



South Eastman Health  
Santé Sud-Est

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## **EDUCATIONAL MODULE**

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# **ADULT CONSCIOUS SEDATION**

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Adapted WHRA 2005  
Approved for use:  
South Eastman Regional Health Authority 2010

## REQUIRED PREPARATION

- Obtain current BCLS certification
- Review Code Blue
- Read South Eastman Health/Santé Sud-Est Inc. Policy on Adult Conscious Sedation (SC/AC – SC-Intra 004/AC A004)
- Review IV Drug Monographs for Fentanyl (Sublimaze), Midazolam, (Versed) Naloxone Hydrochloride (Narcan), Flumazenil (Anexate), Propofol (Diprivan), and Ketamine

## LEARNING OBJECTIVES

To provide best practice and quality care to patients receiving conscious sedation, the nurse will complete the South Eastman Health/Santé Sud-Est Inc.'s Adult Conscious Sedation education module prior to providing care. The nurse will be able to:

- Define conscious sedation
- Identify the goals and advantages of conscious sedation
- Identify the required nursing assessments and actions needed to ensure safe patient care (prior to, during and after the administration of I.V. conscious sedation)
- Have knowledge and skills in airway management and monitoring oxygen levels with pulse oximetry
- Identify the physiological parameters and the frequency of monitoring parameters prior to, during and after conscious sedation
- Correctly document assessment data, action, and outcomes
- Identify most common medications used in conscious sedation with regards to dose, special considerations, complications and monitoring requirements
- Identify post-procedural criteria and considerations for the patient's safe discharge home
- Achieve 90% accuracy on this module post education test

**Competency in conscious sedation is dependent upon current BCLS certification, reading the South Eastman Health/Santé Sud-Est Inc.'s Adult Conscious Sedation education package, completing the post module package test and maintaining competency of practice in IV conscious sedation.**

Following completion of this educational module, the nurse will be held professionally accountable to seek further education/training to ensure and maintain competency of practice.

## **DEFINITION**

Conscious sedation is defined as the administration of pharmacological agents to produce a medically controlled state of depressed consciousness that:

- Allows protective reflexes to be maintained
- Retains the patient's ability to maintain a patent airway independently and continuously
- Permits appropriate responses by the patient
- Typical examples of use, simple fracture/dislocation, endoscopy, cardioversion etc.

## **GOALS**

The goals of conscious sedation are to:

- Facilitate the performance of a procedure
- Manage pain and behaviors, including anxiety
- Allow a quicker return to a state in which safe discharge is possible

## **ADVANTAGES OF I.V. CONSCIOUS SEDATION**

- Provides pain control during patient treatments / procedures
- Minimizes the use of general anesthesia or deep sedation
- Provides for cost-effective treatment
- Decreases the risk of side effects

## **RISKS OF CONSCIOUS SEDATION**

- Can result in cardio-respiratory complications, therefore the patient must be closely monitored

## **PRE-PROCEDURE PLANNING**

### **LOCATION**

- Conscious sedation should be performed in a location where emergency respiratory equipment and cardiac monitoring is present. Consider need for anesthesia support.

## **STAFFING**

- Adequate coverage of responsibilities must be arranged to allow complete and uninterrupted patient monitoring during the procedure. If assistance is needed with the procedure, a second nurse is required.

## **EQUIPMENT REQUIRED**

- A continuous large bore I.V. site and infusion
- Pulse oximetry
- Oxygen supply
- Non invasive blood pressure monitor
- Suction
- Bag-valve mask, airway management devices
- Resuscitation cart/cardiac monitor
- Reversal agents (drugs)

## **PRE-PROCEDURE PATIENT TEACHING**

Ensure patient understands:

- Conscious sedation procedure
- The procedure – what will be done, how they will feel
- Assessments that will be done before, during and after their procedure and importance of each
- Care before, during and after procedure with rationale

Ensure patient understands they must make arrangements for a responsible adult to:

- Drive the patient home
- Remain with the patient for 12 hours following procedure

Ensure the patient understands the effects of sedation on speed of their responses, memory and judgment and agrees that for 12 hours after discharge they will not:

- Drive a motor vehicle
- Operate power tools
- Smoke
- Drink alcoholic beverages
- Sign legal papers or make important decisions

## **PATIENT ASSESSMENT**

Use direct observation, verbal communication and measuring devices to obtain complete assessment data base of patient.

### **1. Pre-Procedure**

**Review the chart** to ensure documentation exists about:

- Reason for procedure
- Pertinent past medical history
- Current medical problems
- Current medication reconciliation (including sedatives, anticoagulants, etc.)
- Any known medication allergies and effects
- Height, weight
- Smoking and substance abuse history

**Perform baseline assessment**, which includes:

- Level of consciousness/orientation
- Barriers to communication or communication ability
- Perception of the procedure and conscious sedation
- Emotional state
- Last oral intake
- Vital signs include blood pressure, heart rate and rhythm, respiratory rate, oxygen saturation on room air

**Complete Documentation** on the appropriate unit specific form

### **2. Intra-Procedure Assessment**

- Apply non-invasive blood pressure device and pulse oximeter
- Establish oxygen at a minimum of 3 liters/min
- Monitor the following parameters continuously and record every 3-10 minutes or more frequently as indicated by the patient's condition
  - All medications administered, including route and dose
  - Respiratory rate
  - Oxygen saturation, maintaining SpO<sub>2</sub> greater than 90%
  - Blood pressure
  - Heart rate
  - Level of consciousness
  - Responses to medications and procedure
  - Refer to Table "Potential Complications", page 10




**THE NURSE MUST BE IN CONSTANT ATTENDANCE TO MONITOR THE PATIENT FOR APPROPRIATE RESPONSES OR ADVERSE EFFECTS.**

### **3. Post Procedure Assessment:**




- Monitor patient's airway continuously until patient rouses to a consciousness level where they can maintain patent airway and there is no risk of airway occlusion

- Take baseline vital signs and oxygen saturation levels post procedure repeat 5-10 minutes, then increase frequency as patient condition warrants
- Patient response to the drug and their recovery time may vary
- Recovery time will be a minimum of 30 minutes in length and should be extended as necessary
- Be aware of anesthesia effects, refer to specific IV drug monographs

**METHODS OF OXYGEN DELIVERY:**

<b>Delivery Method</b>	<b>Flow Rate Required</b>	<b>Approximate FiO<sub>2</sub></b>	<b>Observation/ Interventions</b>	
<b>NASAL CANNULA</b>	Up to 6 LPM	24 – 40%	Do not exceed 6 LPM as it is not tolerated well.	
<b>SIMPLE FACE MASK</b> (Remove reservoir bag, connector with baffle, and flexible disc on side port. Insert oxygen connector (in bag) and reconnect tubing)	5 – 10 LPM	35 – 50%	Ensure mask has a tight seal to deliver the appropriate O <sub>2</sub> concentration.	
<b>PARTIAL REBREATHE MASK</b> (Remove flexible discs located on side port and inside of mask on top of reservoir bag)	6 – 10 LPM	40 – 70%	Inflate reservoir with oxygen prior to establishing.	

**METHODS OF OXYGEN DELIVERY (cont.):**

<b>Delivery Method</b>	<b>Flow Rate Required</b>	<b>Approximate FiO<sub>2</sub></b>	<b>Observation/ Interventions</b>	
<p><b>NON REBREATHE MASK</b> (The 3 in 1 mask comes assembled as a non-rebreathe, DO NOT remove any parts)</p>	10 LPM or higher	60-80%	Use only in areas where patient is being closely monitored (1:1). Used as a final attempt to deliver oxygen, if not effective, may require intubation. Ensure only one vent cover is in place on side of mask. Inflate reservoir with oxygen prior to establishing.	
<b>FACE TENT</b>	10 LPM	Difficult to measure		
<b>BAG-VALVE-MASK</b>	10 – 15 LPM	up to 100%	Inflate reservoir with oxygen prior to establishing. Compress bag with enough force to comfortably rise the chest.	

## AIRWAY MANAGEMENT

Administration of I.V. conscious sedation will alter the level of consciousness and may result in respiratory depression. **Once the patient has received I.V. conscious sedation, the risk for airway obstruction is greatly increased. The airway must be continuously monitored to ensure it remains patent.**

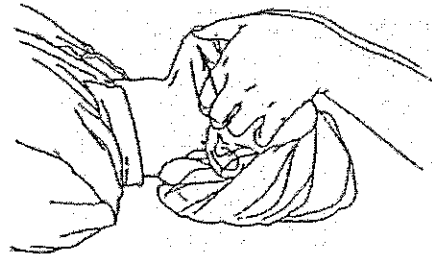
### Techniques for Opening the Airway

**Airway obstruction** is often the result of the loss of tonicity of the submandibular muscles which provide direct support to the tongue and indirect support to the epiglottis. The tongue and/or epiglottis may occlude the airway. Lifting the patient's mandible lifts the tongue and opens the airway.

**Two techniques for opening the airway are head-tilt with chin lift and modified jaw thrust.**



A. Head-tilt / Chin-lift



B. Jaw Thrust

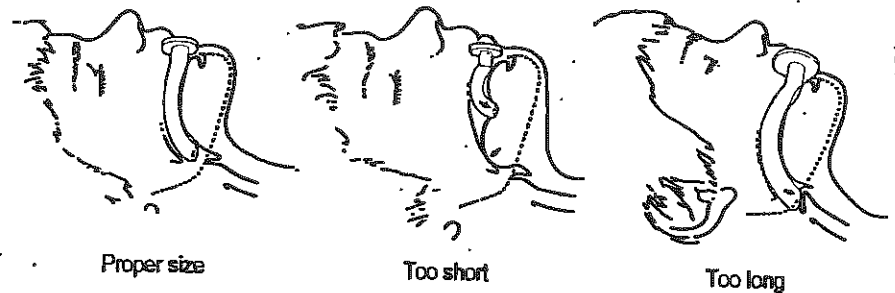
**An airway adjunct** may be required to achieve and maintain an open airway. An oropharyngeal airway can be used in an unconscious patient. It is a semicircular device that holds the tongue away from the posterior wall of the pharynx.

Select the correct size oropharyngeal airway by measuring the distance from the corner of the mouth to the tip of the earlobe.

Insert the airway with the distal tip of the oropharyngeal airway turned upward towards the roof of the mouth. As the airway device passes across the back of the tongue, gently rotate the airway 180 degrees.



**Incorrect size selection and/or improper placement can result in further obstruction of airway.**



## **VENTILATION TECHNIQUES:**

### **One Person Bag-Valve-Mask**

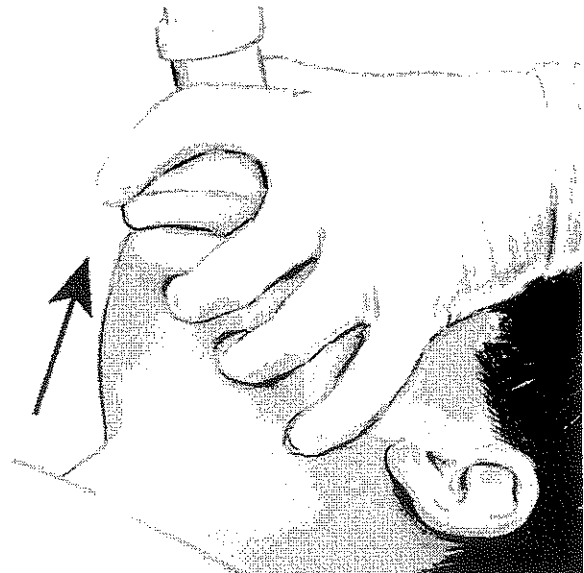
- Stand at patient's head
- Place narrow end of the mask over the patient's nose
- Use E-C technique (see picture below)
- Grasp and lift the mandible with the fingers
- Compress (squeeze) the bag with the other hand
- If unable to effectively ventilate patient, go to 2 person technique

### **Two Person Bag-Valve-Mask**

- One person stands at the patient's head and places the thumbs on each side of the mask
- The patient's mandible is then grasped and lifted with the finger of both hands
- Use EC technique
- The second person stands to the patient's side and compresses the bag using one hand only

**Assess for effective ventilation by inspecting for chest rise and fall and skin color.**

Example of E-C clamp technique for holding mask while lifting the jaw.



## POTENTIAL COMPLICATIONS:

Potential Problem	Key Points	Possible Signs & Symptoms	Interventions
Respiratory Depression	<ul style="list-style-type: none"> <li>O<sub>2</sub> saturation of a healthy adult on room air is 95-99%.</li> <li>O<sub>2</sub> sat. on 3L/nasal prongs should be 98-100%</li> </ul>	<ul style="list-style-type: none"> <li>Decreased respiratory rate is the first sign of respiratory depression.</li> <li>Reduction in O<sub>2</sub> saturation indicates progressive respiratory depression.</li> <li>Cyanosis is a late occurring sign-if untreated cardio-respiratory arrest will develop.</li> </ul>	<ul style="list-style-type: none"> <li>When O<sub>2</sub> saturation starts to drop, tell the patient to take some deep breaths, increase oxygen delivery and alert physician.</li> <li>If LOC decreases, it may be necessary to assist the patient to maintain a patent airway.</li> </ul>
Oversedation		<ul style="list-style-type: none"> <li>Drowsy, difficult to arouse.</li> <li>Slurred speech.</li> <li>Decreased respiratory rate and depth.</li> <li>Snoring.</li> <li>Decreased O<sub>2</sub> saturation.</li> </ul>	<ul style="list-style-type: none"> <li>Stimulate patient</li> <li>Encourage deep breathing</li> <li>Notify physician.</li> <li>Reversal agents may need to be given.</li> </ul>
Hypotension	<ul style="list-style-type: none"> <li>BP may decrease from baseline during conscious sedation.</li> </ul>	<ul style="list-style-type: none"> <li><b>Decrease of 20% from baseline systolic BP.</b></li> </ul> <p>Example: Less than 20% of 110 mmHg = 88 (110 x 0.8)</p>	<ul style="list-style-type: none"> <li><b>Physician must be notified.</b></li> <li>Stimulate patient.</li> <li>Encourage deep breathing.</li> <li>Increase oxygen delivery.</li> <li>Elevate feet.</li> <li>Increase IV fluid as ordered.</li> <li>Administer drugs as ordered.</li> </ul>
Hypertension	<ul style="list-style-type: none"> <li>May be caused by pain, anxiety or stress of procedure.</li> </ul>	<ul style="list-style-type: none"> <li><b>Increase of 20% from baseline systolic BP.</b></li> </ul> <p>Example: More than 20% of 140 mmHg = 168 (140 x 1.2)</p>	<ul style="list-style-type: none"> <li>Report to physician.</li> <li>Administer sedation or analgesia as ordered.</li> </ul>
Cardiac Arrhythmia	<ul style="list-style-type: none"> <li>Heart rate may increase or decrease due to hypoxemia, pain, anxiety or hypovolemia.</li> </ul>	<ul style="list-style-type: none"> <li>Difficult to rouse.</li> <li>Chest pain.</li> <li>Shortness of breath.</li> <li>Increased respiratory rate.</li> <li>Decreased BP.</li> <li>Pale and diaphoretic</li> <li>Irregular heart rate – change from baseline.</li> <li>Decrease O<sub>2</sub> saturation.</li> </ul>	<ul style="list-style-type: none"> <li>Notify physician if patient becomes symptomatic.</li> <li>Treat symptoms as ordered by physician.</li> </ul> <p>Eg. 12 lead ECG, increase O<sub>2</sub> delivery.</p>

## **PATIENT DISCHARGE CRITERIA**

The patient may be discharged home or returned to the inpatient area, once the following criteria have been met:

- Recovery time will be a **minimum of 30 minutes** in length and should be extended as necessary
- Oxygen saturation level is at procedure baseline measured on room air
- Vital signs are stable
- Level of consciousness is returned to a pre-sedation level
- Patient is able to ambulate without dizziness (For discharge home)
- Patient is able to take oral fluids (unless NPO) (For discharge home)
- No untoward signs or symptoms (i.e. SOB, dizziness, nausea, and vomiting)
- Patient and escort have received verbal and written discharge instructions and state understanding of same

**All patients are to be discharged in a wheelchair accompanied with responsible adult.**

## **REFERENCE LIST**

American Association for Respiratory Care (AARC) Clinical Practice Guideline (2002).  
Oxygen Therapy for Adults in the Acute Care Facility.

Emergency Nurses Association (2007). Trauma Nursing Core Course 6th ed.

WRHA (2005). Adult Conscious Sedation, Educational Module

## CONSCIOUS SEDATION TEST QUESTIONS

Correct answers to the following questions are based on information in the Education Module: Adult Conscious Sedation, policy and applicable drug monographs.

Multiple Choice (Circle the Best answer).

1. Which of the following statements about conscious sedation are true?
  - i) It is given to maintain light sedation and control pain.
  - ii) It allows protective reflexes to be maintained.
  - iii) It is always given in the OR with an anesthetist present.
  - iv) It carries the same risks as general anesthesia.
    - a) i, ii and iii
    - b) i and ii
    - c) iii and iv
    - d) All of the above
2. In which of the following procedures is conscious sedation not appropriate?
  - a) Complicated fracture reduction
  - b) Cardioversion
  - c) Shoulder reduction
  - d) Endoscopy
3. Which of the following statements are true about the pre-procedure assessment?
  - i) Verify that the patient understands conscious sedation and the procedure.
  - ii) Do a baseline oxygen saturation level on room air.
  - iii) Notify the physician if the patient has any cardio-respiratory problems.
  - iv) Reconcile current medications and last dosage(s).
    - a) ii and iii
    - b) i and iv
    - c) i, ii and iii
    - d) All of the above
4. Which of the parameters must be monitored during and following conscious sedation?
  - a) Vital signs including oxygen saturation
  - b) Level of consciousness
  - c) Responses to medications and procedure
  - d) All of the above

5. Which sign is the earliest manifestation of respiratory depression?
- A decrease in respiratory rate
  - Hypotension
  - Reduction in oxygen saturation
  - Cyanosis of nail beds
6. Which of the following is not a complication of conscious sedation?
- Respiratory depression
  - Hyperkinesia
  - Cardiac arrhythmias
  - Hypotension
- ~~7. Which drug reverses opioid-induced oversedation and has a short duration of action?~~
- Flumazenil (Anexate)
  - Lorazepam (Ativan)
  - Naloxone hydrochloride (Narcan)
  - Nalbuphine hydrochloride (Nubain)
8. What should be given to reverse the effects of a benzodiazepine?
- Oxygen
  - Naloxone hydrochloride (Narcan)
  - Nalbuphine hydrochloride (Nubain)
  - Flumazenil (Anexate)
9. Which of the following interventions are appropriate for hypotension?
- Stimulate the patient, increase O<sub>2</sub> delivery, place in trendelenberg position
  - Increase IV fluids, increase O<sub>2</sub> delivery, stimulate patient, elevate the feet
  - Increase IV fluids, encourage deep breathing, administer naloxone hydrochloride (Narcan)
  - Increase O<sub>2</sub> delivery, increase IV fluids, turn patient on his/her side
10. Which intervention is appropriate for a suspected airway occlusion in the consciously sedated patient?
- Apply oxygen face mask
  - Perform mouth to mouth rescue breathing
  - Perform the head-tilt chin lift maneuver
  - Ventilate with a bag-valve mask

11. Which of the following are true about bag-valve masks?
- a) Deliver the highest concentration of oxygen
  - b) The bag is compressed using two hands
  - c) An open airway does not need to be maintained when ventilating a patient with a bag-valve mask
  - d) All of the above
12. Patient instructions should include which of the following?
- i) A responsible adult must drive the patient home
  - ii) A responsible adult must remain with the patient for the next 12 hours
  - iii) The patient should not drive a motor vehicle for 12 hours after discharge
  - iv) The patient should not smoke or drink alcoholic beverages until he/she gets home
- a) i only
  - b) i and iii
  - c) ii and iii
  - d) All of the above
13. Which of the following are required to safely administer IV conscious sedation?
- i) Oxygen
  - ii) Running IV
  - iii) Designated nurse for patient monitoring
  - iv) Cardiac monitor present
- a) i only
  - b) i ii, and iii
  - c) ii and iii
  - d) all of the above
14. A 20% decrease of a systolic blood pressure of 130 mmHg is:
- a) 110 mmHg
  - b) 90 mmHg
  - c) 104 mmHg
  - d) 118 mmHg

15. Which of the following are competency requirements for IV conscious sedation?
- i) Current ACLS certification
  - ii) Current Code Red review
  - iii) Education module was read and a pass mark of 90% was achieved on post education package test
  - iv) Maintenance of clinical competency in IV conscious sedation
    - a) iii and iv
    - b) ii and iii
    - c) i and ii
    - d) All of the above
16. The following are true for fentanyl (Sublimaze):
- i) Administered undiluted over 1 minute into the tubing of a running IV
  - ii) May cause respiratory depression which persists longer than the analgesic effect
  - iii) May cause hypertension
  - iv) The dose should be increased for elderly or for patients receiving other CNS depressants
  - v) Onset of action after IV administration is 3 – 5 minutes.
    - a) i, ii and iii
    - b) i, ii and v
    - c) ii, iii and iv
    - d) All of the above
17. Which of the following statements regarding midazolam (Versed) are true?
- i) Midazolam should be administered quickly, over less than one minute for maximum effect
  - ii) Potential hazards of IV administration include tachycardia, hypotension, dyspnea, apnea, nausea, and vomiting
  - iii) Midazolam should be administered at least 10 minutes prior to the procedure
  - iv) Midazolam provides amnesia and light sedation
    - a) i, and iv
    - b) ii and iv
    - c) i, iii and iv
    - d) All of the above
18. Acceptable pulse oximetry readings of a healthy adult breathing room air should be between \_\_\_\_\_.





<b>CONSCIOUS SEDATION MODULE QUESTIONS Answer Key</b>
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**Correct answers are based on information in the Educational Module: Adult Conscious Sedation, Policy and applicable drug monographs.**

- |      |            |
|------|------------|
| 1. b | 10. c      |
| 2. a | 11. a      |
| 3. d | 12. b      |
| 4. d | 13. d      |
| 5. a | 14. c      |
| 6. b | 15. a      |
| 7. c | 16. b      |
| 8. d | 17. b      |
| 9. b | 18. 95-99% |

19. List 5 of the 7 discharge criteria.

- Recovery time will be a **minimum of 30 minutes** in length and should be extended as necessary
- Oxygen saturation level is at procedure baseline measured on room air
- Vital signs are stable
- Level of consciousness is returned to a pre-sedation level
- Patient is able to ambulate without dizziness (For discharge home)
- Patient is able to take oral fluids (unless NPO) (For discharge home)
- No untoward signs or symptoms (i.e. SOB, dizziness, nausea, and vomiting)
- Patient and escort have received verbal and written discharge instructions and state understanding of same