Please find enclosed the required Conscious Sedation Module from Fairfield Medical Center. Please be sure to fill out the answer sheet completely. The Post-Assessment must be completed with **80% minimal achievement**. Feel free to call Medical Staff Services with any questions at 687-8277. Please return the Post-Assessment to the address below as soon as possible:

Fairfield Medical Center  
Attn: Medical Staff Services  
401 N. Ewing Street  
Lancaster, Ohio 43130  
Fax: 740-687-8143

**PROGRAM DESCRIPTION**  
This program is designed to provide the physician with information to help manage the patient receiving conscious sedation. The program discusses caring for the awake patient during a procedure requiring conscious or deep sedation. It examines the patient care requirements, monitoring parameters, and suggested knowledge and skill requirements. The program also identifies medications commonly administered to induce conscious sedation.

**GENERAL METHODOLOGY**  
*Mandatory:* The Post Assessment must be completed with **80% minimal achievement.** Successful completion of the learning module shall be documented in the staff member’s file. **Post-test with identified incorrect answers will be returned to physician for further review.**

**PROGRAM OBJECTIVES**  
At the completion of this competency, physician will be able to:

- Describe conscious sedation  
- List patient assessment requirements prior to conscious sedation  
- Describe minimal monitoring parameters established for the patient receiving conscious sedation  
- Identify medications commonly administered to induce conscious sedation  
- Examine the roles and responsibilities in caring for the patient receiving conscious sedation.

*Module reviewed by Dr. David Conley, Department of Anesthesiology Chairman, June 2014 (amendments)*
CONSCIOUS SEDATION – MODULE I

Conscious sedation is produced by the administration of pharmacological agents during a therapeutic or diagnostic procedure. A patient consciously sedated has a depressed level of consciousness, but retains the ability to independently and continuously maintain an airway and respond appropriately to physical stimulation or verbal commands. Conscious sedation allays the patient’s fear and anxiety regarding the planned procedure.

The objectives of conscious sedation include the following:

**Alteration of mood**
One of the primary objectives is to allay the patient's anxiety and fear.

**Maintenance of consciousness**
The patient should be able to respond to commands and have all protective reflexes intact.

**Cooperation**
The patient must be awake enough to cooperate throughout the procedure.

**Elevation of pain threshold**
Even with the use of local anesthetics for pain control at the procedure site, medications frequently are used to elevate the pain threshold.

**Minor variation of vital signs**
Because protective reflexes are unaffected, the physiologic response should not be altered. With proper administration of medications, only slight changes in the vital signs should occur.

**Some degree of amnesia**
Depending on the dose, some conscious sedation medications provide powerful amnesic effects. So, the patient does not have to be unconscious to produce amnesia.

**A rapid, safe return to ambulation**
Conscious sedation produces a condition where the patient exhibits a depressed level of consciousness. Upon completion of the procedure and adequate recovery phase, the patient should be able to return to his pre-procedure manner of ambulation. So, when properly done, only a short stay in recovery is needed. Your patients will like that.

Effective conscious sedation of the patient usually meets most of the above objectives.

The primary goal of conscious sedation is allaying the patient’s anxiety and fear of the impending procedure. One of the most effective methods of facilitation of conscious sedation is verbal reassurance from the procedural teams.

Proper verbal reassurance allows for a decrease in the use of pharmacological agents. Patients often are not informed that they may be aware of pressure because of the procedural maneuvering. Although they may feel no pain, these sensations increase patient apprehension, fear, and anxiety level. Verbal reassurance and patient education before and during the procedure can alleviate or decrease most of these symptoms.
CONSCIOUS SEDATION – MODULE II

OBJECTIVES: 1). Identify assessment requirements for the patient receiving conscious sedation.
2). List equipment that is required to be in the area where conscious sedation is scheduled to take place.

Patients receiving conscious sedation that may result in the loss of protective reflexes will be monitored according to standards established by the organization (exceptions being elective intubation and those patients receiving medication for the purpose of analgesia).

Monitoring of patient’s receiving sedation must include documentation of the following at a minimum of every 5 minutes intra procedure and 15 minutes post procedure or more frequently as condition dictates:

A. Pulse oximeter
B. Vital signs
C. EKIG monitoring if patient has underlying cardiovascular disease; is undergoing procedures with increased risk of dysrhythmia (ex. Colonoscopy, bronchoscopy), or anticipated time for procedure is greater than 30 minutes.
D. LOC
E. Pain Level
F. End Tidal CO2/Capnography

Based upon the patient’s condition, the physician may order increased monitoring, but under no circumstances will the monitoring be less than what is specified in organizational policies.

Prior to administration of conscious sedation, documentation will include:
- Present medications
- Current medical history
- Vital signs (BP, Respiratory Rate, Pulse, O2Sat., LOC)
- Physical assessment
- Allergies/previous reactions to anesthesia
- Weight
- Last intake of food and water
- Informed consent
- Assignment of American Society of Anesthesiologists (ASA) Classification:

The six (6) ASA Classes are based on the physical condition of the patient:

<table>
<thead>
<tr>
<th>ASA Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Healthy patient with no medical problems.</td>
</tr>
<tr>
<td>II</td>
<td>Mild to moderate medical problems, all controlled, not limiting the patient's activity.</td>
</tr>
<tr>
<td>III</td>
<td>Moderate to severe medical problems, limiting the patient's activity level.</td>
</tr>
<tr>
<td>IV</td>
<td>Severe disturbance posing a threat to life.</td>
</tr>
<tr>
<td>V</td>
<td>Moribund and not expected to survive.</td>
</tr>
<tr>
<td>VI</td>
<td>Organ donor.</td>
</tr>
</tbody>
</table>
Patients who are ASA Class I and II are good candidates for conscious or deep sedation. Some patients who are Class III may be candidates. Patients deemed to be unstable Class III or Class IV or greater may require individual consideration and the presence of an Anesthesiologist. Prior consultation for such patients would be helpful.

So, the pre-procedure assessment and ASA Classification provide baseline data and identify patient risk factors. If any difficulty with the patient or procedure is anticipated, appropriate medical personnel should be informed prior to sedating the patient.

The nurse assigned to monitor the patient and/or administer the conscious sedation medication needs to have the required equipment available in the room prior to the start of the procedure.

The area where conscious sedation is scheduled to take place is to be equipped with:

- A source and means for providing supplemental oxygen (nasal cannula, mask, etc.).
- An airway and ambu bag appropriate to patient population – various bag and mask sizes must be available in those circumstances where appropriate (e.g., pediatric patients)
- A source of suction (portable or wall)
- A pulse oximeter with alarm
- A device for taking blood pressure (manual or automatic)
- A specific pharmacological reversal agent for the type of sedation to be used.

A crash cart and a cardiac monitor should be readily accessible to the room where the procedure is to take place.
CONSCIOUS SEDATION – MODULE III

OBJECTIVES:  
1. Describe the monitoring parameters established for the patient receiving conscious sedation.  
2. Discuss how a pulse oximeter functions.

Each patient receiving conscious sedation should be monitored for reaction to drugs and for physiological and psychological changes. The nurse managing the nursing care of the patient should have no other responsibilities that would leave the patient unattended or compromise continuous monitoring. The medications administered for conscious sedation may cause behavioral changes and rapid, adverse physiological changes. It is important that the nurse monitors the described parameter and provides both physical care and emotional support for the patient. Monitoring parameters need to begin prior to the onset of conscious sedation, and continue during and after the procedure.

The physician responsible for the care of the patient and the nurse assigned to monitor the patient and/or administer medications should be aware of the desirable and undesirable effects of each drug. In addition, the physician responsible for directing the conscious sedation must be immediately available during the duration of the procedure and recovery. Prevention of adverse effects, early detection of non-preventable adverse effects, and accurate documentation of the patient’s response are integral components of the monitoring process.

Desirable effects of conscious sedation include:

- Intact protective reflexes
- Relaxation
- Cooperation
- Diminished verbal communication
- Initiation of slurred speech
- Easy arousal from sleep
- Early ambulation

Undesirable effects of conscious sedation include:

- Nystagmus (may be normal with large doses of diazepam)
- Severely slurred speech
- Unarousable sleep
- Hypotension
- Agitation
- Combativeness
- Hypoventilation
- Respiratory depression
- Airway obstruction
- Apnea
O2 Administration

Oxygen therapy will be initiated at the time of sedation per nasal cannula, mask, or as otherwise appropriate. The individual responsible for monitoring the patient should record the amount and means of oxygen administered.

Monitoring Parameters

Before administration of sedative medications, a baseline Aldrete score with O2 saturation and vital signs should be documented. The patient should be checked frequently to insure a patent airway once he/she receives conscious sedation.

It is recommended that parameters be monitored every 5 minutes or more frequently if indicated during the procedure, based on the patient’s condition and response to sedation. Refer to organization’s specific medication guidelines for required monitoring and frequency.

Pulse Oximetry

Pulse oximetry permits continuous, non-invasive monitoring of arterial oxygen saturation (SaO2) – the amount of hemoglobin-carrying oxygen in relation to its total carrying capacity. Oximetry technology allows assessment of minute-to-minute changes in saturation, intervention before hypoxemia produces obvious and serious symptoms, and evaluation of the patient's response to treatment.

Arterial blood gases (ABGs) measure arterial oxygen pressure (PaO2) and carbon dioxide (CO2) in addition to SaO2. ABG’s are invasive and should be performed when precise assessment is required or pulse oximetry readings are in question.

Pulse oximetry, though reliable for measuring the SaO2 of hemoglobin, may be unreliable under certain conditions. The lighted sensor functions by light absorption from one side of the sensor to the other. Anything that inhibits this process can cause erroneous readings or no reading at all, such as:

- Patient movement
- Poor/absent circulation
- Abnormal hemoglobin (CoHgb, metHgb)
- Skin pigmentation
- Nail polish or nail coverings
- External bright lights
- Intravascular dyes
- Cold finger

Oxygen saturations should stay above 90% at all times. A SaO2 below 90% is cause for concern and hyper oxygenation should be initiated. A SaO2 of 75% or below is life threatening. The physician and respiratory therapist should be alerted immediately. Be ready to initiate resuscitative measures.

Remember! Pulse Oximetry and SaO2 measure the saturation of the hemoglobin with O2. The ABG measures the partial pressure of oxygen in the blood.
Correlations of SaO2 and PaO2:

<table>
<thead>
<tr>
<th>SaO2(%)</th>
<th>PaO2(mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>60</td>
</tr>
<tr>
<td>80</td>
<td>50</td>
</tr>
<tr>
<td>70</td>
<td>40</td>
</tr>
</tbody>
</table>

This is why saturation of 90% or less is good cause for concern. Stop the procedure and correct the airway and ventilation problem!

A simple way to relieve an obstructed airway, not requiring any intervention, is a chin lift. If this does not work, an oral or nasal airway may be used. Verbal and/or painful stimulus may also be initiated.

If the patient becomes unconscious and non-breathing, ventilation with an ambu bag should be initiated and end tracheal intubation should be considered.

More sensitive monitoring of the patient’s ventilation will be required by continuous ETCO2 monitoring.

**OPTIONAL**

**Module III – Self-Assessment Questions**

Identify which patient effects are desirable (D) and which are undesirable (U):

<table>
<thead>
<tr>
<th>Airway obstruction</th>
<th>Apnea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypotension</td>
<td>Relaxation</td>
</tr>
<tr>
<td>Intact protective reflexes</td>
<td>Combativeness</td>
</tr>
<tr>
<td>Early ambulation</td>
<td>Cooperation</td>
</tr>
<tr>
<td>Diminished verbal communication</td>
<td>Initiation of slurred speech</td>
</tr>
<tr>
<td>Severely slurred speech</td>
<td>Easy arousal from sleep</td>
</tr>
<tr>
<td>Unarousable sleep</td>
<td>Nystagmus</td>
</tr>
<tr>
<td>Hypoventilation</td>
<td>Agitation</td>
</tr>
<tr>
<td>Respiratory depression</td>
<td></td>
</tr>
</tbody>
</table>
**True or False**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Pulse oximetry measures PaO2</td>
</tr>
<tr>
<td>2.</td>
<td>Pulse oximetry detects hypoxemia</td>
</tr>
<tr>
<td>3.</td>
<td>Pulse oximetry can measure PaCO2</td>
</tr>
<tr>
<td>4.</td>
<td>Pulse oximetry is useful as a continuous monitoring device</td>
</tr>
<tr>
<td>5.</td>
<td>The amount of light received by the photo detector varies according to the amount of oxygen carried by the hemoglobin and the arterial pulse</td>
</tr>
<tr>
<td>6.</td>
<td>A pulse oximeter is very valuable in a cardiac arrest situation</td>
</tr>
<tr>
<td>7.</td>
<td>Pulse oximetry gives almost instantaneous readings</td>
</tr>
<tr>
<td>8.</td>
<td>A fall in SaO2 from 98 to 90% is significant</td>
</tr>
<tr>
<td>9.</td>
<td>A SaO2 level of 84% should alert the nurse to potential problems</td>
</tr>
<tr>
<td>10.</td>
<td>A SaO2 level of 75% is considered life threatening</td>
</tr>
<tr>
<td>11.</td>
<td>Pulse oximetry is valuable for measuring extremely low levels of hemoglobin</td>
</tr>
<tr>
<td>12.</td>
<td>It is difficult to obtain accurate SaO2 readings from a patient who bends his fingers</td>
</tr>
<tr>
<td>13.</td>
<td>A SaO2 reading may not be obtainable from a patient in shock</td>
</tr>
<tr>
<td>14.</td>
<td>Before applying a sensor to a digit, it may be necessary to remove the patient’s nail polish</td>
</tr>
<tr>
<td>15.</td>
<td>A SaO2 reading can never go above 100%</td>
</tr>
<tr>
<td>16.</td>
<td>ETCO2 monitoring is a more sensitive measure of ventilation</td>
</tr>
</tbody>
</table>
OBJECTIVES:

1). Identify medications commonly administered to induce conscious sedation.
2). Identify possible complication related to conscious sedation

During administration of conscious sedation, the individual responsible for monitoring the patient should record all medication administered, (i.e. route, site, tie, drug and dose). The medication administered during conscious sedation frequently falls into one of two categories: sedatives and narcotics. Sedatives fall into two subcategories: Benzodiazepines and barbiturates.

Sedatives: Benzodiazepines

Benzodiazepines are among the most widely used agents for conscious sedation. They are thought to depress the limbic system and amygdala where the emotions of fear, anxiety, and apprehension are generated. Another possible mechanism of action involves the facilitating of gamma-aminobutyric acid (GABA) neurotransmission.

Diazepam (Valium®, Diazec®), or midazolam (Versed®) may be given alone but, in some cases, they are administered in combination with narcotic analgesics and atropine. Benzodiazepines have an additive effect when used with narcotics, making it possible to reduce the dose of each medication. A potent amnestic effect, which is a major benefit, occurs with Benzodiazepines. These medications provide a rapid onset of sedation when used intravenously. Patients give high ratings to the sedative effects of these agents. The majority of patients are able to respond to simple instructions whether they give the appearance of being awake or asleep.

Symptoms of Benzodiazepines overdose may include somnolence, confusion, coma, diminished reflexes, and decreased respiratory and/or cardiovascular function. Should overdose occur, additional doses should be withheld, and the physician should be notified immediately. Flumazenil (Romazicon®) reverses the CNS depression and may reverse the respiratory depression of Benzodiazepines but must be carefully administered to avoid paradoxical CNS stimulation that may potentiate a seizure.

The most frequently used Benzodiazepines for conscious sedation, diazepam and midazolam, differ in their potency, speed of onset and quality of sedative effect, amnestic response, frequency of phlebitis and thrombophlebitis, and time for recovery following conscious sedation. Midazolam is three to four times as potent as diazepam, which is important when considering the dose to be given. Advantages of midazolam include a lower incidence of phlebitis and other forms of venous irritation and compatibility with other premedications like narcotics and infusion solutions.
Intravenous diazepam has a much higher incidence of venous sequelae because it is not water-soluble. When injected into a small vein (e.g. on the dorsum of the hand) thrombophlebitis may occur. Midazolam however is water-soluble which accounts for the lower incidence of venous irritation.

Recovery time is about the same for both medications but because of the shorter elimination half-life of midazolam; in many cases patients are up and about in less than the one to two hours cited. The amnestic effect is very good with both medications.

Midazolam produces a rapid onset of sedation. In healthy adults, midazolam is to be administered by slow IV push in increments of 1 mg until desired patient responses is achieved. Over the course of three to four minutes, patients are comfortably sedated with midazolam, while diazepam takes somewhat longer to produce sedation. Slurred speech is one indicator used as the end point for conscious sedation. In healthy adults, the total dose of midazolam needed is usually between 3 mg and 5 mg.

**Narcotics**

Narcotic analgesics possess morphine or opium-like properties. Effects include varying degrees of analgesia and sedation. Side effects include respiratory depression, cough, suppression, euphoria-dysphoria, muscular rigidity, histamine release, pruritus, miosis, nausea and vomiting, constipation, biliary colic, urinary retention, and drug dependence. Narcotics are frequently administered as adjuncts to local anesthesia to elevate the pain threshold. It is important to remember that there is an additive effect when administering Benzodiazepines with a narcotic.

**Meperidine** (Demerol®) and morphine are longer-acting narcotic agents generally used in combination with Benzodiazepines. They may cause serious side effects, including respiratory depression and Hypotension; however, respiratory depression may be reversed by administering Narcan®, and Hypotension may be treated with an appropriate IV fluid. As with other narcotics, the sedative effects of Meperidine and morphine are additive when administered in combination with a Benzodiazepines. An advantage of the combination regimen is that the dose of both the narcotic and the Benzodiazepines can be reduced by 30% to 50%. When using Meperidine, its onset of action is more rapid than morphine; its duration of action is slightly shorter. Meperidine is contraindicated in patients who are receiving monoamine oxidase (MAO) inhibitors or those who have recently received such agents (Nardil, etc). Meperidine should also be avoided in patients with renal function impairment.

**Adjunctive Medications**

Atropine is a useful adjunct during conscious sedation. It is administered to counteract vasovagal bradycardia and Hypotension resulting from pain due to visceral traction, such as during a Colonoscopy. In some cases, atropine may be administered before the procedure to prevent or counteract the vasovagal responses that can occur during the procedure. It is most often given only if a vasovagal response occurs. Because the use of atropine increases the risk of tachycardia, it generally is used only as needed. Atropine can also paradoxically induce bradycardia in doses of 0.5 mg or less due to reflexive central and peripheral parasympathomimetic physiologic response to low doses.
CONSCIOUS SEDATION – MODULE V

Objectives:  1). Discuss the physicians /nurses role in caring for the patient receiving conscious sedation.  
2). Define discharge criteria for the patient receiving conscious sedation.

Despite scrupulous attention to detail, emergencies can arise with the administration of any medication during conscious sedation. Early recognition of symptoms and prompt medical management are key components in the care of the patient. It is your professional responsibility to be thoroughly familiar with medications administered for conscious sedation. You should be familiar with proper dosages, administration, adverse reactions, and interventions for adverse reactions and overdoses.

Demands on physicians are continually changing and increasing. When administering conscious sedation medications and monitoring the patients reactions, you are responsible for minimizing the patients risks. Quality patient care depends on the physician’s ability to understand pharmacologic properties and potential adverse reactions of medications and to intervene appropriately if emergencies arise.

Discharge Criteria:

Following administration of conscious sedation, the individual whose responsibility it is to monitor the patient should obtain and record the patient's vital signs and oxygen saturation levels. Organizational policies/standards include patient discharge criteria. These criteria are included in the post-procedure Aldrete Score and state that levels must be greater than or equal to 8 to be considered ready for discharge.
## INTRAVENOUS CONSCIOUS SEDATION POST PROCEDURE EVALUATION

<table>
<thead>
<tr>
<th></th>
<th>Admit</th>
<th>15 min</th>
<th>30 min</th>
<th>45 min</th>
<th>60 min</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Activity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Able to move all</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4 extremities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voluntarily on</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 extremities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Command</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>0 extremities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Respiration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Able to breathe deeply, cough freely or cry</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Dyspnea, shallow or limited breathing</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Apneic</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Circulation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP +/- 20 of pre-procedure level</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>BP +/- 20-30 pre-procedure level</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>BP + &lt;&gt; of pre-procedure level</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Consciousness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fully awake and verbally responsive</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Arousable on calling</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Non-responsive</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>O2 Saturation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Able to maintain O2 St &gt;92% on Room Air</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Needs O2 to maintain O2 Sat &gt;90%</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>O2 Sat &lt;90% even with O2 supplementation</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Score</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All discharged patient's and their competent accompanying individual are to receive:

- Written instructions that includes an explanation of potential or anticipated limitations on activities, behavior and diet
- A 24-hour emergency contact phone number prior to discharge

Ambulatory patients should not leave the premises unless they are under the care of a competent individual. They should be advised to refrain from operating dangerous equipment, driving a care, signing legal documents or any other activity, which requires alertness. They should also be advised not to consume alcohol for at least 24 hours.
MANDATORY
CONSCIOUS SEDATION
POST ASSESSMENT EVALUATION TOOL

1. Identify recommended monitoring parameters for the patient receiving Conscious Sedation.
   1. Blood pressure
   2. Heart rate and rhythm
   3. Oxygen saturation
   4. Level of consciousness
   5. Respiratory rate
   6. Capnography
      a. 1 only  b. 1, 3, and 4  c. 1 and 4  d. all of the above

2. A patient under conscious sedation is expected to have a depressed level of consciousness, is not able to maintain an airway independently, nor is he/she able to respond to verbal commands.
   a. True  b. False

3. In adults, Midazolam is to be administered by slow IV push increments of 1mg., until desired patient response is achieved.
   a. True  b. False

4. Flumazenil may reverse the effects of respiratory depression from Benzodiazepine over sedation.
   a. True  b. False

5. Which of the following is not true?
   a. Conscious sedation may be administered by an RN
   b. Patients should fast at least 2-3 hours before procedure
   c. The nurse must demonstrate competence in skills related to monitoring the patient receiving conscious sedation
   d. The physician is not required to be immediately available.
6. What of the following is the first treatment of choice for vasovagal (symptomatic) bradycardia:
   a. external pacemaker   b. epinephrine
c. atropine   d. dopamine drip

7. Choose the most effective oxygen delivery device for a patient who suddenly becomes unconscious and non-breathing:
   a. N-G tube   b. bag-valve device (e.g. ambu bag)
c. nasal cannula   d. venturi mask

8. Desirable effects of conscious sedation include all of the following except:
   a. diminished verbal communication
   b. unarousable sleep
   c. relaxation and cooperation
   d. slight initiation of slurred speech

9. For each medication administered state the reversal agent.
   Midazolam (Versed): ____________________________
   Diazepam (Valium): ____________________________
   Meperidine (Demerol): ____________________________

10. In accordance to established standards of care, assessment documentation requirements for the patient scheduled to receive conscious sedation are:
    a. Present medications, allergies, and weight
    b. Significant medical history and physical assessment
    c. Vital signs
    d. NPO status
    e. All of the above
11. Identify discharge criteria as designated by established standards of care.
   a. Procedure has been completed for at least 2 hours
   b. Patient must be able to drive home by him/herself
   c. Post procedure Aldrete score is greater than or equal to 10
   d. Post procedure Aldrete score has returned to pre-procedure levels

12. The way to relieve an obstructed airway is:
   a. Chin lift
   b. Suction patient
   c. Insert oral airway
   d. Apply a deep, painful stimulus

13. The total dose of midazolam needed is usually between 3mg. And 5 mg.
   a. True   b. False