Measure Abbreviation: TRAN 02

Data Collection Method: This measure is calculated based on data extracted from the electronic medical record combined with administrative data sources such as professional fee and discharge diagnoses data. This measure is explicitly not based on provider self-attestation.

Measure Description: Percentage of cases with a post transfusion hemoglobin or hematocrit value less than or equal to 10 g/dL or 30%.

Measure Time Period: 90 minutes before the last intraoperative transfusion to 18 hours after Anesthesia End

Measure Type: Outcome

Measure Summary: The recognition of transfusion-related complications, such as transfusion-related infections and immunosuppression, and evidence documenting lack of efficacy has spurred the development of blood management protocols. This measure identifies blood transfusion cases when the hematocrit was ≤30% or hemoglobin was ≤10 g/dL post-transfusion.

Rationale: The American Association of Blood Banks (AABB) recommends a transfusion threshold of hemoglobin concentration less than or equal to 8 g/dL or when patient is symptomatic (chest pain, orthostatic hypotension, tachycardia unresponsive to fluid resuscitation, or congestive heart failure).\(^1\)\(^,\)\(^2\) Furthermore, blood transfusions in non-cardiac surgery have been associated with increased risk of 30-day mortality and morbidity.\(^3\)\(^,\)\(^4\)

Although the literature is not conclusive on the exact hemoglobin concentration that requires transfusion, the evidence is clear that use of fewer RBC transfusions reduces cost and risk for adverse effects of transfusion, and that transfusion to hemoglobin value greater than 10 g/dL or hematocrit greater than 30 is almost always not indicated.\(^5\) TRAN 02 is an outcome measure examining the number of patients who may have received more blood than necessary.

Inclusions: Any patient that receives a red blood cell transfusion. Transfusion is defined as packed red blood cells or whole blood. See MPOG Concept IDs below for complete list.

Exclusions:
- Patients < 2 years of age
- Patients <21 years old undergoing a cardiac procedure (CPT: 00560, 00561, 00562, 00563, 00567, 00580)
- Pediatric cases (<12 years old) where either the transfused PRBC or EBL was greater than 30cc/kg.
- ASA 5 & 6
- EBL ≥ 2000ml
- Massive Transfusion: Transfusion of 4 or more units of blood. Note for sites that document transfusions in ml instead of units: ASPIRE will default to 350ml/unit.
- Obstetric Non-Operative Procedures (CPT: 01958, 01960, 01967)
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- Obstetric Non-Operative Procedures with procedure text: “Labor Epidural”
- Exclude patients undergoing cesarean section (CPT: 01961, 01968, 01962, 01963, 01969) with an EBL > 1500cc.
- Exclude patients undergoing cesarean section (CPT: 01961, 01968, 01962, 01963, 01969) with a HR>110, SBP<85, DBP<45, or O2Sat <95%.
- Exclude postpartum hemorrhage cases (ICD-10 code: O72.0, O72.1, O72.2, O72.3).

### MPOG Concept IDs Required:

<table>
<thead>
<tr>
<th>Blood Product MPOG Concept IDs</th>
<th>Point of Care Testing MPOG Concept IDs</th>
<th>Formal Lab MPOG Concept IDs</th>
<th>EBL MPOG Concept ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>10490 Packed Red Blood Cells- Homologous</td>
<td>3435 POC-hematocrit spun</td>
<td>5006 Formal lab- Hematocrit</td>
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<tr>
<td>10492 Whole Blood- Homologous</td>
<td>3440 POC- Coulter counter- Hemoglobin</td>
<td>5038 Formal lab- Blood gas- Hct measured</td>
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<tr>
<td>10616 Packed Red Blood Cells- Unknown Type</td>
<td>3450 POC- Coulter counter- Hematocrit</td>
<td>5080 Formal lab- Blood gas- Hemoglobin</td>
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<tr>
<td>10617 Whole Blood- Unknown Type</td>
<td>5081 POC- Blood gas- Hemoglobin</td>
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<td></td>
</tr>
<tr>
<td>10618 Categorized Note- Blood Products</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Data Diagnostics Affected:

- Percentage of Inpatient Cases with Documented Blood Loss
- Percentage of Cases with Documented Blood Transfusions
- Percentage of Fluids with a Meaningful Fluid Mapping
- Percentage of Labs Mapped to a Meaningful Lab Mapping
- Percentage of Cases with a Lab Drawn During Anesthesia
- Percentage of Cases with Point of Care Hematocrit Labs
- Percentage of Cases with Point of Care Hemoglobin Labs
- Percentage of Cases with any Staff Tracking
- Percentage of Anesthesia Provider Sign-Ins that are Timed

Success:
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- Hematocrit value documented as less than or equal to 30% and/or hemoglobin value documented as less than or equal 10 g/dL.
- Considerations:
  - All hemoglobin/hematocrit lab values drawn after the last transfusion and within 18 hours after anesthesia end will be evaluated. If the lowest of these values is ≤10g/dL or ≤30%, the case will pass.
  - If the hemoglobin or hematocrit at the time of the last transfusion (within 90 minutes before) is less than or equal to 8/24, the case will pass.
- No hematocrit or hemoglobin checked within 18 hours of anesthesia end.

Threshold: 90%

Responsible Provider: Individual who administered the transfusion.

Risk Adjustment (for outcome measures): Not applicable.

References: