MTQIP

Proposal for monitoring site performance for massive transfusions (MT)

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Current State

• “MTP” for patients 4+ PRBC in first 4 hours
• Patients who receive no FFP are not counted
• Extremely bad PRBC:FFP ratios skew results
• Some centers perform few, if any, MT’s
• MTQIP scoring tied to these results
Questions for our group

- What ratio is supported by the literature?
- Which patients should be included?
  - 4 units PRBC or some other number?
- What should be done with patients who receive no FFP and data is not included?
- How should we handle centers with few MT’s (should there be a minimum of 5/year)?
Literature review

- No consensus on 1:1 versus 1:2
- Ratios >1:2 are associated with poorer outcomes
- MTP is poorly defined, in general, but most would focus on the first 4 hours rather than total blood products at 24 hours (outcomes improve with earlier correction)
At what point should we trigger MTP?

- <4 units PRBC
- 4 units PRBC
- >4 units PRBC

Based on patterns in starting FFP for MTP at many centers
“Four-tier” proposal for reporting the PRBC:FFP ratio

Four tiers, of which the top two receive full credit:

Tier 1: Ratio 1-1.5
Tier 2: Ratio 1.6-2
Tier 3: Ratio 2.1-2.5
Tier 4: Ratio >2.5 (includes patients with no FFP!)

MTQIP would report the % of MT resuscitations in each category for each site. 100% points in top two tiers, 50% in tier 3, 0% in tier 4)
Example-not so perfect anymore!

- 20 MT’s of which 5 were excluded for no FFP
- Previous overall ratio of 1.8
- New report (now includes all 20 patients):
  
<table>
<thead>
<tr>
<th>Tier</th>
<th>Ratio</th>
<th>%</th>
</tr>
</thead>
</table>
  | Tier 1 | 1-1.5  | 25%
  | Tier 2 | 1.6-2  | 25%
  | Tier 3 | 2.1-2.5| 25%
  | Tier 4 | >2.5   | 25% (includes no FFP)

= 50% compliant

Points=$(\% \text{ Tiers 1+2}) \times 0.1 + (\% \text{ Tier 3}) \times 0.05 = 6.25$
Example—outlier less of an issue

• 20 MT’s of which two were extreme outliers
  – (2 patients with 6uPRBC:1FFP)
• Previous overall ratio of 2.25:1
• New report:
  Tier 1 Ratio 1-1.5  25%
  Tier 2 Ratio 1.6-2  40%
  Tier 3 Ratio 2.1-2.5 25%
  Tier 4 Ratio >2.5  10%
  = 65% compliant

Points=(% Tiers 1+2)*0.1 + (% Tier 3)*0.05 = 6.75
How will this change results?

<table>
<thead>
<tr>
<th>Definition Units/4 hours</th>
<th># Centers Less points</th>
<th># Centers More points</th>
<th># Centers No change</th>
<th>Mean Number Points PRE</th>
<th>Mean Number Points POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 PRBC</td>
<td>19</td>
<td>4</td>
<td>3</td>
<td>6.1</td>
<td>4.9</td>
</tr>
<tr>
<td>5 PRBC</td>
<td>17</td>
<td>6</td>
<td>3</td>
<td>6.0</td>
<td>5.3</td>
</tr>
</tbody>
</table>
Additional questions?

- At what number of MT’s should a center be excluded for this metric?
  • Currently one center with no MT

- If no MT’s for time period total points will not include those available for MT (10 less points in the denominator)
Questions?

TEXT MESSAGING
lol no im nt bsy im only driving