**Procedural Sedation Checklist**

- Medication Selection
  - Select appropriate sedative/analgesic for procedure
  - Confirm patient weight, drug doses
  - Reversal agents, emergency medication doses affirmed (keep code sheet ready)
  - Consider adjuvants (lidocaine, glycopyrrolate)
- Discuss plan with the procedural team
- Confirm informed consent(s)
- Monitoring Equipment: ECG, Pulse Ox, BP, ETCO2
- O2 delivery devices & Suction
- Resuscitation equipment available nearby
- Bag/Mask, airway adjuncts (see below)

**Airway Adjuncts**

- Nasopharyngeal Airway: measure from the tip of the nose to tragus of the ear
- Oral Airway: measure from angle of mouth to angle of the mandible/jaw

**Procedural Sedation Adverse Events**

- Apnea/Hypoventilation
- Hypoxemia & desaturations
- Airway obstruction
- Laryngospasm
- Hypotension
- Anaphylaxis

**Airway/Breathing Interventions**

- **Early detection** (use ETCO2)
  - Reposition patient/airway
  - Jaw thrust
  - Oxygen/Suction
  - Positive Airway Pressure
  - Oral/nasal airway
  - Titrate/stop drugs
- **Reversal agents**
- **LMA Intubate**

- **Use PALS guidelines and call for help early**

**Discharge Guidelines:**
1. Tolerate PO/Ambulate
2. Modified Aldrete Score >8
3. Parent teaching
4. F/u phone call in 24 hours.

**References:**
3. ASA House of Delegates, ASA physical status classification system. 2014.
4. www.anaesthesia.net

**Notes:**

- SPS acknowledges a significant contribution by Drs Deshpande and Fitch from Children’s Hospital of Illinois, Peoria, IL, and SPS leadership of Drs Pradip Kamat, Amber Rogers, and Jaimee Holbrook into making of this card.
- Note: Information on this card should not replace clinical judgment or institution-specific guidelines.

**Potentially High Risk Factors:**

- Age <3 months
- Prematurity
- Mallampati Class IV
- Complex congenital heart disease
- Hypotonia/neuromuscular weakness
- Obesity/snoring/OSA
- Mallampati Class IV
- Worms/other obstructive conditions
- Acute respiratory illness
- Chronic lung disease
- Hypotonia/neuromuscular weakness
- End-stage renal or liver disease

**Obtain SAMPLE history prior to procedural sedation:**

- S: Signs and symptoms
- A: Allergies
- M: Medications
- P: Past medical history
- L: Last meal
- E: Events/diagnosis

**ASA-PS Classification**

- **Class I:** A normal healthy patient
- **Class II:** Mild systemic disease (e.g. controlled asthma)
- **Class III:** Patient with severe systemic disease (e.g. actively wheezing child, oncology patients, cystic fibrosis)
- **Class IV:** Patient with severe systemic disease that is constant threat to life (e.g. status asthmaticus)
- **Class V:** Moribund patient who is not expected to survive without the operation (e.g. a patient with severe cardiomyopathy requiring heart transplantation)
- **E:** Procedure done on emergent basis

**Pre-procedure Fasting**

- Per ASA guidelines
  - Clear liquids: 2 hours
  - Breast milk: 4 hours
  - Infant formula / Cow’s milk/light meal: 6 hours
  - Heavy solid food: 8 hours

- *Patients w/ risk factors should be strict NPO for 8 hours*

**01/2021**

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<table>
<thead>
<tr>
<th>Medication</th>
<th>Route/Concentration</th>
<th>Onset</th>
<th>Duration</th>
<th>Dose</th>
<th>Side Effects/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dexmedetomidine</strong></td>
<td>Nasal* (100 mcg/ml)</td>
<td>15-30 min</td>
<td>60-90 min</td>
<td>2-4 mcg/kg</td>
<td>• Hypotension, bradycardia</td>
</tr>
<tr>
<td></td>
<td>IV Bolus</td>
<td>3-5 min</td>
<td>30-45 min</td>
<td>1-3 mcg/kg over 10 minutes</td>
<td>• Minimal effects on respiration</td>
</tr>
<tr>
<td></td>
<td>IV Infusion</td>
<td>&lt; 1 min</td>
<td>30-60 min</td>
<td>0.5-2 mcg/kg/hour</td>
<td>• Monitor for hypertension and bradycardia during bolus</td>
</tr>
<tr>
<td><strong>Fentanyl</strong></td>
<td>IV</td>
<td>&lt; 1 min</td>
<td>30-60 min</td>
<td>0.5-2 mcg/kg</td>
<td>• Do not use vagolytic (atropine/glycopyrrolate) for bradycardia</td>
</tr>
<tr>
<td></td>
<td>Nasal</td>
<td>15-20 min</td>
<td>60-120 min</td>
<td>1-2 mcg/kg</td>
<td>• Respiratory depression</td>
</tr>
<tr>
<td><strong>Ketamine</strong></td>
<td>IV (10 mcg/ml)</td>
<td>1-2 min</td>
<td>10-15 min</td>
<td>1-2 mg/kg</td>
<td>• Chest wall rigidity with rapid IV push (including saline flush used after pushing medication)</td>
</tr>
<tr>
<td></td>
<td>IM, Nasal* (100 mcg/ml)</td>
<td>5-15 min</td>
<td>15-30 min (IM)</td>
<td>2-4 mg/kg</td>
<td>• Increased HR, BP • Bronchodilation</td>
</tr>
<tr>
<td></td>
<td>(Nasal)</td>
<td>5-10 min</td>
<td>30-60 min (Nasal)</td>
<td></td>
<td>• Increased IOP, ICP • Nystagmus</td>
</tr>
<tr>
<td><strong>Midazolam</strong></td>
<td>IV (1 mg/ml)</td>
<td>1-2 min</td>
<td>45-60 min</td>
<td>0.05-0.15 mg/kg (max. 2 mg)</td>
<td>• Laryngospasm (succinylcholine can be used to treat it)</td>
</tr>
<tr>
<td></td>
<td>PO</td>
<td>15-30 min</td>
<td>60-90 min</td>
<td>0.5-0.75 mg/kg (max. 20 mg)</td>
<td>• Increased secretions</td>
</tr>
<tr>
<td></td>
<td>Nasal* (5 mg/ml)</td>
<td>&lt; 5 min</td>
<td>30-60 min</td>
<td>0.2-0.5 mg/kg (max. 10 mg)</td>
<td>• ↓ CO w/ catecholamine depletion, hypotension</td>
</tr>
<tr>
<td><strong>Nitrous Oxide</strong></td>
<td>Inhaled</td>
<td>2-5 min</td>
<td>Recovery within 3-5 min washout with 100% O&lt;sub&gt;2&lt;/sub&gt;</td>
<td>&lt;50% NO&lt;sub&gt;2&lt;/sub&gt; = minimal sedation 50-70% NO&lt;sub&gt;2&lt;/sub&gt; = moderate sedation</td>
<td>• Hypotension • Paradoxical reaction/agitation</td>
</tr>
<tr>
<td><strong>Propofol</strong></td>
<td>IV Bolus</td>
<td>30-45 sec</td>
<td>4-8 min</td>
<td>1-2 mg/kg</td>
<td>• Nausea/vomiting • Avoid in eye/brain surgery and bowel obstruction (air-filled spaces)</td>
</tr>
<tr>
<td></td>
<td>IV infusion</td>
<td></td>
<td></td>
<td>1-6 mg/kg/hour (50-120 mcg/kg/min)</td>
<td>• Avoid with air leak syndromes (pneumomediastinum, pneumothorax, pneumoperitoneum)</td>
</tr>
<tr>
<td><strong>Reversal Agents/Adjuncts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Hypotension, bradycardia • Pain on injection</td>
</tr>
<tr>
<td>Naloxone</td>
<td>IV/Nasal (2 mg/2ml)</td>
<td>1-2 min</td>
<td>20-40 min</td>
<td>0.1 mg/kg/dose for &lt; 20 kg 2 mg for equal or more than 20 kg</td>
<td>• Respiratory depression • Avoid w/ egg, soy anaphylaxis</td>
</tr>
<tr>
<td>(Fentanyl reversal)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flumazenil</td>
<td>IV</td>
<td>1-2 min</td>
<td>30-60 min</td>
<td>0.01 mg/kg (max. 0.2 mg)</td>
<td>• Catecholamine release, HTN</td>
</tr>
<tr>
<td>(Midazolam reversal)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Use frequent dosing until effect reversed</td>
</tr>
<tr>
<td>Glycopyrrolate</td>
<td>IV</td>
<td>&lt; 1 min</td>
<td>~ 7 hours</td>
<td>4 mcg/kg</td>
<td>• Avoid in patients with seizure disorder</td>
</tr>
<tr>
<td>Succinylcholine</td>
<td>IV</td>
<td>0.5-1 min</td>
<td>3-10 min</td>
<td>1 mg/kg</td>
<td>• Thickened secretions</td>
</tr>
</tbody>
</table>