Fever – Adult

For pediatric see, **"Fever – Pediatric"**

CRITERIA

Adult patient with ***any*** of the following:

- Temperature >100.4°F (38°C)
- Temperature ≥2°F (1°C) over baseline and suspected infection[1]
- Temperature ≥2°F (1°C) over baseline and recipient of a blood / blood product transfusion within the last 4 hours[2]

EMT

- ABCs and vital signs, to include SpO_2 and temperature‡
- Airway management and appropriate oxygen therapy

EMT STOP

ADVANCED

- Large bore vascular access
- Normal Saline 500 mL bolus; may repeat once, if lung sounds remain clear (no concerns for pulmonary edema)
- If able to tolerate oral fluid consider one of the following: ‡
  - Acetaminophen[3] up to 1000 mg PO
  - Ibuprofen[4] up to 400 mg PO

ADVANCED STOP

CC

- Consider cardiac monitor, continuous SpO_2
- Consider a 12-lead ECG if appropriate

CC STOP

PARAMEDIC

- Acetaminophen[3] 1000 mg IV over 15 minutes‡Ⓟ

PARAMEDIC STOP

MEDICAL CONTROL CONSIDERATIONS

- Additional Acetaminophen[3]
- Additional Ibuprofen[4]

Key Points/Considerations

1 If fever is due to suspected viral or bacterial infection, see "General: Severe Sepsis / Septic Shock"

2 If fever is due to suspected reaction to blood / blood product transfusion, immediately stop the transfusion, replace all tubing (save for receiving hospital blood bank) and maintain IV access with new bag of Normal Saline, contact medical control, and treat per appropriate protocol to include:

- Temperature monitoring‡, take initial and every 10 minutes
- Cardiac monitor, continuous SpO_2 and continuous pCO_2 monitoring
- Consider a 12-lead ECG, if appropriate

3 Acetaminophen contraindications (unless medical control approved):
- >650 mg of Acetaminophen or an Acetaminophen-containing product within 4 hours
- Hx of liver problems / acute liver failure
- Acute liver inflammation due to hepatitis C virus
- In the setting of shock or overdose (especially Acetaminophen overdose)

4 Ibuprofen contraindications (unless medical control approved):
- >400 mg of Ibuprofen or an Ibuprofen-containing product within 4 hours
- Severe renal impairment (dialysis dependent)
- In the setting of shock or overdose
- Prescribed anticoagulants (i.e. Warfarin / Factor Xa Inhibitors, etc)
- Allergy to any NSAID / Aspirin
- Pregnancy (late)

Pain Management – Adult

For pediatric see, **"Pain Management** – Pediatric**"**

CRITERIA

- Contraindications to standing order pain management include altered mental status, hypoventilation, and SBP <100 mmHg
- Consider consultation with medical control prior to pain management in the third trimester pregnant women with pain complaints

CFR AND ALL PROVIDER LEVELS

EMT

- ABCs and vital signs
- Airway management and appropriate oxygen therapy

CFR AND EMT STOP

ADVANCED

- Vascular access
- Nitrous oxide[1] by self-administered inhalation‡
- If able to tolerate oral fluid consider <u>one</u> of the following:‡
  - Acetaminophen[2] up to 1000 mg
  - Ibuprofen[3] up to 400 mg

ADVANCED STOP

CC

PARAMEDIC

- May choose one:‡
  - Ketorolac[4] (Toradol) 15 mg IV/IM
  - Acetaminophen[2] 1000 mg IV over 15 minutes Ⓟ
- May also choose one:[5]
  - Morphine 0.05 mg/kg IV or 0.1 mg/kg IM
    - May be repeated after 10 minutes; maximum total dose of 10 mg
  - Fentanyl 1-1.5 mcg/kg IV, IM, or intranasal
    - May be repeated after 10 minutes; maximum total dose of 200 mcg
  - Ketamine Ⓟ‡ 25 mg IV over 5 minutes or 50 mg IM
    - May consider weight-based dosing of Ketamine 0.1-0.3 mg/kg IV not to exceed 25 mg IV or 50 mg IM

CC AND PARAMEDIC STOP

MEDICAL CONTROL CONSIDERATIONS

- Additional Morphine IV or IM
- Additional Fentanyl IV, IM, or intranasal
- Additional Acetaminophen or Ibuprofen PO‡
- Midazolam (Versed) IV, IM, or intranasal

Key Points/Considerations

1 Nitrous Oxide contraindications (unless medical control approved):
   - Hypoxia
   - Inability to self-administer
   - Pneumothorax
   - Suspected bowel obstruction

2 Acetaminophen contraindications (unless medical control approved):
   - Hx of liver problems / acute liver failure
   - Acute liver inflammation due to hepatitis C virus
   - In the setting of shock or overdose (especially Acetaminophen overdose)

3 Ibuprofen contraindications (unless medical control approved):
   - Severe renal impairment (dialysis dependent)
   - In the setting of shock or overdose
   - Prescribed "blood thinners" (i.e. Warfarin / Coumadin)
   - Allergy to any NSAID / Aspirin
   - Pregnancy (late)

4 Ketorolac (Toradol) should not be administered in patients with:
   - Renal failure
   - Require dialysis
   - Are >60 years of age
   - Pregnant
   - Are actively bleeding
   - Are presenting with chest pain or a suspected acute coronary syndrome

5 **ONE** non-oral, narcotic pain medication may be given under standing orders. For dosing that exceeds the standing order maximum, or to switch to another agent, you must consult medical control. Additional considerations include:
   - Fentanyl must be pushed *slowly*
   - Fentanyl should be considered if there is an allergy to Morphine or potential hemodynamic instability
   - Morphine or Fentanyl up to the maximum dose may be given via standing orders
   - For ease of administration, if clinically appropriate: consider approximating the dose of Fentanyl to the nearest 50 mcg; consider approximating the dose of Morphine to the nearest 5 mg
   - Morphine often produces a normal localized histamine reaction which manifests as urticaria (hives) immediately surrounding the IV site, and is not considered a sign of allergy. More extensive involvement of urticaria or other signs of allergic reaction should be treated (See "General: Allergic Reaction and Anaphylaxis – Adult")

- For nausea or vomiting see "General: Nausea and/or Vomiting – Adult"
- Nitrous oxide, Ketamine, Ketorolac (Toradol), Acetaminophen (IV or PO – liquid or tablet), or Ibuprofen (PO liquid or tablet) are not required formulary items

Pain Management – Pediatric

CFR AND ALL PROVIDER LEVELS

EMT

- ABCs and vital signs
- Airway management and appropriate oxygen therapy

CFR AND EMT STOP

ADVANCED

- Nitrous oxide[1] by self-administered inhalation‡
- If able to tolerate oral fluid consider <u>one</u> of the following: ‡

Acetaminophen[2] 15 mg / kg PO (325 mg / 10.15 mL concentration):

Weight in Kgs	mL of Acetaminophen
<2.7	Medical Control
2.7 – 5.0	1.25
5.1 – 7.7	2.5
7.8 – 10.9	3.75
11.0 – 22.3	5
≥22.3	10.15

Ibuprofen[3] 10 mg/kg PO (100 mg / 5 mL concentration) if >6 months of age:

Weight in Kgs	mL of Ibuprofen
5.1 – 7.7	2.5
7.8 – 10.9	3.75
11.0 – 22.3	5
≥22.3	10

ADVANCED STOP

CC

- Cardiac monitor
- May choose one:[4]
  - Morphine 0.1 mg/kg IM
    - May be repeated after 10 minutes; maximum total dose of 10 mg
  - Fentanyl 1-1.5 mcg/kg intranasal
    - May be repeated after 10 minutes once; maximum total dose of 100 mcg

CC STOP

PARAMEDIC

- Vascular access, if indicated. See “Resources: Vascular Access”
- May choose one‡
  - Ketorolac[5] (Toradol) 0.5 mg/kg IV/IM if >2 years of age
  - Acetaminophen[2] 12.5 mg/kg IV over 15 minutes℗
- May also choose one:[4]
  - Morphine 0.05 mg/kg IV or 0.1 mg/kg IM

        - May be repeated after 10 minutes; maximum total dose of 10 mg
    - Fentanyl 1-1.5 mcg/kg IV or IM
        - May be repeated after 10 minutes; maximum total dose of 100 mcg

PARAMEDIC STOP

MEDICAL CONTROL CONSIDERATIONS

- CC vascular access
- Additional Fentanyl IV, IM, or intranasal
- Additional Morphine IV or IM

Key Points/Considerations

1 Nitrous Oxide contraindications (unless medical control approved):
    - Hypoxia
    - Inability to self-administer
    - Pneumothorax
    - Suspected bowel obstruction

2 Acetaminophen contraindications (unless medical control approved):
    - Hx of liver problems / acute liver failure
    - Acute liver inflammation due to hepatitis C virus
    - In the setting of shock or overdose (especially Acetaminophen overdose)

3 Ibuprofen contraindications (unless medical control approved):
    - Severe renal impairment (dialysis dependent)
    - In the setting of shock or overdose
    - Prescribed "blood thinners" (i.e. Warfarin / Coumadin)
    - Allergy to any NSAID / Aspirin
    - Pregnancy (late)

4 **ONE** non-oral, narcotic pain medication may be given under standing orders. For dosing that exceeds the standing order maximum, or to switch to another agent, you must consult medical control. Additional considerations include:
    - Fentanyl must be pushed *slowly*
    - Fentanyl should be considered if there is an allergy to Morphine or potential hemodynamic instability
    - Morphine or Fentanyl up to the maximum dose may be given via standing orders
    - Morphine often produces a localized histamine reaction which manifests as urticaria (hives) immediately surrounding the IV site and is not considered a sign of allergy. More extensive involvement of urticaria or other signs of allergic reaction should be treated (See "General: Allergic Reaction and Anaphylaxis – Pediatric")

5 Ketorolac (Toradol) should not be administered in patients with:
    - Renal failure
    - Require dialysis
    - Pregnant
    - Are actively bleeding
    - Are presenting with chest pain or a suspected acute coronary syndrome

- For nausea or vomiting see "General: Nausea and/or Vomiting (>2 y/o) – Pediatric"
- Nitrous Oxide, Ketamine, Ketorolac (Toradol), Acetaminophen (IV or PO – liquid or tablet) or Ibuprofen (PO liquid or tablet) are not required formulary items

- If no length-based tape available, but weight in pounds available:

Weight in Lbs	Weight in Kgs
<6	<2.7
6 – 11	2.7 – 5.0
12 – 17	5.1 – 7.7
18 – 24	7.8 – 10.9
25 – 49	11.0 – 22.3
≥50	≥22.3