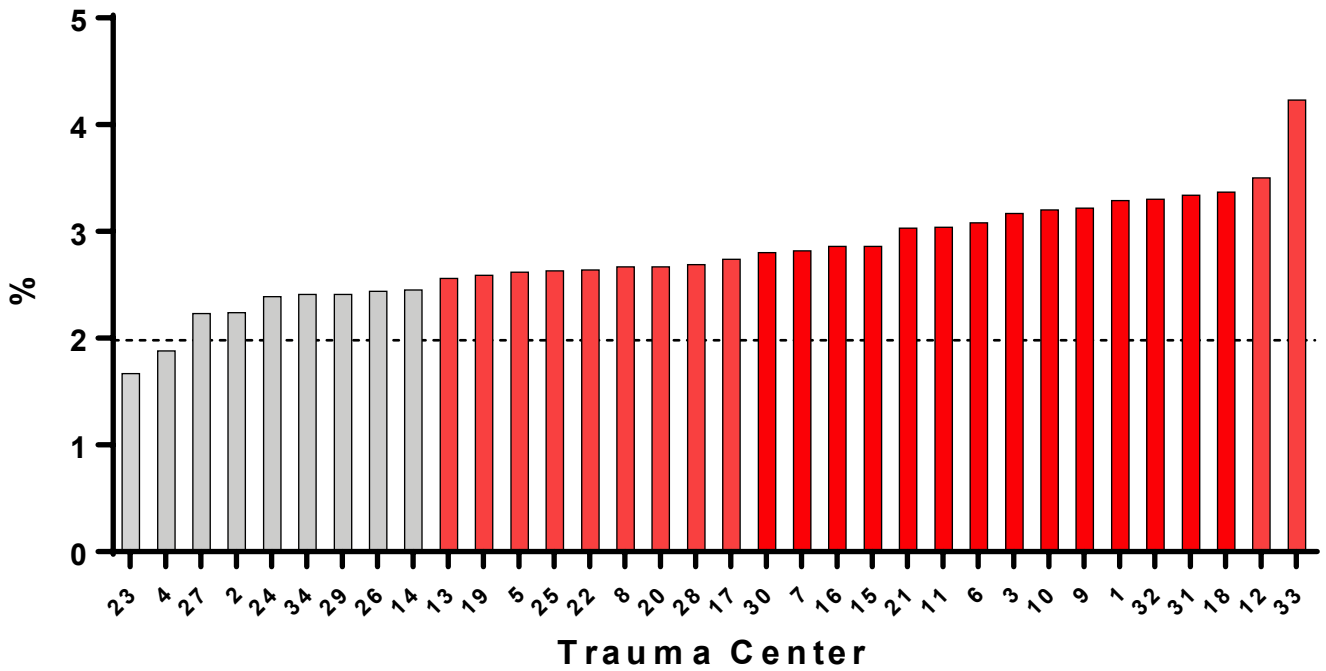
Case Volume  
Cohort 8 - Isolated Hip Fracture



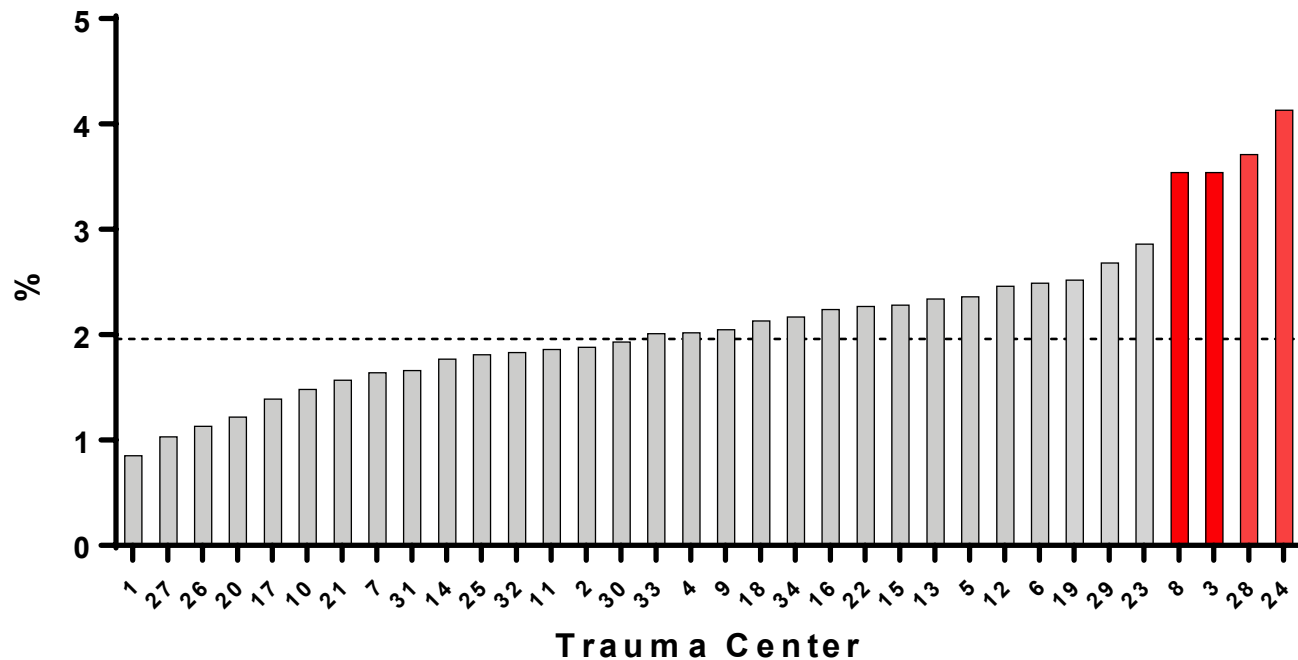
**Mortality w/o DOA  
Cohort 8 - Isolated Hip Fracture**



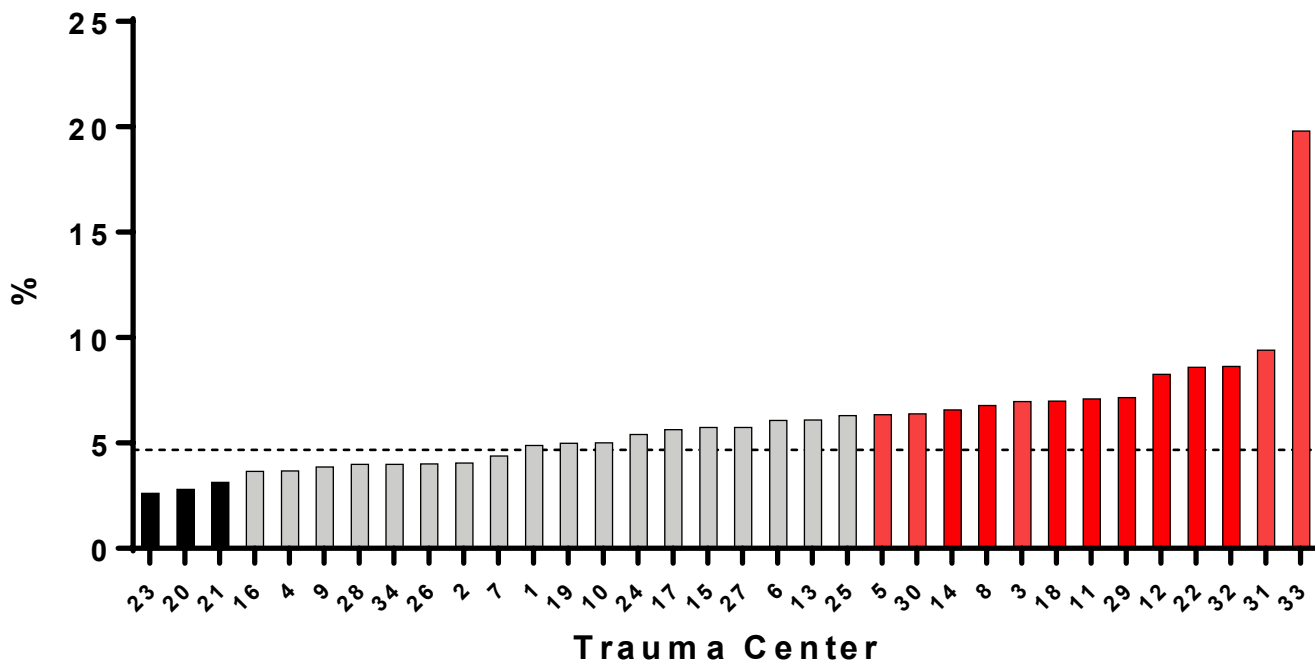
**Mortality w/o DOA, Age ≥ 65  
Cohort 8 - Isolated Hip Fracture**



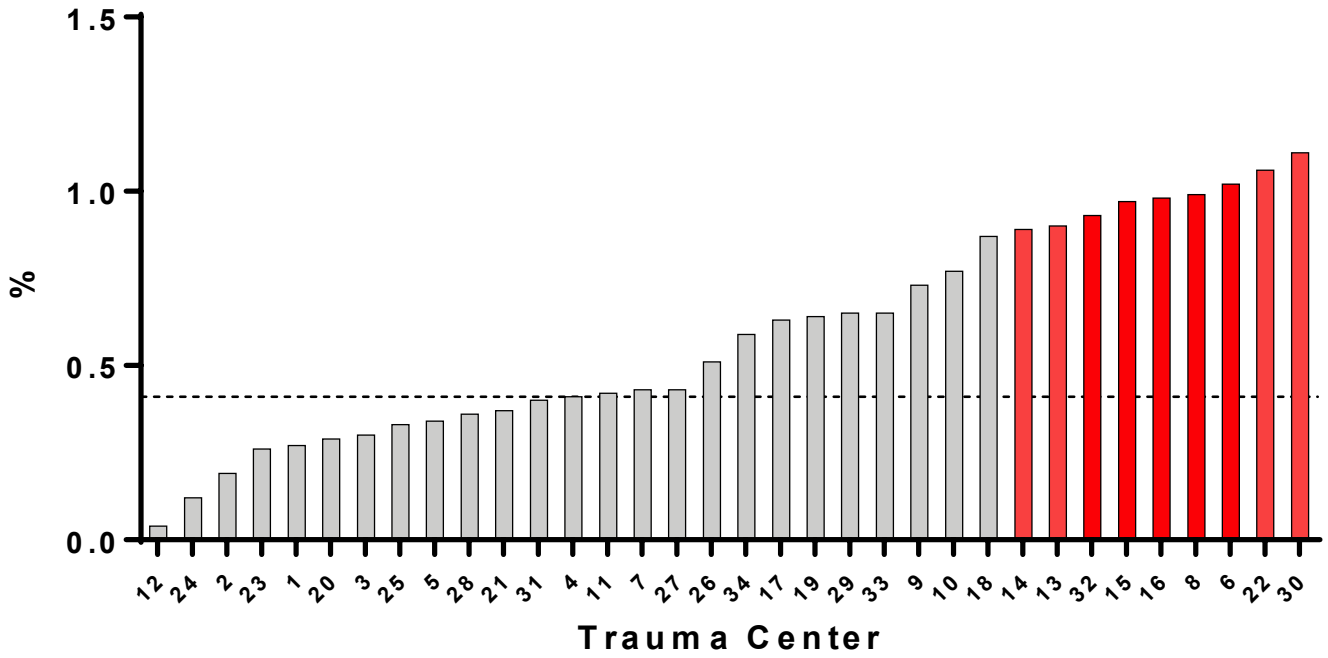
### Mortality or Hospice w/o DOA Cohort 8 - Isolated Hip Fracture



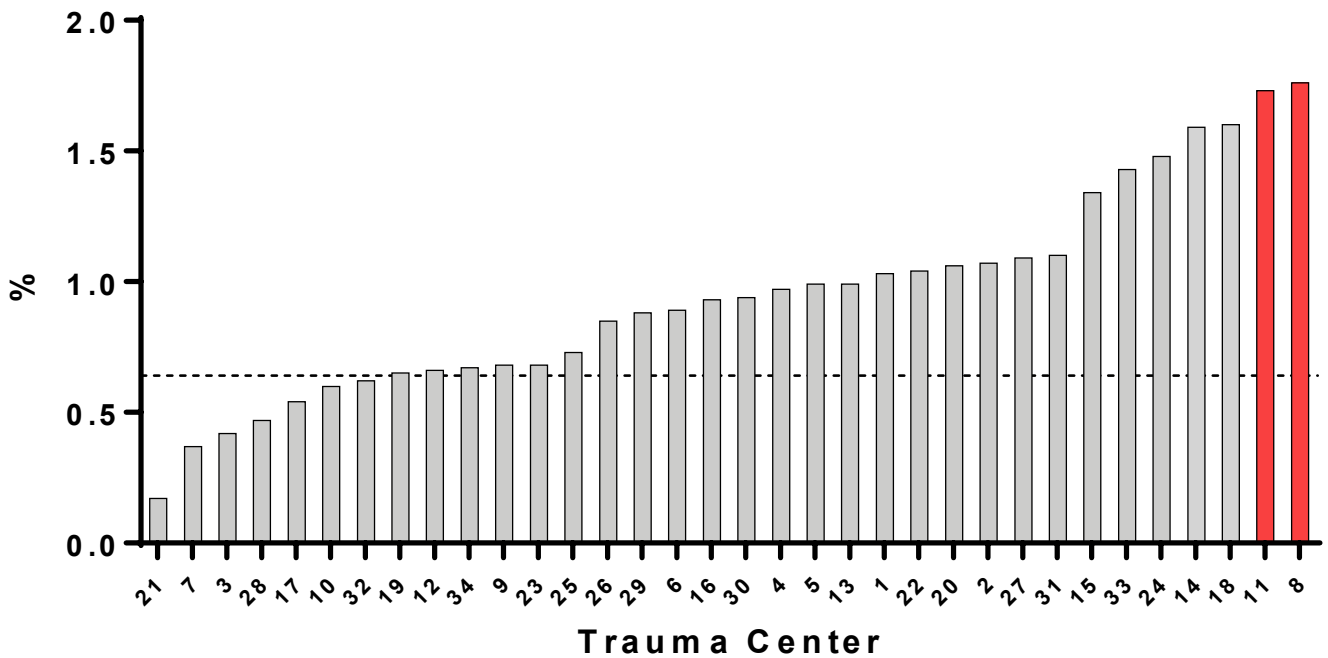
### Serious Complications Cohort 8 - Isolated Hip Fracture



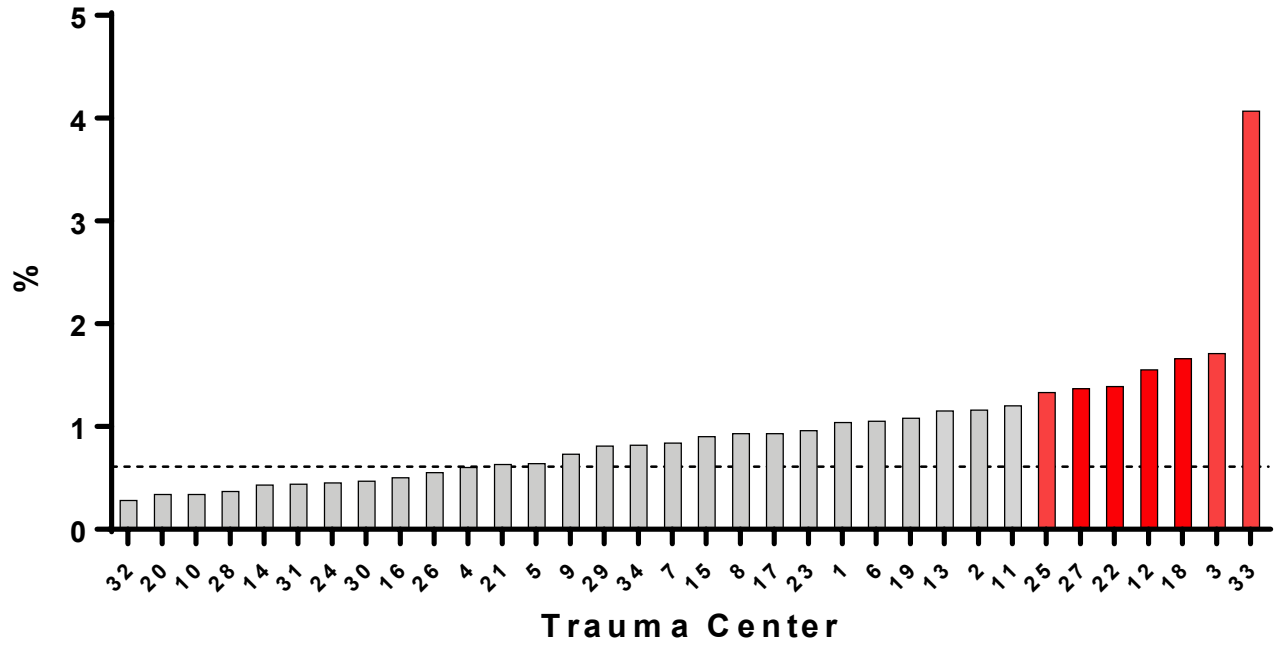
**Cardiac Arrest with CPR  
Cohort 8 - Isolated Hip Fracture**



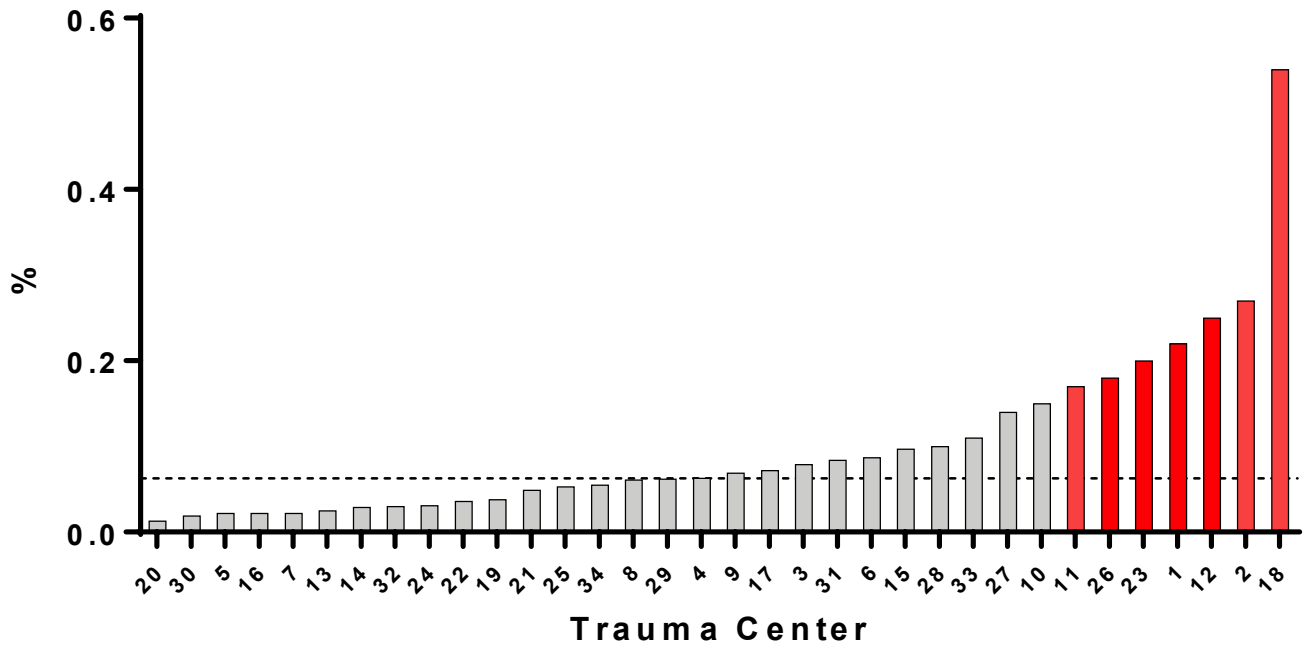
**Myocardial Infarction  
Cohort 8 - Isolated Hip Fracture**



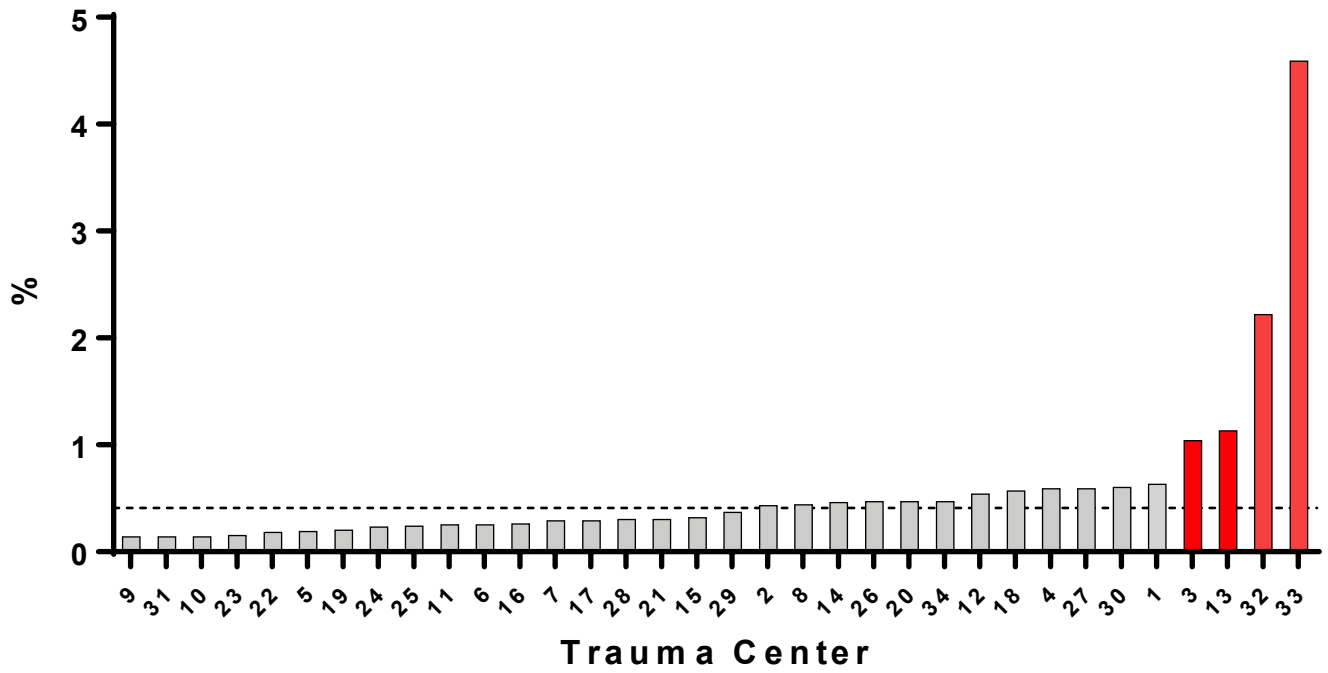
### Pneumonia Cohort 8 - Isolated Hip Fracture



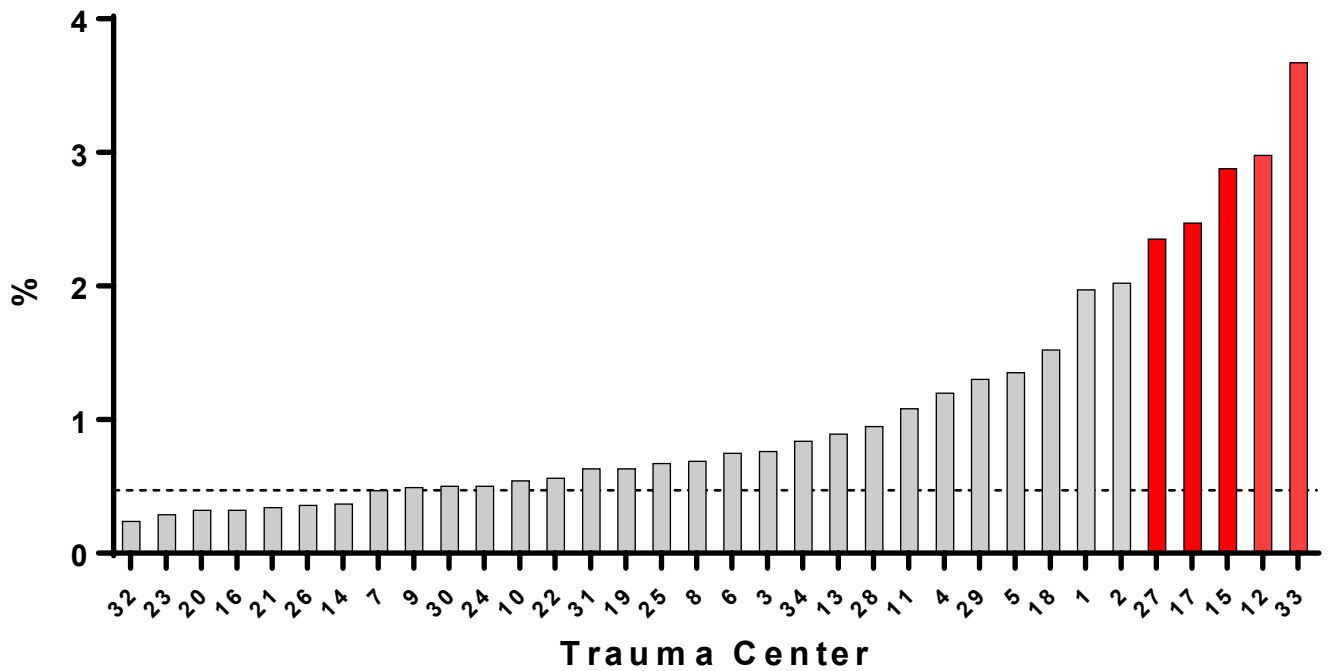
### VAP Cohort 8 - Isolated Hip Fracture



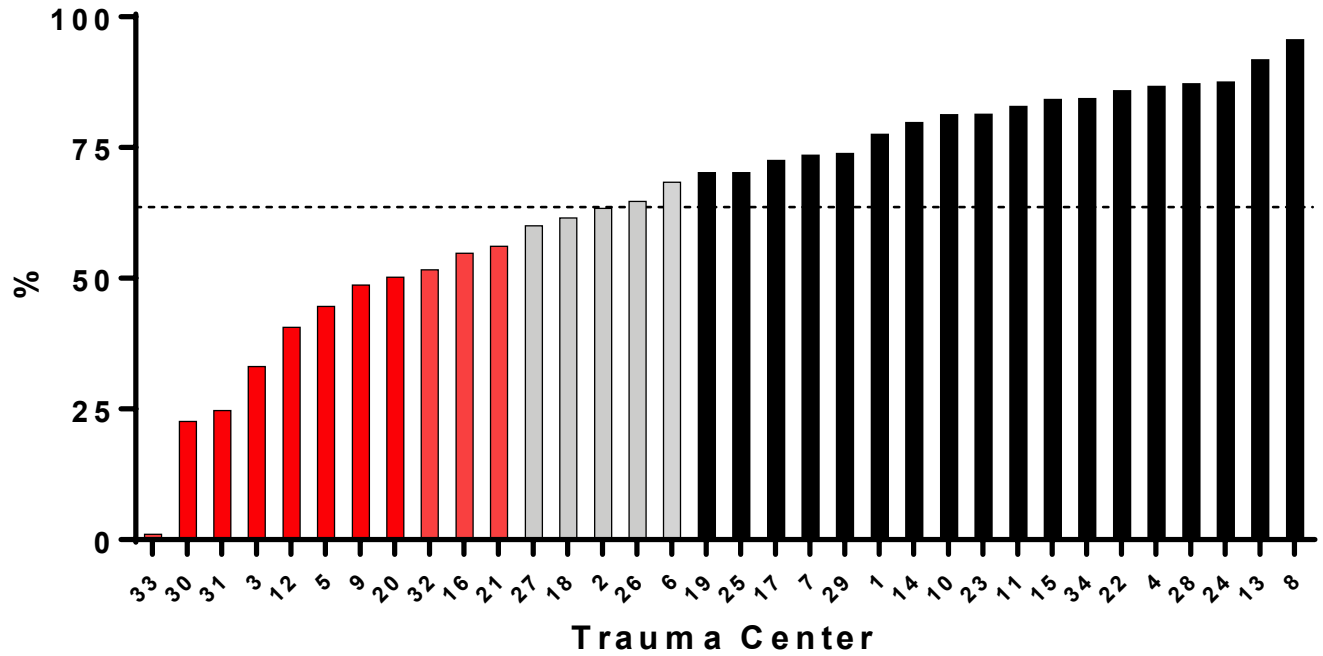
## Acute Renal Failure Cohort 8 - Isolated Hip Frature



## CAUTI Cohort 8 - Isolated Hip Frature



**VTE Prophylaxis Heparin, LMWH ≤ 48 hrs  
Cohort 8 - Isolated Hip Fracture**



**DVT  
Cohort 8 - Isolated Hip Fracture**

