Denver Metro EMS Medical Directors

Protocol Updates February 2025

February 2025 Change List

- 0140 911 System Response to Request for Interfacility Transport
- 0990 Quick Reference Guide
- 3010 Medical Pulseless Arrest Considerations
- 6010 Agitated/Combative Patient
- 9045 Antipsychotics (New Protocol)
- 9075 Butyrophenones (Replaced by 9045 Antipsychotics)
- 9070 Benzodiazepines
- 9190 Magnesium Sulfate
- 9230 Opioids

0140 911 System Response to Request for Interfacility Transport

- Additional guidance added about destinations

Destinations:

- Though EMS are not bound by EMTALA, responding crew should make every effort to transport to the established acceptance facility. Consider that specific specialty services may be alerted and awaiting the patient's arrival and that other closer facilities may not have the same appropriate services.
- If there is a change in patient status, OR a patient may be too unstable, OR there is concern that a time sensitive diagnosis warrants a closer more appropriate facility (alerts, imminent delivery, etc.), discuss with sending physician alternative destinations. **Contact Base** if agreement cannot be reached.

0990 Quick Reference Guide

- Butyrophenone replaced by Antipsychotic
- Olanzapine added under Antipsychotic

Medications	EMR	B	BIV	AEMT	I	P
Antipsychotics (droperidol, haloperidol, olanzapine)						
• Sedation for severely agitated or combative patient – Adult					S	S
• Sedation for severely agitated or combative patient – Pediatric (8-11 years old)					S	S
• Olanzapine ODT – Agitation in a cooperative patient who is able to self-administer the medication and is at high risk for deterioration during transport					B	S
• Droperidol for nausea/vomiting – Adult Only					B	S

3010 Medical Pulseless Arrest Considerations

OLD – Pediatric ventilation rate 10 breaths/minute with advanced airway

Ventilations

- If no advanced airway, alternate ventilations and compressions in 15:2 ratio.
- If advanced airway in place, ventilate continuously at 10 breaths/minute.

NEW – Pediatric ventilation rate 20 to 30 breaths/minute with advanced airway

Ventilations

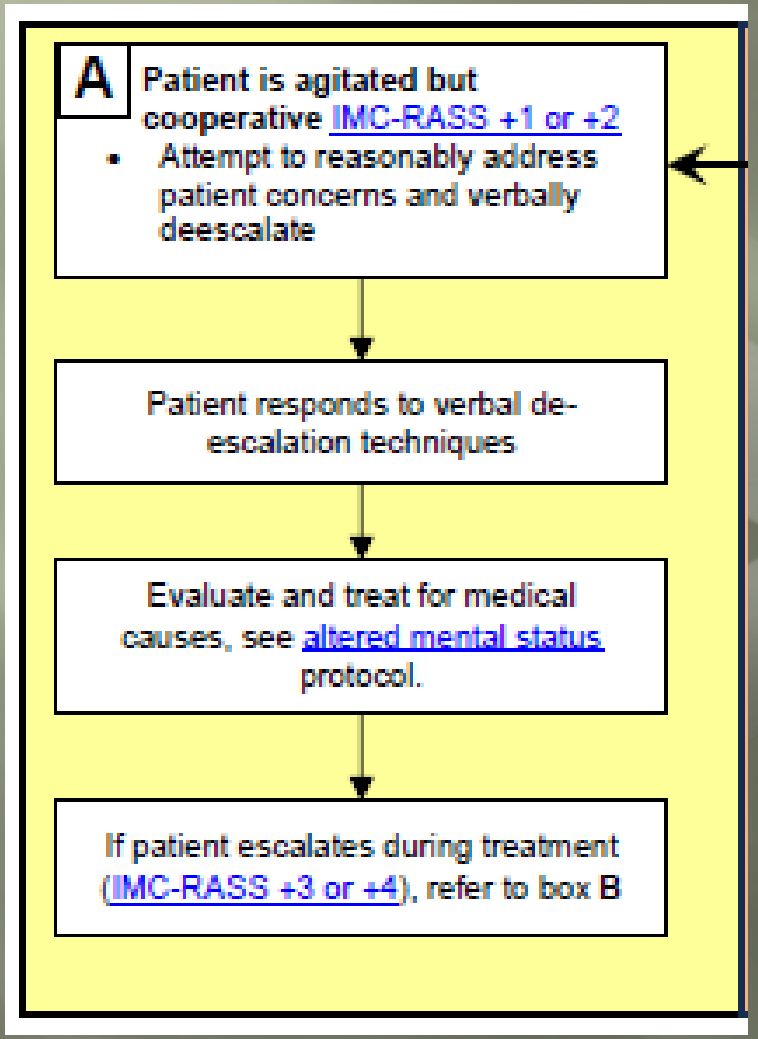
- If no advanced airway (supraglottic airway, ETT), alternate ventilations and compressions in 15:2 ratio.
- If advanced airway in place, ventilate continuously at 20-30 breaths/minute.

New Medication - Olanzapine

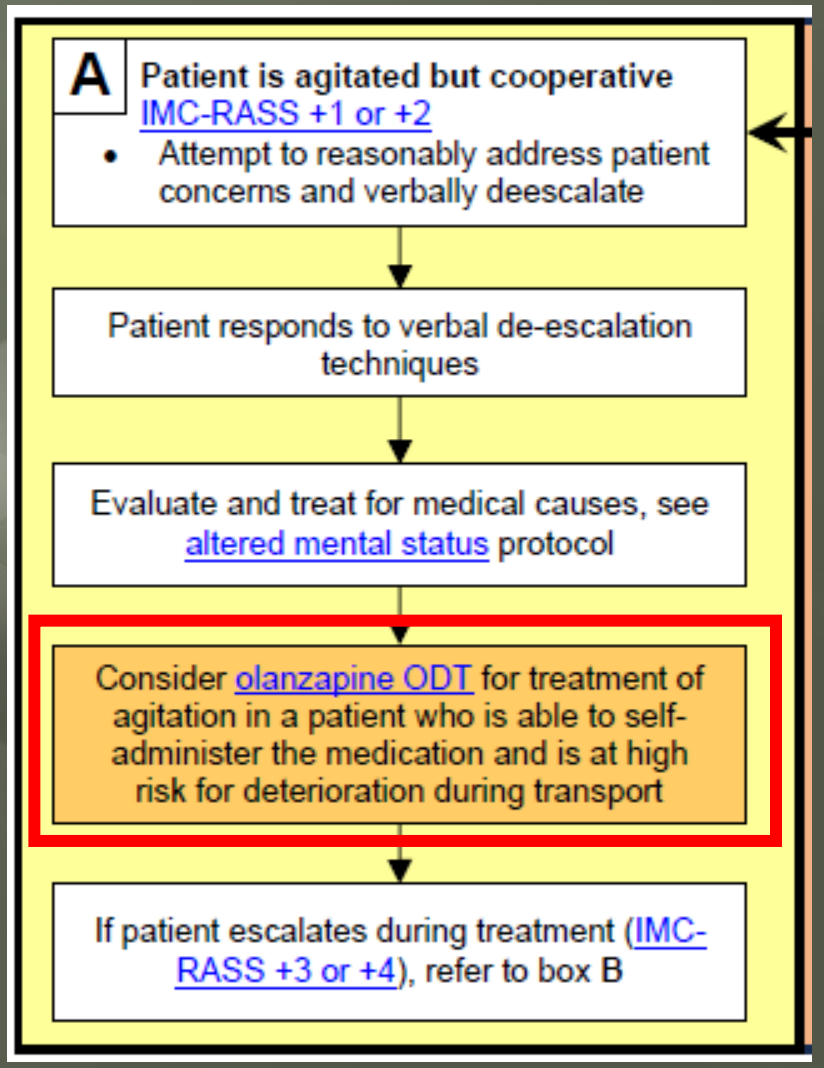
- Olanzapine is a second-generation antipsychotic. It acts through combination of dopamine and serotonin type 2 receptor site antagonism
- Olanzapine and benzodiazepines coadministration has a potential synergistic effect leading to significant sedation.
- For parenteral administration comes as a powder and must be reconstitued with sterile water; must be used within 4 hours.
- For ODT administration, consider for treatment of agitation in a cooperative patient who is able to self-administer the medication and is at high risk for deterioration during transport.
- ODT tablets may be split in half but should not be split into quarters.

6010 Agitated/Combative Patient

OLD

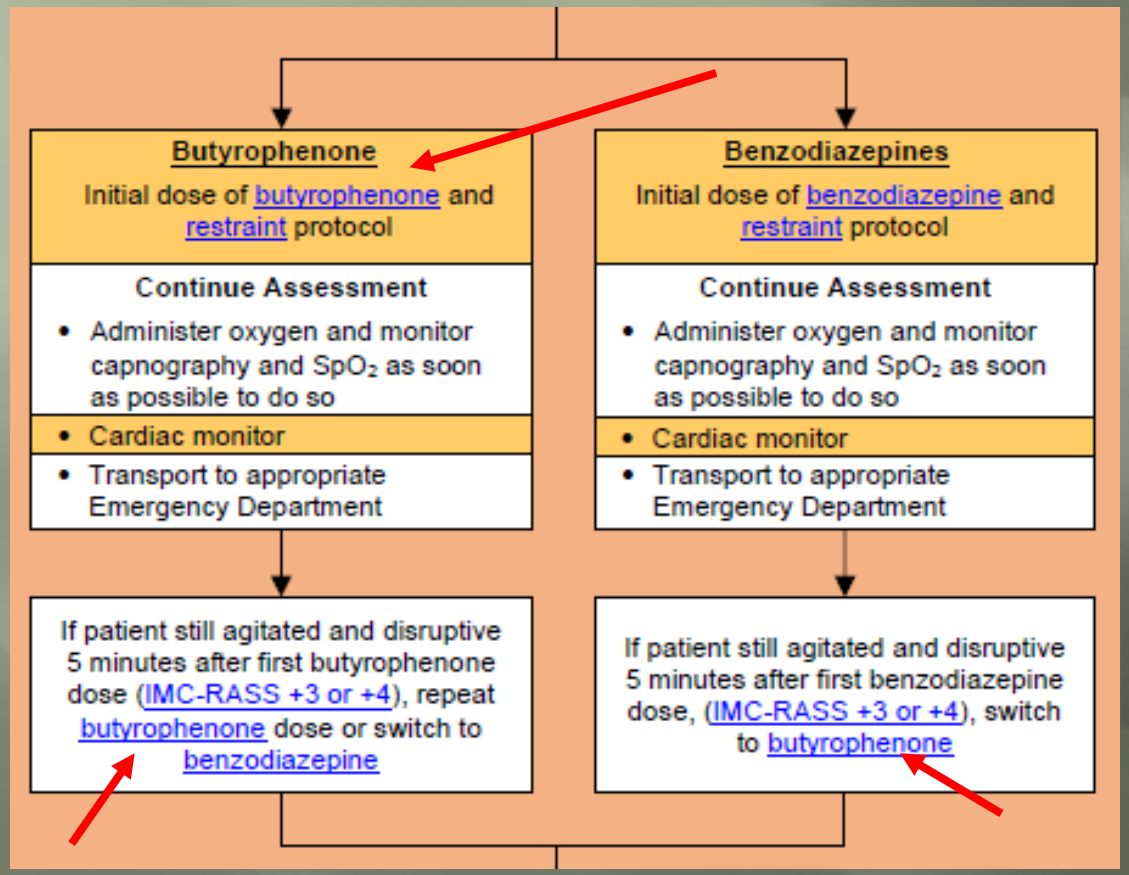


NEW

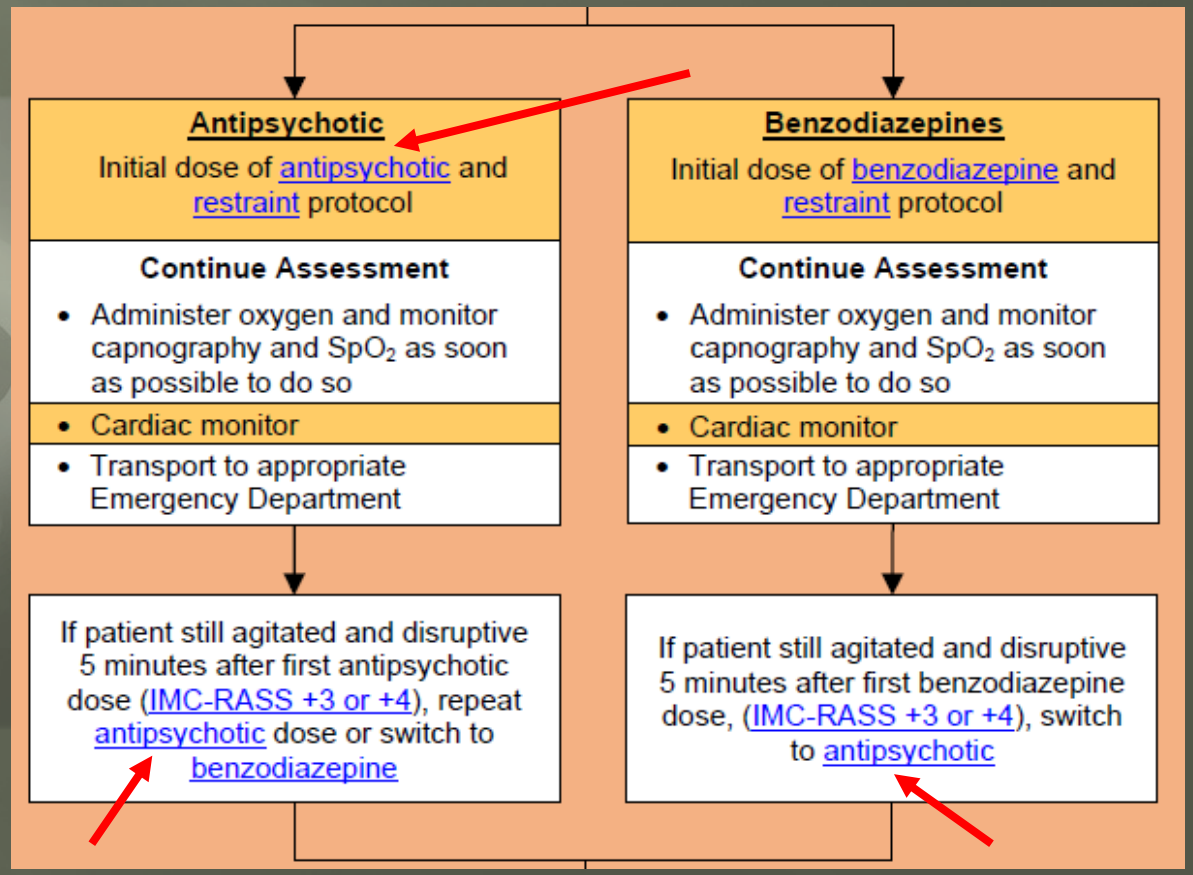


6010 Agitated/Combative Patient

OLD



NEW



6010 Agitated/Combative Patient

OLD

Patient is agitated and combative
Routine EMS care impossible
IMC-RASS +4
AND
Imminent risk of bodily harm to self/others

Sedate and Restrain

Administer:
10 mg midazolam IM
OR
10 mg droperidol IM

- Goal is rapid treatment in order to minimize threat to patient and provider safety
- Restraint protocol

NEW

Patient is agitated and combative
Routine EMS care impossible
IMC-RASS +4
AND
Imminent risk of bodily harm to self/others

Sedate and Restrain

Administer:
10 mg midazolam IM
OR
10mg of antipsychotic (listed in order of preference):
10mg droperidol IM (1st choice)
10mg olanzapine IM (2nd choice)
10mg haloperidol IM (3rd, least preferred)

- Goal is rapid treatment to minimize threat to patient and provider safety
- Restraint protocol

6010 Agitated/Combative Patient

OLD

Pediatric Considerations

It is important to consider etiology for agitation when determining treatment:

- Developmental delay or known Autism
  - Involve caregiver
  - Sensory tools and calming interventions
- Suspected psychiatric diagnosis
  - Use de-escalation techniques
- Check blood glucose, assess for trauma
- Pain

Given risk of complications, medication for sedation of children is rarely needed and is highly uncommon. Sedation of children <8 years old requires **Base Contact** for a physician order.

- Benzodiazepines are preferred in children for most conditions except as below.
- Butyrophenones
  - Head injury
  - Developmental delay or known Autism
  - Alcohol intoxication

NEW

Pediatric Considerations

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- Benzodiazepines are preferred in children for most conditions except as below.
- Antipsychotics
  - Head injury
  - Developmental delay or known Autism
  - Alcohol intoxication

9045 Antipsychotics (New Protocol)

- Replaces 9075 Butyrophenone protocol
- Addition of olanzapine as an alternative to droperidol indications:
  - Patient is agitated and combative, routine EMS care impossible, and (IMC-RASS +3 or +4)
  - Adult patient who is agitated and combative, routine EMS care impossible, IMC-RASS +4, AND imminent risk of bodily harm to self/others (if droperidol not available)
- Addition of olanzapine ODT for treatment of agitation in a cooperative patient who is able to self-administer the medication and is at high risk for deterioration during transport

9045 Antipsychotics (New Protocol)

- Additional contraindication
  - Known QTc prolongation
- Updated monitoring requirements
  - Cardiac monitor, end tidal capnography, pulse oximetry, and establish an IV as soon as possible with all administrations.

OLD

- Cardiac monitor and establish an IV as soon as possible with all administrations.

NEW

- Cardiac monitor, end tidal capnography, pulse oximetry, and establish an IV as soon as possible with all administrations.

9075 Butyrophenones

- Replaced by new protocol 9045 Antipsychotics
- Droperidol and haloperidol can be found in this new protocol

9070 Benzodiazepines - Midazolam

OLD - Seizure

Seizure:

Adult:

IV/IO route: 2 mg

- Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

IN/IM route (intranasal preferred): 10 mg

- Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

Pediatric:

IV/IO route 0.1 mg/kg

- Maximum single dose is 2 mg IV. Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

IN/IM route (intranasal preferred): 0.2 mg/kg.

- Maximum single dose is 10 mg IN or IM. Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

NEW - Seizure

Seizure:

Adult:

IN/IM route (IN preferred over IM): 10 mg

- Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

IV/IO route: 5 mg

- Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

Pediatric:

IN/IM route (IN preferred over IM): 0.2 mg/kg.

- Maximum single dose is 10 mg IN or IM. Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

IV/IO route 0.1 mg/kg

- Maximum single dose is 5 mg IV. Dose may be repeated x 1 after 5 minutes if still seizing. **Contact Base** for more than 2 doses.

9070 Benzodiazepines - Midazolam

OLD - Sedation for cardioversion or transcutaneous pacing:

Sedation for cardioversion or transcutaneous pacing:

Adult:

IV/IO route: 2 mg

- Dose may be repeated x 1 after 5 minutes if additional sedation needed. **Contact Base** for more than 2 doses.

IN/IM route: (intranasal preferred) 5 mg

- Dose may be repeated x 1 after 5 minutes if additional sedation needed. **Contact Base** for more than 2 doses.

Pediatric:

IV/IO route 0.1 mg/kg

- Maximum single dose is 2 mg IV. Dose may be repeated x 1 after 5 minutes if additional sedation needed. **Contact Base** for more than 2 doses.

IN/IM route: (intranasal preferred) 0.2 mg/kg.

- Maximum single dose is 5 mg IN or IM. Dose may be repeated x 1 after 5 minutes if additional sedation needed. **Contact Base** for more than 2 doses.

No dosing change – only change to formatting

NEW - Sedation for cardioversion or transcutaneous pacing:

Sedation for cardioversion or transcutaneous pacing:

Adult:

IN/IM route: 5 mg

- Dose may be repeated x 1 after 5 minutes if additional sedation needed. **Contact Base** for more than 2 doses.

IV/IO route: 2 mg

- Dose may be repeated x 1 after 5 minutes if additional sedation needed. **Contact Base** for more than 2 doses.

Pediatric:

IN/IM route: 0.2 mg/kg.

- Maximum single dose is 5 mg IN or IM. Dose may be repeated x 1 after 5 minutes if additional sedation needed. **Contact Base** for more than 2 doses.

IV/IO route 0.1 mg/kg

- Maximum single dose is 2 mg IV. Dose may be repeated x 1 after 5 minutes if additional sedation needed. **Contact Base** for more than 2 doses.

9070 Benzodiazepines - Midazolam

OLD – Pediatric Agitated/Combative

Pediatric 8 to 11 years old:
IV/IO/IM route: 0.1 mg/kg; maximum single dose of 5 mg.

Age (years)	LBT color	Estimated Weight (kg)	Midazolam Dose (mg)
8-9	Orange	27-34	2.5 mg
10	Green	35	2.5 mg
11	Green	40	5 mg

NEW – Pediatric Agitated/Combative

Pediatric 8 to 11 years old:
IV/IO/IM route: Administer per table

Age (years)	LBT color	Estimated Weight (kg)	Midazolam Dose (mg)
8-9	Orange	27-34	2.5 mg
10	Green	35	2.5 mg
11	Green	40	5 mg

9070 Benzodiazepines

- Special Considerations
  - Lorazepam and diazepam IM administration has poor absorption and a delayed effect and is not recommended as a route for status epilepticus. For IM administration midazolam is preferred.
  - This is noted by an asterisk (*) in diazepam and lorazepam IM dosing
- All references to butyrophenones changed to antipsychotics

- *Lorazepam and diazepam IM administration has poor absorption and a delayed effect and is not recommended as a route for status epilepticus. For IM administration midazolam is preferred.

9190 Magnesium Sulfate

OLD DOSING

Dosage and Administration

- **Torsades de Pointes suspected caused by prolonged QT interval:**
  - **Adult:**
    2 gm, IV/IO bolus.
  - **Pediatric:**
    Not indicated
- **Refractory Severe Bronchospasm:**
  - **Adult:**
    2 gm, IV bolus, over 3-4 minutes
  - **Pediatric:**
    Not indicated
- **Eclampsia:**
  - 2 gm IV/IO over 2 minutes, then mix 4 gm diluted in 50 ml of normal saline (0.9 NS), IV/IO drip over 15 minutes

- Changes Adult and Pediatric dosing for Torsades de Pointes, refractory severe bronchospasm, and eclampsia
- IM route for eclampsia added

NEW DOSING

Dosage and Administration

- **Torsades de Pointes suspected caused by prolonged QT interval:**
  - **Adult:**
    Hemodynamically stable with intermittent Torsades de Pointes: 2 gm diluted in 50 mL of normal saline (0.9% NS), IV/IO drip over 15 minutes
    Hemodynamically unstable/peri-arrest: 2 gm undiluted IV push over 2 min
    Cardiac arrest: 2 gm undiluted, IV/IO push.
  - **Pediatric:**
    Cardiac arrest: 25 mg/kg undiluted, IV/IO push. Up to a maximum of 2 gm.
- **Refractory Severe Bronchospasm:**
  - **Adult:**
    2 gm diluted in 50 mL of normal saline (0.9% NS), IV drip over 15 minutes
  - **Pediatric:**
    50 mg/kg (max 2 gm) IV drip over 30 minutes
- **Eclampsia:**
  IV/IO: 6 gm diluted in 50 mL of normal saline (0.9% NS), IV/IO drip over 15 minutes.
  IM: 10 gm IM, administered as 5 gm in each buttock. Max volume per site is 10 mL.

9230 Opioids

- Old monitoring requirement
  - Continuous pulse oximetry monitoring is mandatory
- New monitoring requirement
  - Institute continuous pulse oximetry for all administrations.
  - In medically complex patients or with repeated dosing, institute cardiac monitoring and capnography as soon as it is possible to do so.
  - An AEMT following a physician's verbal order must institute pulse oximetry, capnography and close monitoring of heart rate.

9230 Opioids

OLD

NOTE: IV route is preferred for all opioid administration because of more accurate titration and maximal clinical effect. IO/IM for all listed opioids and additionally IN for fentanyl are acceptable alternatives when IV access is not readily available. Repeat doses of IN Fentanyl can be given if IV access cannot be established. However greater volumes and repeat IN administration are associated with greater drug run off and may therefore be less effective. Continuous pulse oximetry monitoring is mandatory. Frequent evaluation of the patient's vital signs is also indicated. Emergency resuscitation equipment and naloxone must be immediately available.

NEW

NOTE: IV route is preferred for all opioid administration because of more accurate titration and maximal clinical effect. IO/IM for all listed opioids and additionally IN for fentanyl are acceptable alternatives when IV access is not readily available. Repeat doses of IN Fentanyl can be given if IV access cannot be established. However greater volumes and repeat IN administration are associated with greater drug run off and may therefore be less effective. Institute continuous pulse oximetry for all administrations. In medically complex patients or with repeated dosing, institute cardiac monitoring and capnography as soon as it is possible to do so. An AEMT following a physician's verbal order must institute pulse oximetry, capnography and close monitoring of heart rate. Emergency resuscitation equipment and naloxone must be immediately available.