

# PEM LITERATURE UPDATE

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## MY MODEL OF LIFELONG LEARNING

- We face a paradox as learners and educators. The extent to which we incorporate this paradox will inform the educational process that we guide. We must embrace the concept that the paradox of learning is such that the learner does not at first understand what he needs to learn, cannot be taught what he needs to learn, and can educate himself only by beginning to do what he does not yet understand.
- Our challenge is to know how to guide physicians on the journey of self-discovery of this process. Read, read, read.



## MY MODEL OF LIFELONG LEARNING:

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**Read, read, read.**

- Our challenge is to know how to guide physicians on the journey of self-discovery of this process. Read, read, read.





# FEVER



## PEDIATRIC FEVER

- 15% of all ED visits annually for patients < 15 years of age

### CHILDREN AND FEVERS

Although it can be frightening, a fever can be a good thing because it's often the body's way of fighting infections.

**Infant**  
(Younger than 2 months)  
has a temperature of **100.4 °F** or higher

**Child**  
(2 months to 2 years)  
has a temperature of **102.2 °F** or higher

**Older child**  
has a fever and:

- Appears sick
- Develops a rash
- Has persistent diarrhea or vomiting
- Shows signs of dehydration
- A chronic medical problem

ACEP Clinical Policy. [Clinical Policy for Well-Appearing Infants and Children Younger Than 2 Years of Age Presenting to the Emergency Department with Fever](#). Ann Clin Med 2016;67:625-630.







- Fever is a symptom...not a disease
- Significant number of ED visits
  - 3.3% return within 72 hours
- Fever Phobia:
  - A popular term for the response of parents to childhood fever, which may result in inappropriate over management with antipyretics.



**17 DAY OLD WITH T 100.6°F/38.1°C**

- CBC
- Blood culture
- Urine (cath or SPU) with culture
- CSF studies
- ALT/AST
- Procalcitonin/CRP
- +/- viral testing
- +/- stool studies
- +/- CXR

Mondt EA, Byington CL. Evaluation and Management of Febrile, Well-Appearing Young Infants. *Infect Dis Clin N Am* 2015;29:575-585.

Procalcitonin  
C-reactive Protein  
WBC count  
ANC

< 3 months of age



## BIOMARKERS AND BACTERIAL INFECTIONS





# BIOMARKERS AND BACTERIAL INFECTIONS

- Procalcitonin performed the best...
- ...but would not have identified 30% of infants with invasive bacterial infections.
- CRP still considered useful.

Diaz MG et al. [Lack of Accuracy of Biomarkers and Physical Examination to Detect Bacterial Infection in Febrile Infants](#). *Pediatr Emer Care* 2016;32:664-



17 DAY OLD WITH T 100.6°F/38.1°C

- Admission
- Abx directed toward:
  - E. coli
  - GBS
  - *Listeria is so 2015*
- Ampicillin (50 mg/kg) + Gentamycin (2.5 mg/kg)  
OR
- Ampicillin (50mg/kg) + Cefotaxime (50mg/kg)
- Acyclovir (20 mg/kg)

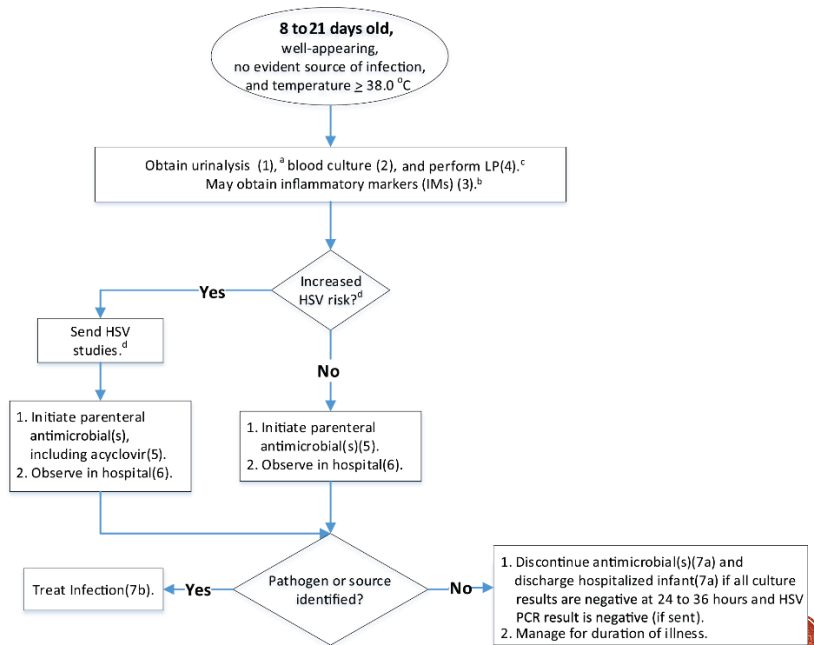
Bondi EA, Hyington CL. Evaluation and Management of Febrile, Well-Appearing Young Infants. *Infect Dis Clin N Am* 2015;29:575-585.



17 DAY OLD WITH T 100.6°F/38.1°C

- What if she has a urinary tract infection?
- What if he has influenza or RSV?

**Clinical Practice Guideline: Evaluation and Management of Well-Appearing Febrile Infants 8 to 60 Days Old**



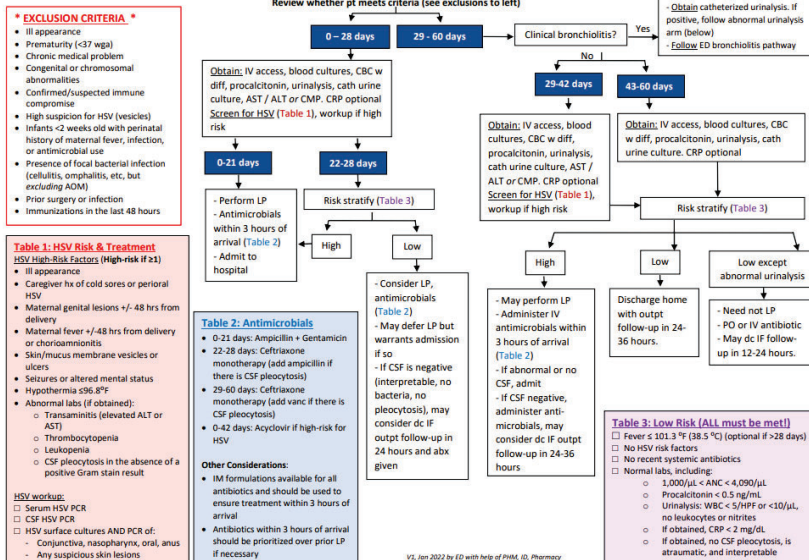
Pediatrics. 2021;148(2). doi:10.1542/peds.2021-052228

**45 DAY OLD WITH T 101.9°F/38.8°C**



**PEDIATRIC ASSESSMENT TRIANGLE**

### ED Well-Appearing Febrile Infant Guideline



## CHANGES & REASONING: HSV

- Guidelines indicate HSV screening extends up to 60 days old
- On review of local and national data, in addition to expert opinion, decreased the upper age cutoff to 42 days old
- Added the following risk factors
  - Ill-appearance
  - Elevated AST OR ALT (not just ALT)
  - Caregiver hx of cold sores or perioral HSV

### Table 1: HSV Risk & Treatment

#### HSV High-Risk Factors (High-risk if ≥1)

- Ill appearance
- Caregiver hx of cold sores or perioral HSV
- Maternal genital lesions +/- 48 hrs from delivery
- Maternal fever +/-48 hrs from delivery or chorioamnionitis
- Skin/mucus membrane vesicles or ulcers
- Seizures or altered mental status
- Hypothermia ≤96.8°F
- Abnormal labs (if obtained):
  - Transaminitis (elevated ALT or AST)
  - Thrombocytopenia
  - Leukopenia
  - CSF pleocytosis in the absence of a positive Gram stain result

#### HSV workup:

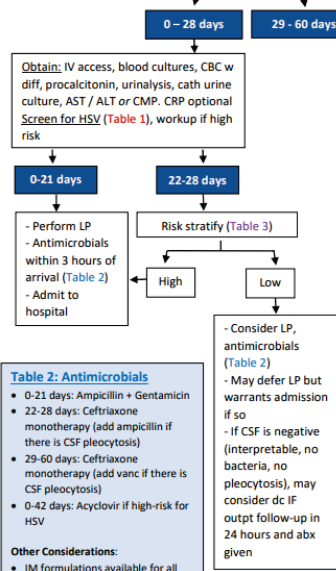
- Serum HSV PCR
- CSF HSV PCR
- HSV surface cultures AND PCR of:
  - Conjunctiva, nasopharynx, oral, anus
  - Any suspicious skin lesions

### Table 3: Low Risk (ALL must be met!)

- Fever ≤ 101.3 °F (38.5 °C) (optional if >28 days)
- No HSV risk factors
- No recent systemic antibiotics
- Normal labs, including:
  - 1,000/μL < ANC < 4,090/μL
  - Procalcitonin < 0.5 ng/mL
  - Urinalysis: WBC < 5/HPF or <10/μL, no leukocytes or nitrites
  - If obtained, CRP < 2 mg/dL
  - If obtained, no CSF pleocytosis, is atraumatic, and interpretable

## CHANGES & REASONING: 22-28 DAYS

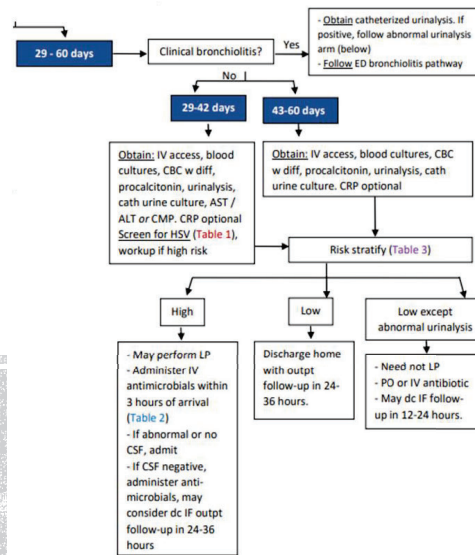
Review whether pt meets criteria (see exclusio





### Table 3: Low Risk (ALL must be met!)

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- No HSV risk factors
- No recent systemic antibiotics
- Normal labs, including:
  - $1,000/\mu\text{L} < \text{ANC} < 4,090/\mu\text{L}$
  - Procalcitonin  $< 0.5 \text{ ng/mL}$
  - Urinalysis:  $\text{WBC} < 5/\text{HPF}$  or  $<10/\mu\text{L}$ , no leukocytes or nitrites
  - If obtained,  $\text{CRP} < 2 \text{ mg/dL}$
  - If obtained, no CSF pleocytosis, is atraumatic, and interpretable



## CHANGES & REASONING: 29-60 DAYS

TABLE 3 Initial Empirical Antibacterial Therapy for Well-Appearing Febrile Infants 7 to 60 Days Old

Suspected Source of Infection	8–21 d Old	22–28 d Old
UTI <sup>a</sup>	Ampicillin IV or IM (150 mg/kg per d divided every 8 h) and either ceftazidime IV or IM (150 mg/kg per d divided every 8 h) or gentamicin IV or IM (4 mg/kg per dose every 24 h)	Ceftriaxone IV or IM (50 mg/kg per dose every 24 h)
No focus identified <sup>c</sup>	Ampicillin IV or IM (150 mg/kg per d divided every 8 h) and either ceftazidime IV or IM (150 mg/kg per d divided every 8 h) or gentamicin IV or IM (4 mg/kg per dose every 24 h) <sup>d</sup>	Ceftriaxone IV or IM (50 mg/kg per dose every 24 h)
Bacterial meningitis <sup>a</sup>	Ampicillin IV or IM (300 mg/kg per d divided every 6 h) and ceftazidime IV or IM (150 mg/kg per d divided every 8 h)	Ampicillin IV or IM (300 mg/kg per d divided every 6 h) and ceftazidime IV or IM (150 mg/kg per d divided every 8 h)

### Table 2: Antimicrobials

- 0-21 days: Ampicillin + Gentamicin
- 22-28 days: Ceftriaxone monotherapy (add ampicillin if there is CSF pleocytosis)
- 29-60 days: Ceftriaxone monotherapy (add vancomycin if there is CSF pleocytosis)
- 0-42 days: Acyclovir if high-risk for HSV

#### Other Considerations:

- IM formulations available for all antibiotics and should be used to ensure treatment within 3 hours of arrival
- Antibiotics within 3 hours of arrival should be prioritized over prior LP if necessary

## CHANGES & REASONING: ANTIBIOTICS

45 DAY OLD WITH T  $101.9^{\circ}\text{F}/38.8^{\circ}\text{C}$

- Stepwise approach appropriate
- Caution the “screening” CBC
- Listen to your gut

- Concern for bacterial co-infections
- Secondary analysis of prior study population
- Viral testing +
- Objective:  
Identify those with presence of bacterial meningitis, bacteremia, or UTI

“HE TESTED  
POSITIVE FOR  
(*INSERT VIRUS  
HERE*) POSITIVE.”

**Table III. Rate of SBI among febrile infants with and without documented viral infections**

	Virus positive		Virus negative, n (%) (95% CI)		Risk Ratio (95% CI)
	n (%)	95% CI	n (%)	95% CI	
Any SBI	44/1200 (3.7%)	2.7%-4.9%	222/1745 (12.7%)	11.2%-14.4%	3.5 (2.5-4.8)
UTIs	33/1200 (2.8%)	1.9%-3.8%	186/1745 (10.7%)	9.2%-12.2%	3.9 (2.7-5.6)
Bacteremia	9/1199 (0.8%)	0.3%-1.4%	50/1743 (2.9%)	2.1%-3.8%	3.8 (1.9-7.7)
Meningitis	5/1200 (0.4%)	0.1%-1.0%	14/1745 (0.8%)	0.4%-1.3%	1.9 (0.7-5.3)

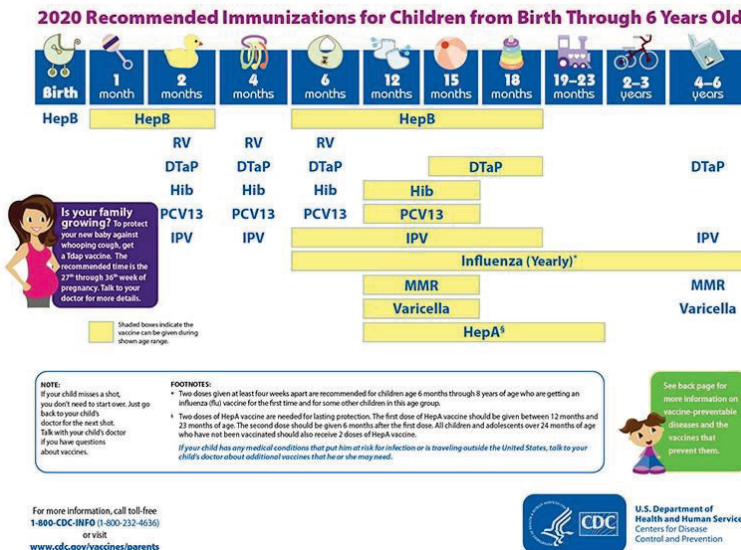
The Journal of Pediatrics Volume 203, December 2018, Pages 86-91.e2

## BOTTOM LINE



- The rate of SBI is lower...
- But not insignificant...
- Especially with UTIs.

The Journal of Pediatrics Volume 203, December 2018, Pages 86-91.e2



“HE GOT HIS SHOTS  
YESTERDAY...”



**Table 1**  
Patient and evaluation characteristics.

Characteristics	All infants (n = 508)	Recently immunized (n = 114)	Not recently immunized (n = 394)
Mean age (days)	66	65	66
% Gender male (n)	54.1 (275)	59.6 (68)	52.5 (207)
% Urinalysis performed (n)	75 (382)	51 (58)	87 (324)
% CBC performed (n)	55.5 (282)	35 (40)	61 (242)
% Abnormal WBC of CBC (n)	14.9 (42)	7.8 (16)	8.4 (26)
% Blood cultures obtained (n)	65 (330)	36 (41)	73 (289)
% LP performed (n)	14 (74)	2.6 (3)	18 (71)
% CXR completed (n)	72 (363)	64 (73)	74 (290)
% Viral testing performed (n)	30 (151)	11 (16)	42 (135)
% Positive of viral tests performed (n)**	48 (62)	44 (7)	49 (56)

Characteristics of infants included in the study in percent gender and mean age in days as well as testing performed overall and among the recently immunized and not recently immunized groups. \*\*positive viral tests include influenza, respiratory syncytial virus, other viral, or co-infection of flu or rsv with another virus.

**Table 3**  
Infections in RI and NRI infants.

Prevalence of infection	All (n = 508) n (%; 95% CI)	RI (n = 114) n (%; 95% CI)	NRI (n = 394) n (%; 95% CI)
Bacteremia	3 (0.6%, 0.2-1.0)	0 (0%, 0-4)	3 (0.8%, 0.2-2.4)
Meningitis	1 (0.2%, 0.01-1.3)	0 (0%, 0-4)	1 (0.3%, 0.1-1.6)
Invasive Bacterial Infection (IBI)	4 (0.8%)	0	4 (1.0%)
UTI	47 (9.3%, 6.9-12.2)	3 (2.6%, 0.7-0.8)	44 (11.2%, 8.3-14.8)
Pneumonia	6 (1.2%, 0.5-2.7)	1 (0.9%, 0.05-5.5)	5 (1.3%, 0.5-3.1)
Other	1 (0.2%, 0.01-1.3)*	0 (%; 0-4)	1 (0.3%, 0.1-1.6)*
Total	58 (11.4%, 8.9-14.6)	4 (3.5%, 1.1-9.3)	54 (13.7%, 10.6-17.6)

Type and Prevalence of infections identified in the whole population with further delineation into infections in recently immunized infants and not recently immunized infants.

\* One infant w/ Salmonella enteritis.



- < 12 weeks
- Routine immunizations in the past 24 hours
- Still check a urine





# **OUTCOMES OF YOUNG INFANTS WITH HYPOTHERMIA EVALUATED IN THE EMERGENCY DEPARTMENT**

Ramgopal S et al. *J Pediatr* 2020;221:132-7.

- Multicenter, retrospective cohort study
- Hypothermia as an admission or discharge diagnosis
- Demographics, diagnostic testing and outcomes
- Outcomes:
  - Presence of SBI
  - ED or hospital mortality

## **HYPOTHERMIA IN YOUNG INFANTS**

Ramgopal S et al. *J Pediatr* 2020;221:132-7.

## **RESULTS**

- 80% had blood and urine cultures
- 42% had CSF
- 30% had HSV testing
- Majority admitted
  - 1/3 to ICU
- 8% had SBI:
  - 5.6% bacteremia
  - 2.4% UTI
  - 0.3% meningitis
  - 0.3% pneumonia
  - 0.2% neonatal HSV
- 0.2% mortality





# **FACTORS ASSOCIATED WITH SERIOUS BACTERIAL ILLNESS IN INFANTS ≤ 60 DAYS WITH HYPOTHERMIA IN THE EMERGENCY DEPARTMENT**

Ramgopal S et al. *Am J Emerg Med* June 2019;37(6):1139-1143.

Age/Sex	Full Term	Initial Temperature	WBC	ANC	Platelets	SBI
4d, M	Yes	35.7	6.5	1.6	381	UTI
4d, F	Yes	36.4	12.1	4.7	210	UTI
5d, M	No	35.9	7.1	2.3	216	Bacteremia
6d, F	Yes	35.6	11.1	3.0	77	Meningitis
6d, M	Yes	33.2	4.8	1.2	109	Bacteremia/Meningitis
7d, F	Yes	36.0	19.4	9.8	108	Meningitis
16d, F	Yes	34.0	6.7	2.9	118	UTI
21d, M	Yes	36.6	8.8	2.5	489	UTI
22d, M	No	34.8	23.1	14.8	442	Bacteremia/Meningitis
27d, F	No	35.8	13.4	9.1	293	UTI

Ramgopal S et al. *Am J Emerg Med* 2019;37(6):1139-1143.



- 31 day old, 33.5°C, apnea
  - Severe hemorrhagic encephalitis of undetermined etiology
- 29 day old, 35°C, lethargy
  - Extensive encephalomalacia, likely secondary to congenital infection
- 16 day old, 33.7°C, recurrent apnea and bradycardia
  - Ketoglutaric aciduria

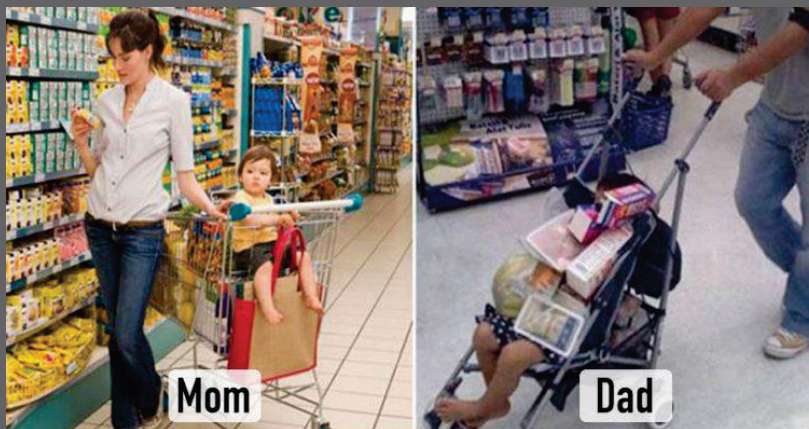
- 15-28 days
- Higher WBC and ANC
- Lower platelet count

## WHO'S AT HIGHER RISK?

Rangappa S et al. Am J Emerg Med 2019;37(6):1139-1143.

## A CROSS-SECTIONAL STUDY ON SUBJECTIVE FEVER ASSESSMENT IN CHILDREN BY PALPATION: ARE FATHERS AS RELIABLE AS MOTHERS?

Rosenbloom e, et al.  
*Emerg Med Int.* 2020.







**MOM**



**DAD**



**MOTHER**



**FATHER**

- “It was a low-grade fever...99°.”
- “It was around 110-ish.”
- “99.6° is a fever for him because he usually runs low.”
- “350°”

**FEVER**

## FEVER

- 0 – 4 years of age
- Asked to determine if their child had fever
  - If yes, was it high?
- Demographics obtained



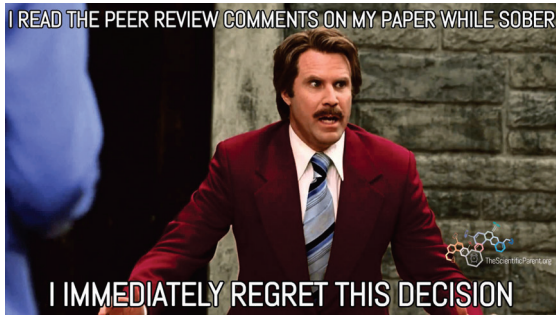
- High sensitivity and low specificity overall
- Presence of fever often overestimated
- Mom no better than dad

AC: 0 EAU: 0 INTRG: 6 Need Pro: 10

Age Sex	Chief Complaint	To Do	Dst	R)
4y /M	assault, by a squirrel			
11y /F	injury, hand			
13y /M	injury, knee			
4y /M	assault, by a squirrel			
6y /F	assault, by a squirrel			
3y /M	assault, by a squirrel			
5y /M	leg laceration			

**A TYPICAL NIGHT  
IN THE PEDS ED...**

# ANCHORING BIAS



- Tendency for clinicians to stick with the initial impression even as new information becomes available



- CC: vomiting
- CC: abdominal pain
- Triage note:
  - Vomiting and diarrhea
  - Fever 101° F
  - Pain score 2
  - Triage class 4
- Triage note:
  - Vomiting and diarrhea
  - Fever 101° F
  - Pain score 2
  - Triage class 4

- 7-15% of children with appendicitis present twice before the diagnosis is made
  - Especially pre-school aged children
- Does the triage chief complaint have an impact on diagnosis of appendicitis?



Drapkin Z et al. Pediatric Appendicitis: Association of Chief Complaint with Missed Appendicitis. Pediatr Emerg Care 2018.



- Retrospective chart review
- Classified chief complaints as:
  - “Suggestive of appendicitis”
    - Abdominal pain, RLQ pain, r/o appy
  - “Nonspecific”
    - Fever, vomiting, diarrhea, constipation, dehydration
- Missed appy = ED visit within 7 days of diagnosis

# ANCHORING BIAS

Drapkin Z et al. Pediatric Appendicitis: Association of Chief Complaint with Missed Appendicitis. Pediatr Emer Care 2018.

## RESULTS

	<u>Missed on 1<sup>st</sup> visit</u>	<u>Diagnosed on 1<sup>st</sup> visit</u>	<u>Total</u>
<b><u>Suggestive CC</u></b>	60	1538	1598
<b><u>Nonspecific CC</u></b>	7	73	80
<b><u>Total</u></b>	67	1611	1678

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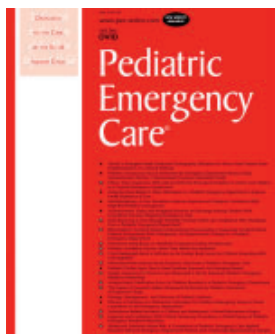
Drapkin Z et al. Pediatric Appendicitis: Association of Chief Complaint with Missed Appendicitis. Pediatr Emer Care 2018.

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**3.8% vs. 8.8%**

Drapkin Z et al. *Pediatric Appendicitis: Association of Chief Complaint with Missed Appendicitis. Pediatr Emer Care* 2018.



## PRESCHOOLERS CAN BE DISTRACTED BY CARTOONS? WHO KNEW?

- Cartoon distraction was most effective for children aged 3 to 6 years, reducing the treatment time and number of medical personnel required.

### Efficacy of Cartoons as a Distraction Technique for Children Undergoing Suture of Facial Lacerations in the Emergency Department

Hyo Jeong Choi, MS and Ho Jung Kim, MD, PhD

**Purpose:** To show the efficacy of cartoon as a distraction technique in suturing a child patient in the emergency room.  
**Methods:** We studied children aged 2 to 8 years who had sustained a facial laceration 3 cm or less that required suturing from September 2015 to November 2016. We used local anesthesia and attempted to place the sutures without sedation while showing the children cartoons instead. If the first attempt failed, 1 more attempt was made. The patients were divided into 3 groups: success, success on second attempt, and failure. Age, location and size of the wound, and scores on the FACES Pain Rating Scale (FPS) before and after local anesthesia were recorded.  
**Results:** The study included 196 children. Cartoon distraction was most effective for those aged 3 to 6 years (4.6 ± 1.9 years). The second-attempt group tended to be older, whereas the failure group was much younger (mean age, 7.4 ± 1.0 vs 2.7 ± 1.5 years). The FPS-R score differed widely among the groups. The success group tended to have a low score before and after local anesthetic injection (4.1 ± 2.0 and 3.1 ± 1.3), whereas the second-attempt and failure groups had much higher scores after injection (4.0 ± 1.7 and 4.8 ± 0.8, 5.7 ± 7.6, and 6.1 ± 0.8).

to examine the efficacy of this method when used in conjunction with local anesthesia to distract a child undergoing suturing of a minor facial laceration.

#### METHODS

This study was performed from September 2015 to November 2016 in the emergency department of Seochunhyang Bucheon Hospital with approval of the institutional review board. We included children aged 2 to 8 years with a facial laceration less than 3 cm that could be surgically repaired via sutures.

Parents provided informed consent prior to their child's inclusion in the study, and we did not include the child if the parent did not agree or did not include initially distracted children even with negotiation by physician and parents. A single emergency physician recorded each patient's observed pain level using the 0- to 10-point metric of Wong-Baker FACES Pain Rating Scale (FPS) at pre- (just before positioning the patient for suturing with parents or caregivers) and post-local injection (just after injection)



# ANAPHYLAXIS

# ANAPHYLAXIS

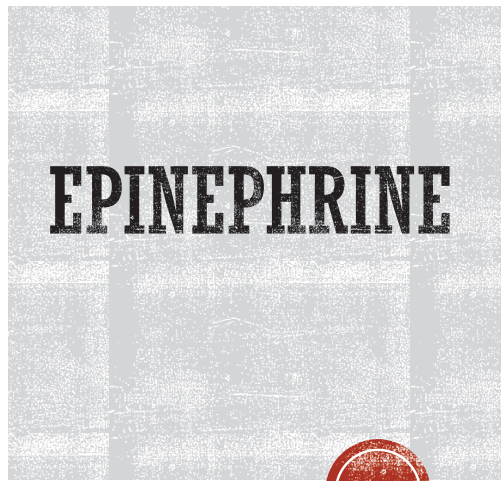
Symptoms of anaphylaxis usually involve more than one part of the body. Some symptoms include:



kidwithfoodallergies.org

- ED visits have doubled
- Hospitalizations have increased sevenfold
  - Median 40-50% in children
- Biphasic reactions likely occur in as few as 5% of patients

Gaffney LK, Porter J, Gerling M, Schneider LC, Stack AM, Shah D, Michelson KA. Safely Reducing Hospitalizations for Anaphylaxis in Children Through an Evidence-Based Guideline. *Pediatrics*. 2022 Feb 1;149(2):e2020045831. doi: 10.1542/peds.2020-045831. PMID: 35059724; PMCID: PMC9250079.



Boston Children's Hospital  
Clinical Pathways

## Anaphylaxis, Emergent

Date of Last Update: 10/15/2020  
Date of Last CPAC Review: 10/15/2020  
Care Venue: Emergent/Urgent

**A. Anaphylaxis\*** is a serious allergic reaction that is rapid in onset and may cause death. The presence of any one of the following 3 criteria indicates that anaphylaxis is highly likely.

**I. Involves plus another system**  
Acute onset of an illness (minutes to several hours) involving skin, mucosal tissue, or both, and at least one of the following:

- Respiratory compromise
- Reduced blood pressure (BP) or associated symptoms of end-organ dysfunction

**II. Two systems involved**  
Two or more of the following that occur rapidly after exposure to a likely allergen for that patient (minutes to several hours):

- Involvement of the skin-mucosal tissue
- Respiratory compromise
- Reduced BP or associated symptoms of end-organ dysfunction
- Persistent GI symptoms

**III. Hypotension**  
Reduced BP after exposure to a known allergen for that patient (minutes to several hours)

**B. Medication Dosing:**

**1. Standard treatment:**

- Epinephrine IM
  - < 10 kg: 0.1 mg/kg IM
  - 10 - 24.9 kg: epinephrine autoinjector 0.15 mg indicated;
  - ≥ 25 kg: epinephrine autoinjector 0.3 mg indicated;
  - Obese patients over 50 kg requiring repeat doses: Epinephrine 0.3 mg (may require ≥ 1 inch needle)
- Cetirizine:
  - 2.5 mg PO (age 6 months- 2 years)
  - 5 mg PO (2 years- 5 years)
  - 10 mg PO (6 years)
- Oral diphenhydramine: 1 mg/kg IV/PO (max 50 mg)

**2. Adjunctive Therapy**

**Corticosteroids:**

- Dexamethasone IV/PO/PO 0.6 mg/kg (max 16 mg)

**Albuterol 0.5%:**

- < 10 kg: 0.25 mL in 1-2 mL NS
- 10 - 24.9 kg: 0.5 mL in 1-2 mL NS
- ≥ 25 kg: 1 mL in 1-2 mL NS

**H1-Antihistamine:** Fexofenadine 5 mg/kg IV/PO (max 20 mg)

**Benazepril:** 2.25% intralid solution

- < 5 kg: 0.25 mL
- ≥ 5 kg: 0.5 mL

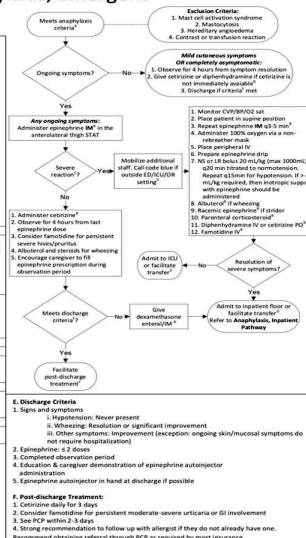
**3. Critical illness**

Epinephrine IV infusion 0.05 mg/kg/min titrate to effect

**C. Severe Reaction:**

- Hypotension or wide pulse pressure
- Altered mental status/confusion
- Dyspnea
- Syncope
- Cyanosis
- Hypoxia (SpO2 < 92%)

**D. See site-specific transfer guidance and disposition planning on page 2**



This pathway was developed for educational purposes only, and is based upon medical evidence and/or professional opinion of clinicians at Boston Children's Hospital. Decisions about evaluation and treatment are the responsibility of the treating clinician and should always be tailored to individual clinical circumstances. Any medication dosing contained within these guidelines is provided for reference only. Please refer to your institutional formulary or ordering guidelines when prescribing. © 2020 Boston Children's Hospital. All rights reserved. For permissions contact: [ped@bwh.harvard.edu](mailto:ped@bwh.harvard.edu). Page 1 of 2



# HOSPITALIZATION FOR...



Hypotension at any time



Persistent wheezing or other system involvement without improvement



≥ 3 doses of epinephrine

Gaffney LK, Porter J, Gerling M, Schneider LC, Stack AM, Shah D, Michelson KA. Safely Reducing Hospitalizations for Anaphylaxis in Children Through an Evidence-Based Guideline. *Pediatrics*. 2022 Feb 1;149(2):e2020045831. doi: 10.1542/peds.2020-045831. PMID: 35059724; PMCID: PMC9250079.

20XX



- Hospitalization rate
- Cetirizine use
- Steroid use

Gaffney LK, Porter J, Gerling M, Schneider LC, Stack AM, Shah D, Michelson KA. Safely Reducing Hospitalizations for Anaphylaxis in Children Through an Evidence-Based Guideline. *Pediatrics*. 2022 Feb 1;149(2):e2020045831. doi: 10.1542/peds.2020-045831. PMID: 35059724; PMCID: PMC9250079.

20XX

28.5% → 11.2%

## HOSPITALIZATION RATE

Gaffney LK, Porter J, Gerling M, Schneider LC, Stack AM, Shah D, Michelson KA. Safely Reducing Hospitalizations for Anaphylaxis in Children Through an Evidence-Based Guideline. *Pediatrics*. 2022 Feb 1;149(2):e2020045831. doi: 10.1542/peds.2020-045831. PMID: 35059724; PMCID: PMC9250079.

**Cetirizine:**  
4.2% -> 59.7%

**Corticosteroids:**  
72.6% -> 32.4%

## ADJUNCTIVE MEDICATIONS



**NO INCREASE IN  
72 HOUR REVISITS**

 **CHOOSING WISELY**



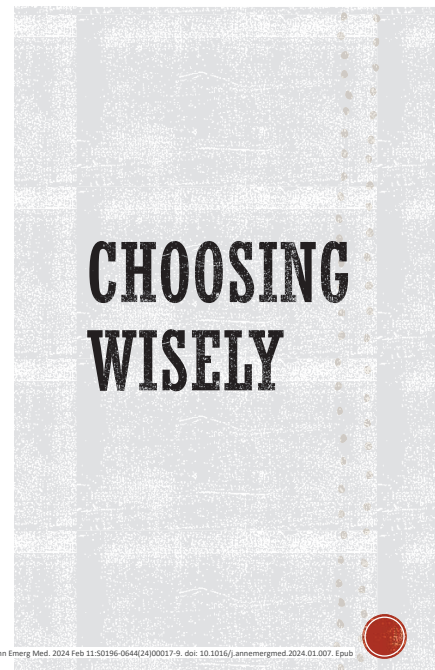
Mullan PC, Levasseur KA, Bajaj L, Nypaver M, Chamberlain JM, Thull-Freedman J, Ostrow O, Jain S. Recommendations for Choosing Wisely in Pediatric Emergency Medicine: Five Opportunities to Improve Value. Ann Emerg Med. 2024 Feb 11;50(196-0644):24(00017-9. doi: 10.1016/j.annemergmed.2024.01.007. Epub ahead of print. PMID: 38349290.

- ~20% of spending on healthcare is attributable to low-value care



- 219 responses from 33 physicians
- 72 -> 25

Mullan PC, Levasseur KA, Bajaj L, Nypaver M, Chamberlain JM, Thull-Freedman J, Ostrow O, Jain S. Recommendations for Choosing Wisely in Pediatric Emergency Medicine: Five Opportunities to Improve Value. Ann Emerg Med. 2024 Feb 11;50(196-0644):24(00017-9. doi: 10.1016/j.annemergmed.2024.01.007. Epub ahead of print. PMID: 38349290.





- Do not obtain radiographs in children with bronchiolitis, croup, asthma, or first time wheezing.



Mullan PC, Levasseur KA, Bajaj L, Nypaver M, Chamberlain JM, Thull-Freedman J, Ostrow O, Jain S. Recommendations for Choosing Wisely in Pediatric Emergency Medicine: Five Opportunities to Improve Value. *Ann Emerg Med.* 2024 Feb 11;50(196-0644):24(00017-9. doi: 10.1016/j.annemergmed.2024.01.007. Epub ahead of print. PMID: 38349290.

## CHOOSING WISELY

- Do not obtain screening laboratory tests in the medical clearance process of pediatric patients who require inpatient psychiatric care unless otherwise indicated

Mullan PC, Levasseur KA, Bajaj L, Nypaver M, Chamberlain JM, Thull-Freedman J, Ostrow O, Jain S. Recommendations for Choosing Wisely in Pediatric Emergency Medicine: Five Opportunities to Improve Value. *Ann Emerg Med.* 2024 Feb 11;50(196-0644):24(00017-9. doi: 10.1016/j.annemergmed.2024.01.007. Epub ahead of print. PMID: 38349290.

## CHOOSING WISELY

- Do not order laboratory testing or head CT for pediatric patients with an unprovoked, generalized seizure or simple febrile seizure who have returned to baseline mental status

Mullan PC, Levasseur KA, Bajaj L, Nypaver M, Chamberlain JM, Thull-Freedman J, Ostrow O, Jain S. Recommendations for Choosing Wisely in Pediatric Emergency Medicine: Five Opportunities to Improve Value. *Ann Emerg Med.* 2024 Feb 11;50(196-0644):24(00017-9. doi: 10.1016/j.annemergmed.2024.01.007. Epub ahead of print. PMID: 38349290.

## CHOOSING WISELY

- Do not obtain radiographs for suspected constipation

Mullan PC, Levasseur KA, Bajaj L, Nypaver M, Chamberlain JM, Thull-Freedman J, Ostrow O, Jain S. Recommendations for Choosing Wisely in Pediatric Emergency Medicine: Five Opportunities to Improve Value. Ann Emerg Med. 2024 Feb 11;50(196-0544):24(00017-9. doi: 10.1016/j.annemergmed.2024.01.007. Epub ahead of print. PMID: 38349290.

## CHOOSING WISELY

- Do not obtain comprehensive viral panel testing for patients with suspected viral respiratory illness

Mullan PC, Levasseur KA, Bajaj L, Nypaver M, Chamberlain JM, Thull-Freedman J, Ostrow O, Jain S. Recommendations for Choosing Wisely in Pediatric Emergency Medicine: Five Opportunities to Improve Value. Ann Emerg Med. 2024 Feb 11;50(196-0544):24(00017-9. doi: 10.1016/j.annemergmed.2024.01.007. Epub ahead of print. PMID: 38349290.

## CHOOSING WISELY



### QUOTE FROM THE JAZZ MASTER CLASS:

“First you master your instrument.

Then you master the music.

Then you forget all about all the *<crap>* you just learned and just play.”

Charlie “Bird” Parker

**THANK YOU AND  
TRAVEL SAFELY!**



**HOPE TO SEE YOU IN 2025!  
JUNE 2-5**

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[annaliseblog.com](http://annaliseblog.com)