Measure Abbreviation: BP 03

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.

Description: Percentage of cases where intraoperative hypotension (MAP < 65 mmHg) was sustained for less than 15 minutes

Measure Time Period: Intraoperative. See ‘Other Measure Build Details’ for more information

Measure Type: Process

Measure Summary: BP 03 measures the cumulative time of Mean Arterial Pressure (MAP) <65mmHg for a given case and provider. BP 03 includes non-invasive and invasive blood pressure monitoring captured using automated and manually entered physiologic data.

Rationale: Intraoperative hypotension (MAP < 65mmHg) is associated with compromised organ perfusion and puts patients at risk for post-operative mortality, cardiac adverse events (CAEs) and acute kidney injury (AKI). Multiple studies have addressed the impact of hypotension on patient outcomes and generally show less CAEs, AKI, and death by maintaining a MAP above 60-70mmHg.1,2 One retrospective cohort analysis, including 57,315 non-cardiac surgical patients, demonstrated a MAP of less than 65mmHg was associated with a higher incidence of myocardial and kidney injury and the duration of low MAP significantly increases the odds of the aforementioned outcomes.3 Furthermore, a retrospective review including 33,330 non-cardiac surgical patients determined that a MAP less than 65mmHg for any duration was associated with similar adverse outcomes4

Inclusions:
All patients requiring general anesthesia or monitored anesthesia care (MAC).

Exclusions:
- Patients < 18 years old
- ASA 5 and 6 cases
- Baseline MAP < 65 mmHg (Highest MAP documented in preop under MPOG concepts 71120, 70211, 70212)
- Daily Hospital Management for Epidural (CPT: 01996)
- Obstetric Non-Operative Procedures (CPT: 01958, 01960, 01967)
- Obstetric Non-Operative Procedures with procedure text: “Labor Epidural”
- Organ Harvest (CPT:01990)
- Cardiac surgery with pump and <1 year old (CPT: 00561)
- Cardiac surgery with pump and > 1 year old (CPT: 00562)
- Cardiac surgery with hypothermic arrest (CPT: 00563)
- CABG with pump (CPT: 00567)
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- CABG without pump (CPT: 00566)
- Heart Transplant (CPT: 00580)
- Liver Transplant Surgery (CPT: 00796, 47135)
- Lung Transplant Surgery (CPT: 32851, 32852, 32853, 32855)
- Unlisted Anesthesia Procedures (CPT: 01999)

**MPOG Concept IDs Required:**

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**Data Diagnostics Affected:**

- Percentage of Physiologic Observations with a Meaningful Type Mapping
- Percentage of Cases with Invasive Blood Pressure
- Percentage of Cases with Non-invasive Blood Pressure
- Percentage of Cases with Physiologic Observations
- Percentage of Physiologic Rows that are Machine Captured
- Percentage of Cases with any Staff Tracking
- Percentage of Anesthesia Provider Sign-Ins that are Timed

**Phenotypes Used:**

- AnesthesiaEnd
- AnesthesiaStart
- AsaNotes
- DataCaptureEnd
- DataCaptureStart
- MpogCaseId
- PatientInRoom
- PatientOutOfRoom
- ProcedureText
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- AgeinYears
- AnesthesiaLeftBound
- AnesthesiaRightBound
- Asa5or6
- BaselineBloodPressureMean
- ProcedureTypeMri

Other Measure Build Details:

- Instances where there are two blood pressure monitoring methods, the higher MAP will be used to determine measure compliance.
- Artifact readings will be identified and removed from final measurement calculation. Artifact processing: if systolic and diastolic blood pressures are present, the values must be at least 5 mmHg apart; otherwise the values will be excluded. MAP values less than 10 are excluded.
- Each incidence of MAP <65 will attribute the responsible provider for a max of 5 minutes
- To determine how many minutes the last BP documented accounts for, the difference between the time of the blood pressure and the “Measure End Time” algorithm is used. As with the duration of other BPs, this duration is also capped at 5 minutes.

Measure Start Time:
First Blood Pressure Reading after the latest of these 3 times:
1. First documented Anesthesia Start time.
2. First documented Patient in Room time.
3. First documented Data Capture Start time.

Measure End Time:
1. Patient Out of Room. If not available,
2. Data Capture End. If not available,
3. Anesthesia End.

Success:
- MAP <65mmHG that does not exceed cumulative time of 15 minutes OR
- MAP >65mmHG throughout case length.

Threshold: 90%.

Responsible Provider: All providers for a given case whose individual cumulative MAP < 65mmHG exceeds the 15-minute timeframe.

Method for determining Responsible Provider: BP 03 is calculated on a per provider basis so there may be multiple responsible providers per case. For example, if two anesthesiologists participated in a case and there were periods of hypotension when each provider was signed in, both would be responsible. The case will populate the institutional flagged cases list once.

Risk Adjustment (for outcome measures): Not applicable.
References:


