Measure Abbreviation: TEMP 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 increased risk of hypothermia that the anesthesia provider documented core temperature.

Measure Time Period: Case start to case end

Measure Type: Process

Scope: Calculated on a per case basis.

Measure Summary: TEMP 02 is the core temperature monitoring measure that will identify the percentage of cases where the anesthesia provider documented at least one core temperature intraoperatively for any patient receiving a general anesthetic.

Core or Near Core Temperature Monitoring Includes:
- Pulmonary Artery Temperature
- Distal Esophageal Temperature
- Nasopharyngeal Temperature
- Tympanic Membrane Temperature
- Bladder Temperature
- Rectal Temperature
- Axillary Temperature (arm must be at patient side)
- Oral Temperature

Peripheral Temperatures (not compliant):
- Skin Temperature
- Temporal Artery Temperature

Rationale:
General and neuraxial anesthesia causes vasodilation thus redistributing body heat from the core to peripheries. This redistribution can cause hypothermia. Core temperatures outside the normal range pose significant risks to patients. Pediatric patients are more likely to develop perioperative hypothermia due to a high surface area to weight ratio and inability to regulate their own temperature. Published research has correlated impaired wound healing, adverse cardiac events, altered drug metabolism, and coagulopathies with unplanned perioperative hypothermia. These adverse outcomes resulted in prolonged hospital stays and increased healthcare expenditures. The mortality rate is almost 20% higher only monitoring skin temperature rather than a core temperature for those who experience malignant hyperthermia during surgery. Core temperature measurements are less variable than skin temperature measurements and more accurately represent body temperature.
Inclusions:
All surgical patients receiving general anesthesia

Exclusions:
- ASA 5 and 6 cases
- Cases with neuraxial anesthesia as the primary technique
- Cases with regional anesthesia as the primary technique
- Obstetric Non-Operative Procedures (CPT: 01958, 01960, 01967)
- Obstetric Non-Operative Procedures with procedure text: “Labor Epidural”
- Diagnostic Procedures (CPT: 01922)
- MRI Rooms (Rooms tagged as Radiology-MRI)
- MRI with procedure text:
  - MRI
  - MR Head
  - MR Brain
  - MR Chest
  - MR Torso
  - MR Abdomen
  - MR Lumbar
  - MR Spine
  - MR Knee
  - MR Femur
  - MR Abdomen
  - OFFSITE - RADIOLOGY PROCEDURE
- Cases ≤30 minutes between Case Start and Case End.

*Algorithm for determining Case Length:

Case Start
1. Anesthesia Induction End. If not available, then
2. Anesthesia Induction Begin. If not available, then
3. Procedure Start. If not available, then
4. Patient in Room. If not available, then
5. Anesthesia Start

Case End
1. Patient Extubated. If not available, then
2. Procedure End. If not available, then
3. Patient Out of Room. If not available, then
4. Anesthesia End
MPOG Concept IDs Used:

<table>
<thead>
<tr>
<th>Temperature MPOG Concept IDs</th>
<th>Case Time MPOG Concept IDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>3031 Temperature- Temporal Artery</td>
<td>50002 AACD Anesthesia Start Date/Time</td>
</tr>
<tr>
<td>3050 Temp 1- Unspecified Site</td>
<td>50003 AACD Patient in Room Date/Time</td>
</tr>
<tr>
<td>3051 Temp 2- Unspecified Site</td>
<td>50004 AACD Induction Start Date/Time</td>
</tr>
<tr>
<td>3052 Temp 1- Monitoring Site</td>
<td>50005 AACD Induction End Date/Time</td>
</tr>
<tr>
<td>3053 Temp 2- Monitoring Site</td>
<td>50006 AACD Procedure Start Date/Time</td>
</tr>
<tr>
<td>3054 Temperature- Skin</td>
<td>50007 AACD Procedure Finish Date/Time</td>
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<tr>
<td>3055 Temperature- Esophageal</td>
<td>50008 AACD Patient out of room Date/Time</td>
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<tr>
<td>3056 Temperature- Blood</td>
<td>50009 AACD Anesthesia End Date/Time</td>
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<td>3057 Temperature- Tympanic</td>
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<td>3058 Temperature- Bladder</td>
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<tr>
<td>3059 Temperature- Nasopharyngeal</td>
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<td>3060 Temperature- Axillary</td>
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<td>3061 Temperature- Rectal</td>
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<tr>
<td>3062 Temperature - Myocardial</td>
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<tr>
<td>3533 Temperature Route</td>
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<tr>
<td>50191 Monitoring- Temperature Probe Placed</td>
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<tr>
<td>50192 Monitoring- Temperature Probe Location/Type</td>
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<tr>
<td>50174 Postoperative Vital Signs</td>
<td></td>
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</tbody>
</table>

Data Diagnostics Affected:
- Percentage of Cases with a Temperature Observation
- Percentage of Cases with an Extubation Note
- Percentage of Cases with Anesthesia Induction End Documented
- Percentage of Cases with Temperature Location Documented

Phenotypes Used:
- AnesthesiaStart
- AnesthesiaEnd
- AnesthesiaTechniqueGeneral
- CaseStart
- ASA5or6
- ProcedureTypeMri
CaseDuration

Other Measure Build Details:
- Artifact algorithm:
  - Less than 32.0°C (89.6°F)
  - Greater than 40.0°C (104.0°F)
  - Any minute-to-minute jumps >0.5°C equivalent.
  - Example: 0.125°C /15s, 0.25°C / 30s, 1°C / 2mins
- Conversion from F to C: $F = \frac{9}{5}(°C) + 32$
- If temperature site not present in physiologic concept, refer to intraop notes.

Success: Cases with at least one core temperature documented between Anesthesia Start and Patient out of Room. If not available then, Anesthesia End.

Threshold: 90% success.

Responsible Provider: Provider present at induction end.

Method for determining Responsible Provider:
1. Provider signed in at Anesthesia Induction End. If not available then,
2. Provider signed in at Anesthesia Induction Begin. If not available then,
3. Provider signed in at Procedure Start. If not available then,
4. Provider signed in at Patient in Room. If not available then,
5. Provider signed in at Anesthesia Start

Risk Adjustment (for outcome measures):
Not applicable.

References: