STATE OF IDAHO –BOARD OF DENTISTRY

09/24/2013

POLICY FOR GENERAL ANESTHESIA AND DEEP SEDATION PERMIT EVALUATIONS

DEFINITION[1]

General anesthesia shall mean a drug-induced loss 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.

Deep sedation shall mean 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 ventilator function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

SCOPE

The following guidelines have been based upon the *AAOMS Office Anesthesia Evaluation Manual 2006 Edition,* and the *American Heart Association Advanced Cardiovascular Life Support Provider Manual 2006 edition.* This is a guideline and is not meant to be a complete review of the manual.

PERSONNEL AND STAFFING

During the period of sedation (before, during, and after the procedure) the patient will be attended by at least one person (in addition to the person performing the procedure) whose responsibilities will include monitoring the patient. This person (monitoring the patient) may be a dentist/physician, RN, or other qualified person (minimally B.C.L.S. certified), and will operate under the supervision of a dentist/physician who is immediately available. The supervising dentist/physician must be certified in Advanced Cardiac Life Support. The office staff should have regular, documented training in emergency procedures.

[1]The Idaho State Board of Dentistry's rules regarding sedation are found at IDAPA 19.01.01 – Rules of the Idaho State Board of Dentistry.

DRUGS AND MEDICATIONS

Route of administration and medications chosen should be well understood. Available reversal agents **must** be present in the office. Please note that dental assistants and dental hygienists are NOT permitted or authorized by the Administrative Rules of the Board of Dentistry to administer sedation medication(s).

MONITORING AND DOCUMENTATION

Each patient should be monitored with non-invasive blood pressure, ECG, and pulse oximetry. Oxygen saturation, blood pressure, heart rate, and respiration should be recorded as a baseline, and then monitored every five minutes during the anesthetic, and then continued every fifteen (15) minutes until the patient meets the requirements for discharge. Respiratory and level of consciousness will be monitored continuously by observation, and significant changes noted. All medications, as well as vital signs must be recorded and remain with the patient's chart as a part of their permanent record. It is required to have documentation of an ASA classification and a completed medical history prior to sedation.

ASA Physical Status Classification System

ASA Physical Status 1 – A normal healthy patient
ASA Physical Status 2 – A patient with mild systemic disease
ASA Physical Status 3 – A patient with severe systemic disease
ASA Physical Status 4 – A patient with severe systemic disease that is a constant threat to life
ASA Physical Status 5 – A moribund patient who is not expected to survive without the operation

RECOVERY

The patient will be monitored closely following the last dose of medication given until the patient meets the discharge criteria. This observation may take place at the site of the procedure or in a designated recovery area. While in the recovery area, the patient will be observed, with the doctor immediately available. All vital signs are to be monitored every 15 minutes. Patients are discharged when they meet discharge criteria.[2]

Stable vital signs
No airway difficulties
No respiratory distress
Return to usual state of alertness
Return to usual ambulatory status (except as limited by surgery)
Stable wound site
Ability to retain fluids
Responsible adult caretaker to accompany patient (patient and responsible party to be provided information on contact person if problems arise).

[2]Source: Longnecker/Tinker/Morgan, *Principles and Practice of Anesthesiology*, page 2260, (Mosby 2nd Ed. 1998).

Office Evaluation Checklist for General Anesthesia/Deep Sedation Permit

Part I. Office Equipment, Monitoring and Emergency Equipment, Records

Required Equipment and Records

____Oxygen and Supplemental gas-delivery system

____etC02 Monitor

____Suction and backup suction device

____Gas Storage facility

____Auxiliary lighting system

____Pulse Oximeter

____Automatic Non Invasive Blood Pressure Monitor

____Manual Sphygmomanometer and Stethoscope

____Recovery Area (monitoring equipment in area if recovery area is used)

____Automatic External Defibrillator (AED)

____Equipment Necessary to Obtain IV access and Delivery of IV fluids

____Appropriate Medications to Provide Level of Sedation for Which Permit Allows

____Full Face Mask, Positive pressure delivery device, Ambu Bag

____Tonsillar Suction

____Oral and Nasal Airways

____Equipment for Performing Cricothyrotomy or Emergency Airway Puncture

____Advanced airways (LMA, Combi Tube, etc.)

____Laryngoscope

____Magill Forceps

____Precordial Stethoscope

____Nasal Cannula

____Board or other device to stiffen the back of patient chair if CPR necessary

Office Records

____Staff and Doctor BLS certification
____Doctor ACLS certification
____Health History form
____Consent for Anesthesia and Surgery
____Anesthesia Record (ASA Status)
____Anesthesia Case Log
____Anesthesia Drug Log

Part II: Required Emergency Medications (required at a minimum)

Check all Expiration Dates

It is the permit holders' responsibility to confirm ALL drug concentrations from individual suppliers
Pediatric dosing should be calculated mg/kg determined by the specific medication
Doses and Delivery Guidelines may be described in Part III-medical emergencies

[REVERSAL AGENTS]

_____Naloxone (*Narcan*) 0.4mg/ml
Reversal of opioids
0.1mg-0.2mg (IV/IM/SC/ET)

_____Flumazenil (*Romazicon*) 0.1 mg/ml
Reversal of benzodiazepines
Adults: recommended initial dose of is 0.2 mg over 15 sec, may repeat q 1min (1g max dose)
Peds: recommended initial dose is 0.01 mg/kg (up to 0.2 mg)
May be associated with the onset of seizures

[CARDIAC, AIRWAY AND ALLERGIC REACTION MEDICATIONS]

_____Epinephrine 1mg/ml
_____ ASA (Chewable uncoated Aspirin) 160-325mg
_____ Nitroglycerin (*Nitrolingual, Nitroquick, Nitrostat*)
_____Ephedrine Sulfate (*Ephedrine*) 50mg/ml
_____Intravenous Fluids (NS, Lactated Ringers, Dextrose in water)
_____Diphenhydramine (*Benedryl*) 50mg/ml
_____Albuterol (*Ventolin*) Bronchodilator Mist Metered Dose Inhaler

[OTHER REQUIRED MEDICATIONS]

_____Instant Glucose or other Sugar Source to treat Hypoglycemia
_____Anti Seizure Medication (*Versed, Valium*)

[Suggested Medications to Treat Medical Emergencies and Non-Emergent Situations]
(not required but can be valuable if needed)

- Succinylcholine (*Anectine)* 20mg/ml
  Ultra short-acting depolarizing skeletal muscle relaxant
  Used in laryngospasm
  10-40mg IV (0.15-0.3mg/kg) or 4mg/kg IM

- Methylprednisolone (*Solu-Medrol*) 125mg
  corticosteroid hormone (glucocorticoid)
  potent anti-inflammatory steroid—useful in allergic reactions.
  adult: 10-250mg IV
  pediatric: 0.5-1 mg/kg IV q6h

Suggested medications – continued

- Morphine- Opiod agonist—useful if suspect Myocardial Infarction
  Multiple available routes of administration)
  1-3mg doses IV administration during MI q5 min

- Ammonia Inhalants (useful in syncope)

Antihypertensives

- Labetalol (*Trandate*) 5mg/ml
  mixed alpha/beta adrenergic antagonist (alpha & beta-blocker)
  IV infusion of 2mg/min (additional dosing 5-20mg IV)
  Relative contraindications for use in patients with asthma, congestive heart failure, any degree of heart block, bradycardia, or those in cardiogenic shock.

- Esmolol (*Brevibloc*) 10mg/ml
  Cardioselective $beta_1$ receptor blocker
  Rapid onset and a very short duration of action
  Commonly used in patients during surgery to prevent or treat tachycardia, and is also used in treatment of acute supraventricular tachycardia.

Bradycardia and Hypotension

- Atropine (*Atropine*) 0.4 mg/ml
  (*Atropine - Ansyr® prefilled syringe*) 0.1mg/ml
  Muscarinic receptor antagonist
  Adults: 0.5 – 1.0mg
  Peds: 0.01 to 0.03 mg/kg body weight

Antiarrythmics

- Amiodarone (50 mg/ml) 300mg IV once then 150mg IV
- Lidocaine (1-1.5mg/kg first dose)

Antiemetics

- Promethazine (*Phenergan*) IV/PO/PR/IM
  Antihistamine
  Adult: 12.5mg-25mg
  Peds: (>2yrs) 0.1mg/kg (12.5mg max)

- Ondansetron (*Zofran*) 2mg/ml IV & 4mg PO
  Selective blocking agent of the serotonin 5-HT_3 receptor
  Adult: 4mg
  Peds: (1mo-12yrs) 0.1mg/kg

Suggested medications – continued

Drugs for Endotracheal Intubation "Lane"

Lidocaine
Atropine
Naloxone
Epinenephrine

PART III: Simulated Emergencies and Suggested Algorithms

The simulated emergency procedures are to be demonstrated in the surgery/anesthesia area with full participation of the office staff. Proper use of any necessary emergency equipment should be demonstrated. Evaluator will check for satisfactory completion of each situation. Two way discussion of each situation with evaluators is expected.

Laryngospasm ☐ Pass ☐ Fail

- Pack off surgical site
- Position patient/ upright/ most comfortable
- Suction patient – tonsillar suction
- Ventilate patient with positive pressure ventilation
  (full face mask/ambu bag with 100% oxygen)
- Auscultation of lung fields
- Succinylcholine (*Anectine)* 20mg/ml
  Ultra short-acting depolarizing skeletal muscle relaxant
  10-40mg IV (0.15-0.3mg/kg) or 4mg/kg IM
- *Cricothyrotomy (if necessary)*
- Call 911

Bronchospasm and Airway Obstruction ☐ Pass ☐ Fail

- Establish airway and administer 100% oxygen with full face mask with positive pressure ventilation
- Albuterol (*Ventolin*) Metered Dose Inhaler
  Used in Asthma
  Beta-agonist bronchodilator
- Epinephrine
  Severe bronchospasm (1:1,000) 0.3-0.5mg SQ
  TB syringe 0.3-0.5ml of 1:1,000 SL/SQ
  1:10,000 dilution if used IV
- Benadryl ~~50mg intravenously
- Auscultation of lung fields
- Call 911 if not resolved

Simulated emergencies – continued

Emesis and Aspiration ☐ Pass ☐ Fail

- Change suction to Tonsillar suction
- Turn patient to right side --Trendelenburg position, check for foreign body
- 100% oxygen
- Auscultation of lungs
- Consider Anti Emetic Medications
- If situation gets worse, (i.e. cyanotic, dyspnea) call 911

Bradycardia ☐ Pass ☐ Fail

- Monitor patient; recheck BP and pulse
- Stop procedure, pack wound site
- Consider etiology
- Consider Atropine (serious sign or symptoms?)

Asystole/PEA (Pulse arrest- NOT Shockable) ☐ Pass ☐ Fail

- Epinephrine 1 mg IV repeat 3-5 min or
- Vasopressin 40 U IV to replace 1^{ST} or 2^{ND} dose epi
- Consider atropine 1 mg IV
- Find and treat factors
  H's and T's (hypovolemia, hypoxia, hydrogen ion, hypo-/hyperkalemia, hypoglycemia, hypothermia, toxins, tamponade, tension stx, thrombosis, trauma)

Angina Pectoris ☐ Pass ☐ Fail

- Nitroglycerin (*Nitrolingual, Nitroquick, Nitrostat*)
  Check Date, use patients own NTG if possible
  Sublingual doses (0.3mg = 1/200 grain, 0.4mg = 1/150 grain
  0.6mg = 1/100 grain)
  SL/spray/oral
  Determine level of SBP (must be > 90mmHg)
  Avoid in patients taking Sildenafil (*Viagra*)
- Place patient in comfortable position
- 100% oxygen, Nitrous Oxide
- Monitor patient
- If pain continues, administer one more tab/spray in 5 minutes in 5 minutes
- If pain still continues, assess MI, 911 and transportation
- Third NTG dose 5 minutes later while waiting for ambulance

Simulated emergencies – continued

Myocardial Infarction ☐ Pass ☐ Fail

- Stop Surgery and Position Patient
- 100% Oxygen
- Call 911
- Establish IV
- Monitor Vitals, Consider Applying AED
- Chewable uncoated Aspirin 325mg orall
- Analgesia—Nitrous Oxide, NTG,
  Morphine 1-3mg doses IV administration during MI q5 min

Cardiac Arrest ☐ Pass ☐ Fail

- Look, Listen, Feel
- Call 911
- Ventilate with AMBU bag and 100% Oxygen
- Apply AED—Defibrillate if indicated
- Check Pulse—Begin Chest Compressions if no pulse
- Establish IV
- ACLS PROTOCOL
  Epinephrine 1mg IV q3-5min
  10ml dilution of 1:10,000
  Antiarrhythmics
  Amiodarone (50 mg/ml) 300mg IV once then 150mg IV
  Lidocaine (1-1.5mg/kg first dose)

Hypotension ☐ Pass ☐ Fail

- Terminate Surgery
- Position Patient—Trendelenberg—Supine
- Check Pulse and BP
- Stimulate Patient
- Increase IV Fluids (IV access if not already established)
  Isotonic intravenous fluids (0.9% Normal Saline, Lactated Ringers)
- Ephedrine sulfate (*Ephedrine*) 50mg/ml
  Alpha-1, Beta-1, Beta-2 receptor agonist
  Must be diluted! (50mg/ml vial diluted with 9ml saline= 5mg/ml)
  2.5-5mg IV SLOW q5-10min
  (pediatric – 0.5mg/kg IM or SQ)

If Bradycardic (HR<60) and Hypotensive

- Atropine (*Atropine*) 0.4 mg/ml (*Atropine - Ansyr® prefilled syringe*) 0.1mg/ml
  Muscarinic receptor antagonist
  Used to treat Bradycardia
  Adults: 0.5 – 1.0mg
  Peds: 0.01 to 0.03 mg/kg body weight

Simulated emergencies – continued

Hypertension ☐ Pass ☐ Fail

Consider all possible etiologies. Treat the cause if known.
Most hypertensive episodes are transient.
Careful consideration for therapeutic intervention.

- Labetalol (*Trandate*) 5mg/ml
  mixed alpha/beta adrenergic antagonist (alpha & beta-blocker)
  IV infusion of 2mg/min (additional dosing 5-20mg IV)
  Relative contraindications for use in patients with asthma, congestive heart failure, any degree of heart block, bradycardia, or those in cardiogenic shock.
- Esmolol (*Brevibloc*) 10mg/ml (500mcg/kg slow delivery over 1 minute)
  Cardioselective $beta_1$ receptor blocker
  Rapid onset and a very short duration of action
  Commonly used in patients during surgery to prevent or treat tachycardia, and is also used in treatment of acute supraventricular tachycardia.
- Call 911 if necessary

Acute Allergic Reaction ☐ Pass ☐ Fail

- Mild Reaction (rash, hives)--- Benedryl 25-50mg IV or IM
- Severe Reaction (wheezing, angioedema, laryngoedema, bronchospasm)
  - Epinephrine—0.3mg-0.5mg SL, SC, IM, IV
  - Bronchodilator mist
  - Benedryl—50mg IV or IM
  - Repeat Epinephrine if needed in 3-5 min
  - Call 911, Continue BLS
  - May give Corticosteroid (*Solu-Medrol, Decadron*)
  - Increase IV Fluids
  - Cricothyrotomy

Syncope, Loss of Consciousness ☐ Pass ☐ Fail

- Position Patient—Trendelenberg—raise legs
- Oxygen, monitor vitals
- Ammonia Inhalants
- Start IV Fluids
- BLS if unresponsive
- Apply AED, call 911 if necessary
- Consider Hypoglycemia (glucagon, instaglucose)

Hyperventilation ☐ Pass ☐ Fail

- Calm the patient, Position patient Upright
- Breath into paper bag, cupped hands, or full mask with 0.5L of Oxygen flow
- May need to sedate with Valium or Versed

Simulated emergencies – continued

Convulsions ☐ Pass ☐ Fail

- Protect patient and gently restrain
- After seizure BLS—post ictal depression—maintain airway
- May need Valium or Versed –titrate in IV

Malignant Hyperthermia ☐ Pass ☐ Fail

- Avoid succinylcholine
- Avoid volatile inhalation anesthetics
- Nitrous oxide safe
- Need alternative muscle relaxation (non-depolarizing)
- Access to Dantrolene (Dantrium) – ER transfer

Part IV: Observation of a Sedation Case

One parenteral case should be observed. The sedation should be no longer than one hour. Evaluators will remain present to ensure proper use of patient monitors, preparation and delivery of medications, titration to appropriate level of sedation, and patient management.

☐ Pass ☐ Fail

DEFICIENCIES NOTED/CORRECTIVE ACTION NEEDED

_____
_____
_____
_____
_____
_____
_____

Recommended Follow-up:

☐ Follow-up Evaluation
☐ Written Follow-up
☐ No follow-up required

If a follow-up evaluation is required, within thirty (30) days of the date of initial evaluation it is the responsibility of the dentist being evaluated to undertake the identified corrective action and make appropriate arrangements with an evaluator to conduct the follow-up evaluation. An anesthesia permit will not be issued until all requirements of the evaluation are satisfied.

A site evaluation is required when sedation is administered at a satellite office. The purpose of this type of evaluation is to evaluate the suitability of the facility and presence of all necessary equipment, emergency medications, and the proper training and presence of auxiliary personnel. Board staff will contact permit holders with information regarding site evaluation.

Is Sedation Administered at an Additional Location?

□Yes

□No

Business address of satellite office:

_____

Dr. _____ completed the general anesthesia/deep sedation evaluation program on this date, assisted by:

_____	_____	_____
Printed Name	Signature	Date
_____	_____	_____
Printed Name	Signature	Date

Return forms to:
Idaho State Board of Dentistry
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