

**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		
#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)			
#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
#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				
#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			
#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		
#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 (Jan-Dec 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		

Additional Information

Measure 6: Red Blood Cell to Plasma Ratio

Average of tier points assigned to patients transfused ≥ 5 units PRBC's in 1st 4 Hours.

Ratio PRBC to Plasma for each patient	Tier	Points
≤ 1.5	1	10
1.6 – 2.0	2	10
2.1 – 2.5	3	5
> 2.5	4	0

Example:

Patient	PRBC	FFP	PRBC/FFP	Tier	Points
1	10	10	1.0	1	10
2	5	4	1.3	1	10
3	7	4	1.8	2	10
4	8	5	1.6	2	10
5	5	2	2.5	3	5
6	7	3	2.3	3	5
7	9	2	4.5	4	0
8	5	1	5.0	4	0
9	11	0		4	0
10	6	0		4	0

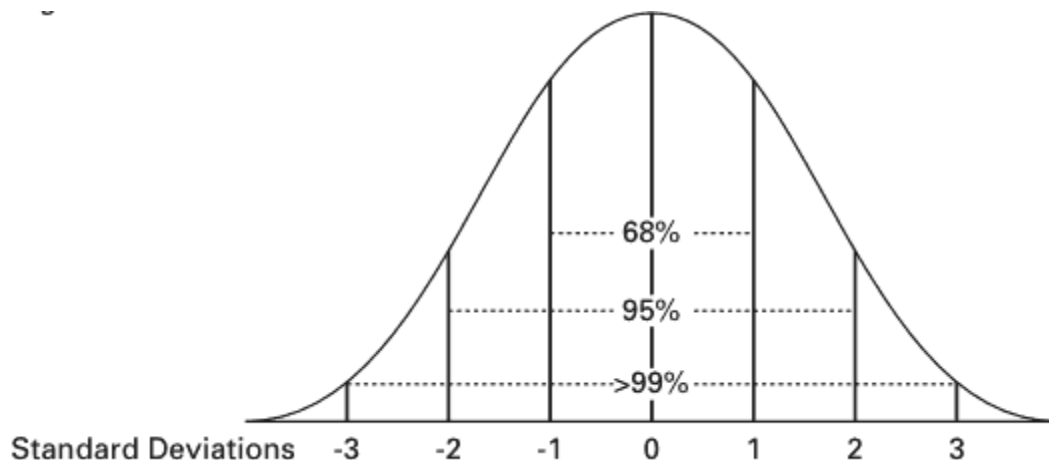
50

$$\frac{\text{Total Points}}{\text{Total Patients}} = \text{Metric Points}$$

$$\frac{50}{10} = 5$$

Z-Score Explanation

The z-score is a measure 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. This z-score is used to test whether the hospital's trend is flat or trending upwards/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).



Measure 7: Serious Complication Rate

Serious complications are any complication with a severity grade of 2 or 3 as defined below:

Complication severity grade 2

- a. Definition: Potentially life-threatening complications
- b. Complications: abdominal compartment syndrome, decubitus ulcer, DVT, enterocutaneous fistula, extremity compartment syndrome, pneumonia, pulmonary embolism, unplanned intubation, unplanned return to OR

Complication severity grade 3

- a. Definition: Life-threatening complications with residual or lasting disability or mortality
- b. Complications: acute lung injury/ARDS, acute kidney injury, cardiac arrest with CPR, myocardial infarction, severe sepsis, stroke/CVA

Total: Maximum points is 100

Filters

#4: VTE Prophylaxis Metric

Heparin, LMWH <= 48 hours

Cohort = Cohort 2 (Admit to trauma service)

No Signs of Life = Exclude DOAs

Transfers Out = Exclude Transfers Out

Default Period = Custom (1/1/16 to 6/30/17)

#5: VTE Prophylaxis Types

LMWH (Type)

Cohort = Cohort 2 (Admit to trauma service)

No Signs of Life = Exclude DOAs

Transfers Out = Exclude Transfers Out

Default Period = Custom (1/1/16 to 6/30/17)

#6: Red Blood Cell to Plasma Ratio

Hemorrhage

Cohort = Cohort 1 (All)

No Signs of Life = Include DOAs

Transfers Out = Include Transfers Out

Default Period = Custom (1/1/16 to 6/30/17)

#7: Serious Complication

Cohort 2, 7/1/14 to 6/30/17

Exclude patients with No Signs of Life

Exclude transfers out

#8: Mortality

Cohort 2, 7/1/14 to 6/30/17

Exclude patients with No Signs of Life

Exclude transfers out

#9: IVC Summary

IVC Filter Use (Unadj)

Cohort = Cohort 1 (All)

No Signs of Life = Exclude DOAs

Transfers Out = Exclude Transfers Out

Default Period = Custom (7/1/16 to 6/30/17)