2022 ABG QCDR Measure Specifications

ABG QCDR MEASURE SPECIFICATIONS INDEX

Disclaimer

The ABG QCDR is certified by CMS as a Qualified Clinical Data Registry (QCDR); however, submitting data to the ABG QCDR does not guarantee success in the CMS Merit-Based Incentive Payment Program (MIPS). There are many variables that contribute to your outcome when participating in this program.

Measure Calculations

$$\text{Reporting Rate} = \frac{\text{Performance Met + Performance Not Met + Denominator Exceptions}}{\text{Initial Patient Population - Denominator Exclusions}}$$

$$\text{Performance Rate} = \frac{\text{Performance Met}}{\text{Reporting Numerator – Denominator Exceptions}}$$

Measure Title

ABG40: Hypotension Prevention After Spinal Placement for Elective Cesarean Section

Measure Description: Percentage of patients, who present for elective Caesarean section under spinal anesthesia who have phenylephrine infusions started prophylactically to prevent hypotension.

National Quality Strategy Domain: Patient Safety

Measure Type: Process

High Priority Status: Yes

High Priority Type: Patient Safety

Inverse Measure: No

Risk Adjusted: No

Instructions: This measure is to be reported each time an adult patient presents for elective Caesarean section under spinal anesthesia and who has phenylephrine infusions started prophylactically to prevent hypotension. It is anticipated that qualified anesthesia providers and eligible clinicians who provide denominator-eligible services will submit this measure.

Measure Reporting via the Qualified Clinical Data Registry

Patient demographics and CPT codes are used to identify patients who are included in the measure denominator. G-codes and Registry Codes are used to capture the numerator.

Denominator: Patients who have elective Caesarean section and undergo spinal anesthesia

Denominator Criteria (Eligible Cases): All patients who undergo spinal anesthesia electively AND patient encounter during the reporting period: **CPT:** 59510, 59514, 59515**/ ASA:** 01961, 01968

DENOMINATOR EXCLUSIONS: ASA Physical Status =E

DENOMINATOR EXCEPTIONS: Contraindication to use of phenylephrine infusion (e.g. bradycardia, compromised cardiac function, pre-eclampsia, etc.)

Numerator: Patients who have a phenylephrine infusion started for prophylactic treatment of hypotension.

***Performance Met*:** Phenylephrine infusion started prophylactically (ABG Measure Response code **1081**)

OR

Performance Not Met: Phenylephrine infusion NOT started prophylactically (ABG Measure Response code **1082**)

Denominator Exceptions*:* Contraindication to phenylephrine infusion (ABG Measure Response code **1083**)

Rationale:

Quoted Verbatim:

Spinal hypotension is common in women who receive spinal anesthesia for Caesarean delivery, with an incidence of up to 71%.1 Spinal hypotension can occur precipitously and, if severe, can result in important perinatal adverse outcomes, such as maternal nausea and vomiting, fetal acidosis and may be an important contributory factor for maternal death related to regional anaesthesia.2 3 Mothers with pre-delivery hypovolemia may be at risk of cardiovascular collapse because the sympathetic blockade may severely decrease venous return. As a consequence, prevention of spinal hypotension has been a key research area within the field of obstetric anesthesia.

To prevent spinal hypotension, a number of approaches have been investigated, notably fluid loading, vasopressors, or both.4 5 Despite early enthusiasm, the efficacy of fluid loading for preventing spinal hypotension has been called into question. In contrast, the use of vasopressors has gained increasing prominence as the primary technique for the prevention and treatment of spinal hypotension during Caesarean delivery.6–10

There is accumulating evidence that phenylephrine delivered as an infusion is the most effective method for preventing maternal hypotension and intraoperative nausea or vomiting.7 23 24 In a recent meta-analysis that assessed the harm and benefit of prophylactic phenylephrine infusions, phenylephrine was associated with a reduced risk of pre-delivery hypotension (RR ¼ 0.36; 95% CI ¼ 0.18–0.73) and nausea and vomiting (R ¼ 0.39; 95% CI ¼ 0.17–0.91) compared with placebo.25 Furthermore, the use of an 'on–off' phenylephrine infusion (commenced at 100mg min21) in combination with crystalloid co-hydration has been shown to nearly eliminate the likelihood of spinal hypotension.26

References

1 Klohr S, Roth R, Hofmann T, Rossaint R, Heesen M. Definitions of hypotension after spinal anaesthesia for caesarean section: literature search and application to parturients. Acta Anaesthesiol Scand 2010; 54: 909–21

2 Auroy Y, Benhamou D, Bargues L, et al. Major complications of regional anesthesia in France: The SOS Regional Anesthesia Hotline Service. Anesthesiology 2002; 97: 1274–80

3 Hawkins JL, Chang J, Palmer SK, Gibbs CP, Callaghan WM. Anesthesia-related maternal mortality in the United States: 1979–2002. Obstet Gynecol 2011; 117: 69–74

4 Cyna AM, Andrew M, Emmett RS, Middleton P, Simmons SW. Techniques for preventing hypotension during spinal anaesthesia for caesarean section. Cochrane Database Syst Rev 2006: CD002251

5 Loubert C. Fluid and vasopressor management for Cesarean delivery under spinal anesthesia: continuing professional development. Can J Anaesth 2012; 59: 604–19

6 Ngan Kee WD. Prevention of maternal hypotension after regional anaesthesia for caesarean section. Curr Opin Anaesthesiol 2010; 23: 304–9

7 Ngan Kee WD. Phenylephrine infusions for maintaining blood pressure during spinal anesthesia for cesarean delivery: finding the shoe that fits. Anesth Analg 2014; 118: 496–8

8 Veeser M, Hofmann T, Roth R, Klohr S, Rossaint R, Heesen M. Vasopressors for the management of hypotension after spinal anesthesia for elective caesarean section. Systematic review and cumulative meta-analysis. Acta Anaesthesiol Scand 2012; 56: 810–6

9 Smiley RM. Burden of proof. Anesthesiology 2009; 111: 470–2

10 Lee AJ, Smiley RM. Phenylephrine infusions during Cesarean section under spinal anesthesia. Int Anesthesiology Clin 2014; 52: 29–47 11 Mercier FJ. Fluid loading for cesarean delivery under spinal anesthesia: have we studied all the options? Anesth Analg 2011; 113:677–80

12 Cooper DW. Caesarean delivery vasopressor management. Curr Opin Anaesthesiol 2012; 25: 300–8

13 Morgan PJ, Halpern SH, Tarshis J. The effects of an increase of central blood volume before spinal anesthesia for cesarean delivery: a qualitative systematic review. Anesth Analg 2001; 92:

997–1005

14 Banerjee A, Stocche RM, Angle P, Halpern SH. Pre-load or co-load for spinal anesthesia for elective Cesarean delivery: a meta-analysis. Can J Anaesth 2010; 57: 24–31

15 McDonald S, Fernando R, Ashpole K, Columb M. Maternal cardiac output changes after crystalloid or colloid coload following spinal anesthesia for elective cesarean delivery: a randomized controlled trial. Anesth Analg 2011; 113: 803–10

16 Tamilselvan P, Fernando R, Bray J, Sodhi M, Columb M. The effects of crystalloid and colloid preload on cardiac output in the parturient undergoing planned cesarean delivery under spinal anesthesia: a randomized trial. Anesth Analg 2009; 109: 1916–21

17 Sharwood-Smith G, Drummond GB. Hypotension in obstetric spinal anaesthesia: a lesson from pre-eclampsia. Br J Anaesth 2009; 102: 291–4

18 Dyer RA, Reed AR, van Dyk D, et al. Hemodynamic effects of ephedrine, phenylephrine, and the co-administration of phenylephrine with oxytocin during spinal anesthesia for elective cesarean delivery.

Anesthesiology 2009; 111: 753–65

19 Langesaeter E, Rosseland LA, Stubhaug A. Continuous invasive blood pressure and cardiac output monitoring during cesarean delivery: a randomized, double-blind comparison of low-dose versus high-dose spinal anesthesia with intravenous phenylephrine or placebo infusion. Anesthesiology 2008; 109: 856–63

20 Langesaeter E, Dyer RA. Maternal haemodynamic changes during spinal anaesthesia for caesarean section. Curr Opin Anaesthesiol 2011; 24: 242–8

21 Macarthur A. Solving the problem of spinal-induced hypotension in obstetric anesthesia. Can J Anaesth 2002; 49: 536–9

22 Ngan Kee WD, Khaw KS, Tan PE, Ng FF, Karmakar MK. Placental transfer and fetal metabolic effects of phenylephrine and ephedrine during spinal anesthesia for cesarean delivery. Anesthesiology

2009; 111: 506–12

23 Habib AS. A review of the impact of phenylephrine administration on maternal hemodynamics and maternal and neonatal outcomes in women undergoing cesarean delivery under spinal anesthesia. Anesth Analg 2012; 114: 377–90

24 Ngan Kee WD, Khaw KS, Ng FF, Lee BB. Prophylactic phenylephrine infusion for preventing hypotension during spinal anesthesia for cesarean delivery. Anesth Analg 2004; 98: 815–21.

25 Heesen M, Kolhr S, Rossaint R, Straube S. Prophylactic phenylephrine for caesarean section under spinal anaesthesia: systematic review and meta-analysis. Anaesthesia 2014; 69:143–65

26 Ngan Kee WD, Khaw KS, Ng FF. Prevention of hypotension during spinal anesthesia for cesarean delivery: an effective technique using combination phenylephrine infusion and crystalloid cohydration.

Anesthesiology 2005; 103: 744–50

Data Source: Claims, Hybrid, other

Measure Steward: ABG QCDR

Inverse Measure: No

Proportional Measure: Yes

Continuous Variable Measure: No

Ratio Measure: No

Risk Adjustment: No

Meaningful Measure Area: Patient Focused Episode of Care

Number of Performance Rates: 1

Care Setting: Hospital

Includes Telehealth: No

NQF Number: Not applicable

eCQM Number: Not applicable

Measure Title

ABG41: Upper Extremity Nerve Blockade in Shoulder Surgery

Measure Description: Percentage of patients who undergo elective shoulder arthroscopy or arthroplasty who have an upper extremity nerve blockade performed before or immediately after the procedure.

National Quality Strategy Domain: Effective Clinical Care

Measure Type: Process

High Priority Status: No

Inverse Measure: No

Risk Adjusted: No

Instructions: This measure is to be reported each time an adult patient presents for elective shoulder arthroscopy or elective shoulder arthroplasty. It is anticipated that qualified anesthesia providers and eligible clinicians who provide denominator-eligible services will submit this measure.

Measure Reporting via the Qualified Clinical Data Registry

Patient demographics and CPT codes are used to identify patients who are included in the measure denominator. G-codes and Registry Codes are used to capture the numerator.

Denominator: Patients who have elective shoulder arthroscopy or shoulder arthroplasty.

Denominator Criteria (Eligible Cases): (ASA and CPT): **CPT:** 23470, 23472, 23473, 23474, 29805, 29806, 29807, 29819, 29820, 29821, 29822, 29823, 29824, 29825, 29826, 29827, 29828
ASA: 01630, 01634, 01636, 01638

Numerator: Patients who have an upper extremity nerve block placed before or immediately after the procedure. Numerator Note: upper extremity block may include any one or a combination of the following: Interscalene, Supraclavicular, Suprascapular, Infraclavicular, Axillary

Performance Met: Upper extremity nerve block performed (ABG Measure Response code **1084**)

OR

Performance Not Met: Upper extremity nerve block NOT performed (ABG Measure Response code **1085**)

Denominator Exceptions: Contraindication to/refusal of upper extremity nerve block (ABG Measure Response Code **1086) or** Surgeon administered upper extremity nerve block (ABG Measure Response Code **1087)**

Rationale
Quoted Verbatim: "What are the benefits of nerve blocks?

Nerve blocks have several advantages in shoulder surgery. First, nerve blocks provide better pain relief after surgery than the combination of general anesthesia and systemic pain-relieving medications such as opioids that are given after surgery. This is because pain relief provided by nerve blocks is much more specific to the location of the pain. You will also need lower doses of opioids after surgery to control your pain. Opioids have a number of side effects, which are discussed below, so minimizing their use is important. Regional

anesthesia provides greater muscle relaxation than general anesthesia. You will also need less anesthesia for the surgery because your shoulder is totally numb during and after the procedure. That means that you will have less pain, your recovery will be quicker, and your rehabilitation will be easier.

If you happen to receive a block and sedation for surgery instead of receiving general anesthesia, you may avoid many of the side effects and complications associated with general anesthesia, including feeling sick to your stomach or throwing up after anesthesia, commonly known as postoperative nausea and vomiting (PONV)."[1]

[1]American Society of Regional Anesthesia and Pain Medicine: Outpatient orthopedic shoulder surgery: Your pain relief options. (https://www.asra.com/page/1546/outpatient-orthopedic-shoulder-surgery-your-pain-relief-options)

Other references:
Bowens C and Sripada R. Regional blockade of the shoulder: approaches and outcomes. *Anesthesiology Research and Practice*. 2012; 2012(4):1-12.
Hussain N et al. Suprascapular and Interscalene Nerve Block for Shoulder Surgery: A Systematic Review and Meta-analysis. Anesthesiology. 2017 Dec; 127(6):998-1013.

Data Source: Claims, Hybrid, other

Measure Steward: ABG QCDR

Inverse Measure: No

Proportional Measure: Yes

Continuous Variable Measure: No

Ratio Measure: No

Risk Adjustment: No

High Priority Type: Patient Safety

Meaningful Measure Area: Patient Focused Episode of Care

Number of Performance Rates: 1

Care Setting: Ambulatory, Ambulatory Care: Clinician Office/Clinic, Ambulatory Care: Hospital, Ambulatory Surgical Center, Hospital, Hospital Inpatient, Hospital Outpatient

Includes Telehealth: No

NQF Number: Not applicable

eCQM Number: Not applicable

Measure Title

ABG42: Known or Suspected Difficult Airway Mitigation Strategies

Measure Description: Percentage of patients with a known or suspected difficult airway who undergo a planned general endotracheal anesthetic that have both a second provider present at induction and placement of the endotracheal tube and have difficult airway equipment in the room prior to the induction.

National Quality Strategy Domain: Patient Safety

Measure Type: Process

High Priority Status: Yes

High Priority Type: Patient Safety

Inverse Measure: No

Risk Adjusted: No

Instructions: The measure will be applicable to patients who by history or physical examination are known to have or are suspected of having a difficult airway and for whom general anesthesia with an endotracheal tube is planned. The measure will be considered met when a dedicated second provider is physically present in the room and is available to assist with induction and placement of the endotracheal tube. Additionally, the measure will be considered met when difficult airway equipment is brought into the room prior to induction to assist with the placement of the endotracheal tube if needed. It is anticipated that qualified anesthesia providers and eligible clinicians who provide denominator-eligible services will submit this measure.

Measure Reporting via the Qualified Clinical Data Registry

Patient demographics and CPT codes are used to identify patients who are included in the measure denominator. G-codes and Registry Codes are used to capture the numerator.

Denominator: Patients with a known or suspected difficult airway who undergo a planned general endotracheal anesthetic.

Denominator Criteria (Eligible Cases):

Patient having a GETA (ABG Measure Response Code **1019**)

AND

Patient identified as difficult airway – (ABG Measure Response Code **1073)**

AND

CPT Codes included: 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, 0930, 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, 01992

DENOMINATOR EXCLUSIONS: Age < 18 ASA Physical Status =E

Numerator: Patients who have a dedicated second provider physically present in the room who is available to assist with induction and placement of the endotracheal tube**.**

Performance Met: Second provider present at induction (ABG Measure Response Code **1074**)

AND

Use of difficult airway equipment, planned is reported (ABG Observation **036**)

OR

***Performance Not Met*:** Second provider NOT present at induction (ABG Measure Response Code **1075)**

OR

***ABG Observation* 037, 038 or 004** reported (unplanned use of difficult airway equipment, unable to intubate or failed airway)

Definitions:

Numerator Note: suspected difficult airway- A difficult airway is defined as the clinical situation in which a conventionally trained anesthesiologist experiences difficulty with facemask ventilation of the upper airway, difficulty with tracheal intubation, or both. The difficult airway represents a complex interaction between patient factors, the clinical setting, and the skills of the practitioner.

Numerator Note: dedicated second provider- capable healthcare provider whose only responsibility at the time of induction is to provide assistance for management of difficult airway. A dedicated second provider may include operating room staff: physician, certified registered nurse anesthetist, registered nurse, resident, or anesthesia technician.

References:

Practice Guidelines for Management of the Difficult Airway, An Updated Report by the American

Society of Anesthesiologists Task Force on Management of the Difficult Airway. Anesthesiology 2013; 118:251-70.

https://www.openanesthesia.org/overall_preoperative_evaluation_anesthesia_text/

Data Source: Claims, Hybrid, other

Measure Steward: ABG QCDR

Inverse Measure: No

Proportional Measure: Yes

Continuous Variable Measure: No

Ratio Measure: No

Risk Adjustment: No

Meaningful Measure Area:

Number of Performance Rates: 1

Care Setting: Hospital, Ambulatory Surgery Center, Office Based Surgery Center

Includes Telehealth: No

NQF Number: Not applicable

eCQM Number: Not applicable

Measure Title:

ABG43: Use of Capnography for non-Operating Room Anesthesia

Measure Description: Percentage of patients receiving anesthesia in a non-operating room setting who have end-tidal carbon dioxide (E_TCO_2) monitored using capnography.

National Quality Strategy Domain: Patient Safety

Measure Type: Process

High Priority Status: Yes

High Priority Type: Patient Safety

Inverse Measure: No

Risk Adjusted: No

Instructions: This measure is to be reported each time a patient receives anesthesia in a non-operating room setting. End-tidal carbon dioxide (E_TCO_2) can be recorded in the medical record with either a qualitative ("+") or quantitative measure (numerical value).

Measure Reporting via the Qualified Clinical Data Registry

CPT codes, type of anesthesia, and patient location are used to identify patients who are included in the measure's denominator. Registry codes are used to report the numerator of the measure.

Denominator: All patients receiving anesthesia in a non-operating room setting for whom select CPT codes are reported.

Denominator Criteria (Eligible Cases): Patients receiving anesthesia in a non-operating room setting (**Measure response code 1088**).

AND Patient encounter reported with one of the following applicable setting anesthesia services:

CPT: 00104, 00410, 00731, 00732, 00811, 00812, 00813, 01922

Denominator Exclusions:

Patients receiving anesthesia in an operating room setting

OR

Patients receiving general anesthesia

Numerator: Patients who have end-tidal carbon dioxide (E_TCO_2) monitoring using capnography.

Numerator Definition: Operating room is defined as a permanent fixed location in which procedures are performed and is equipped with a dedicated anesthesia machine (mechanical ventilator and inhalational anesthetic delivery system) with standard OR monitors (BP, EKG, pulse oximetry, end tidal CO2). Procedure rooms where anesthesia machines and standard monitors are made available on an "as needed" basis are not considered operating rooms for the purposes of this measure.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met: **Mednax53A**: Clinician monitored end-tidal carbon dioxide (E_TCO_2) using capnography. End-tidal carbon dioxide can be recorded in the medical record with either a qualitative ("+") or quantitative measure (numerical value).

***Performance Not Met: Mednax*53B**: Clinician did not monitor end-tidal carbon dioxide using capnography.

Rationale

The use of capnography when administering anesthesia in non-operating room sites is highly variable. To assess current use of capnography in non-OR settings, MEDNAX conducted a random audit of 100 anesthesia cases among all MEDNAX group practices participating in the MEDNAX QCDR. These cases were performed during the first 6 months of 2018 and represented either anesthesia for screening colonoscopy (CPT 00812) or anesthesia for non-invasive radiologic imaging (CPT 01922). In 76% of these cases, anesthesiologists documented use of end-tidal CO2 monitoring while in 24% of cases, such monitoring was not documented.

Anecdotally, monitoring of end-tidal carbon dioxide (E_TCO_2) occurs in a minority of cases outside of the operating room. This is despite evidence that it reduces hypoxemic events: "Meta-analysis of RCTs indicate that the use of continuous end-tidal carbon dioxide monitoring (*i.e.*, capnography) is associated with a reduced frequency of hypoxemic events (*i.e.*, oxygen saturation less than 90%) when compared to monitoring without capnography (*e.g.*, practitioners were blinded to capnography results) during procedures with moderate sedation (category A1-B evidence)."[1]

Capnography use helps avoid adverse events in numerous settings, including the pediatric emergency room:

"Hypoventilation is common during sedation of pediatric emergency department patients. This can be difficult to detect by current monitoring methods other than capnography. Providers with access to capnography provided fewer but more timely interventions for hypoventilation. This led to fewer episodes of hypoventilation and of oxygen desaturation."[3] In addition, monitoring of end-tidal carbon dioxide reduces complications in advanced endoscopic procedures: "Capnographic monitoring of respiratory activity improves patient safety during procedural sedation for elective ERCP/EUS by reducing the frequency of hypoxemia, severe hypoxemia, and apnea."[4]

Finally, the use of capnography is not only cost efficient, but it may also create cost savings: "Capnography is estimated to be cost-effective if not cost saving during PSA (procedural sedation/analgesia) for gastrointestinal endoscopy. Savings were driven by improved patient safety, suggesting that capnography may have an important role in the safe provision of PSA."[6]

References:

1. ASA Practice Guidelines for Moderate Procedural Sedation and Analgesia 2018:

http://anesthesiology.pubs.asahq.org/article.aspx?articleid=2670190&_ga=2.238907456.1334756999.1531922211 -1495262938.1525547862

2. Beitz, A, Riphaus, A, Meining, A, Kronshage, T, Geist, C, Wagenpfeil, S, Weber, A, Jung, A, Bajbouj, M, Pox, C, Schneider, G, Schmid, RM, Wehrmann, T, von Delius, S. Capnographic monitoring reduces the incidence of arterial oxygen desaturation and hypoxemia during propofol sedation for colonoscopy: A randomized, controlled study (ColoCap Study). *Am J Gastroenterol* 2012; *107*:1205–12

3. Langhan, ML, Shabanova, V, Li, FY, Bernstein, SL, Shapiro, ED. A randomized controlled trial of capnography during sedation in a pediatric emergency setting. *Am J Emerg Med* 2015; *33*:25–30
4. Qadeer, MA, Vargo, JJ, Dumot, JA, Lopez, R, Trolli, PA, Stevens, T, Parsi, MA, Sanaka, MR, Zuccaro, G. Capnographic monitoring of respiratory activity improves safety of sedation for endoscopic cholangiopancreatography and ultrasonography. *Gastroenterology* 2009; *136*:1568–76
5. Slagelse, C, Vilmann, P, Hornslet, P, Jørgensen, HL, Horsted, TI. The role of capnography in endoscopy patients undergoing nurse-administered propofol sedation: A randomized study. *Scand J Gastroenterol* 2013; *48*:1222–30
6. Saunders, R, Erslon, M, Vargo, J. Modeling the costs and benefits of capnography monitoring during procedural sedation for gastrointestinal endoscopy. *Endosc Int Open* 2016; 4(3): E340–E351

Data Source: Claims, Hybrid, other

Measure Steward: ABG QCDR

Inverse Measure: No

Proportional Measure: Yes

Continuous Variable Measure: No

Ratio Measure: No

Risk Adjustment: No

Meaningful Measure Area: Preventable Healthcare Harm

Number of Performance Rates: 1

Care Setting: Ambulatory Care sites, Ambulatory surgery center, emergency department, hospital inpatient, hospital outpatient, imaging facility, office-based surgery center, clinic

Includes Telehealth: No

NQF Number: Not applicable

eCQM Number: Not applicable

Measure Title:

Quantum31 (Q31): Central Line Ultrasound Guidance

Measure Description: Percentage of patients, regardless of age, in whom ultrasound guidance is used by the clinician when placing a central line for those central lines that are placed in the internal jugular location.

National Quality Strategy Domain: Patient Safety

Measure Type: Process

High Priority Status: Yes

High Priority Type: Patient Safety

Inverse Measure: No

Risk Adjusted: No

Instructions: This measure is to be reported each time a clinician places a central line in the internal jugular location (de novo placement). Performance of this metric requires clinician documentation that ultrasound guidance was performed at the time of central line placement.

Measure Reporting via the Qualified Clinical Data Registry

CPT codes and patient demographics are used to identify patients who are included in the measure's denominator. Registry codes are used to report the numerator of the measure.

Denominator: All patients, regardless of age, who undergo internal jugular central line placement by the clinician.

Denominator Criteria (Eligible Cases): All patients, regardless of age

AND

Patient encounter during the reporting period (CPT): 36555, 36556, 36557, 36558, 36560, 36561, 36563, 36565, 36566, 93503 **AND Internal jugular site insertion (Measure Response Code 1089).**

Denominator Exclusion: Tunneled placement through same, existing site as previously placed and currently indwelling non-tunneled placement **(Measure Response Code 1090).**

Numerator: Use of ultrasound guidance during the central line insertion when central line is placed at the internal jugular site.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

Mednax52A: Clinician used ultrasound guidance during central line placement when internal jugular site used.

OR

Performance Not Met:

Mednax52C: Clinician did not use ultrasound guidance during central line placement when internal jugular site used.

Rationale

The use of ultrasound to guide central venous cannulation has been shown to decrease adverse events including but not limited to decreased risks of cannulation failure, arterial puncture, hematoma, and hemothorax. Benefits that relate to ultrasound guidance are most appreciable for internal jugular site insertion in contrast to either subclavian or femoral insertion.

References:

1. Wu, Shao-yong, et al. "Real-time Two-dimensional Ultrasound Guidance for Central Venous Cannulation." Anesthesiology 118.2 (2013): 361.

2. Bruzoni, Matias, et al. "A prospective randomized trial of ultrasound-vs landmark-guided central venous access in the pediatric population." Journal of the American College of Surgeons 216.5 (2013):

939-943.

3. Bass et al. Ultrasound guidance versus anatomical landmarks for subclavian or femoral vein catheterization. Cochrane Database Syst Rev. 2015 Jan 9;1. CD011447

4. Bass et al. Ultrasound guidance versus anatomical landmarks for internal jugular vein catheterization. Cochrane Database Syst Rev. 2015 Jan 9;1:CD006962.

Data Source: Claims, EHR, Paper Medical Record, Hybrid, Registry

Measure Steward: ABG QCDR

Proportional Measure: Yes

Continuous Measure: No

Ratio Measure: No

Meaningful Measure Area: Preventable Healthcare Harm

Number of Performance Rates: 1

Care Setting: Hospital

Includes Telehealth: No

NQF Number: Not applicable

eCQM Number: Not applicable

Measure Title:

MEDNAX54 (MD54): Labor Epidural Failure when Converting from Labor Analgesia to Cesarean Section Anesthesia

Measure Description

The percentage of patients who have pre-existing labor epidural or combined epidural/spinal technique who require either repeat procedural epidural or spinal, general anesthesia, or supplemental sedation as defined below for cesarean section.

National Quality Strategy Domain: **Efficiency and Cost Reduction**

Measure Type: Outcome

High Priority Status: Yes

High Priority Type: Outcome

Inverse Measure: Yes

Risk Adjusted: No

Instructions:

This measure is to be reported each time a patient with an existing labor epidural or combined epidural/spinal requires delivery by cesarean section.

Measure Reporting via the Qualified Clinical Data Registry

CPT codes and patient demographics are used to identify patients who are included in the measure's denominator. Registry codes are used to report the numerator of the measure.

DENOMINATOR: All parturients with an existing labor epidural or epidural/spinal technique who require delivery by cesarean section.

Denominator Criteria (Eligible Cases):

Parturient

AND with labor epidural in place (CPT code 01967)

AND requires delivery by cesarean section (CPT code +01968)

Denominator Exclusions: Urgent/Emergent C/S for fetal well-being **(Measure Response Code 1091).**

Numerator: Patients who have pre-existing labor epidural or epidural/spinal technique who require either general anesthesia, repeat procedural epidural and/or spinal technique, or supplemental sedation for cesarean section. For the purposes of this measure, "supplemental sedation" is defined as any dose of propofol, etomidate, or nitrous oxide.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

Mednax54A: Patient who has pre-existing labor epidural or epidural/spinal technique who requires either general anesthetic, repeat procedural epidural and/or spinal technique, or supplemental sedation for cesarean section.

Performance Not Met:

Mednax54B: Patients who has pre-existing labor epidural or epidural/spinal technique who **did not** require either general anesthesia, repeat procedural epidural and/or spinal technique, or supplemental sedation.

Measure Type: Outcome

Rationale

The Royal College of Anaesthetists states that an acceptable rate of general anesthesia in a parturient receiving labor epidural analgesia should be no more than 3%. (1,2). In a 2012 systematic review, Bauer et al. found that the percentage of all cesarean deliveries performed with general anesthesia with a pre-existing labor epidural was 5% (95% CI 3.5 to 6.5%). The requirement for a second anesthetic, including repeat epidural, spinal or general anesthetic was 7.7% (95% CI 5.0 to 10.5%) and overall, 10.7% (95% CI 4.2 to 17.3) of patients were given supplementation (intravenous, inhalational, or not specified) for cesarean sections. (3).

To assess current conversion of labor epidural to either spinal or general anesthesia for cesarean section, MEDNAX conducted a random audit of 100 cesarean following labor epidural cases among all MEDNAX obstetrical anesthesia group practices participating in the MEDNAX QCDR. These cases were performed during the first 6 months of 2018. In 17% of these cases, anesthesiologists converted the labor epidural to either spinal or general anesthesia in performing the cesarean section.

Based on published literature, one notable risk factor for conversion failure was being a non-obstetrical (general) anesthesiologist (4,5). They posited that obstetrical anesthesiologists may be more aware of the quality of labor analgesia and more likely to replace dysfunctional catheters or perform manipulations of the existing catheter or performing another neuraxial technique to avoid general anesthesia (3). Campbell reported an 84.6% success rate of converting labor epidurals by withdrawing the catheter 1cm before further drug administration. (4). Riley reported that obstetrical anesthesiologists had more success than general anesthesiologists in conversion (5). This metric could identify performance gaps and the need for dedicated obstetrical anesthesia staff rather than cross coverage by general anesthesiologists.

References:

1. Russell I. Technique of anesthesia for cesarean section. In: Colvin J, editor. *Raising the standard: a compendium of audit recipes.* London: The Royal College of Anaesthetists; 2000. p. 6 – 8.
2. Russell I. Technique of anesthesia for cesarean section. In: Colvin J, editor. *Raising the standard: a compendium of audit recipes for continuous quality improvement in anaesthesia.* 2nd ed. London: The Royal College of Anaesthetists; 2006. p. 166 – 7.
3. M.E. Bauer, J.A. Kountanis, L.C. Tsen, M.L. Greenfield, J.M. Mhyre. Risk factors for failed conversion of labor analgesia to cesarean delivery anesthesia: a systematic review and meta-analysis of observational trials. International *J of Obstet Anesth* (2012) 21, 294 – 309.

4. Campbell DC, Tran T. Conversion of epidural labour analgesia to epidural anaesthesia for intrapartum cesarean delivery. *Can J Anesth* 2009; 56:19 – 26.
5. Riley ET, Papasin J. Epidural catheter function during labor predicts anesthetis efficacy for subsequent cesarean delivery. *Int J Obstet Anesth* 2002; 11:81 – 4.

Data Source: Claims, Hybrid, Other

Measure Steward: ABG QCDR

Inverse Measure: Yes

Proportional Measure: Yes

Continuous Variable Measure: No

Ratio Measure: No

Risk Adjustment: No

Meaningful Measure Area: Appropriate Use of Healthcare

Number of Performance Rates: 1

Care Setting: Hospital Inpatient

Includes Telehealth: No

NQF Number: Not applicable

eCQM Number: Not applicable

Measure Title:

MEDNAX56 (MD56): Use of a "PEG Test" to Manage Patients Receiving Opioids

Measure Description: Percentage of patients in an outpatient setting, aged 18 and older, in whom a stable dose of opioids is prescribed for greater than 6 weeks for pain control, and the results of a "PEG Test" are correctly interpreted and applied to the management of their opioid prescriptions.

National Quality Strategy Domain Effective Clinical Care

Measure Type: Process

High Priority Status: Yes

High Priority Type: Opioid-related Measure

Inverse Measure: No

Risk Adjusted: No

Instructions: This measure is to be reported once each reporting period. The measure applies when a practitioner sees a patient in an outpatient setting who has been taking a stable dose of opioids for greater than 6 weeks. A stable dose of opioids is defined as the same medication, route of delivery, dose, and schedule for at least a one-week time period.

The PEG score is determined prior to the initiation of opioid therapy (Baseline PEG), and then after the patient has been on a stable dose of opioid therapy for greater than 6 weeks. These scores are recorded in the medical record. For those patients who are already on opioid therapy at the time the measure is applied, the "Baseline PEG" may also be determined after a washout period of opioids, or by asking the patient to answer the Baseline PEG questions like he would have prior to beginning opioid therapy. A 30% change in PEG score is considered a significant improvement.

Measure Reporting via the Qualified Clinical Data Registry

CPT codes and patient demographics are used to identify patients who are included in the measure's denominator. QCDR-established codes are used to report the numerator of the measure.

Denominator

All patients, aged 18 and older, receiving chronic opioid therapy for pain management in an outpatient setting, and who have been at a stable dose of opioids for greater than 6 weeks.

Denominator Criteria (Eligible Cases):

Patients aged ≥ 18 years on date of encounter

AND

taking a stable dose of opioid medications for greater than 6 weeks in an outpatient setting

(Measure Response Code 1092)

AND

At least one encounter during the one-year performance period (CPT or HCPCS): 99201, 99202, 99203, 99204, 99205, 99211, 99212, 99213, 99214, 99215, 99241, 99242, 99243, 99244, 99245.

Denominator Exclusions (Measure Response Code 1093): Inpatients

OR

Post-op surgical patients (defined as the period of time after surgery, not to exceed 6 weeks)

OR

Patients in hospice or palliative care treatment programs

OR

Patients in whom the opioid dose is still being adjusted and has not been consistent during the 6 weeks prior to the reporting period

Denominator Exception: Acute pain flare with elevated PEG that is assessed to be acutely transient and not warranting excessive opioid titration at this visit. (**Measure Response Code 1094**)
Numerator: Use of PEG Test results to guide opioid prescribing.

Numerator Quality-Data Coding Options for Reporting Satisfactorily

Performance Met:

Mednax12A: At least once during the reporting year, clinician used the PEG Test results to correctly continue opioid prescribing, meaning the PEG score showed a reduction of 30% or greater from baseline, and the patient was continued on the opioid regimen.

OR

Mednax12B: At least once during the reporting year, clinician used the PEG Test result to correctly discontinue previous opioid regimen (PEG score was not reduced 30% or more from baseline), and then weaned the patient off opioids, adjusted the dose of opioid, or changed to a different opioid.

Performance Not Met:

Mednax12C: At least once during the reporting year, clinician did not administer the PEG Test or administered the test and did not alter opioid prescribing appropriately.

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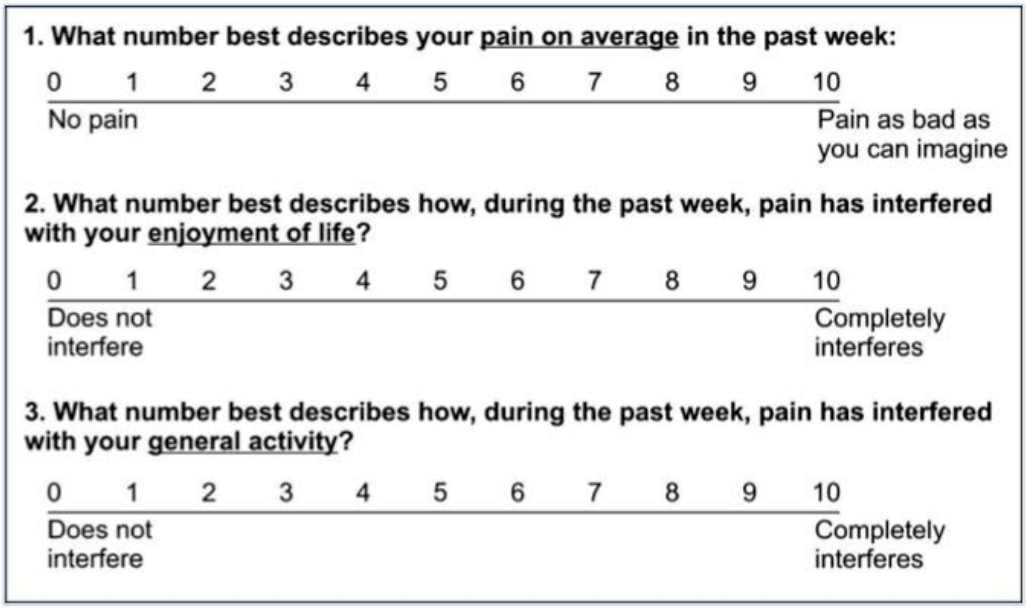
Rationale

Inadequate pain assessment is a barrier to appropriate pain management, but single item "pain screening" provides limited information about chronic pain. Multidimensional pain measures such as the *Brief Pain Inventory (BPI)* are widely used in pain specialty and research settings but are impractical for primary care. The *Brief Pain Inventory (BPI)* includes two scales that assess pain intensity and pain-related functional impairment (physical and emotional). The *PEG score*, similar to the BPI, looks at multiple dimensions of pain management, including average pain intensity (P), interference with enjoyment of life (E), and interference with general activity (G). Because it is brief and straightforward, the PEG score will likely improve initial assessment and follow-up of chronic pain."[1]

The Center for Disease Control (CDC) recommends that a PEG test be administered to patients chronically on opioids to periodically reassess their functionality and pain control.[2] If a person does not have a 30% improvement in their PEG score (i.e., a reduction in the number) when on opioids, then it is interpreted that the opioids did not provide an adequate improvement in pain and function. In this situation, the opioid prescription should be weaned off. If the patient had a 30% improvement in pain and function, then opioids are continued. The chart below from Krebs et al[1] illustrates the scoring:



References:

1. Krebs E, Lorenz K, Blaie M, et al. Development and Initial Validation of the PEG, a Three-item Scale Assessing Pain Intensity and Interference. J Gen Intern Med. 2009 Jun; 24(6): 733–738.
2. https://www.cdc.gov/drugoverdose/pdf/pdo_checklist-a.pdf. Accessed August 3, 2017.

Data Source: Administrative Claims, hybrid, other

Measure Steward: ABG QCDR

Inverse Measure: No

Proportional Measure: Yes

Continuous Variable Measure: No

Ratio Measure: No

Meaningful Measure Area: Medication Management

Number of Performance Rates: 1

Care Setting: Ambulatory Care: Clinician Office/Clinic, ambulatory care, outpatient services

Includes Telehealth: Yes