CLINICAL PATHWAY:
Anaphylaxis

THIS PATHWAY SERVES AS A GUIDE AND DOES NOT REPLACE CLINICAL JUDGMENT.

Inclusion Criteria: child of any age with signs and/or symptoms of anaphylaxis[1]
Exclusion Criteria: blood transfusion and other medication infusion reactions that are not anaphylaxis, symptoms attributable to other causes, allergy to epinephrine

[2]Hypotension:

Low systolic blood pressure for children is defined as:
- 1 month to 1 year: Less than 70 mmHg
- 1 to 10 years: Less than (70 mmHg + [2x age])
- 11 to 17 years: Less than 90 mmHg

Initial Management:
- If outside Emergency Department (ED) or PICU: consider calling Code Blue if severe respiratory distress or hypotension[2]
- Place on continuous cardiorespiratory monitor and perform full set of vitals
- Immediately discontinue medications that may be causing anaphylaxis
- Rapid assessment and manage ABCs:
  - Administer Epinephrine 0.01 mg/kg of 1:1000 [1mg/ml] solution IM (max 0.5 mg)
  - Place patient in recumbent or supine position
  - *If hypotensive*[2]: Place PIV and administer normal saline bolus 20 ml/kg IV
  - *If hypoxic*: administer oxygen
  - *If respiratory failure*: consider intubation
- Continue to check vital signs every 15 min, or more frequent if unstable

MUST document allergy and symptoms of allergy in patient's chart

Stable vital signs and/or anaphylaxis resolved?

YES

- Observe minimum of 2-4 hours from last epinephrine dose
- Vital signs every 30 min
- *The following medications are NOT first line treatment for anaphylaxis and do NOT prevent biphasic anaphylaxis. However, these may be considered as secondary therapies to treat symptoms:*
  - *If urticaria*: diphenhydramine 1 mg/kg/dose IV/PO q6hr
  - *Systemic steroids*: prednisone or prednisolone 1-2 mg/kg/day (may choose alternative steroids as clinically indicated)

Any of the following?
Hx biphasic or severe reactions,
≥ 2 doses epinephrine required, progressive/persistent sxs,
reaction was to long acting medication, hx severe asthma/ current asthma flare, hypotension[2] or syncope,
upper airway obstruction,
young age

NO

Discharge Criteria:
Complete resolution of all serious symptoms (rash may persist), minimum of 2-4 hours from last epinephrine, parental comfort with discharge and easy access to ED, epinephrine auto-injector physically available to family (if reaction to medication administered only in hospital setting, auto-injector may not be indicated)

Discharge meds:
Epinephrine auto-injector, diphenhydramine PRN

Discharge Instructions:
Epinephrine auto-injector training,
avoid known allergens, consider referral to allergist,
f/u with PCP in 1-2 days

YES

- Admit to Medical-Surgical floors on Pediatric Hospital Medicine Service (GI, Nephrology or Heme-Onc will admit to their own service)
- Observe on continuous cardiorespiratory monitor
- Consider the following medications if needed as per above indications:
  - Diphenhydramine
  - Systemic steroids

NO

Vital signs unstable and/or anaphylaxis unresolved:
- If outside Emergency Department (ED) or PICU: consider calling Code Blue if severe respiratory distress or hypotension[2]
- Administer up to 3 total doses of IM epinephrine q 5-15 min
- Place PIV and administer rapid NS bolus 20 ml/kg IV
  - If hypotension[2]: give up to 3 boluses
- Check vital signs q 5 min

The following medications are NOT first line treatment for anaphylaxis and do NOT prevent biphasic anaphylaxis. However, these may be considered as secondary therapies to treat symptoms:
- *Systemic steroids*: prednisone or prednisolone 1-2 mg/kg/day (max 60 mg/day) (may choose alternative steroids as clinically indicated)
- *If urticaria:* diphenhydramine 1 mg/kg/dose IV/PO q6hr PRN
- *If wheeze:* consider albuterol 5 mg nebulized
- *If stridor*: consider racemic epinephrine
- *If respiratory failure:* consider intubation

Does patient meet **all** of the below?
(if no to one criteria, must admit to PICU)
- Required <3 doses of epi?
- Stable vital signs?
- Normal mental status?

YES

NO

Admit to PICU

[1]Diagnostic Criteria for Anaphylaxis:
(must meet ONE of the following three criteria)

1. Acute onset (seconds to minutes) of skin and/or mucosal involvement (e.g. generalized hives, pruritus or flushing, swollen lips/tongue/uvula), AND respiratory compromise (e.g. dyspnea, wheeze/bronchospasm, stridor, hypoxemia) OR reduced blood pressure or associated symptoms of end-organ dysfunction (e.g. hypotonia, syncope, incontinence)

2. TWO OR MORE OF THE FOLLOWING that occur rapidly after exposure to a LIKELY allergen for that patient (seconds to minutes):
   - A. Skin-mucosal involvement (e.g. generalized hives, pruritus or flushing, swollen lips/tongue/uvula)
   - B. Respiratory compromise (e.g. dyspnea, wheeze/bronchospasm, stridor, hypoxemia)
   - C. Reduced blood pressure or associated symptoms (e.g. hypotonia, syncope, incontinence)
   - D. Persistent gastrointestinal symptoms (e.g. crampy abdominal pain, vomiting, diarrhea)

3. Reduced blood pressure after exposure to a KNOWN allergen for that patient (seconds to minutes):
   - A. Infants and children – Low systolic blood pressure (age-specific) or greater than 30% decrease in systolic blood pressure from baseline
   - B. Adults – Systolic BP of less than 90 mmHg or greater than 30% decrease from that person's baseline

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