Any signs or symptoms of hypersensitivity reaction/allergic reaction, call On-Call Provider\(^1\) STAT, notify attending physician and MERIT as appropriate.

If a patient is unresponsive at any point, call a “code” as appropriate for your area.

**STOP infusion and monitor vital signs every 5 minutes**

**Patient with HSR to medication (see Page 2 for HSR to blood products)**

**PRESENTING SYMPTOMS**

- Itching (urticaria), facial flushing, and/or hives (rash)
- Hypotension\(^2\), wheezing, shortness of breath, facial/lip/tongue swelling
- Other signs or symptoms of HSR/allergic reaction

**Instructions per appropriate provider\(^1\)**

- Place on cardiopulmonary monitoring and check vital signs
- Start oxygen at 10 liters/minute by non rebreather mask to maintain oxygen saturation greater than 95%

**Diphenhydramine 1 mg/kg**

- (maximum 50 mg/dose)
- IV push over 5 minutes

**Improvement within 5 minutes?**

- Yes
  - Place on cardiopulmonary monitoring and check vital signs
  - Start oxygen at 10 liters/minute by non rebreather mask to maintain oxygen saturation greater than 95%

- Hydrocortisone 2 mg/kg
  - (maximum 100 mg/dose)
  - IV push over 30 seconds

**Evidence of respiratory distress or hemodynamic instability?**

- Yes
  - Epinephrine (1:1,000) 0.01 mL/kg
    - (maximum 0.5 mL/dose)
    - subcutaneously, followed by
  - Diphenhydramine 1 mg/kg
    - (maximum 50 mg/dose)
    - IV push over 5 minutes (if not administered within last 30 minutes), followed by,
  - Hydrocortisone 2 mg/kg
    - (maximum 100 mg/dose)
    - IV push over 30 seconds (if not administered within last 30 minutes)

- No
  - Normal saline 10 mL/kg IV rapid bolus

**No**

**Evidence of respiratory distress or hemodynamic instability?**

- Yes
  - Epinephrine (1:1,000) 0.01 mL/kg
    - (maximum 0.5 mL/dose)
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  - Hydrocortisone 2 mg/kg
    - (maximum 100 mg/dose)
    - IV push over 30 seconds (if not administered within last 30 minutes)

- No
  - Normal saline 10 mL/kg IV rapid bolus

**Note:** Obtain medications from Pyxis and utilize Order Set/SmartSet

\(^1\) Appropriate provider:
- PICS – ICU Attending
- PATC/CLinic – Doc of Day
- G9 – Inpatient Pediatric Hematology/Oncology or Cell Therapy Provider

\(^2\) Hypotension defined as:
- Age 0 to 28 days: SBP less than 60 mmHg
- Age 1 to 12 months: SBP less than 70 mmHg
- Age 1 to 10 years: SBP less than \[70 + (2 \times \text{age in years})\] mmHg
- Age greater than 10 years: SBP less than 90 mmHg

\(^3\) Documentation:
- Use HSR/Allergy orders to document management utilized for an individual patient
- Document event as an Observed Adverse Drug Reaction (ADR)
Pediatric Hypersensitivity (HSR)/Allergic Reaction Management Procedures (Medications, Blood Products, and/or Food)

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Any signs or symptoms of hypersensitivity reaction/allergic reaction, **call On-Call Provider**\(^1\) STAT, notify attending physician and MERIT as appropriate.

If a patient is unresponsive at any point, call a “code” as appropriate for your area.

**PRESENTING SYMPTOMS**

- Itching, facial flushing, hives (urticaria), rash
- Fever\(^2\), chills, or rigors
- Hypotension\(^3\), wheezing, respiratory distress\(^4\), facial/lip/tongue swelling
- Other signs or symptoms\(^5\) of HSR/allergic reaction

**Patient with HSR to blood product**\(^1\) transfusion (see **Page 1 for HSR to medication**)

- Pause blood product transfusion and monitor vital signs every 5 minutes
- Diphenhydramine 1 mg/kg (maximum 50 mg/dose) IV push over 5 minutes

**Improvement within 15 minutes?**

- Yes
  - Resume blood product transfusion

- No
  - STOP blood product transfusion and monitor vital signs every 5 minutes
  - Hydrocortisone 2 mg/kg (maximum 100 mg/dose) IV push over 30 seconds and Repeat diphenhydramine 1 mg/kg (maximum 50 mg/dose) IV push over 5 minutes
  - Additional orders per appropriate provider\(^1\)
  - See **Page 3 for Transfusion Reaction Work-up and Reporting**

**Patient with Hypotension**\(^3\), wheezing, respiratory distress\(^4\), facial/lip/tongue swelling

- STOP blood product transfusion
- Place on cardiopulmonary monitoring and check vital signs every 5 minutes
- Start oxygen at 10 liters/minute by non rebreather mask to maintain oxygen saturation greater than 95%

**Normal saline 10 mL/kg IV rapid bolus**

**Patient with Other signs or symptoms**\(^5\) of HSR/allergic reaction

- STOP blood product transfusion and monitor vital signs every 5 minutes
- Contact appropriate provider\(^1\) for instructions

**Additional information**

\(1\) Appropriate provider: ● PICS – ICU Attending ● PATC/CLinic – Doc of Day

\(2\) Blood products include red blood cells, platelets, fresh frozen plasma, cryoprecipitate, and white blood cells

\(3\) Hypotension defined as: ● Age 0 to 28 days: SBP less than 60 mmHg ● Age 1 to 12 months: SBP less than 70 mmHg

\(4\) Fever defined as increase of \(1^\circ\)C or more from the baseline temperature

\(5\) Hypotension defined as: ● Age 1 to 10 years: SBP less than \([70 + (2 \times \text{age in years})]\) mmHg ● Age greater than 10 years: SBP less than 90 mmHg

\(6\) Other signs and symptoms may include, but are not limited to: ● Chest pain, tachycardia, tachypnea, hypertension ● Headache occurring during transfusion

\(7\) Respiratory distress may include, but is not limited to: shortness of breath, hypoxia, dyspnea or labored respiration, wheezing, orthopnea, stridor

Department of Clinical Effectiveness V7 rev
Approved by the Executive Committee of the Medical Staff on 12/18/2018
# Management of Blood Product Transfusion Reaction - PEDIATRIC

**Pediatric Hypersensitivity (HSR)/Allergic Reaction Management Procedures** (Medications, Blood Products, and/or Food)

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<table>
<thead>
<tr>
<th>Laboratory tests:</th>
<th>Reporting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Anti-IgA antibodies (for suspected anaphylaxis reactions)</td>
<td>● Place a Transfusion Medicine consult</td>
</tr>
<tr>
<td>● Urinalysis for presence of hemoglobin</td>
<td>● Complete a Patient Safety Event report</td>
</tr>
<tr>
<td>● Other appropriate laboratory tests</td>
<td>● Complete a Transfusion Reaction Investigation request</td>
</tr>
<tr>
<td></td>
<td>● Return the remaining blood tubing to Blood Bank</td>
</tr>
</tbody>
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**TRANSFUSION REACTION WORK-UP AND REPORTING**

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SUGGESTED READINGS


Philips, L. (2005). American Academy of Allergy, Asthma and Immunology; American College of Allergy, Asthma and Immunology; Joint Council of Allergy, Asthma and Immunology: The diagnosis and management of anaphylaxis: an updated practice parameter. *Journal of Allergy and Clinical Immunology*, 115, S483-S523.


UTMDACC Institutional Policy #CLN1115 Blood Component Administration and Transfusion Reaction Policy.

Pediatric Hypersensitivity (HSR)/Allergic Reaction Management Procedures (Medications, Blood Products, and/or Food)

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DEVELOPMENT CREDITS

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