

DEPARTMENT: Emergency/Trauma Services	POLICY TITLE: Hypothermia Prevention and Treatment in Trauma Patients
Page 1 of 3	REPLACES POLICY DATED: Replaces 6/12
EFFECTIVE DATE: 3/2014	REFERENCE NUMBER: 780-012

PURPOSE:

Hypothermia is common after severe trauma. Mortality for primary unintended hypothermia is ~20% and for a trauma patient at 32°C (89°F) mortality approaches 100%. Hypothermia is included in the lethal triad of hemorrhage with coagulopathy and acidosis. The purpose of these guidelines is to help prevent and correct hypothermia as early and effectively as possible.

POLICY:**I. Emergency Department Guidelines****A. Monitoring**

1. All trauma patients should have their core temperature measured during the initial assessment in the emergency department. Oral temperatures acceptable as appropriate.
2. All trauma patients should have their core temperature reassessed during their ED course to assess the effectiveness of warming measures instituted. Oral temperatures acceptable as appropriate.
3. All intubated level one trauma patients should have their core temperature measured continuously using a temperature measuring foley catheter. Hourly rectal temperatures should be taken in the absence of an indwelling temperature foley catheter.

B. Hypothermia Prevention

1. All trauma patients should be protected with the principles of passive rewarming: removal of wet clothing, coverage with warm blankets, and maintenance of an adequate ambient room temperature at 76 °F.
2. All fluids (including blood products) administered in the ED should be warmed to 37.5° C, either with a standard fluid warmer, or via a rapid warmer-infuser system (e.g., Level One or Belmont).
3. All level I trauma patients should have an underbody Convective air blanket (e.g., Bair Hugger) in place prior to placement on the ED bed.

C. Rewarming Guidelines

1. Patients with a core temperature of $\leq 36.0^{\circ}$ (96.8° F) should have additional active external rewarming with an under and over body convective air blanket (e.g., Bair Hugger).
2. Patients with a core temperature of $< 34.0^{\circ}$ C (93.2° F) should have consideration of additional active core rewarming with continuous endovascular rewarming (e.g., Alsius).

II. Operating Room Guidelines**A. Monitoring**

All operative patients should have continuous esophageal temperatures or thermistor equipped Foley catheter temperatures monitored throughout the operative procedure.

B. Hypothermia Prevention

1. All trauma operative procedures should be performed in the dedicated trauma room. It is preferable to keep the room set at 76° F during evening and night shifts. If another OR is used or the room temp is low it should immediately be turned to 85° upon patient arrival.
2. Convective air blanket (e.g., Bair Hugger) should be used on all operative trauma patients.
3. All emergent trauma patients requiring surgery should have an underbody convective air blanket (e.g., Bair Hugger) in place prior to placement of the patient on the OR table.

DEPARTMENT: Emergency/Trauma Services	POLICY TITLE: Hypothermia Prevention and Treatment in Trauma Patients
Page 2 of 3	REPLACES POLICY DATED: Replaces 6/12
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4. All fluids should be warmed and the use of a rapid warmer-infuser system (e.g., Belmont or Level One) infuser should be at the discretion of the trauma and anesthesia services.

III. Special Procedures Guidelines

A. Monitoring

1. All trauma patients should have their core temperature measured during the initial assessment in the special procedures suite.
2. Patients in shock should have their core temperature measured continuously, if possible.
3. Hourly temperatures should be taken in the absence of indwelling foley temperature probes.

B. Hypothermia Prevention

1. All trauma patients should be protected with the principles of passive rewarming: removal of wet clothing, coverage with warm blankets, and maintenance of an adequate ambient room temperature at 76°.
2. All fluids (including blood products) administered in Specials should be warmed to 37.5° C, either with a standard fluid warmer, or via a rapid warmer-infuser system (e.g., Level One or Belmont).
3. All trauma patients that require special procedures should have consideration for an underbody convective air blanket (e.g., Bair Hugger) in place prior for special procedures if it is feasible to have one in place for the procedure.

C. Rewarming Guidelines

1. Patients with a core temperature of $\leq 36.0^{\circ}$ (96.8° F) should have additional active external rewarming with a convective air blanket (e.g., Bair Hugger) as their procedure permits.
2. Patients with a core temperature of $< 34.0^{\circ}$ C (93.2° F) should have consideration of additional active core rewarming with continuous endovascular rewarming(e.g., Alsius)

IV. ICU Guidelines

A. Monitoring

All patients should have continuous core temperature monitoring or oral as appropriate.

B. Hypothermia Prevention

1. All trauma patients should be protected with the principles of passive rewarming: removal of wet clothing, coverage with warm blankets, and maintenance of an adequate ambient room temperature.
2. All fluids (including blood products) administered to patients with a core temperature of $\leq 36.0^{\circ}$ (96.8° F) should be warmed to 37.5° C, either with a standard fluid warmer, or via a rapid warmer-infuser system (e.g., Level One or Belmont).

C. Rewarming Guidelines

1. Patients with a core temperature of $\leq 36.0^{\circ}$ (96.8° F) should have additional active external rewarming with an under and over body convective air blanket (e.g., Bair Hugger).
2. Patients with a core temperature of $< 34.0^{\circ}$ C (93.2° F) should have consideration of additional active core rewarming with continuous endovascular rewarming(e.g., Alsius).
3. Active rewarming should cease when the patient's core temperature has achieved normothermia (36.5°C-37.5°C) (97.7°F-99.5°F) and resuscitation has ended.

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Page 3 of 3	REPLACES POLICY DATED: Replaces 6/12
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