

Recommended Practices for Managing the Patient Receiving Moderate Sedation/Analgesia

The following recommended practices for managing the patient receiving moderate sedation/analgesia were developed by the AORN Recommended Practices Committee and have been approved by the AORN Board of Directors. They were presented as proposed recommendations for comments by members and others. They are effective January 1, 2008.

These recommended practices are intended as achievable recommendations representing what is believed to be an optimal level of practice. Policies and procedures will reflect variations in practice settings and/or clinical situations that determine the degree to which the recommended practices can be implemented.

AORN recognizes the various settings in which perioperative nurses practice. These recommended practices are intended as guidelines adaptable to various practice settings. These practice settings include traditional operating rooms, ambulatory surgery centers, physician's offices, cardiac catheterization laboratories, endoscopy suites, radiology departments, and all other areas where surgery may be performed.

References to nursing interventions (I) used in the Perioperative Nursing Data Set, second edition, (PNDS) are noted in parentheses when a recommended practice corresponds to a PNDS intervention.¹ The reader is referred to the PNDS for further explanation of perioperative nursing diagnoses, interventions, and outcomes.

Purpose

Moderate sedation/analgesia is a drug-induced, mild depression of consciousness achieved by the administration of sedatives or the combination of sedatives and analgesic medications, most often administered intravenously, and titrated to achieve a desired effect. The primary goal of moderate sedation/analgesia is to reduce the patient's anxiety and discomfort. Moderate sedation/analgesia also can facilitate cooperation between the patient and caregivers.² Moderate sedation/analgesia produces a condition in which the patient exhibits a mildly depressed level of consciousness and an altered perception of pain, but retains the ability to respond appropriately to verbal and/or tactile stimulation. The patient maintains protective reflexes, may experience some degree of amnesia, and has a rapid return to activities of daily living.³

The desired effect is a level of sedation with or without analgesia whereby the patient is able to tolerate diagnostic, therapeutic, and invasive procedures through relief of anxiety and pain. The four distinct characteristics of moderate sedation/analgesia are:

- ◆ The patient is able to respond purposefully to verbal commands or light tactile stimulation.
- ◆ The patient is able to maintain his or her protective reflexes and communicate verbally.
- ◆ The patient can maintain adequate, spontaneous ventilation.
- ◆ There are minimal variations in vital signs.⁴

Recommendation I

The perioperative registered nurse administering moderate sedation/analgesia must practice within the scope of nursing practice as defined by his or her state and should be compliant with state advisory opinions, declaratory rules, and other regulations that direct the practice of the registered nurse.⁴

The methods of monitoring used with patients who receive moderate sedation/analgesia, the medications selected and administered, and the interventions taken must be within the legal definitions of the scope of practice of the registered nurse.³

- I.a. In accordance with state and local laws and regulations, a licensed independent practitioner qualified by education, training, and licensure to administer moderate sedation should supervise the administration of moderate sedation.
- I.b. The perioperative registered nurse should consult with his or her state board of nursing for any changes or revisions to declaratory rulings and other guidelines that relate to the perioperative registered nurse's role as a provider of moderate sedation/analgesia.⁵ (PNDS: I1)

The professional obligation of the perioperative registered nurse to safeguard clients is grounded in the ethical obligation to the patient, the profession, society, the American Nurses Association's (ANA) *Standards of Clinical Nursing Practice*, AORN's "Explications for perioperative nursing," and state nurse practice acts.^{4,6}

Table 1

PHYSICAL STATUS CLASSIFICATION		
Status	Definition of patient status	Example
P1	A normal healthy patient	No physiologic, psychological, biochemical, or organic disturbance.
P2	A patient with mild systemic disease	Cardiovascular disease, asthma, chronic bronchitis, obesity, or diabetes mellitus.
P3	A patient with severe systemic disease	Cardiovascular or pulmonary disease that limits activity; severe diabetes with systemic complications; history of myocardial infarction, angina pectoris, or poorly controlled hypertension.
P4	A patient with severe systemic disease that is a constant threat to life	Severe cardiac, pulmonary, renal, hepatic, or endocrine dysfunction.
P5	A moribund patient who is not expected to survive without the operation	Surgery is done as a last recourse or resuscitative effort; major multi-system or cerebral trauma, ruptured aneurysm, or large pulmonary embolus.
P6	A declared brain-dead patient whose organs are being removed for donor purposes	

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Recommendation II

Patient selection for moderate sedation/analgesia should be based on established criteria developed through interdisciplinary collaboration by health care professionals.

Certain patients may not be candidates for moderate sedation/analgesia administered by perioperative registered nurses. Such patients may require care provided by an anesthesia provider qualified to administer monitored anesthesia care and to rescue the patient from a deeper level of sedation, or qualified to convert to general anesthesia if needed.^{3,7,8}

II.a. The perioperative registered nurse should assess the patient to determine the appropriateness of registered nurse-administered sedation/analgesia based on selection criteria defined by the health care organization. (PNDS: 159, 1144, 160, 166, 168)

The American Society of Anesthesiologists (ASA) Physical Status Classification (**Table 1**) may be used as a means of determining patient appropriateness for registered nurse-administered sedation/analgesia. Patients classified as P1, P2, and a medically stable P3 are normally considered appropriate for registered nurse-administered moderate sedation/analgesia.^{5,6}

II.b. Consultation with an anesthesia provider should be obtained if a patient presents with any one of the following:

- known history of respiratory or hemodynamic instability;
- previous difficulties with anesthesia or sedation;²
- severe sleep apnea or other airway related issues;²
- one or more significant co-morbidities;² (I58)
- pregnancy;²
- inability to communicate (eg, aphasic);
- inability to cooperate (eg, mentally incapacitated);²
- multiple drug allergies;
- multiple medications with potential for drug interaction with sedative analgesics;^{2,3}
- current substance use (eg, street drugs, herbal supplements, nonprescribed prescription drugs);³
- ASA physical classification of an unstable P3;^{3,5} and
- ASA physical classification of P4 or above.^{3,5} (PNDS: 192, 1111)

Recommendation III

The perioperative registered nurse should complete a patient assessment before administering moderate sedation/analgesia.

A presedation assessment determines a patient's suitability for registered nurse-administered moderate sedation/analgesia by identifying the potential for adverse events.

III.a. The presedation assessment should include, but is not limited to,^{4,5,7}

- verification of consent explaining the risks, benefits, and alternatives to sedation;^{2,5} (PNDS: I124)
 - review of medical history; (PNDS: I111)
 - review of physical examination of the cardiac and pulmonary systems, including vital signs;¹ (PNDS: I66, I58)
 - review of height and weight;^{1,2} (PNDS: I66)
 - verification of pregnancy test results, when applicable; (PNDS: I66)
 - review of present medication regimen (eg, prescribed, over-the-counter, herbals, supplements), medication taken within the last 48 hours including any as needed medications, especially opioids or other narcotics;² (PNDS: I17)
 - review of substance use;^{1,2,5} (PNDS: I66, I114)
 - review of tobacco and alcohol use;^{1,2,5} (PNDS: I66, I114)
 - verification of allergies and sensitivities to medications, latex, chemical agents, foods, and adhesives;^{1,2,5} (PNDS: I123)
 - confirmation of NPO status;^{2,5} (PNDS: I56, I66)
 - determination of patient's ability to tolerate and maintain the required position for the duration of the planned procedure; and (PNDS: I64, I127)
 - verification of a responsible adult caregiver to escort the patient home.^{5,9} (PNDS: I80)
- The fasting guidelines developed by the ASA may be used.²
- III.b. The perioperative registered nurse should perform an assessment of the patient's airway before administering moderate sedation/analgesia. (PNDS: I66, I60, I15)
- Support of the airway and positive-pressure bag-mask ventilation may be necessary if respirations are compromised by the respiratory depressive effects of moderate sedation medications.^{2,5}
- III.b.1. The pre-sedation airway assessment should include, but is not limited to, the following risk factors for difficult mask ventilation:
- age > 55 years;¹⁰
 - significant obesity (especially of the face, neck, and tongue);²
 - missing teeth or edentulous;¹⁰
 - presence of a beard;¹⁰
 - history of snoring or sleep apnea;¹⁰ and
 - presence of stridor.²
- III.c. The perioperative registered nurse should consult with an anesthesia provider if the patient presents with a history of severe obstructive sleep apnea.² (PNDS: I92, I64, I15, I111)
- Administration of sedatives to the patient with central sleep apnea may inhibit the brain's signal to wake up and breathe.¹¹
- III.d. Additional precautions should be taken for patients with sleep apnea. (PNDS: I64, I92, I87, I121)
- Moderate sedation medications may cause relaxation of the oropharyngeal structures resulting in partial or total airway obstruction.^{2,11}
- III.d.1. Care of the patient with sleep apnea should include, but is not limited to,
- management by an anesthesia provider if the patient has severe central sleep apnea;²
 - positioning in the lateral or semi-Fowlers position, if at all possible;
 - use of continuous positive airway pressure (CPAP) machines during the procedure and recovery periods for patients who routinely use CPAP machines when they sleep;¹¹ and
 - continuous monitoring and positioning to facilitate an open airway.¹¹
- III.e. The perioperative registered nurse should collaborate with the licensed independent practitioner in developing and documenting the sedation/analgesia plan.²

Recommendation IV

The perioperative registered nurse monitoring the patient receiving moderate sedation/analgesia should have no other responsibilities that would require leaving the patient unattended or would compromise continuous monitoring during the procedure.¹²

Continuous monitoring of the patient's physiological and psychological status by the perioperative registered nurse leads to early detection of potential complications.¹²

IV.a. A designated perioperative registered nurse should continually monitor the patient during administration of moderate sedation/analgesia.^{1,2,2} (PNDS: I30, I27, I128)

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- IV.b. An additional perioperative registered nurse should be assigned to the circulating role during the administration of moderate sedation.²
- IV.c. When moderate sedation is administered, the supervising licensed independent practitioner should remain immediately available during the procedure and recovery period.

Recommendation V

The perioperative registered nurse should know the recommended dose, recommended dilution, onset, duration, effects, potential adverse reactions, drug compatibility, and contraindications for each medication used during moderate sedation/analgesia.

Safe administration of medications for moderate sedation and analgesia requires knowledge of the intended purpose and potential adverse effects of each medication and continuous monitoring of the patient responses to the medications.^{2,3}

- V.a. When medications are administered by the oral, rectal, intramuscular, or transmucosal routes, sufficient time should be allowed for drug absorption and onset before considering additional medication.² (PNDS: 18, 151)
- The absorption rate of nonintravenous medications is unpredictable.²
- V.b. The need for IV access should be assessed and will vary depending on the level of sedation intended; the route of sedative administration (eg, oral); and organizational policy, procedure, and protocol. (PNDS: 134)
- Maintaining IV access throughout the procedure allows for additional sedation as well as resuscitative medications.²
 - Intravenous administration of both a sedative and an analgesic provides effective moderate sedation/analgesia.²
 - Sedatives (eg, benzodiazepines) may be prescribed to reduce anxiety.^{2,3,5}
 - Analgesics (eg, opioid agonists) may be prescribed to manage pain.^{2,3,5}
- V.c. Each IV agent should be administered separately in incremental doses and titrated to desired effect (ie, moderate sedation/analgesia that enables the patient to maintain his or her protective reflexes, airway patency, spontaneous ventilation).^{2,3} (PNDS: 151, 189)

The incremental administration of agents decreases the risk for overdose and respiratory or circulatory depression because the person administering the agents may better observe the patient's response to the medications given.^{2,2,5}

- V.d. Opioid antagonists (ie, naloxone) and benzodiazepine antagonists (ie, flumazenil) should be readily available whenever opioids and benzodiazepines are administered.^{2,3} (PNDS: 151, 189)
- V.e. Only persons trained in administering general anesthesia should administer propofol for moderate sedation/analgesia. (PNDS: 11)

On April 14, 2004, the American Association of Nurse Anesthetists (AANA) and the ASA in a joint statement said:

"Because sedation is a continuum, it is not always possible to predict how an individual patient will respond. Due to the potential for rapid, profound changes in sedative/analgesia depth and the lack of antagonistic medications, agents such as propofol require special attention.

Whenever propofol is used for sedation/anesthesia, it should be administered only by persons trained in the administration of general anesthesia, who are not simultaneously involved in these surgical or diagnostic procedures. This restriction is concordant with specific language in the propofol insert, and failure to follow these recommendations could put patients at increased risk of significant injury or death.

Similar concerns apply when other intravenous induction agents are used for sedation, such as thiopental, methohexital or etomidate."^{6,7,13}

The AORN Board of Directors endorsed this statement on January 14, 2005.

Recommendation VI

The perioperative registered nurse should continuously monitor the patient throughout the procedure.^{1,5,7}

Continuous monitoring throughout the procedure enables the perioperative registered nurse to use clinical data to implement or modify the plan of care.³

- VI.a. The perioperative registered nurse, at a minimum, should continuously monitor the patient's heart rate and function via electrocardiogram (ECG); oxygenation using pulse oximetry; respiratory rate and adequacy of ventilation; blood pressure; level of consciousness (LOC); comfort level; and skin condition at regular intervals.^{2,2} (PNDS: 189, 187, 159, 1128)
- VI.b. The method and the flow rate of administering oxygen should be determined based upon achieving the patient's optimal level of oxygen saturation level as measured with pulse oximetry. (PNDS: 187)
A patient's restlessness resulting from hypercapnia and hypoxia may be misinterpreted as discomfort.
The administration of oxygen does not prevent apnea. Patients manifesting restlessness in the absence of a change in pulse oximetry readings may be overmedicated.¹⁴
- VI.c. Monitoring end-tidal carbon dioxide by capnography should be considered for those patients whose ventilation cannot be directly observed during the procedure.² (PNDS: 187, 189, 1128)
- VI.d. Vital signs should be monitored before the start of the procedure, after administration of sedative or analgesic medications, and at least every five minutes during the procedure based on the patient's condition, type and amount of medication administered, and length of procedure.² (PNDS: 189, 1128)
- VI.e. The patient's LOC and ability to respond to verbal commands should be a routine assessment indicator, except in patients unable to respond (eg, young children, mentally impaired, dental surgery).^{4,2} (PNDS: 1144, 1145, 1128)
Assessing the patient's LOC by his or her verbal responses at regular intervals during the procedure can quickly determine if the patient is also breathing well. In addition, verbally reassuring the patient can divert his or her attention and assist in reducing anxiety.²
- VI.f. Equipment should be present, working properly, and immediately available in the room where the procedure is performed.² (PNDS: 1122, 1138, 1120, 187)
- VI.f.1. The following age- and size-appropriate equipment and supplies should be present:
- suction;
 - airway management devices (eg, oral, nasal airways; mask ventilation devices);
 - noninvasive blood pressure monitoring device;
 - pulse oximetry;
 - electrocardiograph; and
 - sedative and analgesic antagonists.^{2,15}
- VI.g. An emergency resuscitation cart should be immediately available in every location in which moderate sedation/analgesia is administered. (PNDS: 1121, 1120, 187)
While careful titration of sedation and analgesics to obtain the desired effect can be very safe when using short-acting agents; respiratory depression, hypotension, or impaired cardiovascular function are common sequelae of sedation and analgesia.^{2,3}
- VI.g.1. An emergency cart should include
- resuscitation medications;
 - intravenous access equipment;
 - intravenous fluids; and
 - life-support equipment (eg, defibrillator, endotracheal intubation equipment, mechanical positive bag-value mask device).

Recommendation VII

The perioperative registered nurse should monitor the patient who receives moderate sedation/analgesia postoperatively.

Recovery time will depend on the type and amount of sedation/analgesia given, procedure performed, and organizational policy.

- VII.a. The same monitoring parameters used during the procedure should be used during the recovery phase. (PNDS: 145, 144, 187, 1120, 1121)
- VII.a.1. Postoperative patient care and monitoring should be consistent for all patients.
- VII.a.2. Postoperative monitoring should include, but is not limited to,
- heart rate and rhythm;^{3,2}
 - LOC;^{2,2,3}
 - blood pressure;^{3,2}
 - cardiac monitoring;³

- oxygenation monitored by pulse oximetry with an audible pulse rate and alarms;² and
 - ventilation monitored by direct observation and/or auscultation.²
- VII.b. All patients should be assessed postoperatively. (PNDS: I4, I3, I16, I130, I153, I54)
- VII.b.1. Postoperative patient care assessments should include, but are not limited to:
- wound condition;^{3,2}
 - dressing condition;^{2,2}
 - line patency;³
 - amount of drainage in drains;³ and
 - level of pain.^{5,2,2}

Recommendation VIII

The perioperative registered nurse should evaluate the patient for discharge readiness based on specific discharge criteria.^{5,2}

Recovery time will depend on the type and amount of sedation/analgesia given, procedure performed, and organizational policy.

- VIII.a. Discharge criteria should be developed collaboratively and agreed upon by nursing, surgery, medicine, and anesthesia services. (PNDS: I92)
- Establishing discharge criteria may minimize the risk of cardiorespiratory depression after the patient has been released.¹⁶⁻¹⁸
- VIII.b. Patients should remain awake for at least 20 minutes without stimulation before they are considered ready for discharge.³ (PNDS: I146)
- The incorporation of a sedation scale in combination with a modified wakefulness test has been reported as ensuring a more objective criterion as compared to using the caregiver's judgment alone.²
- VIII.c. Children receiving medication with a long half-life should be monitored post-procedure until able to meet discharge criteria and remain awake for at least 20 minutes without stimulation.¹⁵
- There are numerous reports of deaths of prematurely discharged children that have died in the back seats of cars on the ride home from airway obstruction related to the administration of long-acting agents (eg, chloral hydrate).^{9,12}

VIII.d. Discharge criteria should be consistently applied to all patients. (PNDS: I89, I27, I146, I44, I45, I51, I143)

- VII.d.1. Criteria for discharge may include, but are not limited to:
- return to preoperative, baseline LOC;
 - stability of vital signs;
 - sufficient time interval (eg, two hours) since the last administration of an antagonist (eg, naloxone, flumazenil) to prevent re sedation of the patient;^{2,12}
 - use of an objective patient assessment scoring system (eg, Aldrete Recovery Score);^{4,21}
 - absence of protracted nausea;
 - intact protective reflexes;
 - adequate pain control; and
 - return of motor/sensory control.

VIII.e. Patients and/or their caregivers should receive verbal and written discharge instructions.² (PNDS: I50, I80)

Medications used for moderate sedation/analgesia cause retrograde amnesia reducing patient's ability to recall events during the immediate postoperative period.

- VIII.e.1. A copy of the written discharge instructions should be given to the patient and a copy should be placed in the patient's medical record.²²
- VIII.e.2. The patient and/or caregiver should be able to verbalize an understanding of the discharge instructions.

Recommendation IX

Competency

The perioperative registered nurse should be clinically competent, possessing the skills necessary to manage the nursing care of the patient receiving moderate sedation/analgesia.

Competency assurance verifies that personnel have an understanding of moderate sedation; the risks of unplanned, deeper sedation; and the safe use of monitoring equipment. This knowledge is essential to minimize the risks of moderate sedation and to provide safe care.²¹

- IX.a. The competency of the perioperative registered nurse to administer moderate sedation/analgesia should be assessed, demonstrated,

documented, and maintained.¹¹ (PNDS: 11, 1128, 1138, 115, 189, 151, 18, 1121, 1120, 1111)

- IX.a.1. Competencies related to administration of moderate sedation/analgesia should include, but are not limited to,
- patient selection and assessment criteria;
 - selection, function, and proficiency in use of physiological monitoring equipment;¹
 - pharmacology of the medications used;
 - airway management;
 - CPAP use;
 - basic dysrhythmia recognition and management;
 - emergency response and management;
 - advanced cardiac life support (ACLS) and pediatric advanced life support (PALS) according to patients served;¹²
 - recognition of complications associated with sedation/analgesia; and
 - knowledge of anatomy and physiology.¹²
- IX.b. The perioperative registered nurse administering moderate sedation/analgesia should be able to rescue patients whose level of sedation progresses to deep sedation. (PNDS: 11, 189, 192)

Sedation occurs on a continuum from fully conscious to deep sedation^{2,2} (Table 2).

- XI.c. The perioperative registered nurse should, at a minimum, have the ability to manage a compromised airway and to provide adequate oxygenation and ventilation. (PNDS: 11)
- Patients receiving moderate sedation/analgesia may unexpectedly slip to the next level (ie, deep sedation or general anesthesia). A provider with bag-, valve-, mask-ventilation; advance life support; and resuscitation skills should be immediately available (eg, within one to five minutes).^{2,2}
- IX.d. Administrators should ensure that initial and ongoing educational opportunities are provided to meet the needs of personnel who perform moderate sedation/analgesia. (PNDS: 11)
- Initial education provides a baseline to support a beginning level of competency to assist in the development of knowledge, skills, and attitudes that positively affect patient outcomes. Ongoing education offers personnel an opportunity to enhance skills and learn about changes in practice, regulations, and standards.²¹
- IX.d.1. An introduction and review of moderate sedation/analgesia policies and procedures should be included in the orientation and ongoing education of personnel.

Table 2

CONTINUUM OF DEPTH OF SEDATION				
Levels of sedation/analgesia	Minimal sedation (ie, anxiolysis)	Moderate sedation/analgesia (ie, conscious sedation)	Deep sedation/analgesia	General anesthesia
Responsiveness	Normal response to verbal stimulation	Purposeful response to verbal or tactile stimulation	Purposeful response following repeated or painful stimulation	Unarousable even with painful stimulation
Airway	Unaffected	No intervention required	Intervention may be required	Intervention often required
Ventilations	Unaffected	Adequate	May be adequate	Frequently inadequate
Cardiovascular function	Unaffected	Usually maintained	Usually maintained	May be impaired

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- IX.e. Administrators should ensure that perioperative registered nurses who administer moderate sedation/analgesia for procedures are competent to perform these skills.²¹ (PNDS: I1)
- IX.f. Competencies should reflect current regulations, nurse practice acts, standards, recommended practices, and guidelines affecting the administration of moderate sedation/analgesia. (PNDS: I1)
- Regulations, nurse practice acts, standards, recommended practices, and guidelines affecting the administration of moderate sedation/analgesia are evolving and may change over time.
- IX.g. The perioperative registered nurse should have the additional knowledge and skills necessary to provide care to the pediatric patient populations they serve.¹⁵

Recommendation X

Documentation

The perioperative registered nurse should document the care of the patient and their physiological responses throughout the continuum of care.⁷

Documentation of all nursing activities performed is legally and professionally important for clear communication and collaboration between health care team members, and for continuity of patient care.

- X.a. Documentation using the PNDS, should include a patient assessment, a plan of care, nursing diagnoses, identification of desired outcomes, interventions, and an evaluation of the patient's response to the care provided.
- X.b. Documentation should be recorded in a manner consistent with health care organization policies and procedures and should include, but is not limited to,
- name, dose, route, time, and effects of all medications;
 - patient's LOC;
 - ventilation and oxygenation status;
 - vital signs documented at intervals dependent on the type and quantity of medication administered;
 - procedure start and end times; and
 - condition of the patient.¹

Recommendation XI

Policies and Procedures

Policies and procedures for managing patients who receive moderate sedation/analgesia should be written, reviewed periodically, and readily available within the practice setting.

Policies and procedures are operational guidelines that are used to minimize patient risk factors, standardize practice, direct staff members, and establish guidelines for continuous performance improvement activities.

- XI.a. Policies and procedures should establish authority, responsibility, and accountability.
- XI.b. Policies and procedures for managing patients receiving moderate sedation/analgesia should include, but are not limited to,
- patient selection criteria;
 - personnel requirements;
 - staffing requirements;
 - monitoring;
 - risk assessment and criteria for consultation (eg, anesthesia);
 - moderate sedation/analgesia medication administration and dosage guidelines;
 - recovery and discharge criteria;
 - documentation;
 - emergency procedures;^{3,2} and
 - alternative care arrangements when the patient's acuity and or level of care required is outside the capabilities and scope of practice of the perioperative registered nurse.²²

Recommendation XII

Quality

A quality assurance/performance improvement process should be in place that measures patient, process, and structural (eg, system) outcome indicators.

A fundamental precept of AORN is that it is the responsibility of professional perioperative registered nurses to ensure safe, high-quality nursing care to patients undergoing operative and invasive procedures.²³

- XII.a. Structure, process, and clinical outcomes performance measures should be identified that can be used to improve patient care and that also monitor compliance with

facility policy and procedure, national standards and regulatory requirements.^{2,3,25}

- XII.a.1. The measures should have universality across the continuum and relevance to all providers of sedation for procedures.²⁵
- XII.a.2. Process indicators may include, but are not limited to,
- consent for sedation and procedure;
 - NPO status confirmed;
 - history and physical completed;
 - airway assessment conducted;
 - factors requiring anesthesia consultation are noted;
 - ASA classification;
 - anesthesia intervention required (eg, loss of protective reflexes, bag mask ventilation required);
 - reversal agents used;
 - providers credentialed for procedure/sedation and practice in compliance with facility policy and procedure; and
 - adherence to required physiological monitoring.
- XII.b. Adverse events should be reported and investigated through the health care organization's quality review process (eg, root cause analysis).²³
- XII.b.1. Any of the following adverse events should be reviewed, and some may require reporting to the appropriate regulatory agency or accrediting organization:²³
- death;
 - aspiration;
 - use of antagonists (eg, reversal agents);
 - unplanned transfer to a higher level of care;
 - cardiac or respiratory arrest;
 - sedation using nonapproved agents (eg, anesthetic agent by nonanesthesia provider); and
 - emergency procedure without a licensed, independent practitioner in attendance.

Glossary

Anxiolytic: Pharmacologic agent used to treat anxiety. Synonym for anti-anxiety agent.²¹

Benzodiazepine: Pharmacological agent that has sedative, anxiolytic, amnesic, muscle relaxant, and anticonvulsant properties.²⁴

Deep sedation/analgesia: A medication-induced depression of consciousness that allows patients to respond purposefully only after repeated or painful stimulation. The patient cannot be aroused easily, and the ability to independently maintain a patent airway may be impaired with spontaneous ventilation possibly inadequate. Cardiovascular function usually is adequate and maintained.²¹

General anesthesia: Patients cannot be aroused, even by painful stimulation, during this medication-induced loss of consciousness. Patients usually require assistance in airway maintenance and often require positive pressure ventilation due to depressed spontaneous ventilation or depression of neuromuscular function. Cardiovascular function also may be impaired.

Immediately available: Defined by the ASA practice guidelines as having a health care provider trained in ACLS and resuscitation skills available to assist with patient care within one to five minutes.²

Licensed independent practitioner: Any individual who is permitted by law and the health care organization to provide care and services, without supervision or direction. The care and services should be within the scope of the individual's license and granted clinical privileges.

Moderate sedation/analgesia: A minimally depressed level of consciousness that allows a surgical patient to retain the ability to independently and continuously maintain a patent airway and respond appropriately to verbal commands and physical stimulation. Often referred to as *conscious sedation*.

Opioid: Pharmacologic agent that produces varying degrees of analgesia and sedation, and relieves pain. Fentanyl, morphine, and hydromorphone are opioid analgesic medications that may be used for moderate sedation/analgesia.³

Sedative: Pharmacologic agent that reduces anxiety and may induce some degree of short-term amnesia. Diazepam and midazolam are two benzodiazepines commonly used for sedation.

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