# Summary of Draft Changes
## 2020 Field Treatment Guidelines

<table>
<thead>
<tr>
<th>Treatment Guideline Number</th>
<th>Treatment Guideline Name</th>
<th>Change(s)</th>
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</table>
| A02                        | Adult Airway             | o New Definition of intubation attempt – An intubation attempt is defined as inserting the laryngoscope blade with the intent to intubate or inserting an advanced airway passed the teeth.  
   o Removed PEARL - This Treatment Guideline is only for use with patients >15 years of age.  
   o i-Gel to replace King Tube in adults. |
| A03                        | Adult Behavioral         | o Public Comment: "Change ‘Establish IV’ to ‘Consider IV’. Risk to establishing an IV on combative patient, removal upon arrival to PES, risk of infection.”  
   o Changed to - Consider IV. |
| A09                        | Respiratory Distress     | Considerable reworking of Field Treatment Guideline  
   o Combined A09 - Dyspnea & AC09 - CHF to create new treatment guideline A09 – Respiratory Distress. Uses lung sounds and assessment to determine which treatment pathway to take. |
| A14                        | Adult Pain Control       | o Addition of Ketamine, Acetaminophen. |
| P01                        | Pediatric Airway         | o Added “Direct Laryngoscopy” under Complete Obstruction.  
   o Added new definition of intubation attempt – same as Adult.  
   o **Please note:** i-Gel’s will not be used in children less than 40kg. The i-Gel is still in progress for local scope approval by EMSA but will not be for peds this year. |
| P10                        | Pediatric Pain Control   | o Addition of Ketamine.  
   o Addition of Pearl noting that Fentanyl is first line pain management for children.  
   o Reworked basic treatment for all patients with pain and have a pathway for Moderate/Severe pain. |
| FP24                       | Pediatric Medication Administration | o Added new Field Procedure for Pediatric Medication Administration as this has proven to be an infrequently used skill. |

Contra Costa County Emergency Medical Services

Adult Airway

Basic maneuvers first

- Open airway chin lift/jaw thrust
- Nasal or oral airway
- Bag-valve mask (BVM)

Spinal motion restriction if indicated

Basic maneuvers first

- Abdominal thrusts (conscious)
- Chest compression (unconscious)
- Direct laryngoscopy

Assess respiratory rate, effort, oxygenation
Is airway/breathing adequate?

No

Yes

Basic maneuvers first

Exit to appropriate TG

Supplement oxygen
Goal oxygen saturation ≥ 94%

Exit to appropriate TG

Airway patent?

No

Yes

Complete obstruction?

No

Yes

Breathing/oxygenation support required?

No

Yes

Monitor/reassess supplemental oxygen if indicated

Exit to appropriate TG

Supplemental oxygen via BVM

P

Monitor continuous EtCO2

Reassess airway procedure and adjust if necessary

Notify receiving facility.
Contact Base Hospital for medical direction

E

Monitor/reattachment and adjust if necessary

BVM effective?

No

Yes

Consider, sedation if I-Gel or ETT in place

Midazolam IV/IO
Maximum 5 mg total

I-Gel, as indicated in cardiac arrest

I-Gel or intubation, as indicated

The maximum allowed attempts for an advanced airway placement is two (2).

If an attempt fails, reassess and approach with a different technique.
Always weigh the risks and benefits of endotracheal intubation in the field against transport. All prehospital endotracheal intubations are considered high risk. If ventilation/oxygenation is adequate, transport may be the best and safest option. The most important airway device is the BVM, not the laryngoscope.

**Cormack-Lehane Difficult Airway Assessment:**

<table>
<thead>
<tr>
<th>Grade IV</th>
<th>Grade III</th>
<th>Grade II</th>
<th>Grade I</th>
</tr>
</thead>
<tbody>
<tr>
<td>No distinguishable anatomy is visible</td>
<td>Only the epiglottis is visible</td>
<td>Partial view of the glottic opening</td>
<td>Complete view of glottic opening and surrounding structures</td>
</tr>
</tbody>
</table>

**CJ: Utilize in-line cervical stabilization during intubation, BLS airway or BVM use. During intubation, the cervical collar front should be open or removed to facilitate translation of the mandible/mouth opening.**

**Pearls**

- Continuous capnometry (EtCO₂) is mandatory with all methods of airway management. Document results.
- If an effective airway is being maintained with a BVM and a basic airway adjunct with continuous pulse oximetry values of ≥ 90% or values expected based on pathophysiologic condition with otherwise reassuring vital sign (e.g., pulse oximetry of 85% with otherwise normal vital signs in a post-drowning patient), it is acceptable to continue with basic airway measures rather than placing an advanced airway.
- For the purposes of this TG, a secure airway is achieved when the patient is receiving appropriate oxygenation and ventilation.
- An intubation attempt is defined as inserting the laryngoscope blade with the intent to intubate or inserting an advanced airway past the teeth.
- An appropriate ventilatory rate is one that maintains an EtCO₂ of 35 or greater. Avoid hyperventilation.
- A Bougie is strongly encouraged for all ET intubation attempts.
- Effective use of a BVM is best achieved with two (2) people.
- The airway should be reassessed with each patient move. Document findings and EtCO₂ readings for each.
- Maintain spinal motion restriction for patients with suspected spinal injury.
- Document visualization and grading scale in prehospital record.
- Hyperventilation in deteriorating head trauma should only be done to maintain an EtCO₂ of 30-35.
- It is important to secure the advanced airway well and consider c-collar use (in the absence of trauma) to better maintain advanced airway placement. Manual stabilization of advanced airway should be used during all patient moves/transfers.
Adult Behavioral

**History**
- Situational crisis
- Psychiatric illness/medications
- Injury to self or threats to others
- Medical alert tag
- Substance abuse/overdose
- Diabetes

**Signs and Symptoms**
- Anxiety, agitation or confusion
- Affect change or hallucinations
- Delusional thoughts or bizarre behavior
- Combative or violent
- Expression of suicidal/homicidal thoughts

**Differential**
- Altered mental status
- Alcohol intoxication
- Toxin / substance abuse
- Medication effect/overdose
- Withdrawal symptoms
- Depression
- Bipolar (manic-depressive)
- Schizophrenia
- Anxiety disorders
- Hypoglycemia

**Exit to appropriate TG, if indicated**

- **Midazolam 5mg IM/IN**
- **Midazolam 1-3mg IV** in 1mg increments
- Age ≥ 65 years of age 1mg IV/IM
- May repeat every 5 minutes to effect.
- Maximum 5mg

**Diabetic TG, if indicated**
- Aggressive or agitated, possible psychosis, possible danger to self, or others
- Consider restraints
- Monitor restraints and PMS if indicated
- Consider external cooling measures
- Monitor and reassess
- Consider IV
- Blood glucose analysis
- Cardiac monitor

**Excited Delirium Syndrome**
- Paranoia, disorientation, extremely aggressive or violent, hallucinations, tachycardia, increased strength, hyperthermia, and clearly a danger to self or others

**Consider** restraints
- Monitor restraints and PMS if indicated
- Consider external cooling measures
- Monitor and reassess
- Consider IV
- Blood glucose analysis
- Cardiac monitor

**Exit to appropriate TG, if indicated**

- **Midazolam 5mg IM/IN**
- May repeat 2.5mg every 5 minutes to effect.
- Maximum 10mg

**Cardiac monitor**
- Consider external cooling measures

**Notify receiving facility. Contact Base Hospital for medical direction**

**Midazolam** Contact Base Hospital Physician for additional order

**Effective Jan. 2020**
Excited Delirium Syndrome:

This is a medical emergency. The condition is a combination of delirium, psychomotor agitation, anxiety, hallucinations, speech disturbances, disorientation, violent/bizarre behavior, insensitivity to pain, hyperthermia and increased strength. The condition is life-threatening and is often associated with use of physical control measures, including physical restraints, and tasers. Most commonly seen in male patients with a history of serious mental illness or drug abuse, particularly stimulant drugs such as cocaine, crack cocaine, methamphetamine, amphetamines, bath salts, or similar agents. Alcohol withdrawal or head injury may also contribute to the condition.

Pearls

- Crew/responder safety is the main priority. See Policy 1008 – Managing Assaultive Behavior/Patient Restraint.
- Avoid using benzodiazepines for patients with alcohol intoxication.
- Limit IN administrations to ½ dose in each nare.
- All patients who receive either physical restraint or chemical sedation must be continuously observed by EMS personnel. This includes direct visualization of the patient as well as cardiac and pulse oximetry monitoring.
- Consider all possible medical/trauma causes for behavior (e.g. hypoglycemia, overdose, substance abuse, hypoxia, seizure, head injury, etc.).
- Use caution when considering the use of Midazolam with postictal patients.
- Do not irritate the patient with a prolonged exam. Be thorough but quick.
- Do not overlook the possibility of associated domestic violence or child abuse.
- If patient suspected of excited delirium and suffers cardiac arrest, consider fluid bolus and sodium bicarbonate early.
- Do not position or transport any restrained patient in a way that negatively affects the patient’s respiratory or circulatory status (e.g. hog-tied or prone positions). Do not place backboards, splints or other devices on top of the patient.
- If restrained, the extremities that are restrained will have a circulation check at least every 15 minutes. The first of these checks should occur as soon after placement of the restraints as possible. This shall be documented in the EHR.

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Respiratory Distress

**History**
- Asthma; COPD – chronic bronchitis and emphysema
- Home treatment (e.g. oxygen or nebulizer)
- Medications (e.g. Theophylline, steroids, inhalers, digoxin, lisinopril, Viagra, Sildenafil, Levitra, Vardenafil, Cialis, or Tadalafil)
- Toxic exposure or smoke inhalation
- Cardiac History including MI

**Signs and Symptoms**
- Shortness of breath
- Increased respiratory rate and effort
- Diminished or abnormal lung sounds
- Tachycardia
- Purse-lipped breathing
- Use of accessory muscles
- Jugular vein distention
- Peripheral edema or diaphoresis
- Pink, frothy sputum

**Differential**
- Asthma
- COPD
- Congenital Heart Failure
- Myocardial Infarction
- Aspiration
- Pneumonia
- Pulmonary embolus
- Hyperventilation
- Inhaled toxin

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**Routine Care**

- **Airway Obstructed?**
  - **No**
    - **Lung Sounds**
      - Rales, pedal edema, hx of heart disease
  - **Yes**
    - **Exit to A02 - Adult Airway TG**

- **Wheezes, Hx of Asthma/COPD**

- **Applying Oxygen**
  - Maintain goal SpO2 93 to 95%

- **Airway support**

- **Lung Sounds**

- **Cardiac monitor**

- **12-Lead ECG**

- **EtCO2 monitoring**

- **Consider IV/IO**

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**If no improvement, consider**

- **Epinephrine 1:1,000 0.3mg IM** (Use 0.15mg for patients > 50 years of age)

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**PERI-ARREST OR SEVERE DISTRESS?**

- **Consider administering Epinephrine 1:1,000 0.3mg IM**

- **Albuterol nebulizer 5mg**
  - Repeat as needed
  - Consider CPAP
  - Improving?
    - **No**
      - **If no improvement, consider**
        - **Epinephrine 1:1,000 0.3mg IM**
          (Use 0.15mg for patients > 50 years of age)

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**BP > 90**

- **Nitroglycerin 0.4mg sublingual**
  - If systolic BP > 150, double Nitroglycerin to 0.8mg sublingual
  - Repeat every 5 minutes as needed

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**Hypotensive**

- **Systolic < 90**
  - **Remove CPAP**
  - **Consider A12 Hypotension/Shock TG**

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**Improving?**

- **Yes**
  - **Consider CPAP**
  - **Consider A02 Adult Airway TG**

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**Exit to A04 – Allergic Reaction/Anaphylaxis TG**

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**Notify receiving facility. Contact Base Hospital for medical direction**
 Pearls

- **Patients receiving epinephrine should receive a 12-Lead ECG at some point in their care in the prehospital setting, but this should NOT delay the administration of Epinephrine.**
- Epinephrine may precipitate cardiac ischemia. The following patients should receive half the adult dose of Epinephrine (0.15mg Epinephrine 1:1,000) for the initial dose and any repeated doses:
  - Patients with a history of coronary artery disease, MI, stents, CHF, cardiac surgery; OR
  - Patients over 50 years of age and has a heart rate ≥ 150.
- Pulse oximetry and continuous EtCO₂ monitoring is required for all respiratory patients.
- A silent chest in respiratory distress is a pre-respiratory arrest sign.
- CPAP is not a ventilation device. Patients with an inadequate respiratory rate or depth of respiration will need assistance with a BVM.
Contra Costa County Emergency Medical Services

Adult Pain Control

**History**
- Age
- Location and duration
- Severity (0 – 10 scale)
- Past medical history
- Pregnancy status
- Drug allergies and medications

**Signs and Symptoms**
- Severity (pain scale)
- Quality (e.g. sharp, dull, or stabbing)
- Radiation
- Relation to movement or respiration
- Increased with palpation of area

**Differential**
- Per the specific TG
  - Musculoskeletal
  - Visceral (abdominal)
  - Cardiac
  - Pleural/respiratory
  - Neurogenic
  - Renal (colic)

**Position of comfort**
- Apply cold pack *if applicable*
- Monitor and reassess

**Assess and monitor respiratory status**
- Monitor continuous EtCO₂
- Apply and monitor cardiac rhythm

**Mild pain**
- Acetaminophen 1g IV/IO infusion over 15 minutes (*single dose only*)
  - Monitor and reassess every 5 minutes following administration

**Moderate to severe pain**
  - Fentanyl 100mcg IN if no IV access. May repeat once after 15 minutes
  - Fentanyl 50 – 100mcg IM if no IV access and IN route not advisable. May repeat once after 15 minutes
  - Maximum of 200mcg total
    - Monitor and reassess every 5 minutes following administration

- Ketamine IV/IO infusion over 5 minutes *Refer to dosing guide*
  - Maximum of 30mg total
    - Monitor and reassess every 5 minutes following administration

**Consider for longer acting relief**
- Acetaminophen 1g IV/IO infusion over 15 minutes (*single dose only*)
  - Monitor and reassess every 5 minutes following administration

**Notify receiving facility.**
- Contact Base Hospital for medical direction as needed

**Fentanyl or Ketamine**
- Contact Base Hospital for additional order

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**Effective Jan. 2016**

**Effective Jan. 2020**
 Pearls

- **DO NOT ADMINISTER FENTANYL AND KETAMINE TO THE SAME PATIENT.**
- Pain severity (0 – 10 scale) is a vital sign to be recorded before and after all BLS pain control measures and ALS pain medication delivery. Monitor blood pressure and respirations closely as pain control medications may cause hypotension or respiratory distress.
- Patients may display a wide variation of response to opioid pain medication (Fentanyl). Consider the patient’s age, weight, clinical condition, other recent drugs, or alcohol and prior exposure to opiates when determining initial dosing. Minimal doses of opioids may cause respiratory depression in the elderly or those patients who weigh less.
- **USE EXTREME CAUTION** when administering opioids together with benzodiazepines; this combination results in a deeper level of anesthesia with a significant risk for airway and respiratory compromise.
- For patients who have a tolerance to opioids, non-narcotic therapies may be appropriate until evaluation at the receiving facility.
- Acetaminophen may be administered in addition to Fentanyl or Ketamine for patients with severe pain.
- Do not administer Acetaminophen to patients with severe liver impairment or active liver disease.
- Contraindications of Fentanyl and Ketamine include:
  - Closed head injury
  - Hypotension (BP < 90)
  - Headache
  - Altered level of consciousness
  - Respiratory failure/worsening status
  - Childbirth/suspected active labor
- Have Naloxone available to reverse respiratory depression should it occur.
- Burn patients may require higher than usual opioid doses to achieve adequate pain control. **IF A PATIENT HAS SUFFERED BURNS THAT REQUIRE TRANSPORT TO A BURN CENTER, THE PATIENT MAY REQUIRE MORE THAN THE MAXIMUM TOTAL DOSE OF FENTANYL OR KETAMINE TO ACHIEVE PAIN CONTROL. CONTACT THE BASE HOSPITAL FOR ADDITIONAL ORDERS.**

Contra Costa County Emergency Medical Services

Pediatric Airway

Basic maneuvers first
- Open airway chin lift/jaw thrust
- Nasal or oral airway
- Bag-valve mask (BVM)

Spinal motion restriction if indicated

Yes

Supplement oxygen
Goal oxygen saturation ≥ 94%

Exit to appropriate TG

No

Airway patent?

Yes

Breathing/oxygenation support required?

Yes

Supplement oxygen via BVM

No

Monitor/reassess supplemental oxygen if indicated

Exit to appropriate TG

If indicated

Airway foreign body obstruction procedure

No

Complete obstruction?

No

Transport to closest receiving facility

Yes

Assess respiratory rate, effort, oxygenation Is airway/breathing adequate?

No

Notify receiving facility.
Contact Base Hospital for medical direction

The maximum allowed attempts for an advanced airway placement is two (2).

If an attempt fails, reassess and approach with a different technique.

E

O

P

Direct laryngoscopy

E

Airway patent?

Yes

Breathing/oxygenation support required?

No

Monitor continuous EtCO2

E

P

Pediatape and refer to dosing guide

Reassess airway procedure and adjust if necessary

For patients > 15 years of age in cardiac arrest
Place i-Gel as appropriate

P

Consider, sedation if i-Gel or ETT in place

Midazolam IV/IM/IO
Use Pediatape and refer to dosing guide

Notify receiving facility. Contact Base Hospital for medical direction

For patients > 40kg
Intubate with ETT as appropriate or
Place i-Gel, refer to weight-based guide

E

O

P

The maximum allowed attempts for an advanced airway placement is two (2).

If an attempt fails, reassess and approach with a different technique.

E

Supplemental oxygen

Effective Jan. 2020

Contra Costa County Emergency Medical Services

Pediatric Treatment Guidelines

Treatment Guideline P01
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Pearls

• Placement of an advanced airway is not a priority during the first five minutes of resuscitation unless ventilation is unable to be maintained with basic maneuvers.
• Endotracheal intubation is only approved for patients over 40kg.
• Capnometry is mandatory with all methods of airway management. Document results.
• Continuous capnometry (EtCO₂) is mandatory for the monitoring of all respiratory patients.
• If an effective airway is being maintained with a BVM and a basic airway adjunct with continuous pulse oximetry values of ≥ 90% or values expected based on pathophysiologic condition with otherwise reassuring vital sign (e.g. pulse oximetry of 85% with otherwise normal vital signs in a post-drowning patient), it is expected to continue with basic airway measures.
• For the purposes of this TG, a secure airway is achieved when the patient is receiving appropriate oxygenation and ventilation.
• An intubation attempt is defined as inserting the laryngoscope blade with the intent to intubate or inserting advanced airway past the teeth.
• An appropriate ventilatory rate is one that maintains an EtCO₂ of 35 or greater. Avoid hyperventilation.
• Patients with perfusing pulses should be managed with a BLS airway unless unable to successfully ventilate.
• Contraindications for i_Gel:
  • Presence of gag reflex
  • Caustic ingestion
  • Known esophageal disease
  • Laryngectomy with stoma (alternatively place ET in stoma)
• Effective use of a BVM requires two (2) people.
• Airway is a more important intervention in pediatric arrests. This should be accomplished quickly with a BVM and appropriately sized mask. Patient survival is often dependent on proper ventilation and oxygenation.
• Maintain spinal immobilization for patients with suspected spinal injury.
• Hyperventilation in deteriorating head trauma should only be done to maintain an EtCO₂ of 30-35.
• It is important to secure the advanced airway well and consider c-collar (in the absence of trauma) to better maintain advanced airway placement. Manual stabilization of advanced airway should be used during all patient moves/transfers.
Pediatric Pain Control

**History**
- Age
- Location and duration
- Severity (0 – 10 scale or Wong-Baker faces scale)
- Past medical history
- Medications
- Drug allergies

**Signs and Symptoms**
- Severity (pain scale)
- Quality (e.g. sharp, dull, or stabbing)
- Radiation
- Relation to movement or respiration
- Increased with palpation of area

**Differential**
- Per the specific TG
- Musculoskeletal
- Visceral (abdominal)
- Cardiac
- Pleural / respiratory
- Neurogenic
- Renal (colic)

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Assess pain severity
Use combination of pain scale, circumstances, MOI, injury, or illness severity

**Position of comfort**
- Apply pack, if applicable
- Monitor and reassess

**Consider IV/IO procedure**
- Assess and monitor respiratory status
- Monitor continuous EtCO₂
- Apply and monitor cardiac rhythm

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**Moderate to severe pain**

**Fentanyl IV/IO/IM**
- Use Pediatape and refer to dosing guide
- Monitor and reassess every 5 minutes

**Ketamine IV/IO infusion**
- Use Pediatape and refer to dosing guide
- Maximum of 15mg total
- Monitor and reassess every 5 minutes following administration

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**Notify receiving facility.**
Contact Base Hospital for medical direction as needed

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Pearls

• **DO NOT ADMINISTER FENTANYL AND KETAMINE TO THE SAME PATIENT.**

• Fentanyl is first line pain management for children. In patients with shock, prolonged extrication or allergy to opiates/opiate intolerance, Ketamine should be used.

• Use EXTREME CAUTION in administering pain medication to patients less than 10kg.

• This treatment guideline applies to patients < 15 years of age and who can be measured on a PediaTape. If a patient is larger than a PediaTape, you may use the Adult Pain Control Treatment Guideline.

• Pain severity (0 – 10 scale or Wong-Baker faces scale) is a vital sign to be recorded before and after all BLS pain control measures and ALS pain medication delivery. Monitor blood pressure and respirations closely as pain control medications may cause hypotension or respiratory distress.

• Contraindications of Fentanyl and Ketamine include:
  - Closed head injury
  - Hypotension
    - Neonate: < 60mmHg or weak pulses
    - Infant: < 70mmHg or weak pulses
    - 1-10 years: < 70mmHg + (age in years x2)
    - Over 10 years: <90mmHg
  - Altered level of consciousness
  - Respiratory failure/worsening status
  - Headache
  - Childbirth/suspected active labor
  - Neonate: < 60mmHg or weak pulses
  - Infant: < 70mmHg or weak pulses
  - 1-10 years: < 70mmHg + (age in years x2)
  - Over 10 years: <90mmHg

• Have Naloxone available to reverse respiratory depression should it occur.

• Burn patients may require higher than usual opioid doses to achieve adequate pain control. IF A PATIENT HAS SUFFERED BURNS THAT REQUIRE TRANSPORT TO A BURN CENTER, THE PATIENT MAY REQUIRE MORE THAN THE MAXIMUM TOTAL DOSE OF FENTANYL OR KETAMINE TO ACHIEVE PAIN CONTROL. CONTACT THE BASE HOSPITAL FOR ADDITIONAL ORDERS.
Patient Safety is medication administration is paramount. Accurate administration of pediatric medication requires multiple steps. Follow each of the steps below in every case.

Clinical Indications:
1. Any patient under 15 years of age that requires a medication intervention.

Procedure:

1. **Assess Patient**
   Use the 6 RIGHTS – Right patient, Right drug (and indication), Right dose, Right route of administration, Right timing and frequency, and Right documentation.

2. **Obtain weight estimate in Kilograms**
   A. Use the PediTape measurement device in every child of appropriate height to determine color range of weight. *Peditape applies to patients less than 147 cm tall (4 foot, 10 inches)*
   B. If taller than the Peditape tape, estimate weight by patient/parent history or paramedic estimate and ALWAYS convert to kilograms using conversion table.

3. **Determine volume on Drug Chart**
   A. Consult drug chart based on medication name to determine volume in ml.
   B. If patient is 50 Kg or greater, utilize adult dosages.

4. **Draw up medication**
   A. Verify drug being administered.
   B. Utilize smallest syringe for volume (e.g. 1 ml or less, use tuberculin syringe).
   C. When giving IM or intranasal medication, load syringe ONLY with amount to be administered.

5. **Double check to confirm volume**
   A. **Double-check volume and dose with drug chart in hand** – verbalize name of medication, volume, dosage and route to another paramedic or EMT on scene. If possible, have another provider visually confirm dose in syringe and as called for on drug card.

6. **Administer Medication**
   A. Administer medication by appropriate route.
   B. Observe the patient for signs of an adverse reaction.

7. **Documentation**
   A. Always document dosages in your patient care report by milligrams (or if Dextrose, in grams).
   B. Document response to medication and any observed adverse reaction.