

**Michigan Trauma Quality Improvement Program (MTQIP)**

**2020 Performance Index**

**January 1, 2020 to December 31, 2020**

Measure	Weight	Measure Description	Points	
#1	10	<b>Data Submission</b>		<b>PARTICIPATION (30%)</b>
		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	<b>Meeting Participation</b> Surgeon and (TPM or MCR) participate in 3 of 3 Collaborative meetings (9 pt) Surgeon and (TPM or MCR) participate in 2 of 3 Collaborative meetings (6 pt) Surgeon and (TPM or MCR) participate in 0-1 of 3 Collaborative meetings (0 pt) Registrar or MCR participate in the Annual June Data Abstractor meeting (1 pt)	0-10	
#3	10	<b>Data Validation Error Rate</b>		
		0-4.0%	10	
		4.1-5.0%	8	
		5.1-6.0%	5	
		6.1-7.0%	3	
	> 7.0%	0		
#4	10	<b>Timely LMWH VTE Prophylaxis in Trauma Service Admits (18 mo: 1/1/19-6/30/20)</b>		<b>PERFORMANCE (70%)</b>
		≥ 50% of patients (≤ 48 hr)	10	
		≥ 45% of patients (≤ 48 hr)	8	
		≥ 40% of patients (≤ 48 hr)	5	
	< 40% of patients (≤ 48 hr)	0		
#5	10	<b>Timely Surgical Repair in Geriatric (Age ≥ 65) Isolated Hip Fxs (12 mo: 7/1/19-6/30/20)</b>		
		≥ 90% of patients (≤ 48 hr)	10	
		≥ 85% of patients (≤ 48 hr)	8	
		≥ 80% of patients (≤ 48 hr)	5	
	< 80% of patients (≤ 48 hr)	0		
#6	10	<b>RBC to Plasma Ratio in Massive Transfusion (18 mo: 1/1/19-6/30/20)</b> Weighted Mean Points in Patients Transfused ≥ 5 Units 1st 4 hr	0-10	
#7	10	<b>Serious Complication Z-Score Trend in Trauma Service Admits (3 yr: 7/1/17-6/30/20)</b>		
		< -1 (major improvement)	10	
		-1 to 1 or serious complications low-outlier (average or better rate)	7	
	> 1 (rates of serious complications increased)	5		
#8	10	<b>Mortality Z-Score Trend in Trauma Service Admits (3 yr: 7/1/17-6/30/20)</b>		
		< -1 (major improvement)	10	
		-1 to 1 or mortality low-outlier (average or better)	7	
	> 1 (rates of mortality increased)	5		
#9	10	<b>Timely Head CT in TBI Patients on Anticoagulation Pre-Injury (12 mo: 7/1/19-6/30/20)</b>		
		≥ 90% patients (≤ 120 min)	10	
		≥ 80% patients (≤ 120 min)	7	
		≥ 70% patients (≤ 120 min)	5	
	< 70% patients (≤ 120 min)	0		
#10	10	<b>Timely Antibiotic in Femur/Tibia Open Fractures - Collaborative Wide Measure (12 mo: 7/1/19-6/30/20)</b>		
		≥ 85% patients (≤ 120 min)	10	
		< 85% patients (≤ 120 min)	0	
Total (Max Points) =			100	

### Additional Information

**Measure 1: Data Submission:** Partial/incomplete submissions receive no points

**Measure 2: Meeting Participation:** Surgeon represents 1 center only, Alternate must be equivalent attending level

**Measure 3: Data Validation Error Rate:** Centers not selected for validation this year will receive full points. Center's that are selected, but do not schedule a visit will receive 0 points for the validation measure.

### Measure 6: RBC to Plasma Ratio in Massive Transfusion

Step 1: Assign (weight) to each individual patient's 4 hr PRBC/FPP ratio to designated tier/points using chart below

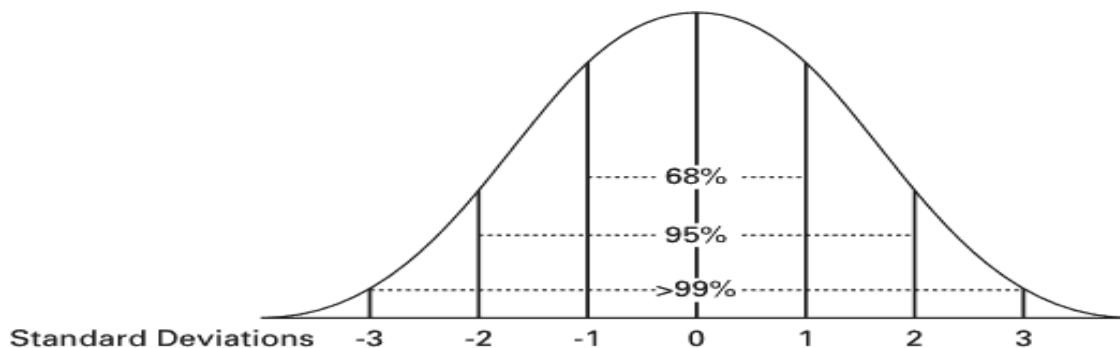
Step 2: Add the points and divide by number of patients (weighted average) See example below:

Step One		
PRBC to Plasma Ratio	Tier	Points
$\leq 1.5$	1	10
1.6 – 2.0	2	10
2.1 – 2.5	3	5
$> 2.5$	4	0

Step Two (Example)					
Patient	PRBC	FFP	PRBC/FFP	Tier	Points
1	10	10	1.0	1	10
2	5	2	2.5	3	5
3	9	2	4.5	4	0
					Total 15
Total Points/Total #Patients = 15/3 = 5 points earned					

### Measure 7 & 8: Z-Score Trend Calculation

The z-score is a measure of a hospital's trend in [serious complications, mortality] over the three-year time period. For each hospital, we fit a linear regression model with [serious complications, mortality] as the outcome, and time period and patient characteristics as the explanatory variables. The z-score is an estimate of the slope of a hospital's own linear trend line over time, standardized by the error estimate. The score indicates whether the hospital's performance is flat or trending upwards or downwards. If the z-score is one standard deviation away (either  $>1$  or  $<-1$ ), there is more evidence that the hospital's performance has a linear trend in one of these directions (as opposed to being flat). Scores  $>1$  are worsening, scores between 1 to -1 are staying the same, and scores  $<-1$  are improving.



### Measure 7: Serious Complication is Any Complication with Severity Grade of 2 or 3 (Defined Below)

#### Complication Severity Grade 2

Definition: Potentially life-threatening complications

Complications: C. difficile colitis, decubitus ulcer, DVT, enterocutaneous fistula, extremity compartment syndrome, pneumonia (including VAP), pulmonary embolism, unplanned admission to ICU, unplanned return to OR

#### Complication Severity Grade 3

Definition: Life-threatening complications with residual or lasting disability

Complications: ARDS, acute renal failure, cardiac arrest, myocardial infarction, renal insufficiency, stroke/CVA, systemic sepsis, unplanned intubation

### Collaborative Wide Measure:

Points awarded based on total collaborative result, not individual hospital result

### Scoring When Center Has No Patients Meeting Measure Criteria

When a center has no patients to score for a measure, that measure will be excluded from their performance index denominator. Example: A center with no massive transfusion patients will have the measure (worth 10 points) excluded and their maximum total numerator will be 90 points, the denominator will be 90 points and a new % (points) calculated by dividing the numerator by the denominator.

## Filters

### **#4: Timely LMWH VTE Prophylaxis in Trauma Service Admits**

Practices > VTE Prophylaxis Metric

LMWH ≤ 48 hr

Cohort: 2 (Admit to Trauma Service) > 2 day LOS

No Signs of Life: Exclude DOAs

Transfers Out: Exclude Transfers Out

Default Period: Custom (1/1/19 to 6/30/20)

### **#5: Timely Surgical Repair in Geriatric (Age ≥ 65) Isolated Hip Fracture**

Cohort: 8 (Isolated hip fracture)

Age: ≥ 65

No Signs of Life: Exclude DOAs

Transfers out: Exclude Transfers Out

Default Period: Custom (7/1/19 to 6/30/20)

### **#6: Red Blood Cell to Plasma Ratio in Massive Transfusion**

Hemorrhage

Cohort: 1 (All)

No Signs of Life: Include DOAs

Transfers Out: Include Transfers Out

Default Period: Custom (1/1/19 to 6/30/20)

### **#7: Serious Complication**

Cohort: 2 (Admit to Trauma Service)

No Signs of Life: Exclude DOA

Transfers Out: Exclude Transfers Out

Default Period: Custom (7/1/17 to 6/30/20)

### **#8: Mortality**

Cohort: 2 (Admit to Trauma Service)

No Signs of Life: Exclude DOA

Transfers Out: Exclude Transfers Out

Default Period: Custom (7/1/17 to 6/30/20)

### **#9: Timely Head CT in Anticoagulated TBI**

First Head CT performed: date, time from procedures data

Eligible: Presence of prehospital anticoagulant use. One or more of the following variables captured as yes: Warfarin, direct thrombin inhibitor, factor Xa inhibitor.

Presence of a head injury with blunt mechanism based on AIS codes (list available on request)

Cohort: 1 (All)

Exclude: Direct admissions and Transfers in

No Signs of Life: Exclude DOAs

Transfers Out: Include Transfers Out

Default Period: Custom (7/1/19 to 6/30/20)

### **#10: Timely Antibiotic in Femur/Tibia Open Fractures - Collaborative Wide Measure**

Points awarded based on total collaborative result, not individual hospital result.

Type of antibiotic administered along with date and time for open fracture of femur or tibia.

Eligible: Presence of acute open femur or tibia fracture based on AIS or ICD10 codes (available on MTQIP.org)

Exclude: Direct admissions, Transfers in, and Death in ED

Cohort: 1 (All)

No Signs of Life: Exclude DOAs

Transfers Out: Include Transfers Out

Default Period: Custom (7/1/19 to 6/30/20)