



# **Sedation and Analgesia by Non-Anesthesiologists**

Nina de Vilmorin, MD  
Mission Community Anesthesia Specialists



# Benefits of Sedation and Analgesia

- Safe and appropriate administration of sedation and analgesia benefits BOTH the patient and the practitioner
  - Sedation and analgesia benefit patients by allowing them to tolerate unpleasant procedures via relief of anxiety and pain
  - The practitioner benefits from the ability to perform procedures in patients who might not otherwise tolerate or cooperate with the procedure, and by increased patient satisfaction
  - The goal is to provide sedation and analgesia SAFELY, by avoiding serious and life-threatening risks and the complications that may occur

# The Continuum of Sedation

- The administration of sedation and analgesia causes a continuum of depression in the level of consciousness, from minimal anxiolysis to general anesthesia
- It is important to control the level of sedation to avoid serious and life-threatening complications
- The levels of sedation have been defined based on the responsiveness of the patient, the maintenance of airway reflexes and spontaneous ventilation, and adequacy of cardiovascular function

# Definitions of the Levels of Sedation/Analgesia

- The American Society of Anesthesiologists identifies four levels in the continuum of the level of sedation and Analgesia:
  - Minimal Sedation
  - Moderate Sedation
  - Deep Sedation
  - General Anesthesia (anesthesia-trained practitioners ONLY)

# Minimal Sedation (also called anxiolysis)

- Normal responsiveness to verbal stimulation (talking to the patient without physical contact)
- Airway, ventilation, and adequacy of cardiovascular function are unaffected

# Moderate Sedation

- Purposeful response to verbal or light tactile stimulation
- Maintenance of airway without intervention
- Adequate spontaneous ventilation
- Cardiovascular function usually maintained near normal

# Deep Sedation

- Purposeful response only after repeated or painful stimulation
- Intervention often required to maintain a patent airway
- Ventilation is frequently inadequate and may require support
- Cardiovascular function may be impaired and require support

# General Anesthesia

- The patient is unarousable, even to painful stimuli (withdrawal from a painful stimulus may occur, but the patient remains unconscious)
- Airway intervention is often required to maintain airway patency
- Spontaneous ventilation is frequently inadequate and may require support
- Cardiovascular function may be depressed and require support



# Patient Evaluation

- Clinicians providing sedation should be aware of the sedation-oriented aspects of the patient's history:
  - Abnormalities of major organ systems
  - Previous adverse experience with sedation, analgesia, and anesthesia (including airway issues like difficult intubation)
  - Time and nature of last oral intake
  - History of sleep apnea, CPAP use, home oxygen
  - History of tobacco, alcohol, and substance use/abuse
  - Allergies, current medications, laboratory results
  - ASA status (see next slide)

# ASA Status

- The American Society of Anesthesiologists (ASA) classifies the fitness of patients as follows:
  - Healthy patient
  - Mild systemic disease that is well-controlled
  - Severe systemic disease, poorly-controlled
  - Severe systemic disease that is a constant threat to life
  - Moribund and not expected to survive without the procedure
  - Brain-dead, organ donor

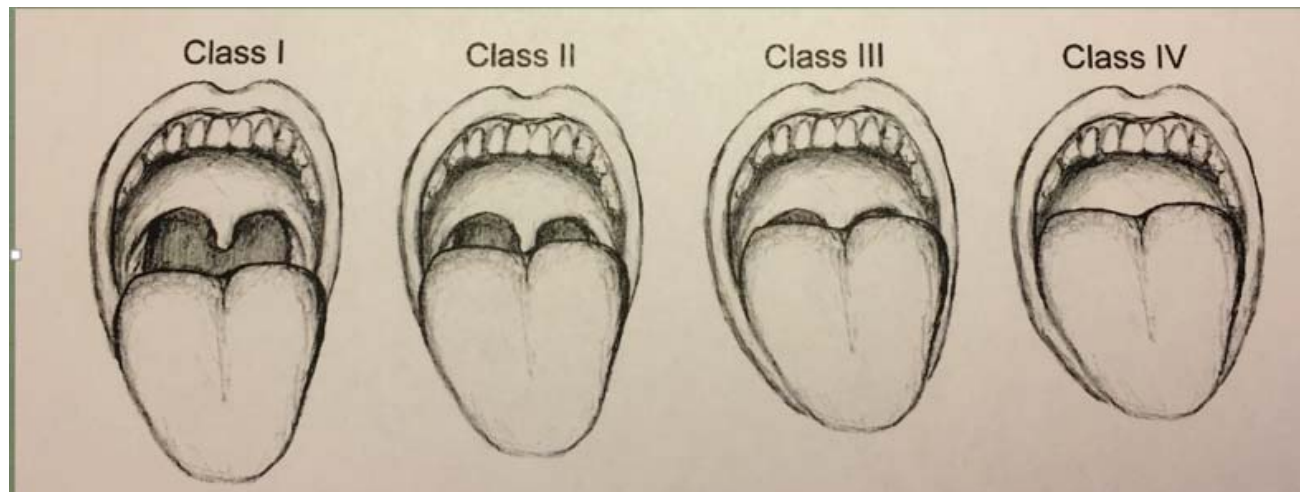
## ASA Status, continued

- Practitioners who administer sedation/analgesia are required to report the ASA classification of the patient in the written pre-procedure evaluation
- It is possible that the higher the ASA classification, the higher the risk under sedation/analgesia
- In addition to AIRWAY RISKS, consultation with an anesthesiologist or other specialist would be reasonable for patients with ASA III status or higher, depending on the experience and comfort level of the practitioner

# Physical Exam

- Vital signs, weight
- Heart and lung auscultation
- Evaluation of the AIRWAY!
  - Mallampati classification (see diagram next slide)
  - Ability to extend neck (backwards)
  - Obesity, including neck circumference
  - Adequacy of oral opening
  - Presence of hypognathia (small chin)
  - Dentition including loose teeth

# Mallampati Airway Assessment



- Mallampati airway assessment is one tool used to predict airway obstruction and difficulty of airway management. Class III and IV should alert the practitioner to the increased potential for airway problems during sedation and analgesia

# NPO Status

- Patients undergoing sedation for elective procedures should not drink fluids or eat solid food for a time period sufficient to allow gastric emptying
- Aspiration is potentially fatal and these guidelines are not flexible for elective procedures
  - Clear liquids 2 hours
  - Breast milk 4 hours
  - Infant formula / nonhuman milk 6 hours
  - Light meal (dry toast and clear liquids) 6 hours
  - Other meal 8 hours

# NPO Status in Emergencies


- In urgent or emergent situations, or when gastric emptying is impaired, the possibility of aspiration of gastric contents must be considered
- The target level of sedation must maintain airway reflexes, or
- The procedure should be postponed, or
- The trachea should be protected by intubation (by an experienced practitioner)

# Documentation

- The history & physical exam, including the ASA status and airway exam are required documentation
  - H & P to be completed as before
  - ASA status and airway exam to be completed with Sedation Assessment Form which will be imbedded within the procedural sedation when ordered
- Documentation that the MD is aware of the NPO status is required
  - Located on Sedation Assessment form, found in Procedural Sedation Plan and as a separate orderable to complete prior to procedure
- Documentation of the intended level of sedation is required
  - Located on the Sedation Assessment Form, found in Procedural Sedation Plan and as a separate orderable to complete prior to procedure
- A post-procedure note is also required, including any untoward events that may have occurred and their resolution (as before)



# New Sedation Assessment Form

Sedation Assessment and Plan	
<b>Pre-Sedation Documentation:</b>	
<ul style="list-style-type: none"> <li>- H&amp;P documented including examination specific to planned procedure</li> <li>- Informed Consent for procedure including possible sedation obtained</li> <li>- History of complications with previous sedation, intubation, or anesthesia</li> <li>- History of sleep apnea, use of CPAP and/or nocturnal oxygen</li> <li>- Pre-procedure auscultation of heart and lungs</li> </ul>	
<b>Diagnosis/Reason for Procedure</b>	<b>Procedure</b>
<b>WPO Status (ASA Guidelines for Minimum Fasting):</b>	
<ul style="list-style-type: none"> <li>- Clear Liquids, greater than 2 hours</li> <li>- Breast Milk, greater than 4 hours</li> <li>- Infant Formula/Nonhuman Milk, greater than 6 hours</li> <li>- Light Meal (dry toast, clear liquids), greater than 6 hours</li> <li>- Other Meal, greater than 8 hours</li> </ul>	
<b>Patient Meets Minimum Fasting Guidelines</b>	<b>If No, please comment</b>
<input type="radio"/> Yes <input type="radio"/> No	
<b>Mallampati Airway Assessment</b>	<b>ASA Score</b>
<input type="radio"/> Class I <input type="radio"/> Class 2 <input type="radio"/> Class 3 <input type="radio"/> Class 4 <input type="radio"/> Pediatric/Neonate - Unable to assess	<input type="radio"/> I <input type="radio"/> II <input type="radio"/> III <input type="radio"/> IV <input type="radio"/> Pediatric/Neonate - Unable to assess
	<b>Other Airway Considerations:</b> <ol style="list-style-type: none"> <li>1. Extension of Neck</li> <li>2. Dentition in General</li> <li>3. Small Chin</li> <li>4. Obese Neck</li> <li>5. Overbite</li> </ol>
This examination may not be applicable for patients <50 kg or <14 years of age	
<b>This patient has been examined and it has been determined that he/she is an appropriate candidate for sedation</b> <input type="radio"/> Yes <input type="radio"/> No	
<b>I am credentialed to administer the level of sedation designated</b> <input type="radio"/> Yes <input type="radio"/> No	
<b>Planned Sedation Level</b>	<b>Comments</b>
<input type="radio"/> Minimal <input type="radio"/> Moderate <input type="radio"/> Deep	

# Procedural Sedation Subplan

- Another tool to be used for Procedural Sedation is the new subplan that contains medications and the Sedation Assessment Form
- Open hyperlink below to view video presentation: (access via Slide Show or right click and select “Open Hyperlink”)

[Provider Video Procedural Sedation Link](#)

# Informed Consent

- Patients (or their guardians) must be counseled regarding the risks, benefits, limitations and alternatives of sedation/analgesia, have all of their questions answered to their satisfaction, and provide informed written consent

**CONSENT FOR SURGERY PROCEDURE**  
*By signing this form, you are confirming your consent to the described surgery or procedure and to what is explained on this form. Please read carefully before signing.*

Patient Name: (please print) \_\_\_\_\_

Physician/Provider Performing Surgery/Procedure: (please print) \_\_\_\_\_

Surgery/Procedure: My physician/provider has explained my current medical condition to me and the proposed surgery or procedure known as or as described below (the "Surgery/Procedure"):

\_\_\_\_\_

\_\_\_\_\_

Surgery Site:  Left  Right  not applicable  
Patient's initials Patient's initials Patient's initials

Blood Products:  
 Blood or blood products may be needed. Blood Consent Form needed.  
 Blood or blood products not anticipated.  
 Patient declines the use of blood or blood products under any circumstances, including an emergency. Patient's initials \_\_\_\_\_

My physician/provider has explained to me, and I understand, the likely benefits, significant risks and complications associated with the Surgery/Procedure, including those that are specific to me and to my condition. My physician/provider has also explained, and I understand, other options for treating my medical condition (including not having this surgery) and the likely benefits, significant risks, and consequences.

I understand that sedation or anesthesia may be used as a part of the Surgery/Procedure. I understand and agree that a physician/provider has or will explain to me the significant risks, benefits, and alternatives regarding anesthesia or sedation as a part of my Surgery/Procedure. Risks associated with sedation include, but are not limited to: nausea, vomiting, excessive sedation with possible decreased blood pressure, decreased heart rate, and decreased ability to breathe adequately with the need to support heart and lung function.

I understand that the practice of medicine is not an exact science and that there is no guarantee that the surgery will improve or fix my medical condition. I understand that risks explained to me could happen during or after the Surgery/Procedure. It is also possible that life-threatening events, unexpected situations, emergencies or changes in my condition could occur during the Surgery/Procedure. I understand and agree that my physician/provider may have to change or abandon the Surgery/Procedure or perform other medically necessary procedures to carry out my medical treatment, which may include the use of blood or blood products.

I understand that my physician/provider (or if my physician is unavailable, then another qualified physician) will perform the surgery with the help of other physicians, generally including anesthesiologists, radiologists and pathologists. My physician/provider may also have other physicians and trained medical personnel (including resident physicians in training, physician assistants and nurses) help with or perform important parts of the surgery. Trained medical personnel will only perform tasks within their skill set, scope of practice, state license, and hospital privileges.

I understand that Mission Hospital is involved in the education of physicians, nurses, technicians and other health care providers. I understand that these individuals may be present at part of my care team with my physician/provider's approval.

I understand and agree that this Surgery/Procedure may require photographs or the use of video footage as an aide to the physician/provider performing the Surgery/Procedure. I understand and agree that a medical supply representative or vendor may be in the operating room during my Surgery/Procedure or give my physician/provider or others involved in my Surgery/Procedure information or otherwise provide appropriate support.

Continued on Page 2

DO NOT WRITE IN MARGIN

DO NOT WRITE IN MARGIN

MSJ-0000-360-0113

  
MISSION  
HOSPITAL, Inc.  
Surgies/Procedures  
Informed Consent  
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# Monitoring

- Monitoring of patient response to verbal commands during moderate sedation should be routine. During deep sedation, purposeful response to a more profound stimulus should be monitored to ensure the patient has not drifted into general anesthesia
- Continuous pulse oximetry is required, best with audible variable pitch beep that correlates with saturation level
- End-tidal carbon dioxide monitoring, for deep sedation
- Blood pressure measurement at least every 5 minutes
- Continuous ECG monitoring in cases of moderate or deep sedation, or anytime cardiac dysrhythmias are anticipated

# Monitoring, Continued

- A designated individual not performing the procedure (an appropriately credentialed monitor) should be present to monitor the patient, and to record pre-, intra-, and post-procedure values, and doses and times of drugs administered
- During deep sedation, the monitoring individual should have no other responsibilities, and so a third person is required (possibly another RN or a respiratory therapist)
- During moderate sedation, the individual may assist with minor interruptible tasks as long as the vital signs and level of consciousness remain stable

# Training of Personnel

- Practitioners administering sedation and/or analgesia are responsible for understanding the pharmacology of the agents they administer (including potential reversal agents)
- They should be able to recognize complications, and to manage them if they occur
- They should be proficient in maintaining airway patency and providing positive-pressure ventilation
- They must be ACLS or American Board of Emergency Medicine certified for all levels of sedation
- They should know when to call for help, allowing time for assistance to arrive in time (5 min or less)

# Emergency Equipment

- The following equipment must be readily available:
  - A defibrillator, during moderate and deep sedation
  - Appropriately-sized equipment for establishing a patent airway and providing positive-pressure ventilation with oxygen
  - Suction and advanced airway equipment
  - Resuscitation medications and reversal agents
  - Equipment for establishing IV access

# IV Access

- Patients who have received IV sedation/analgesia should have IV access maintained throughout the procedure and recovery period, until the risk of cardiorespiratory depression has passed, and the patient is stable
- Patients receiving nonintravenous sedation may not necessarily require IV access, but the ability to establish IV access should be immediately available



# Common Drug Choices for Moderate Sedation

- It is the physician's responsibility to be familiar with the drugs chosen for sedation/analgesia
- Commonly used drugs for moderate sedation include midazolam (or other benzodiazepines), and fentanyl (or other opioids)

# Combinations of Sedative and Analgesic Agents

- Sedatives and analgesics potentiate each other, so when used together the doses of each must be reduced
- Incremental administration may reduce the risk of overdose, allowing time between doses for the medications to reveal their effects
- Continually monitoring depth of sedation is essential to reduce the risk of overdose

# Reversal Agents

- Specific antagonists to opioids and benzodiazepines are available
- Opioids (fentanyl, morphine, dilaudid, meperidine) may be reversed with naloxone (Narcan)
- Naloxone may result in pain, hypertension, tachycardia, and pulmonary edema
- Benzodiazepines (midazolam, diazepam, ativan) may be reversed with Flumazenil
- Routine reversal of opioids and benzodiazepines is discouraged, and judicious use of sedation/analgesia agents is preferred

## Reversal Agents, continued

- Patients receiving reversal agents (Narcan and/or Flumazenil) must be observed long enough to ensure that cardiorespiratory depression does not recur once the effect of the antagonist dissipates

# General Anesthesia Induction Agents used for Sedation/Analgesia

- Propofol, methohexital, etomidate, and ketamine are four drugs used for induction of general anesthesia
- These four drugs can also be used to provide moderate and deep sedation
- Rapid and profound decreases in consciousness can occur, culminating in general anesthesia
- The practitioner must be qualified to rescue the patient from general anesthesia, especially when using these four drugs
- There are NO reversal agents for propofol, methohexital, etomidate, and ketamine

# Ketamine

- Ketamine is different than the other general anesthesia induction agents because it is a dissociative general anesthetic
- This is important because some of the usual signs of depth of sedation may not apply. Eyes may remain open despite deep sedation, for example
- Ketamine is associated with less cardiorespiratory depression than other sedatives, BUT airway compromise and aspiration may still occur

# Recovery Care

- There is significant risk of cardiorespiratory depression deepening after the procedure is completed because the level of stimulation/pain decreases after the procedure is complete
- Patients must meet discharge criteria after receiving sedation / analgesia before they can be released from observation by trained personnel

# Provider EMR Coaches

Should have any questions about Orders and Plans, you may contact EMR Coaches: [coaching@msj.org](mailto:coaching@msj.org) or (828) 213-8464



Jonathan Shoemaker  
Email: [finjps@msj.org](mailto:finjps@msj.org)  
Phone: (828) 776-5174



Bennett Rogers  
Email: [himbrr@msj.org](mailto:himbrr@msj.org)  
Phone: (828) 213-5317



Michael Conley  
Email: [infmgc@msj.org](mailto:infmgc@msj.org)  
Phone: (828) 777-5895