

## Evidence Based Guideline

### Monitored Anesthesia Care (MAC)

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#### Description of Procedure or Service

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Adequate sedation and analgesia are important parts of diagnostic and therapeutic procedures. Various levels of sedation and analgesia (anesthesia) may be used, depending on the patient's status and the procedure being performed. This policy addresses the potential role of dedicated anesthesia providers during procedures performed in a properly-equipped and staffed outpatient setting.

Monitored anesthesia care (MAC) refers to the anesthesia personnel present during a procedure and does not implicitly indicate the level of anesthesia needed. The American Society of Anesthesiologists (ASA) has defined MAC. The following is derived from ASA statements:

Monitored anesthesia care is a specific anesthesia service for a diagnostic or therapeutic procedure. Indications for monitored anesthesia care include the nature of the procedure, the patient's clinical condition and/or the potential need to convert to a general or regional anesthetic.

Monitored anesthesia care includes all aspects of anesthesia care – a preprocedure visit, intraprocedure care and postprocedure anesthesia management. During monitored anesthesia care, the anesthesiologist provides or medically directs a number of specific services, including but not limited to:

- Diagnosis and treatment of clinical problems that occur during the procedure
- Support of vital functions
- Administration of sedatives, analgesics, hypnotics, anesthetic agents or other medications as necessary for patient safety
- Psychological support and physical comfort
- Provision of other medical services as needed to complete the procedure safely.

Monitored anesthesia care may include varying levels of sedation, analgesia, and anxiolysis as necessary. The provider of monitored anesthesia care must be prepared and qualified to convert to general anesthesia when necessary. If the patient loses consciousness and the ability to respond purposefully, the anesthesia care is a general anesthetic, irrespective of whether airway instrumentation is required.

In 2004, the ASA defined four levels of sedation/ analgesia as follows:

**Minimal sedation (anxiolysis):** is a drug-induced state during which patients respond normally to verbal commands. Although cognitive function and coordination may be impaired, ventilator and cardiovascular function are unaffected.

**Moderate sedation/analgesia (“conscious” sedation):** is a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or

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accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.

**Deep sedation/analgesia:** is a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

**General anesthesia:** is a drug-induced depression of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilator function is often impaired. Patients often require assistance in maintaining a patent airway, and positive-pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

Because sedation is a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to rescue patients whose level of sedation becomes deeper than initially intended. Individuals administering moderate sedation/analgesia (conscious sedation) should be able to rescue patients who enter a state of deep sedation/analgesia, while those administering deep sedation/analgesia should be able to rescue patients who enter a state of general anesthesia.

According to the American Society of Anesthesiologists' (ASA) standard for monitoring, monitored anesthesia care (MAC) should be provided by qualified anesthesia personnel, including physicians and nurse specialists. By this standard, the personnel must be in addition to the proceduralist and must be present continuously to monitor the patient and provide anesthesia care. MAC may include varying levels of sedation, analgesia, and anxiolysis, including but not limited to moderate sedation. For patients at high risk of an unsuccessful procedure under moderate sedation, this allows for the safe continuation of the procedure under deep sedation or general anesthesia by trained personnel. MAC includes all aspects of anesthesia care – a preprocedure visit, intra-procedure care, and postprocedure anesthesia management. During MAC, the anesthesia personnel provide or medically direct a number of specific services such as administration of sedatives, analgesics, hypnotics, anesthetic agents, or other medications as necessary.

Sedation and anesthesia services that are provided in outpatient settings should be administered by qualified and appropriately trained personnel. Moderate sedation is generally sufficient for many diagnostic and uncomplicated therapeutic procedures. Moderate sedation using benzodiazepines, with or without narcotics, is usually administered by, or under the supervision of, the proceduralist.

Moderate sedation can be achieved using pharmacologic agents for sedation, anxiolysis and analgesia. A frequently used combination is an opioid and benzodiazepine, for example fentanyl with midazolam, at doses individualized to obtain the desired sedative effect. Other combinations have also been utilized for this purpose. While both benzodiazepines and opioids can cause respiratory depression, effective reversal agents exist for both.

Propofol is an agent that has been increasingly used to provide sedation for procedures. Propofol is associated with a rapid onset of action and fast recovery from sedation. However, there have been concerns about potential side effects and safety when used by non-anesthesiologists. Propofol has the potential to induce general anesthesia, and there is no pharmacologic antagonist to reverse its action. When used as moderate sedation, propofol may be administered by anesthesia personnel or under the direction of the proceduralist. ASA has offered practice guidelines for the provision of sedation by non-anesthesiologists, stating that personnel must be prepared to respond to deep sedation and loss of airway protection should these complications inadvertently occur during sedation.

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## Regulatory Status

In October, 1989 propofol “Diprivan®” (AstraZeneca) was first approved by the U.S. Food and Drug Administration (FDA) through the premarket approval process for the induction and maintenance of anesthesia. The current FDA-approved label for Diprivan® states that it is indicated for initiation and maintenance of monitored anesthesia care (MAC) sedation, combined sedation and regional anesthesia, or intensive care unit (ICU) sedation of intubated, mechanically ventilated patients (adults only). It is also approved for induction of general anesthesia in patients older than or equal to 3 years of age and maintenance of general anesthesia in patients older than or equal to 2 months of age.

This evidence based guideline only addresses anesthesia services for diagnostic or therapeutic procedures involving gastrointestinal endoscopy, bronchoscopy, and interventional pain procedures performed in the outpatient setting.

## Related Policies:

Spinal Manipulation under Anesthesia  
Anesthesia Services

**\*\*\*Note: This Evidence Based Guideline is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

## Evidence Based Guideline for Monitored Anesthesia Care

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Monitored anesthesia care is considered a matter of patient choice when used for gastrointestinal endoscopic, bronchoscopic, or interventional pain procedures in patients with average anesthesia risk. In these settings, shared decision-making is recommended such that the patient and his or her physician discuss the risks and benefits of monitored anesthesia care.

Monitored anesthesia care may be appropriate for gastrointestinal endoscopy, bronchoscopy, and interventional pain procedures, when there is documentation by the proceduralist and anesthesiologist that specific risk factors or significant medical conditions are present. Those risk factors or significant medical conditions include any of the following:

- Increased risk for complications due to severe comorbidity (ASA P3\* or greater)
- Morbid obesity (BMI [body mass index] >50)
- Severe sleep apnea (oxygen and bi-pap required during sleep)
- Inability to follow simple commands (cognitive dysfunction, intoxication, or psychological impairment)
- Spasticity or movement disorder complicating procedure
- History or anticipated intolerance to standard sedatives, such as
  - Chronic opioid use
  - Chronic benzodiazepine use
- Patients with active medical problems related to drug or alcohol abuse
- Patients of extreme age, i.e., younger than age 12 or age 70 years or older
- Patients who are pregnant
- Patients with increased risk for airway obstruction due to anatomic variation, such as
  - History of sleep apnea or stridor
  - Dysmorphic facial features
  - Oral abnormalities (e.g., macroglossia)
  - Neck abnormalities (e.g., neck mass)
  - Jaw abnormalities (e.g., micrognathia)
- Acutely agitated, uncooperative patients
- Prolonged or therapeutic gastrointestinal endoscopy procedures requiring deep sedation.

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[\*American Society of Anesthesiologists (ASA) physical status classification system for assessing a patient before surgery:

P1 – A normal, healthy patient

P2 – A patient with mild systemic disease

P3 – A patient with severe systemic disease

P4 – A patient with severe systemic disease that is a constant threat to life

P5 – A moribund patient who is not expected to survive without the operation

P6 – A declared brain-dead patient whose organs are being harvested ]

## Benefits Application

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This evidence based guideline relates only to the services or supplies described herein. Please refer to the Member's Benefit Booklet for availability of benefits. Member's benefits may vary according to benefit design; therefore member benefit language should be reviewed before applying the terms of this guideline.

## Billing/Coding/Physician Documentation Information

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This guideline may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at [www.bcbsnc.com](http://www.bcbsnc.com). They are listed in the Category Search on the Medical Policy search page.

*Applicable codes: 00520, 00740, 00810*

## Scientific Background and Reference Sources

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BCBSA Medical Policy Reference Manual [Electronic Version]. 7.02.01, 7/8/2010

American Society of Anesthesiologists (ASA). Statement of the safe use of propofol. Amended October 2009. Accessed 3/7/2011 online at: <http://www.asahq.org/For-Healthcare-Professionals/Standards-Guidelines-and-Statements.aspx>.

American Society of Anesthesiologists. 2009. Distinguishing monitored anesthesia care ("MAC") from moderate sedation/analgesia (conscious sedation). Retrieved 3/8/11 from <http://www.asahq.org/publicationsAndService/standards/35.pdf>.

American Society of Anesthesiologists. 2008. Position on monitored anesthesia care. Retrieved 3/8/11 from <http://www.asahq.org/publicationsAndService/standards/23.pdf>.

Senior Medical Director – 10/2011

Specialty Matched Consultant Advisory Panel – 12/2011

## Policy Implementation/Update Information

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11/8/11 New evidence based guideline implemented. Reviewed by Senior Medical Director 10/2011. "Use of monitored anesthesia care may be appropriate for gastrointestinal endoscopy, bronchoscopy, and interventional pain procedures, when there is documentation by the proceduralist and anesthesiologist that specific risk factors or significant medical conditions are present." "Use of monitored anesthesia care is considered a matter of

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patient choice when used for gastrointestinal endoscopic, bronchoscopic, or interventional pain procedures in patients at average risk related to use of anesthesia and sedation. Shared decision-making is recommended such that the patient and their physician discuss the risks and benefits of the use of monitored anesthesia care in these patients.” (btw)

1/10/12 Specialty Matched Consultant Advisory Panel review 11/30/2011. No change to guideline. (btw)

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Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.