



State of Maryland  
**Maryland  
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TO: Maryland EMS Providers

FROM: Richard Alcorta, MD, FACEP *Richard Alcorta MD*

DATE: June 12, 2012

RE: Emergent Addition of Fentanyl to 2012 Protocols

The continuing medication shortage continues to affect Maryland EMS Operational Programs (EMSOPs). Morphine is among the medications that EMSOPs have had difficulty restocking.

Because of the importance of successfully managing pain in out-of-hospital medicine, the Protocol Review Committee has looked into alternatives to Morphine. The Committee decided that Fentanyl is the best alternative to Morphine for Maryland EMS. MIEMSS has emergently included Fentanyl in the 2012 Maryland Medical Protocols effective immediately. Please see the attached protocol pages.

If you have any questions or concerns, please contact the Office of the Medical director at [ralcorta@miemss.org](mailto:ralcorta@miemss.org)/[jkelly@miemss.org](mailto:jkelly@miemss.org).

Attachments

These emergent addenda have been approved by the EMS Board at the June 2012 meeting to go into effect immediately where morphine appears:

- Pain Management protocol, pp 101 – 102-2
- Fentanyl protocol, pp 232 – 232-1
- “Administer fentanyl 1 mcg/kg IV/IO titrated to effect at a rate of 50 mcg/minute increments slow IVP with maximum single dose of 100 mcg. Repeat dose in 5-10 minutes after reassessment with 0.5 mcg/kg titrated to effect at a rate of 50 mcg/minute to a maximum single dose of 50 mcg. Fentanyl may also be administered IM/IN dose: 1 mcg/kg with to a maximum single dose of 100 mcg (divide IN administration of the dose equally between the nostrils to a maximum of 1 mL per nostril). (Paramedic may perform without consult.)”

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- “Administer fentanyl 1 mcg/kg IV/IO titrated to effect at a rate of 50 mcg/minute increments slow IVP with maximum single dose of 100 mcg. Repeat dose in 5-10 minutes after reassessment with 0.5 mcg/kg titrated to effect at a rate of 50 mcg/minute to a maximum single dose of 50 mcg. Fentanyl may also be administered IM/IN dose: 1 mcg/kg with to a maximum single dose of 100 mcg (divide IN administration of the dose equally between the nostrils to a maximum of 1 mL per nostril).”

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## GG. PAIN MANAGEMENT



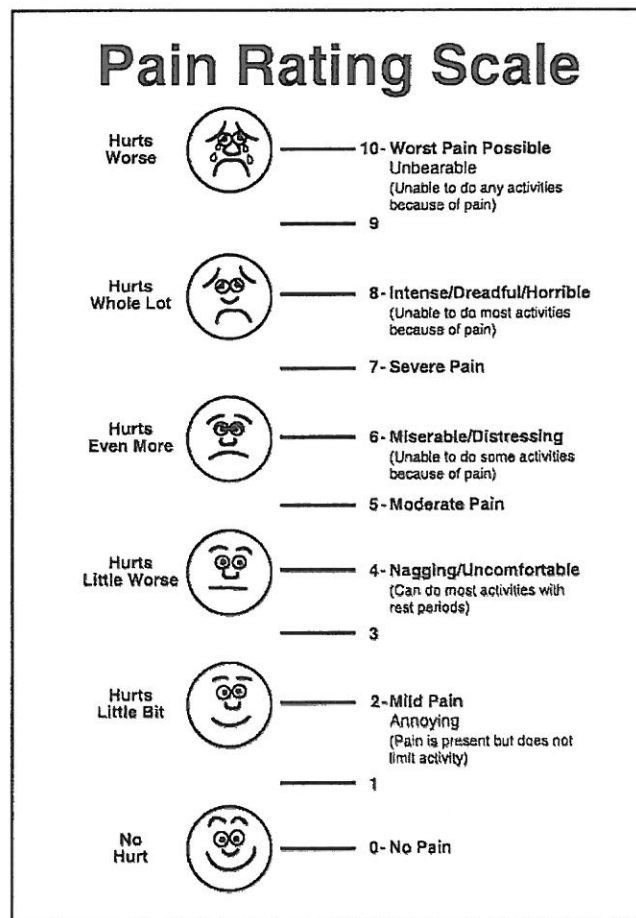
1. Initiate General Patient Care.

2. Presentation

Pain may be present in many different conditions. Management of pain in the field can help to reduce suffering, make transport easier, and allow the emergency department personnel to initiate specific treatment sooner. Use of certain drugs for analgesia (reduction of pain) may also interfere with diagnostic procedures in the emergency department, and their use in such circumstances must be judicious, with medical control consulted when necessary.

3. Treatment Indications

a) Measure level of pain. Ask adults to rate their pain on a scale from 0 (**no pain**) to 10 (**worst pain imaginable**). Young children can be asked to rate their pain using the **FACES** scale, which provides 5 levels of pain perception.



## PAIN MANAGEMENT (Continued)

- b) Allow patient to remain in position of comfort unless contraindicated.
- c) Monitor airway and vitals signs every 5 minutes for unstable patients
- d) Mild pain



- (1) Indications for pain management
  - (a) Isolated musculoskeletal injuries such as sprains and strains
  - (b) Pain related to childhood illnesses such as headache, ear infection, and pharyngitis
- (2) Contraindications for pain management with acetaminophen
  - (a) Head injury
  - (b) Hypotension
  - (c) Administration of acetaminophen or medications containing acetaminophen within the previous four hours
  - (d) Inability to swallow or take medications by mouth
  - (e) Respiratory distress
  - (f) Persistent vomiting
  - (g) Known or suspected liver disease
  - (h) Allergy to acetaminophen
- (3) Administer acetaminophen to patients ages 3 years and above judged to be in mild to moderate discomfort (2-5 on FACES scale) by child or parent.
  - (a) Standard unit dosing of liquid preparation:
    - (1) Less than 3 years of age: Not indicated
    - (2) 3-5 years: Unit dose 160 mg/5 mL
    - (3) 6-9 years: TWO unit doses of 160 mg/5 mL each for a total of 320 mg/10 mL
  - (4) 10 years and above: FOUR unit doses of 160 mg/5 mL each for a total of 640 mg/20 mL
  - (b) Obtain on-line medical direction for appropriate dosing for patients who are significantly underweight or overweight



ADMINISTRATION OF ACETAMINOPHEN FOR MILD TO MODERATE PAIN DOES NOT ELIMINATE THE NEED FOR TRANSPORT OF THE PATIENT TO THE HOSPITAL TO RECEIVE A COMPREHENSIVE EVALUATION OF THE CAUSE OF HIS/HER PAIN AND APPROPRIATE DEFINITIVE TREATMENT.



- e) Moderate to severe pain
  - (1) Indications for pain management
    - (a) Acute myocardial infarction
    - (b) Burns
    - (c) Isolated injuries requiring pain relief such as suspected fractures or dislocations
    - (d) Acute sickle cell pain crisis
    - (e) Abdominal pain (**NEW '12**)
    - (f) EMS/DNR A, A (DNI), or B Protocol

## PAIN MANAGEMENT (Continued)

- (2) Contraindications for pain management with morphine
  - (a) Head injury
  - (b) Hypotension
  - (c) Sensitivity to morphine, fentanyl, codeine, or Percodan
  - (d) Allergy to morphine or fentanyl (**NEW JUNE 2012**)
- (3) Opioid administration



Adult: Morphine

- (i) AMI: Administer 0.1 mg/kg IV/IO titrated to effect at a rate of 2 mg/min to a maximum single dose of 20 mg. Repeat in 5-10 minutes after reassessment with 0.05 mg/kg titrated to effect at a rate of 2 mg/min to a maximum single dose of 10 mg. For IM, administer 0.1 mg/kg.
- (ii) Isolated injury (including burns, frostbite, eye trauma): Administer 0.1 mg/kg IV/IO titrated to effect at a rate of 2 mg/min to a maximum single dose of 20 mg. Repeat in 5-10 minutes after reassessment with 0.05 mg/kg titrated to effect at a rate of 2 mg/min to a maximum single dose of 10 mg. For IM, administer 0.1 mg/kg. (Paramedic may perform without consult.)



Pediatric: Morphine

Administer 0.1 mg/kg IV/IO titrated to effect at a rate of 2 mg/min to a maximum single dose of 20 mg. Repeat in 5-10 minutes after reassessment with 0.05 mg/kg titrated to effect at a rate of 2 mg/min to a maximum single dose of 10 mg. For IM, administer 0.1 mg/kg.

**OR**



Adult: Fentanyl Administration (**NEW JUNE 2012**)

(Paramedic may perform without consult for isolated injury)



CAREFULLY OBSERVE LEVEL OF CONSCIOUSNESS, BLOOD PRESSURE AND RESPIRATORY STATUS AS FENTANYL IS MORE POTENT THAN MORPHINE. FENTANYL SHALL BE ADMINISTERED SLOWLY IV AND TITRATED TO EFFECT

- (1) Administer 1 mcg/kg IV/IO titrated to effect at a rate of 50 mcg/minute increments slow IVP with maximum single dose of 100 mcg. Repeat dose in 5-10 minutes after reassessment with 0.5 mcg/kg titrated to effect at a rate of 50 mcg/minute to a maximum single dose of 50 mcg.

## PAIN MANAGEMENT (Continued)

- (2) May also be administered IM/IN dose: 1 mcg/kg with to a maximum single dose of 100 mcg (divide IN administration of the dose equally between the nostrils to a maximum of 1 mL per nostril)

Additional dosing requires medical consultation



Administer 1 mcg/kg IV/IO titrated to effect at a rate of 50 mcg/minute increments slow IVP with maximum single dose of 100 mcg. Repeat dose in 5-10 minutes after reassessment with 0.5 mcg/kg titrated to effect at a rate of 50 mcg/minute to a maximum single dose of 50 mcg

May also be administered IM/IN dose: 1 mcg/kg with to a maximum single dose of 100 mcg (divide IN administration of the dose equally between the nostrils to a maximum of 1 mL per nostril) **(NEW JUNE 2012)**

Additional dosing requires medical consultation

4. Repeat - Measure level of pain and monitor the patient's level of pain during subsequent treatment and transport.
5. Transport
6. Continue General Patient Care





16. FENTANYL (NEW JUNE 2012)

a) Indications

- (1) Acute myocardial infarction (sensitivity or allergy to morphine)
- (2) Burns
- (3) Isolated injuries requiring pain relief
- (4) Trauma patients requiring sedation/pain relief
- (5) Sedation for transcutaneous pacing

b) Pharmacokinetics

- (1) Synthetic opioid binds with opiate receptors in the CNS, altering both perception and emotional response to pain
- (2) Onset of action is 2-3 minutes after IV dose and effects last 30 min – 1 hour
- (3) Fentanyl is significantly more potent than morphine. 100 mcg of fentanyl is equivalent to 10 mg of morphine

c) Adverse Effects


- (1) Respiratory depression/arrest
- (2) Altered mental status
- (3) Increased vagal tone due to suppression of sympathetic pathways (slowed heart rate)
- (4) Constricted pupils (pin-point)
- (5) Increased cerebral blood flow

d) Precautions

- (1) Naloxone (Narcan) reverses all effects
- (2) Should be administered slowly and titrated to effect
- (3) Vital signs should be monitored frequently
- (4) Hypotension is a greater possibility in volume-depleted patients
- (5) Elderly patients and those with impaired renal function may be more sensitive to the medication's effects.

e) Contraindications

- (1) Trauma with hypotension
- (2) COPD with compromised respiratory effort
- (3) Hypotension
- (4) Known sensitivity to fentanyl

f)  Dosage

- (1) Adult: (Paramedic may perform without consult)
  - (a) Administer 1 mcg/kg IV/IO titrated to effect at a rate of 50 mcg/minute increments slow IVP with maximum single dose of 100 mcg. Repeat dose in 5-10 minutes after reassessment with 0.5 mcg/kg titrated to effect at a rate of 50 mcg/minute to a maximum single dose of 50 mcg.
  - (b) May also be administered IM/IN dose: 1 mcg/kg with to a maximum single dose of 100 mcg (divide IN administration of the dose equally between the nostrils to a maximum of 1 mL per nostril)

Additional dosing requires medical consultation

(1) Pediatric:

Administer 1 mcg/kg IV/IO titrated to effect at a rate of 50 mcg/minute increments slow IVP with maximum single dose of 100 mcg. Repeat dose in 5-10 minutes after reassessment with 0.5 mcg/kg titrated to effect at a rate of 50 mcg/minute to a maximum single dose of 50 mcg

May also be administered IM/IN dose: 1 mcg/kg with to a maximum single dose of 100 mcg (divide IN administration of the dose equally between the nostrils to a maximum of 1 mL per nostril)

Additional dosing requires medical consultation