

Measure #424 (NQF 2681): Perioperative Temperature Management – National Quality Strategy
Domain: Patient Safety

2017 OPTIONS FOR INDIVIDUAL MEASURES:
REGISTRY ONLY

MEASURE TYPE:
Outcome

DESCRIPTION:
Percentage of patients, regardless of age, who undergo surgical or therapeutic procedures under general or neuraxial anesthesia of 60 minutes duration or longer for whom at least one body temperature greater than or equal to 35.5 degrees Celsius (or 95.9 degrees Fahrenheit) was recorded within the 30 minutes immediately before or the 15 minutes immediately after anesthesia end time

INSTRUCTIONS:
This measure is to be reported **each time** any procedure including surgical, therapeutic or diagnostic is performed under general or neuraxial anesthesia during the **performance period**. There is no diagnosis associated with this measure. It is anticipated that eligible clinicians who provide the listed anesthesia services as specified in the denominator coding will submit this measure.

Measure Reporting:
The listed denominator criteria is used to identify the intended patient population. The numerator options included in this specification are used to submit the quality actions allowed by the measure. The quality-data codes listed do not need to be submitted for registry-based submissions; however, these codes may be submitted for those registries that utilize claims data.

DENOMINATOR:
All patients, regardless of age, who undergo surgical or therapeutic procedures under general or neuraxial anesthesia of 60 minutes duration or longer

Denominator Instructions: The anesthesia time used for this measure should be the time recorded in the anesthesia record.

Denominator Criteria (Eligible Cases):

All patients, regardless of age

AND

Patient procedure during the performance period (CPT): 00100, 00102, 00103, 00104, 00120, 00124, 00126, 00140, 00142, 00144, 00145, 00147, 00148, 00160, 00162, 00164, 00170, 00172, 00174, 00176, 00190, 00192, 00210, 00211, 00212, 00214, 00215, 00216, 00218, 00220, 00222, 00300, 00320, 00322, 00326, 00350, 00352, 00400, 00402, 00404, 00406, 00410, 00450, 00454, 00470, 00472, 00474, 00500, 00520, 00522, 00524, 00528, 00529, 00530, 00532, 00534, 00537, 00539, 00540, 00541, 00542, 00546, 00548, 00550, 00560, 00600, 00604, 00620, 00625, 00626, 00630, 00632, 00635, 00640, 00670, 00700, 00702, 00730, 00740, 00750, 00752, 00754, 00756, 00770, 00790, 00792, 00794, 00796, 00797, 00800, 00802, 00810, 00820, 00830, 00832, 00834, 00836, 00840, 00842, 00844, 00846, 00848, 00851, 00860, 00862, 00864, 00865, 00866, 00868, 00870, 00872, 00873, 00880, 00882, 00902, 00904, 00906, 00908, 00910, 00912, 00914, 00916, 00918, 00920, 00921, 00922, 00924, 00926, 00928, 00930, 00932, 00934, 00936, 00938, 00940, 00942, 00944, 00948, 00950, 00952, 01112, 01120, 01130, 01140, 01150, 01160, 01170, 01173, 01180, 01190, 01200, 01202, 01210, 01212, 01214, 01215, 01220, 01230, 01232, 01234, 01250, 01260, 01270, 01272, 01274, 01320, 01340, 01360, 01380, 01382, 01390, 01392, 01400, 01402, 01404, 01420, 01430, 01432, 01440, 01442, 01444, 01462, 01464, 01470, 01472, 01474, 01480, 01482, 01484, 01486, 01490, 01500, 01502, 01520, 01522, 01610, 01620, 01622, 01630, 01634, 01636, 01638, 01650, 01652, 01654, 01656, 01670, 01680, 01682, 01710, 01712, 01714, 01716, 01730, 01732, 01740, 01742,

01744, 01756, 01758, 01760, 01770, 01772, 01780, 01782, 01810, 01820, 01829, 01830, 01832, 01840, 01842, 01844, 01850, 01852, 01860, 01924, 01925, 01926, 01930, 01931, 01932, 01933, 01935, 01936, 01951, 01952, 01961, 01962, 01963, 01965, 01966

AND

Anesthesia of 60 minutes duration or longer: 4255F

AND NOT

DENOMINATOR EXCLUSIONS:

Monitored Anesthesia Care (MAC): G9654

OR

Peripheral Nerve Block (PNB): G9770

NUMERATOR:

Patients for whom at least one body temperature greater than or equal to 35.5 degrees Celsius (or 95.9 degrees Fahrenheit) was recorded within the 30 minutes immediately before or the 15 minutes immediately after anesthesia end time

Numerator Options:

Performance Met:

At least 1 body temperature measurement equal to or greater than 35.5 degrees Celsius (or 95.9 degrees Fahrenheit) achieved within the 30 minutes immediately before or the 15 minutes immediately after anesthesia end time (**G9771**)

OR

Denominator Exception:

Documentation of one of the following medical reason(s) for not achieving at least 1 body temperature measurement equal to or greater than 35.5 degrees Celsius (or 95.9 degrees Fahrenheit) achieved within the 30 minutes immediately before or the 15 minutes immediately after anesthesia end time (e.g., Emergency cases, Intentional hypothermia, etc.) (**G9772**)

OR

Performance Not Met:

At least 1 body temperature measurement equal to or greater than 35.5 degrees Celsius (or 95.9 degrees Fahrenheit) not achieved within the 30 minutes immediately before or the 15 minutes immediately after anesthesia end time (**G9773**)

RATIONALE:

A drop in core temperature during surgery, known as perioperative hypothermia, can result in numerous adverse effects, which can include adverse myocardial outcomes, subcutaneous vasoconstriction, increased incidence of surgical site infection, and impaired healing of wounds. The desired outcome, reduction in adverse surgical effects due to perioperative hypothermia, is affected by maintenance of normothermia during surgery.

Unintended perioperative hypothermia occurs in up to 20% of surgical patients. An observational cohort study in a pediatric setting found that more than 50% of children experienced intraoperative hypothermia. Pediatric patients undergoing major surgery were at greater risk of intraoperative hypothermia.

CLINICAL RECOMMENDATION STATEMENTS:

Preadmission/Preoperative Recommendations

Assessment: Assess for risk factors for perioperative hypothermia (Class I, Level C); Measure patient temperature on admission (Class I, Level C); Determine patient's thermal comfort level (Class I, Level C); Assess for signs and

symptoms of hypothermia (Class I, Level C); Document and communicate all risk factor assessment findings to all members of the anesthesia/surgical team (Class I, Level A)

Interventions: Implement passive thermal care measures (Class I, Level B); Maintain ambient room temperature at or above 24 degrees Celsius (Class I, Level C); Institute active warming for patients who are hypothermic (Class IIb, Level B); Consider preoperative warming to reduce the risk of intra/postoperative hypothermia (Class IIb, Level B)

Intraoperative Recommendations

Assessment: Identify patient's risk factors for unplanned preoperative hypothermia (Class I, Level C); Frequent intraoperative temperature monitoring should be considered in all cases (Class I, Level C); Assess for signs and symptoms of hypothermia (Class IIb, Level C); Determine patient's thermal comfort level (Class IIb, Level C); Document and communicate all risk factor assessment findings to all members of the anesthesia/surgical team (Class I, Level A)

Interventions: Limit skin exposure to lower ambient environmental temperatures (Class I, Level C); Initiate passive warming measures (Class I, Level C); Maintain ambient room temperature from 20-25 degrees Celsius based on AORN and architectural recommendations (Class I, Level C); Patients undergoing a procedure with an anticipated anesthesia time greater than 30 minutes (Class I, Level C) and/or who are hypothermic preoperatively (Class I, Level A), and/or patients at risk for hypothermia (Class I, Level C) or at increased risk for suffering its complications (Class I, Level C) – Forced air warming should be implemented (Class I, Level A); There is evidence to suggest that alternative active warming measures may maintain normothermia when used alone or in combination with forced air warming (Class IIb, Level B). These warming measures include: Warmed IV fluids (Class IIa, Level B), Warmed irrigation fluids (Class IIb, Level B), Circulating water garments (Class IIb, Level B), Circulating water mattresses (Class IIb, Level B), Radiant heat (Class IIb, Level B), Gel pad surface warming (Class IIa, Level B), Resistive heating (Class IIa, Level B) (ASPAN, 2010)

Maintenance of body temperature in a normothermic range is recommended for most procedures other than during periods in which mild hypothermia is intended to provide organ protection (e.g., during high aortic cross-clamping) (Class I Recommendation, Level of Evidence B) (ACC/AHA, 2014)

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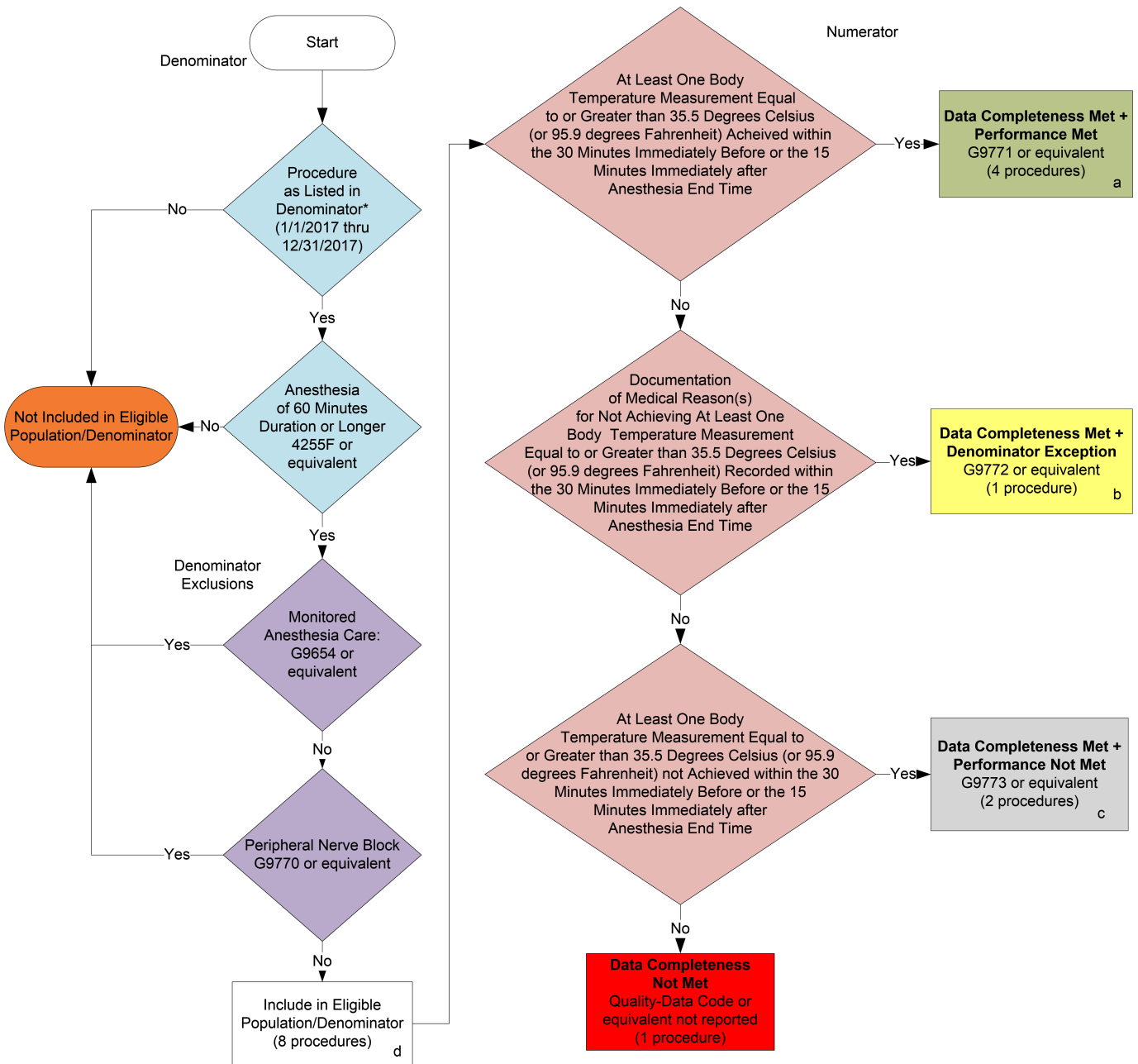
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2017 Registry Individual Measure Flow #424 NQF #2681: Perioperative Temperature Management



SAMPLE CALCULATIONS:

Data Completeness=

$$\frac{\text{Performance Met (a=4 procedures)} + \text{Denominator Exception (b=1 procedure)} + \text{Performance Not Met (c=2 procedures)}}{\text{Eligible Population / Denominator (d=8 procedures)}} = \frac{7 \text{ episodes}}{8 \text{ episodes}} = 87.50\%$$

Performance Rate=

$$\frac{\text{Performance Met (a=4 procedures)}}{\text{Data Completeness Numerator (7 procedures) - Denominator Exception (b=1 procedure)}} = \frac{4 \text{ procedures}}{6 \text{ procedures}} = 66.66\%$$

*See the posted Measure Specification for specific coding and instructions to report this measure.

NOTE: Reporting Frequency: Procedure

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2017 Registry Individual Measure Flow
#424 NQF #2681: Perioperative Temperature Management

Please refer to the specific section of the Measure Specification to identify the denominator and numerator information for use in reporting this Individual Measure.

1. Start with Denominator
2. Check Procedure Performed:
 - a. If Procedure as Listed in the Denominator equals No, do not include in Eligible Patient Population. Stop Processing.
 - b. If Procedure as Listed in the Denominator equals Yes, proceed to check Anesthesia of 60 Minutes or Longer.
3. Check Anesthesia of 60 Minutes or Longer:
 - a. If Anesthesia of 60 Minutes or Longer equals No, do not include in Eligible Patient Population. Stop Processing.
 - b. If Monitored Anesthesia Care equals Yes, include in the Eligible population.
4. Check Monitored Anesthesia Care:
 - a. If Monitored Anesthesia Care equals Yes, do not include in Eligible Patient Population. Stop Processing.
 - b. If Anesthesia of 60 Minutes or Longer equals No, include in the Eligible population.
5. Check Peripheral Nerve Block:
 - a. If Peripheral Nerve Block equals Yes, do not include in Eligible Patient Population. Stop Processing.
 - b. If Peripheral Nerve Block equals No, include in the Eligible population.
6. Denominator Population:
 - a. Denominator population is all Eligible Patients in the denominator. Denominator is represented as Denominator in the Sample Calculation listed at the end of this document. Letter d equals 8 procedures in the sample calculation.
7. Start Numerator
8. Check At Least one Body Temperature Greater Than or Equal to 35.5 Degrees Celsius (or 95.9 degrees Fahrenheit) Was Recorded Within the 30 Minutes Immediately Before or the 15 Minutes Immediately After Anesthesia End Time:
 - a. If At Least one Body Temperature Greater Than or Equal to 35.5 Degrees Celsius (or 95.9 degrees Fahrenheit) Was Recorded Within the 30 Minutes Immediately Before or the 15 Minutes Immediately After Anesthesia End Time equals Yes, include in Data Completeness Met and Performance Met.
 - b. Data Completeness Met and Performance Met is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter a equals 4 procedures in Sample Calculation.

- c. If At Least one Body Temperature Greater Than or Equal to 35.5 Degrees Celsius (or 95.9 degrees Fahrenheit) Was Recorded Within the 30 Minutes Immediately Before or the 15 Minutes Immediately After Anesthesia End Time equals No, proceed to Documentation of Medical Reason(s) for Not Achieving At Least One Body Temperature Greater Than Or Equal to 35.5 Degrees Celsius Or 95.9 Degrees Fahrenheit Within the 30 Minutes immediately Before or the 15 Minutes Immediately After Anesthesia End Time.
9. Check Documentation of Medical Reason(s) for Not Achieving At Least One Body Temperature Greater Than Or Equal to 35.5 Degrees Celsius Or 95.9 Degrees Fahrenheit Within the 30 Minutes immediately Before or the 15 Minutes Immediately After Anesthesia End Time:
 - a. If Documentation of Medical Reason(s) for Not Achieving At Least One Body Temperature Greater Than Or Equal to 35.5 Degrees Celsius Or 95.9 Degrees Fahrenheit Within the 30 Minutes immediately Before or the 15 Minutes Immediately After Anesthesia End Time equals Yes, include in Data Completeness Met and Denominator Exception.
 - b. Data Completeness Met and Denominator Exception is represented in the Data Completeness and Performance Rate in the Sample Calculation listed at the end of this document. Letter b equals 1 procedure in the Sample Calculation.
 - c. If Documentation of Medical Reason(s) for Not Achieving At Least One Body Temperature Greater Than Or Equal to 35.5 Degrees Celsius Or 95.9 Degrees Fahrenheit Within the 30 Minutes immediately Before or the 15 Minutes Immediately After Anesthesia End Time equals No, proceed to At Least One Body Temperature Greater Than or Equal to 35.5 Degrees Celsius (or 95.9 Degrees Fahrenheit) Not Achieved Within the 30 Minutes Immediately Before or the 15 Minutes Immediately After Anesthesia End Time.
10. Check At Least One Body Temperature Greater Than or Equal to 35.5 Degrees Celsius (or 95.9 Degrees Fahrenheit) Not Achieved Within the 30 Minutes Immediately Before or the 15 Minutes Immediately After Anesthesia End Time:
 - a. If At Least One Body Temperature Greater Than or Equal to 35.5 Degrees Celsius (or 95.9 Degrees Fahrenheit) Not Achieved Within the 30 Minutes Immediately Before or the 15 Minutes Immediately After Anesthesia End Time equals Yes, include in Data Completeness Met and Performance Not Met.
 - b. Data Completeness Met and Performance Not Met is represented in the Data Completeness in the Sample Calculation listed at the end of this document. Letter c equals 2 procedures in the Sample Calculation.
 - c. If At Least One Body Temperature Greater Than or Equal to 35.5 Degrees Celsius (or 95.9 Degrees Fahrenheit) Not Achieved Within the 30 Minutes Immediately Before or the 15 Minutes Immediately After Anesthesia End Time equals No, proceed to Data Completeness Not Met.
11. Check Data Completeness Not Met:
 - a. If Data Completeness Not Met equals No, Quality Data Code or equivalent not reported. 1 procedure has been subtracted from the Data Completeness numerator in the sample calculation.

SAMPLE CALCULATIONS:

Data Completeness=

$$\frac{\text{Performance Met (a=4 procedures)} + \text{Denominator Exception (b=1 procedure)} + \text{Performance Not Met (c=2 procedures)}}{\text{Eligible Population / Denominator (d=8 procedures)}} = \frac{7 \text{ episodes}}{8 \text{ episodes}} = 87.50\%$$

Performance Rate=

$$\frac{\text{Performance Met (a=4 procedures)}}{\text{Data Completeness Numerator (7 procedures) - Denominator Exception (b=1 procedure)}} = \frac{4 \text{ procedures}}{6 \text{ procedures}} = 66.66\%$$