OFFICE "EMERGENCIES"

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VE RI TAS
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Conflicts of Interest

- I have none

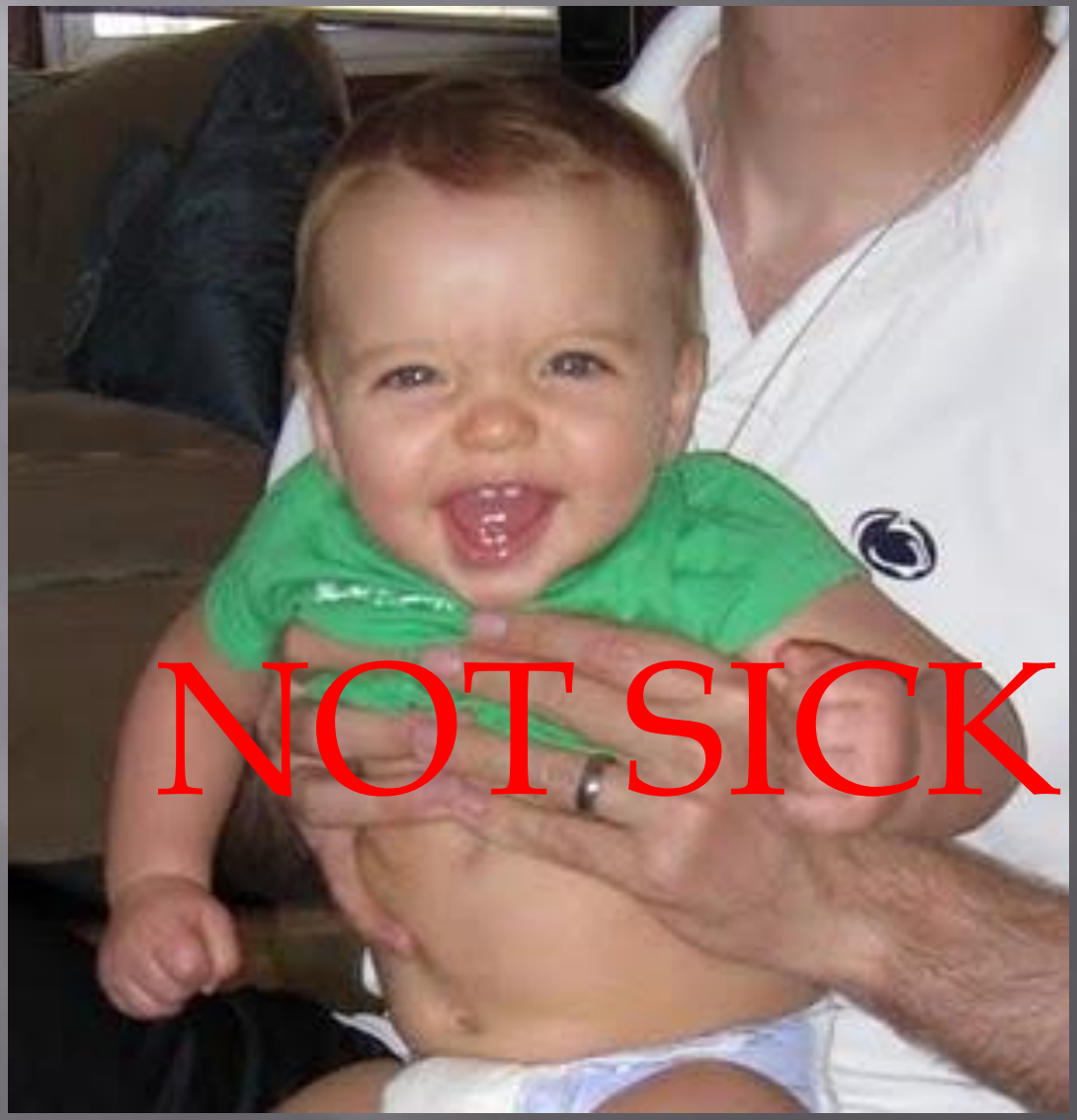
EMERGENCIES ARE IN THE EYE OF THE BEHOLDER


ADVERTENCIA
Children have STRANGLED in loose or partially buckled harness straps. Fully restrain the child even when carrier is used outside the vehicle.
Los niños se han ESTRANGULADO en las correas del arnés sueltas o parcialmente abrochadas. Debe de contener completamente al niño, incluso cuando el portador se utiliza fuera del vehículo.

PED ED

- Pediatric ED attending Coverage 24h 5d/week
- <22 years of age
- 10 rooms >50% still seen in hallways
- About 20k annually down 3%
- 14% admission rate
- RN and APP shortages
- Increased Border and Psychiatric patients
- Unable to accept all transfers

HAPPY WHEEZER




SICK

Be Prepared

- Unannounced Mock Codes RCT- increased written protocols and additional training
  - Pediatrics. 2003 Aug;112(2):291-5. doi: 10.1542/peds.112.2.291. PMID: 12897276
- 2021 multicenter (multi-state) assessment of AAP protocols
  - Mean Emerg Prep Score 75%
    - For seizure 69%
    - For asthma 64%
    - Small and independent practices worse
      - *Pediatrics* September 2021; 148 (3): e2020038463. 10.1542/peds.2020-038463

Question

- What size ambu bag does your practice carry?
- A) none
- B) Infant only
- C) Pediatric only
- D) Adult only
- E) Infant, Pediatric and Adult

Difficulty Breathing

- 5yo presents to the clinic for sick visit. 3 days of URI and cough, now increased work of breathing.
- PMH mild intermittent asthma
- Exam RR 36 sat 94% with mild wheeze diffusely and moderate increased WOB
- What do you do?
  - A) Send to ED via private car
  - B) Send to ED via ambulance
  - C) Give albuterol treatment
  - D) Give albuterol/ipratropium treatment

ASTHMA

- Hard to argue about calling EMS- but you need a plan for acute exacerbations
- Alb or alb/ipr- just start treating
- Should you start steroids?
- What steroid do you use in your office?
  - A) Prednisolone
  - B) Dexamethasone tablets
  - C) IV/IM Dexamethasone
  - D) Methylprednisolone

Onset of action

- Which steroid has a faster onset of action?
  - A) Prednisolone PO
  - B) Dexamethasone PO
  - C) Dexamethasone IM
  - D) Solumedrol IV
  - E) None of the above

  - Onset of action 3-8 hours regardless of route
    - Respiratory Care June 2018
  - High dose not better- Cochrane Database Syst Rev. 2001

Steroids for Asthma

- Use them early and often
- PO and IV equivalent (multiple studies)
  - Oral more cost-effective
- IM if PO not tolerated (Klig '97, Gries '00)
- PO pred similar to dex (Qureshi '01)
- DB RCT Single dose PO dex equal to 5d pred (Altamimi '06)
- No diff in rate of rtn dex v pred (Auger '22)
- Dex- 0.6mg/kg (**Max dose 12mg)**
- 1 vs 2 dose Dex equal (Martin '22)
- Palatability is key (Qureshi '01, Hendeles '03,)
  - Give IV formulation of Dex orally

- PLEASE START THEM IN THE OFFICE

Inhaled Steroids (ICS) for Acute Asthma

- Recent Meta-analysis- J Emerg Trauma Shock. 2020 Apr-Jun; 13(2): 161–166.
  - ICS can be used alone for mild-mod exacerbations
  - ICS + systemic for mod-severe
  - Less hospitalization
- Other studies have shown shorter LOS, less beta-agonists, better FEV1, < pituitary supp
- May work more quickly 2h v 4h
- >4 y mod/severe ICS-formoterol in a single inhaler daily controller and reliever
  - 2020 NIH Asthma Mangt Guidelines
- Consider cost and freq of dosing

Beta-Agonists

- MDI w/spacer is equal or better then neb (Castro-Rodriguez meta-analysis '04)
  - ?Less risk of aerosolizing viral pathogens
  - Biney, Isaac N. et al. CHEST, Volume 165, Issue 3, 653 – 668 March 2024
- Levalbuterol not better then racemic (contrary to initial studies; Qureshi '05, Haradsmalani '05, Ralston '05, Andrews '09)
  - In general, use the least costly
  - ? Utility in those with arrhythmias
- IV unproven benefit-arrhythmias (Cochrane '01)
- Do not forget IM epi Thorax. 2022 Jun;77(6):563-572

MDI:
5kg-10kg: 4 puffs
>10kg-20kg: 6 puffs
>20kg: 8 puffs

Anti-Cholinergics

- ED d/c pts-shorter LOS and # of treatments
  - Pediatrics. 1999 Apr;103(4 Pt 1):748-52. doi: 10.1542/peds.103.4.748. PMID: 10103297.
- Multiple doses better for severe asthma (Plotnick '00, Cleary-Hammarstedt '02, Rodrigo '06, NHLBI report '09)
- Unclear if effective for mild exacerbations
- Not effective once hospitalized (Goggin and Craven '01)

- Give them 3 back-to-back alb/ipratropium

Magnesium

- Conflicting but in severe attacks increase in FEV1 and PEFR (Rowe sys rev '00)
- The DB PCTs looked at **discharge** rate (50% d/c'd) (Ciarallo '00)
- PECARN 2020- No increase in revisit if d/c'd
- May increase hospitalization
  - Schuh *JAMA Netw Open*. 2021
- Dosing 25-75mg/kg max 2g over 20min (in comparison 4-5g/h for preterm labor)

Magnesium:
<13kg: 50-75mg/kg IV over 20 min x1
13-25kg: 1g IV over 20 min x1
>25kg: 2g IV over 20 min x1

Ketamine

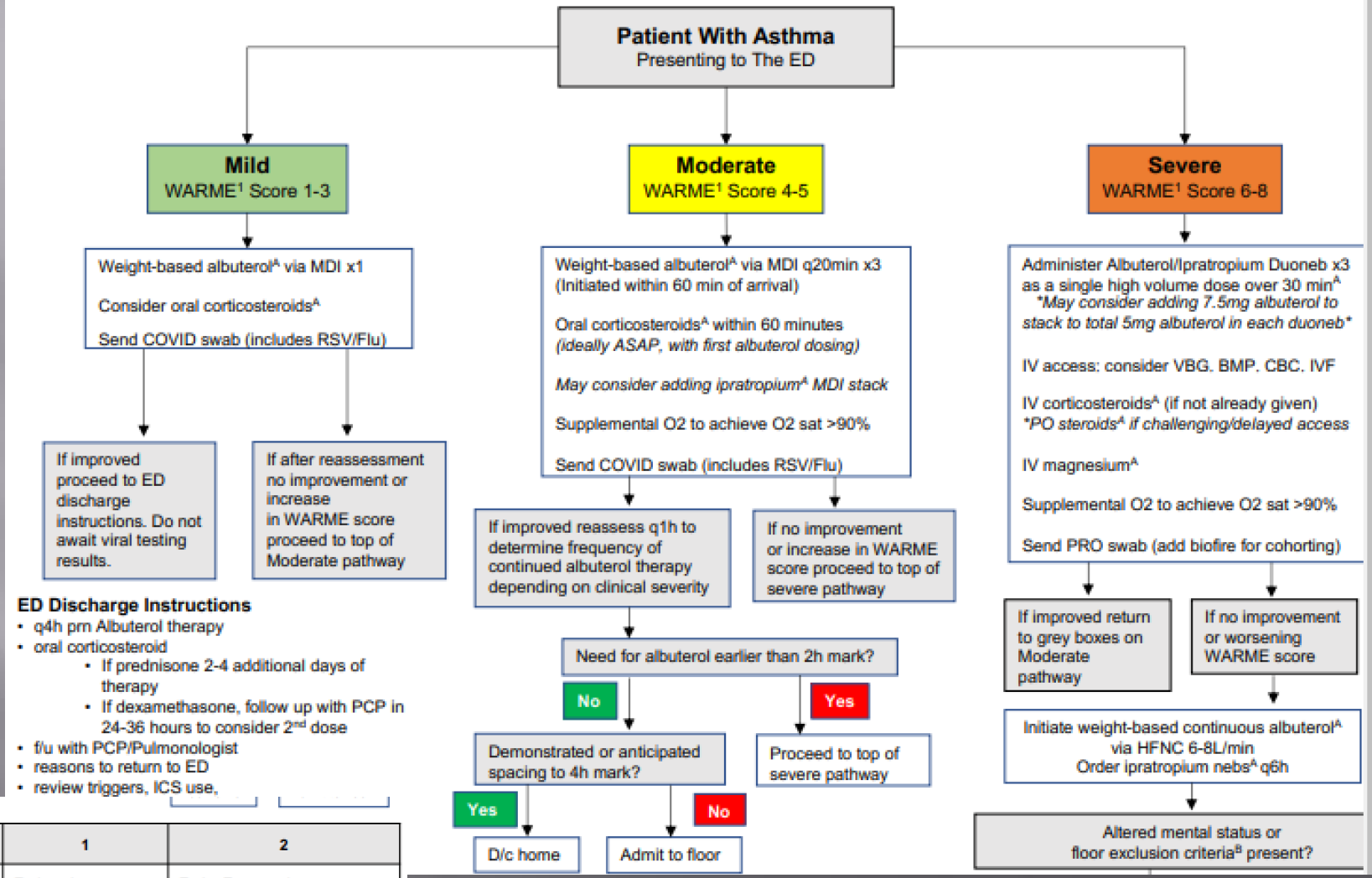
- Has bronchodilatory effects
  - Relative contraindication for sedation
- DB PCT of **low** dose ketamine infusion showed no benefit (Macias '05)
- May be the drug of choice for intubation (Hommedieu '86, '87)

Heliox

- Increases laminar airflow but limited by hypoxia (70/30)
- Conflicting studies (Kim ’05 and Rivera ’06)
- Large volume nebulizer with reservoir
- Minimal adverse effects (voice)
- NHLBI “may consider”

Asthma Clinical Pathway: Acute Phase

Version: 4.0 Revised: Nov 2022



ED Discharge Instructions

- q4h prn Albuterol therapy
- oral corticosteroid
  - If prednisone 2-4 additional days of therapy
  - If dexamethasone, follow up with PCP in 24-36 hours to consider 2nd dose
- f/u with PCP/Pulmonologist
- reasons to return to ED
- review triggers, ICS use,

Table 1: WARME SCALE

	0	1	2
Wheeze	None	End-expiratory	Entire Exp, any Insp
Air exchange	Normal	One area decreased	More than one area decreased
RR	Normal	Tachypneic	–
Muscle use	None	Subcostal/Intercostal	Any neck or abd retractions
Expiration	Normal	Exp > 3x Insp	–

Case: 9 year old with hives

- A 9 year old is brought to the office for hives that started 30 minutes ago after she ate candy

PE: afebrile, Sat 97%, RR 20 HR 120, BP 110/62

- Alert, anxious, with obvious hives on face and extremities
- HEENT: No angioedema
- PUL: Clear, no wheeze
- EXT: cap refill normal

- What would you do?

What would you do first?

- A. EPI SQ
- B. EPI IM
- C. Antihistamines
- D. Steroids
- E. H2 Blockers
- F. Send them to the ED

9 year old with hives (updated scenario)

- A 9 year old is brought to the office for hives that started 30 minutes ago after she ate candy, now complaining of abdominal pain
- PMH: Asthma
- PE: afebrile, Sat 97%, RR 20 HR 120, BP 110/62
  - Alert, anxious, with obvious hives on face and extremities
  - HEENT: No angioedema
  - PUL: Clear, no wheeze
  - EXT: cap refill normal
- Vomits on your shoes
- What would you do?

What Do You Do First?

- A. EPI SQ
- B. EPI IM
- C. Antihistamines
- D. Steroids
- E. H2 Blockers
- F. Send to the ED

9 year old with hives (Updated Scenario)

- A 9 year old female is brought to the office for hives that started 30 minutes ago after she ate candy
- PMH: Known peanut allergy, asthma
- PE: afebrile, Sat 97%, RR 20 HR 160, BP 110/62
  - Alert, anxious, with obvious hives on face and extremities
  - HEENT: No angioedema
  - PUL: Scattered wheeze
  - EXT: Cap refill normal
- What would you do?

What Do You Do First?

- A. EPI SQ
- B. EPI IM
- C. Antihistamines
- D. Steroids
- E. H2 Blockers
- F. Send to the ED

https://www.aaaai.org › Aaaai › media › MediaLibrary › 2015-Anaphylaxi...

Epinephrine and Anaphylaxis

- Early tx decreases late-phase reaction (Lee '00, Lane '07) (up to 20%, high risk-severe, multi-dose, poor response)
- 54% got epi vs. 78% steroids, 92% anti-histamine (Russell '10)
- School nurses administered epinephrine 69% of the time while EMS providers only 36% Prehosp Emerg Care. 2014
- Inhalation of Epi not effective (Gu '00)
- IV epi only with arrest or severe hypotension (Lieberman '05)
- Only 25-63% pts sent home with epi auto-injector (Clark '05, Russell '10)
  - Rx 2 devises

Anaphylaxis is highly likely when any one of the 3 criteria are fulfilled:

1. **Acute onset of an illness (minutes to several hours) with involvement of the skin, mucosal tissue, or both (eg, generalized hives, pruritus or flushing, swollen lips-tongue-uvula)**

AND AT LEAST ONE OF THE FOLLOWING

a. Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced PEF, hypoxemia)

b. Reduced BP or associated symptoms of end-organ dysfunction (eg, hypotonia [collapse], syncope, incontinence)

Anaphylaxis is highly likely when any one of the 3 criteria are fulfilled:

- 2. **Two or more of the following that occur rapidly after exposure to a likely allergen for that patient (minutes to several hours):**
- a. Involvement of the skin-mucosal tissue (eg, generalized hives, itch-flush, swollen lips-tongue-uvula)
- b. Respiratory compromise (eg, dyspnea, wheeze-bronchospasm, stridor, reduced PEF, hypoxemia)
- c. Reduced BP or associated symptoms (eg, hypotonia [collapse], syncope, incontinence)
- d. Persistent gastrointestinal symptoms (eg, crampy abdominal pain, vomiting)

Anaphylaxis is highly likely when any one of the 3 criteria are fulfilled:

- **3. Reduced BP after exposure to known allergen for that patient (minutes to several hours):**
- a. Infants and children: low systolic BP (age specific) or greater than 30% decrease in systolic BP (70 + agex2)
- b. Adults: systolic BP of less than 90 mm Hg or greater than 30% decrease from that person's baseline
- Caveat: those with known severe rxn
- They have high sensitivity (96.7%), reasonable specificity (82.4%), and a high negative predictive value (98%) Sicherer 2017

Infants are different

- Not validated in infants
- Hypotension late finding of CV compromise
- Difficult to assess incontinence, throat closing, cause of crying
- Less often a known allergy

- May need to consider tachycardia and other more subtle symptoms

Anaphylaxis and Steroids

- No benefit for acute anaphylaxis
- 50-75% get rx at d/c from ED
- No proven benefit at preventing late-phase reaction (Sampson and Lieberman ’06)
- Cochrane Rev ’10 – no good studies (Choo)
- No placebo-controlled trials
- Recommend against use Resuscitation. 2021 Apr 23;163:86-96
- ? Benefit for asthmatics or steroid deficient (Cydulka ’88)
- Will use with hx of late phase rxn or really sick

Common Scenario

- Clear case of anaphylaxis prior to arrival.
- No epi given (maybe just Benadryl)
- Now 30min post reaction and symptoms have improved, still few urticaria
  - Tachycardia (before epi-CV effect)
- Do you administer EPI? How long do you watch them (if at all)?
- Stabilizes mast and basophils via β2 receptor
  - Longer observation w/o epi?
  - Low threshold to administer

Case

- 2yo brought into the office after swallowing a penny 30min ago (2pm). No choking or cyanosis at time of ingestion. Now has no symptoms.
- What do you do?
  - A) Send them home
  - B) PO trial
  - C) Send for CXR
  - D) Send them to the ED

Case Cont'

- Xray obtained shows FB in the stomach.
- What do you do?
  - A) Send them to the ED
  - B) Send them home with bowel regiment
  - C) Ask them to strain the stool for the FB
  - D) Reassure

Anecdote: Colleague's kid in fellowship swallowed to quarters them out earning him the nickname?

Case Adjusted

- 2yo brought into the office after choking on a penny 30min ago (2pm). Initially choking but no cyanosis at time. Now is drooling and looks distressed.
- What do you do?
  - A) Send them home
  - B) PO trial
  - C) Send for CXR
  - D) Send them to the ED

Case Adjusted

- 2yo brought into the office after gagging on a peanut 30min ago (2pm). Initially choking but no cyanosis at time. Now has a mild cough and ? crackles right side.
- No known allergies
- What do you do?
  - A) Send them home
  - B) PO trial
  - C) Send for CXR
  - D) Send them to the ED

Case Adjusted

- 2yo brought into the office after gagging on a "something" this morning. Initially choking but no cyanosis at time. Now complaining of throat pain.
- You get this CXR

Based on this film you…

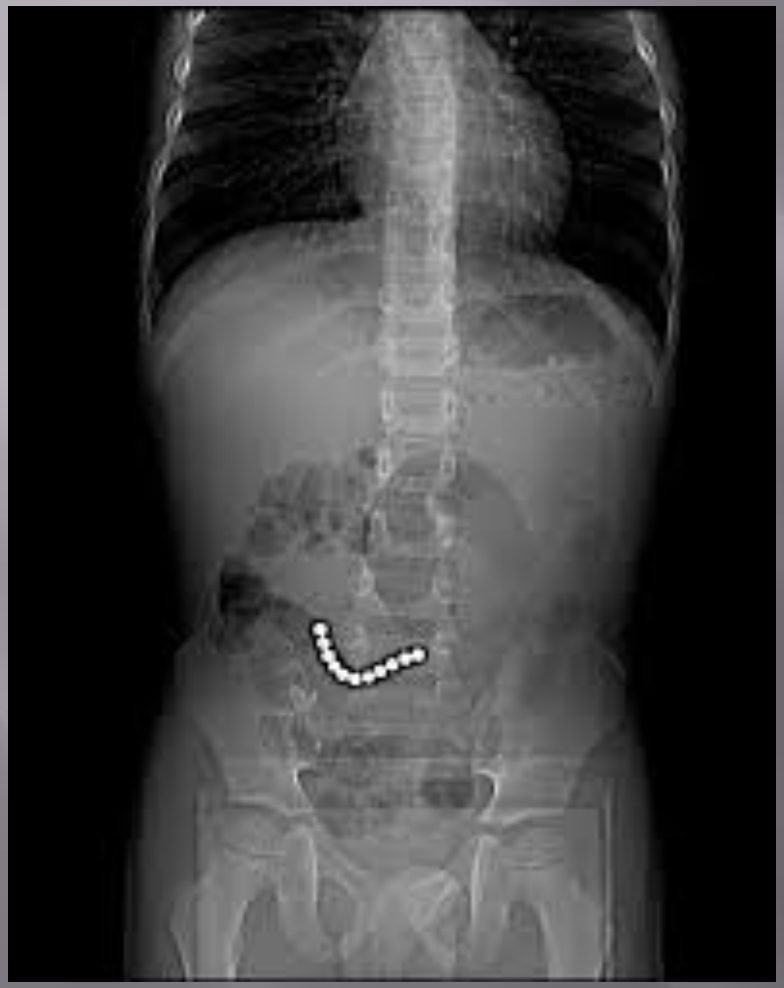
- A) Reassure that it will often pass but need repeat film in several hours
- B) PO to see if it will help pass then repeat film
- C) Send to the ED for emergent procedure
- D) Send to ED for GI consult

Need some more info?

Does this view change you mind…

- A) Reassure that it will often pass but need repeat film in several hours
- B) PO to see if it will help pass then repeat film
- C) Send to the ED for emergent procedure
- D) Send to ED for GI consult

Worisome FB?



- A) Yes
- B) No

Ingested FB

- Blunt small items will likely pass as long as pass esophagus
- Sharp items usually need to be extracted although many would pass
- Disc type batteries-most lethal due to its electrical discharge current that causes tissue burn and liquefaction necrosis within 2–3 hours of ingestion.
- Multiple magnets = BAD
- Most objects < 1 inch (2-3cm) will pass
  - *Pediatr Ann*. 2001;30:736-42

Aspirated Foreign Body

- Reasons for bronchoscopy for FB
- A) Witnessed choking episode
- B) Exam findings- cough, wheeze, rales or any distress
- C) Focal Findings on CXR (PNA, hyperinflation, atelectasis)
- D) Nuts and Seeds higher risk

Case: 1 year old with a seizure

- Previously well 1 year old female brought to the office for fever to 104 since last night
- Placed in an examination room by staff and begins to seize (generalized tonic-clonic)
- PE:
  - Actively seizing in mother's arms, eyes rolled up
  - Appears to be hypo-ventilating, lips are blue
  - Delayed capillary refill
- What would you do?

Immediate Issues:
- Seizing
- Febrile
- Airway/Breathing
- Circulation

1 year old with a seizure (Febrile Seizure)

- Assess-Seizing and cyanotic
- Activate Rapid Response
  - Who should come?
  - What is needed? (code bag?)
  - What to tell EMS?
- Initiate treatment-Resp Support
- ETA for EMS = 5 minutes
- Reassess = seizure stops, color improves, somnolent, RR 28, very warm to touch
- Further treatment? Treat the fever!

Immediate Issues:
- Seizing
- Febrile
- Airway/Breathing
- Circulation

Benzodiazapines

- Do you stock one in your office/practice?

- A: Lorazepam
- B: Midazolam
- C: Diazepam
- D: None

IN Meds

- Who stocks IN meds for seizure?
- A) Yes
- B) No

Seizure Medications

- Oxygen by 100% NRB (multiple sizes)
- IV/IM/IN Benzodiazepine (may repeat)
  - Lorazepam IV (0.1mg/kg) Max 4mg
    - Lorazepam- longer sedation (recovery) (Chamberlain, 2014)
  - Midazolam IM (0.2mg/kg) Max 10mg (Best non-IV)
  - Midazolam also buccal, IN (W/ATOMIZER) (Nayzilam >12y)
    - IN Midaz as fast Diazepam rectal J Pediatr Pharmacol Ther. 2013 Apr;18(2):79-87
    - IN and Buccal most cost-effective Epilepsy Curr. 2018 Jan-Feb;18(1):27-28
  - Diazepam IV (0.2mg/kg) Max 8mg
    - Diazepam short anti-epileptic effect
  - Diazepam IN (Valtoco 6-11y) is effective and now available
    - Slower peak but lasts longer
  - Neurotherapeutics. 2023 Apr;20(3):758-766, NeurologyLive June 2021 Volume 4 Issue 3
- Rectal Benzodiazepine
  - Diazepam (Diastat) 0.5mg/kg:1-5y, 0.3mg/kg:6-11y, 0.2mg/kg: >11y. MAX 20mg 2-10min for effect

Case: Unresponsive In Bathroom

- 16yo male routine well child visit, had oral surgery 2 weeks ago, you hear “HELP”
- Slumped on floor of bathroom.
- HR 50, RR 4, dusky lips and unresponsive
- What is the likely diagnosis?
- A: Seizure
- B: Toxicologic
- C: Vasovagal Syncope
- D: Trauma

Unresponsive Teenager

- Start PALS/CPR
- Activate 911
- Get out of bathroom
- Administer Naloxone (Narcan)
- Check a glucose

Do You Have Naloxone?

- A: Yes
- B: No

Consider Naloxone

- Many ODs in medical settings
- On the rise in US, MA
  - 2016 1800+ deaths, 2x national avg
- Intranasal 4mg and autoinjectors 0.4mg
  - Equal effective
- Lay people (schools) and first responders are carrying
- THIS COULD HAPPEN TO YOU!

Case

- 2 yo presents with foreign body in their nose. Having clear nasal drainage. No bleeding. No resp symptoms.
  - What do you do?
  - A) Send to the ED
  - B) Refer to outpatient ENT within 1 week
  - C) Attempt removal in office
  - D) Depends on what it is, where it is etc

Nasal Foreign Bodies

http://www.momwithastethoscope.wordpress.com

Indications:

- All nasal foreign bodies should be removed

Contraindications/Refer:

- Penetrated cranial vault
- Tissue damage and necrosis
- Inability to remove

Equipment

- Alligator Forceps

- Parent's Kiss
  (Self-Inflating bag)

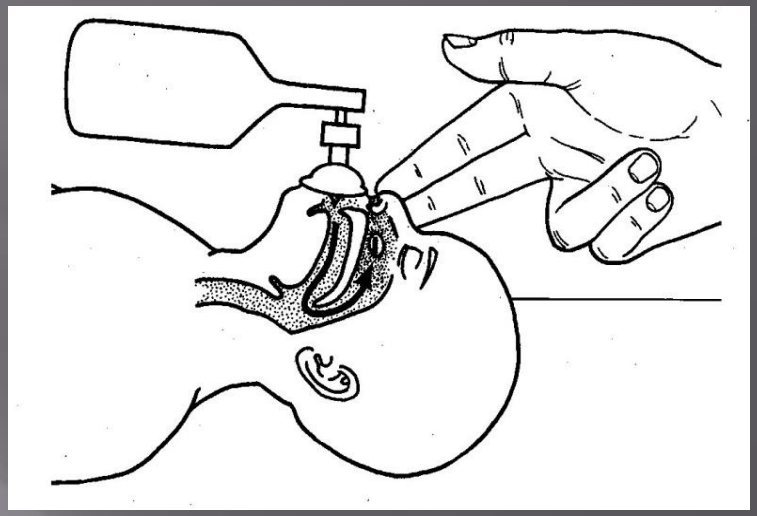
- Katz Extractor

Who has performed the “Big Kiss” in their office

- A) Yes
- B) No

Parent's Kiss: Technique

- Equipment
  - Self-inflating bag or parent
- Procedure
  - Obstruct uninvolved side
  - Place bag-mask over the mouth
  - Or parent can blow into child's mouth (*have forceps ready)
  - Foreign body "pops" out nare
  - 60% success rate
    - CMAJ. 2012 Nov 20;184(17):E904-12
- Older child can "blow"



King. *Textbook of Pediatric Emergency Procedures* 2000.
Botma et al. *Journal of laryngology and otology*. August 2000.

Katz Extractor: Technique

http://www.inhealth.com/katz/aboutkatz.htm

Choosing a method

- Good seal-big kiss
- Space around or through
  - Consider other methods
- If big kiss fails consider oxymetazoline (Afrin)
- Hard objects difficult to grab with alligator try bayonet
- Katz usually quicker

Post Procedural Care

- Look for retained foreign body or signs of trauma
- Inspect the other nasal canal and ears for foreign bodies
- Warn parents to expect epistaxis

http://www.emed.ie/HE-ENT/ENT/Mothers_Kiss.php

REMEMBER

- Unilateral nasal discharge is a FB until proven otherwise!

EQUIPMENT – What is correct?

EQUIPMENT:
Emergency Supplies

- AIRWAY
  - 02 delivery system
  - Bag-valve mask
  - Oxygen masks (sizes)
  - Suction device
  - Nebulizer
  - Oropharyngeal airways
  - Pulse oximeter
- VASCULAR ACCESS
  - Butterfly needles
  - IV catheter
  - Arm boards, tape, tourniquet
  - Intraosseous needles/drill
  - IV tubing

Committee on Pediatric Emergency Medicine. "Preparation for Emergencies in the Offices of Pediatricians and Primary Care Providers." Pediatrics 2007: 120(1):2000-212.

EQUIPMENT:
Emergency Supplies

- MISCELLANEOUS
  - Broselow® tape
  - Backboard
  - Blood pressure cuffs (sizes)
  - Splints, sterile dressings
  - AED
  - Spot glucose test
  - Stiff neck collars

Committee on Pediatric Emergency Medicine. "Preparation for Emergencies in the Offices of Pediatricians and Primary Care Providers." Pediatrics 2007: 120(1):2000-212.

EQUIPMENT:
Emergency Medications

- ESSENTIAL
  - Oxygen
  - Albuterol
  - Epinephrine 1mg/ml (1:1,000)
    (anaphylaxis/croup)
    -croup <4y 2.5ml, ≥ 4 5ml
- STRONGLY RECOMMENDED
  - Antibiotics (Ceftriaxone)
  - Anticonvulsants (Benzodiazepine)
  - Corticosteroids
  - Diphenhydramine
  - Epinephrine 0.1mg/ml (1:10,000)
    (cardiac resuscitation)
  - Fluids (NS, D51/2NS,
  - 25% dextrose, oral rehydration solution)

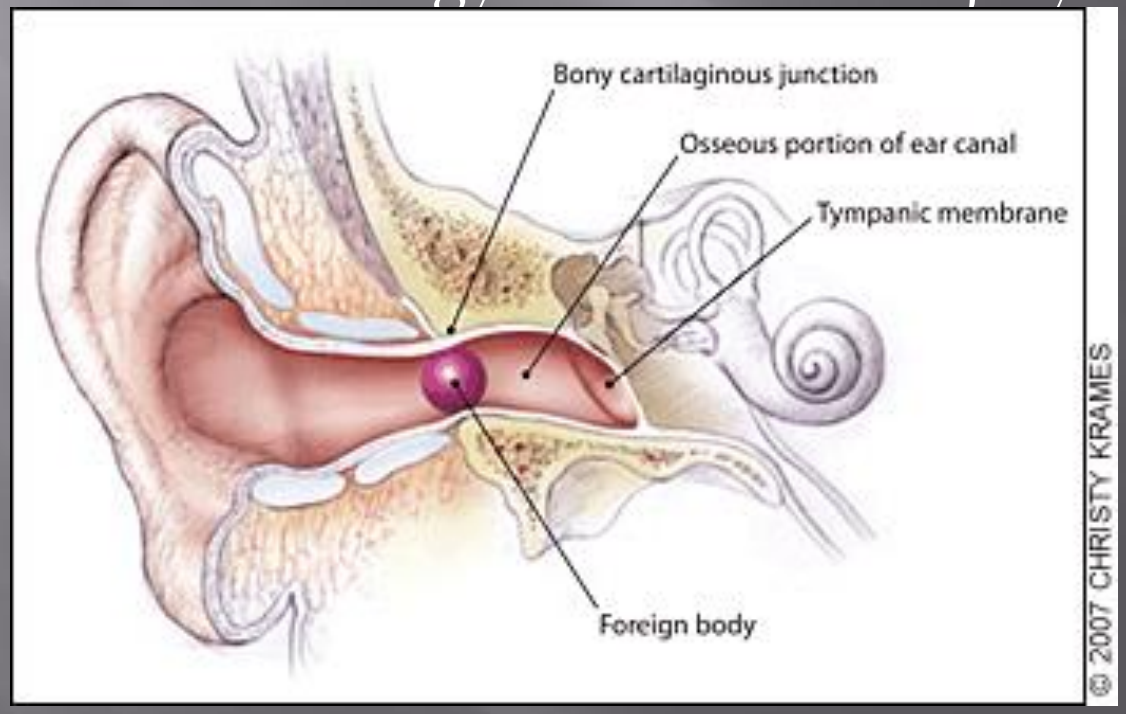
QUESTIONS?

ENT Procedures

Emergencies because sent to ED

Ear Foreign Bodies

- Indications
  - All aural foreign bodies should be removed
  - Emergent removal rarely needed (insect, penetrating, battery)
  - Consider audiology if concern for injury



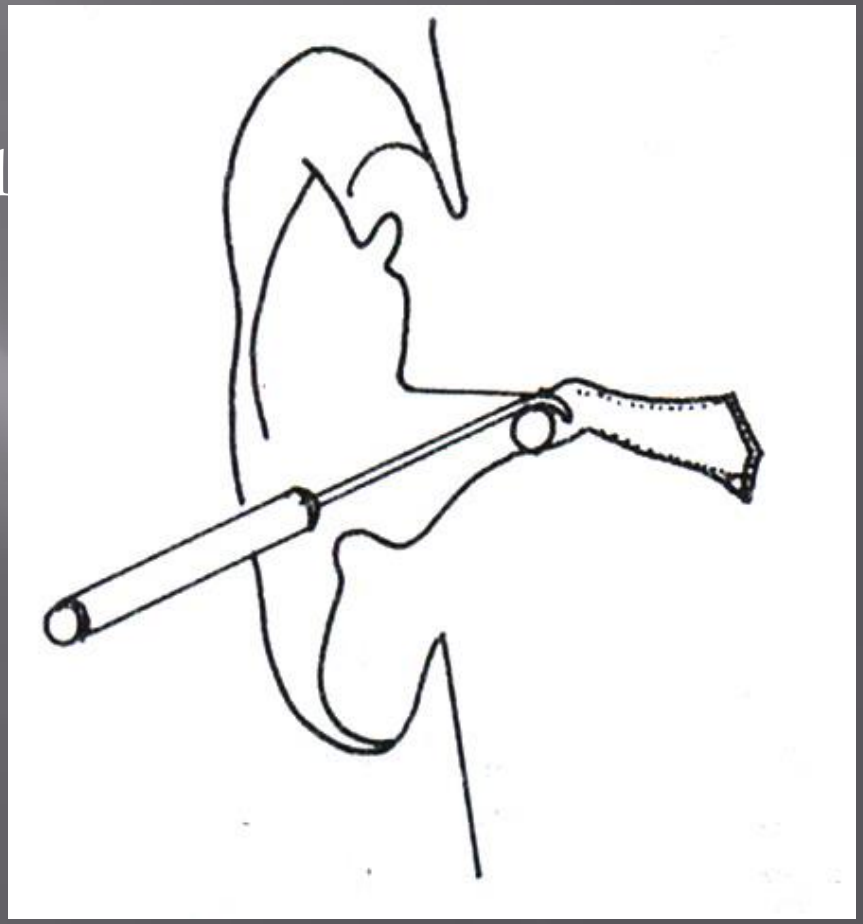
Equipment

- Use available equipment
  - Ear curettes
  - Molded paper clips
  - Ear irrigation equipment
  - Forceps
  - Skin adhesive on a cotton tip applicator
- Tailor equipment to type of foreign body

http://www.claflinequip.com

Beads or Solid Foreign Bodies

- If hole
  - Insert hook into hole and remove
- If no hole
  - Use hook to go beyond the object and work it forward
  - If cannot pass removal device beyond consider tissue adhesive



http://chandrajayasuriya.com/?q=node/28

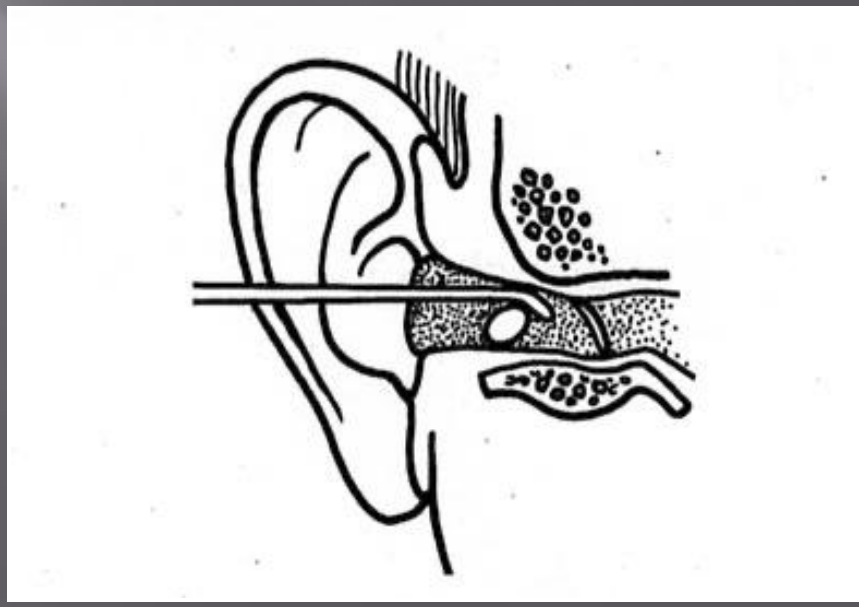
Tissue Adhesive

- Use for a foreign body with a smooth surface that is difficult to get a hook behind
- In cooperative patients only
  - Don't add to the problem!

http://academiclifeinem.com/trick-of-the-trade-ear-foreign-body/

Food or Paper

- Use a hook or ear curette
- Irrigation should be avoided
- May cause it to swell (food) or stick to sides (paper)



King. *Textbook of Pediatric Emergency Medicine Procedures* 2000.

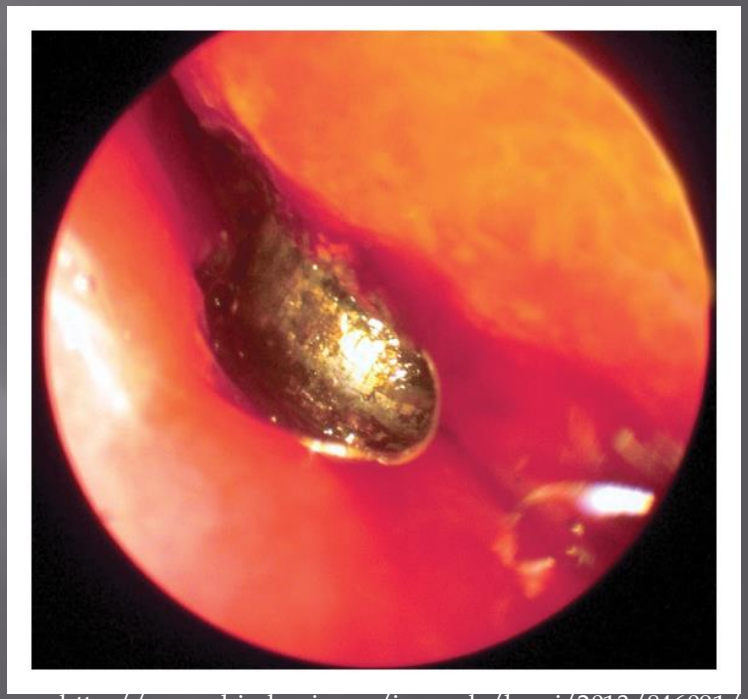
Insects

- If alive
  - Mineral oil or viscous lidocaine to kill the bug
  - Irrigation to flush out bug
- If dead
  - Irrigation to flush out bug
- Avoid forceps
  - Bug may break into several pieces

http://bestpractice.bmj.com/best-practice/monograph/434/resources/image/bp/4.html

Special Considerations: Button Batteries

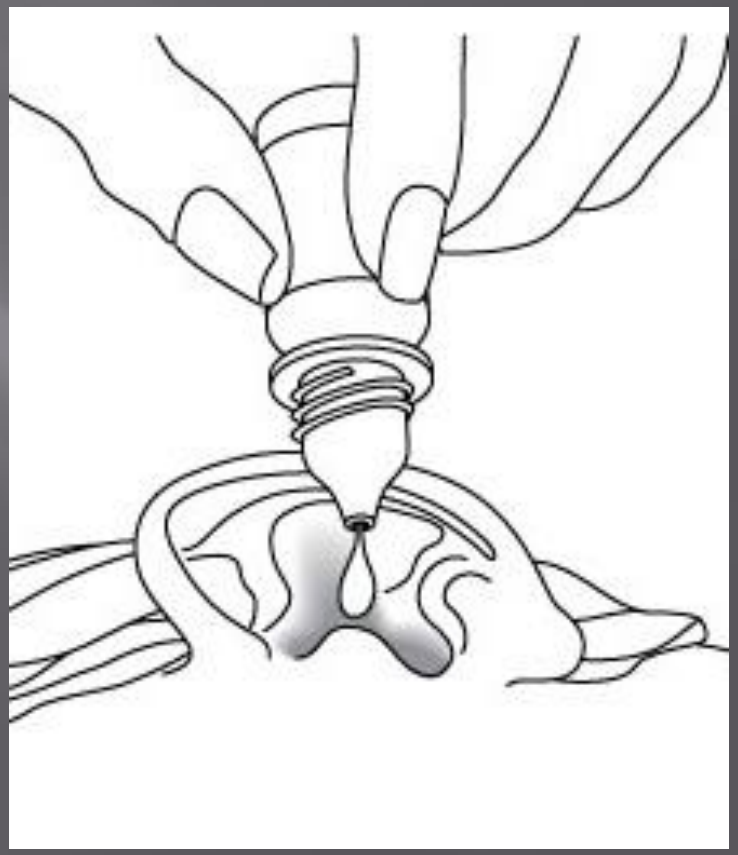
- Require emergent removal and referral
- Risk of liquefaction necrosis
  - Releases current → burns
  - Leak of alkaline electrolyte solution from battery
- Avoid irrigation or drops



http://www.hindawi.com/journals/bmri/2013/846091/

Post Procedural Care

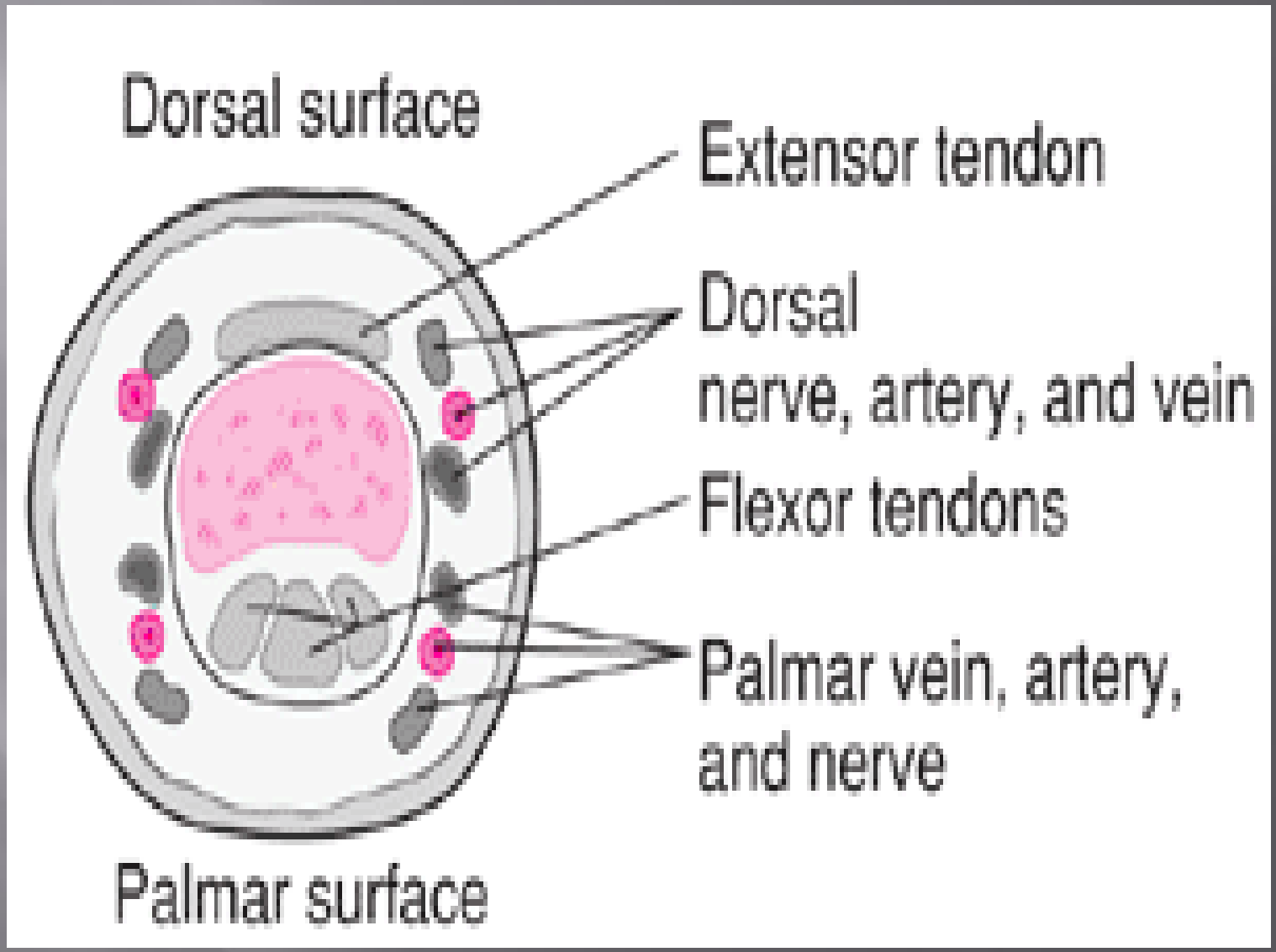
- Check other ear for foreign bodies
- Consider antibiotic drops
  - Indicated with trauma to ear canal
  - ± Topical steroid
- ENT referral
  - Ruptured TM
  - Significant trauma during procedure
  - Inability to remove object



Extremity Procedures:

A 2 month-old female comes to your office with a red, swollen right 4th toe. The mother has long blond hair and thinks there is a strand of it wrapped around it. They tried to remove it at home unsuccessfully with tweezers and now come to you for help.

Hassoun, 2012


Dorsal surface
Extensor tendon
Dorsal
nerve, artery, and vein
Flexor tendons
Palmar vein, artery,
and nerve
Palmar surface

King, 2007

Equipment

- Topical (EMLA®) or regional anesthesia
- Povidone–iodine solution
- Scalpel blade with handle (no. 11)
- Fine-tip forceps
- Blunt probe or Ear curette
- Fine-tip scissors
- Protective dressing
- Magnification

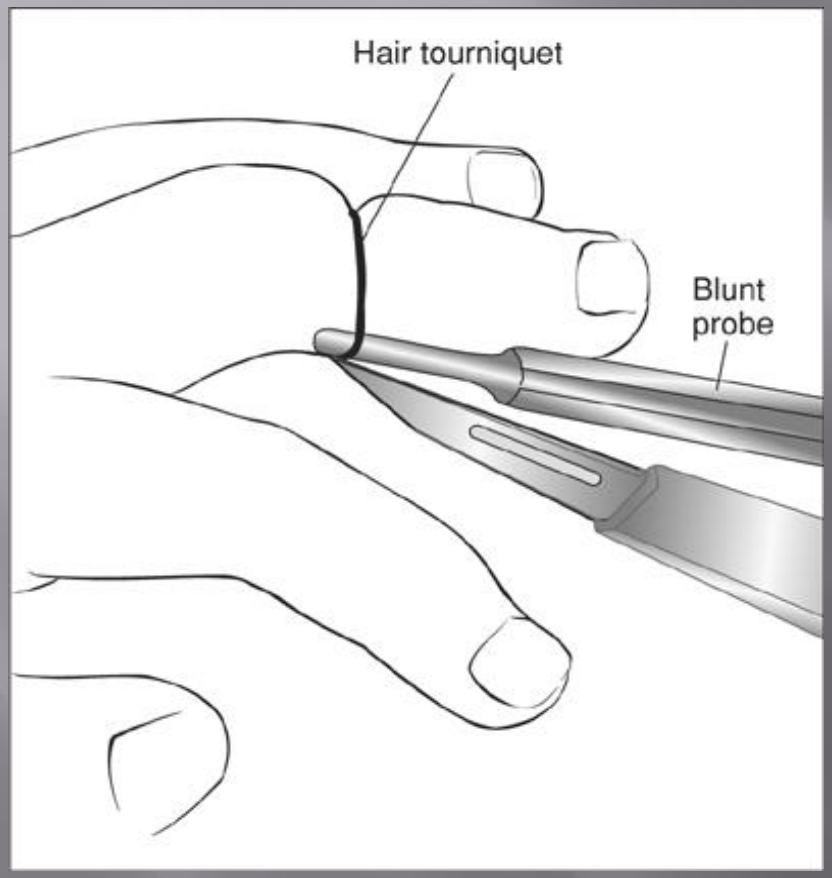
Technique

- Apply anesthetic

Approaches (3)

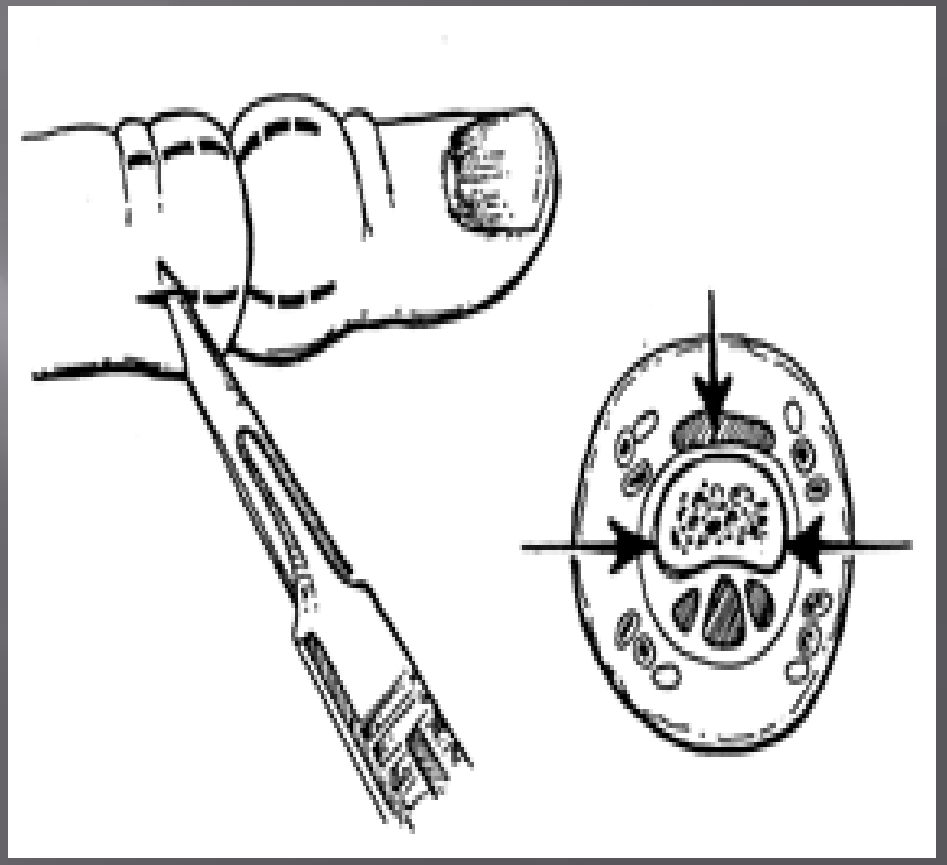
- Hair remover
- Nonsurgical removal
- Surgical removal

Nonsurgical



King, 2007

Surgical



King, 2007

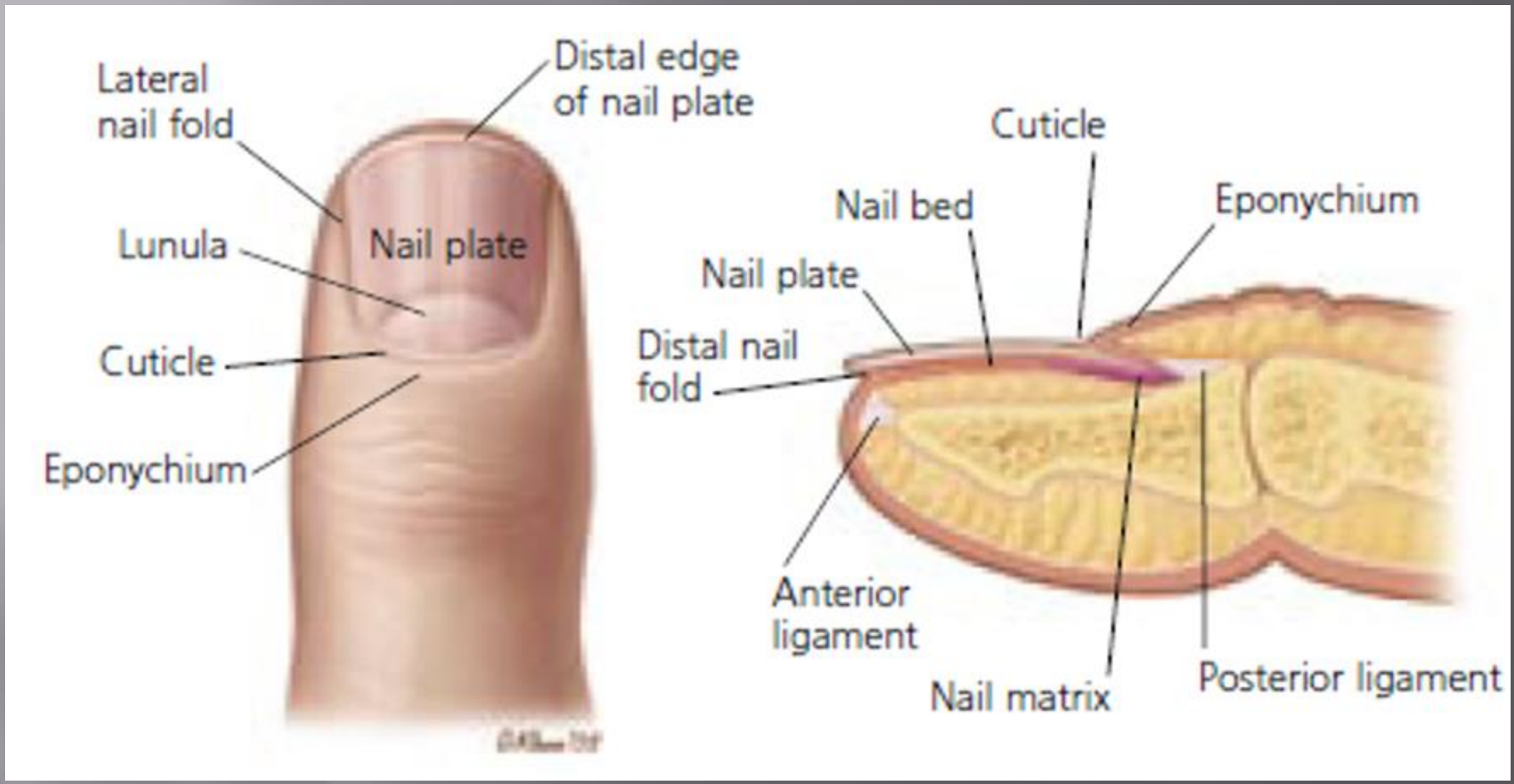
Complications

- Damage to neurovascular bundle or tendons, incision site infection

After Care

- Passive drainage
- Ensure improvement in swelling.
- Assess NV status and tendon function
- Tetanus ppx if indicated.
- Reevaluation in 24 hours- ensure that all constricting bands have been removed, perfusion has improved, and infection has not occurred.

A 7-year-old boy developed a subungual hematoma of the right index finger after getting it stuck in the car door.


Lateral nail fold
Distal edge of nail plate
Lunula
Nail plate
Cuticle
Eponychium
Cuticle
Nail bed
Eponychium
Nail plate
Distal nail fold
Anterior ligament
Nail matrix
Posterior ligament

Equipment

- Regional anesthesia
- Restraints (as needed)
- Povidone–iodine solution
  - (NOT ALCOHOL)
- Electrocautery device
- paper clip, butane lighter, and a hemostat
- 18g needle
- scalpel blade w/ handle (no.11)
- Protective dressing

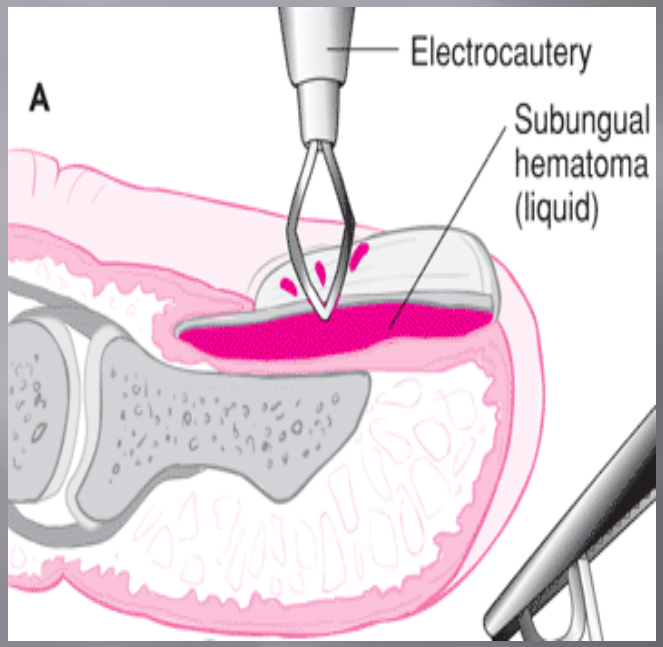
Technique

- Digital block (if needed, rare)

Approaches

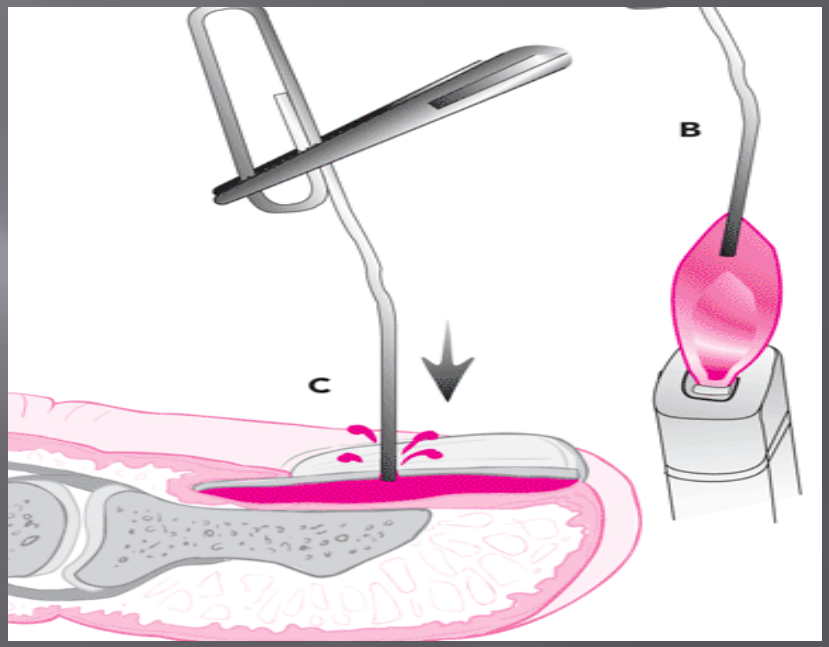
- Trephination
- 18g needle tip
- Heated paper clip
- Scalpel

Trephination



King, 2007

Paperclip



King, 2007

Complications

- bleeding, infection

After Care

- soak the digit in warm water three times daily for 2 days, redressing it after each soak.
- fracture care
- anticipatory guidance- blood may continue to ooze for 1-2 days; the discoloration under the nail can persist days-weeks; the nail may fall off, and if so, it will take at least 3-4 months to grow in.

Thank You

- This is a unprecedented time in Pediatric Emergency Medicine
- This is not just locally but nationally and internationally
- We are all in this together and trying the best we can to care for all sick children
- Please contact me with questions (or positive experiences) ACohen7@partners.org

CASE

- 6mo old first time wheezing. 1 day of URI and 101 fever. Drinking fairly well.
  - No PMH, FHx- aunt w asthma
  - PEx Mild tachypnea (40's), mild retractions, diffuse rhoncherous sounds. Sats 93% RA
- A. Trial Beta-agonists
- B. Steroids
- C. Saline Neb
- D. A or C
- E. None of above

CASE Continued

- What else would you do?
- A. PO trial
- B. CXR to r/o PNA
- C. Give O2
- D. Admit or transfer to admit
- E. None of the above

AAP Guidelines 2014

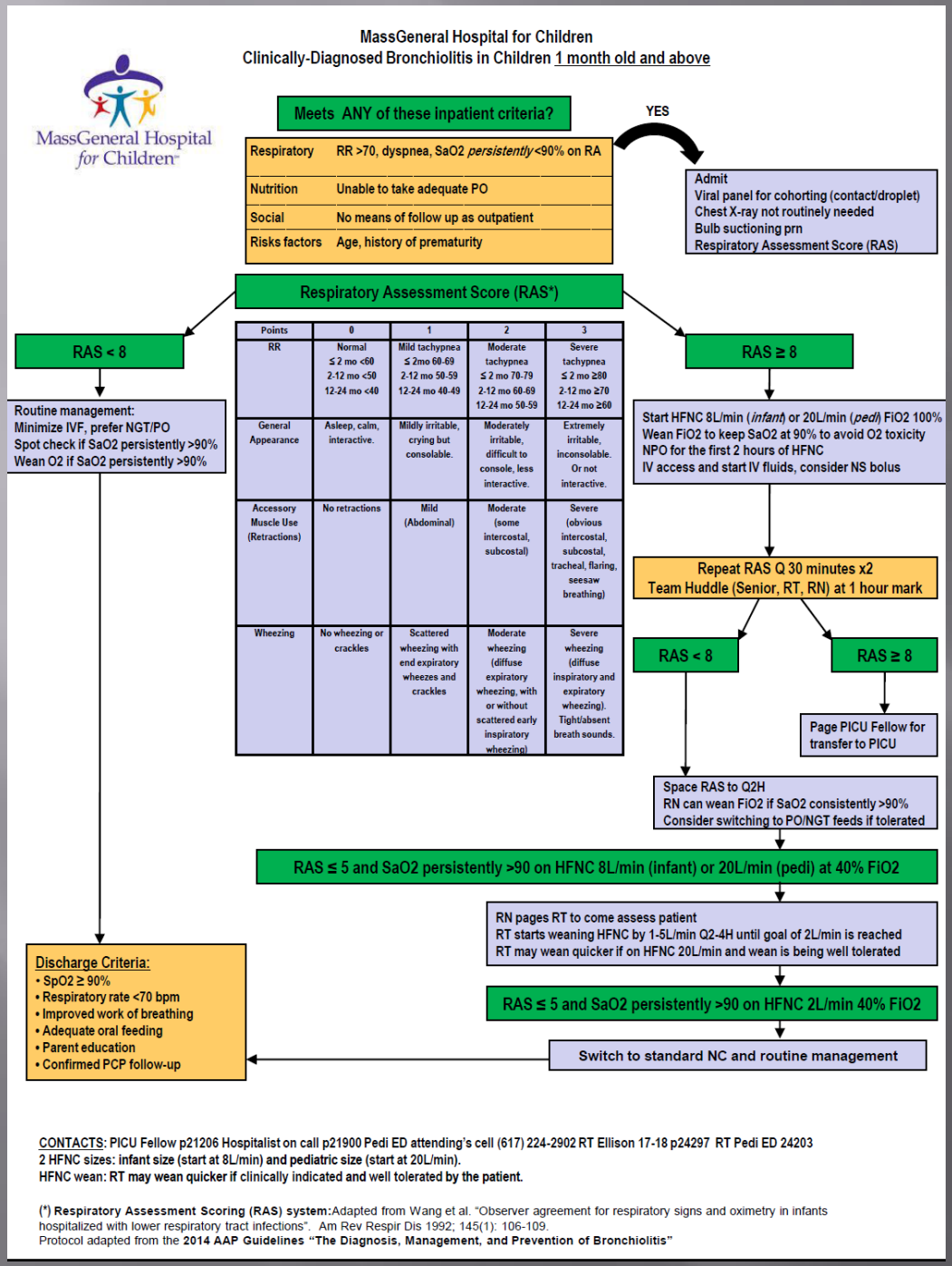
- Risk of severe disease
  - <12 weeks of age, Prematurity, Cardiopulm dz, immunodeficiency
- Supplemental O2 for sat persistently < 90%
- Assess hydration status
- Bronchodilators should **not be** used
- NO Hypertonic saline in ED
- NO Chest PT
- NO Abx

Ralston 2014 *Pediatrics*

Dispo to Home

- Dispo home if not high risk
  - Not distressed
  - Not “significantly” hypoxic
  - Able to PO
  - Adequate follow up
- No steroids
- No X-rays
- Rarely beta-agonists

The threshold must change!
Can not admit for observation as there are no beds.
Watch more at home!



You Get:

Decrease Abx-Wilson 2002

Shorter LOS- Bryan 2017

Lower cost- Bryan 2017

Decrease Beta-agonist use
Mittal 2014

Decrease CXR- Mittal 2014

Decrease Steroid use-Mittal 2014

- You Need:
- Objective Scoring
- Admit or D/C Criteria

NO INCREASE IN READMIT

High Flow Nasal Canula

- Infant vs child rate of flow (8 v 20 L/min max)
  - Titrate % O2
  - 1L/Kg/min
- Mechanism- 1) reduce resistance 2) decrease dead space 3) CPAP effect 4) less gas dilution
- Need a way to measure effect
- RCT 2018 less escalation of care

  N Engl J Med. 2018 Mar 22;378(12):1121-1131. doi: 10.1056/NEJMoa1714855.
- 2019 Systematic review (9 RCTs)
  - No differences in length of stay, duration of oxygen therapy, ICU transfer, intubation rate, respiratory rate, SpO_2 and adverse events
  - Less tx failure than O2 and more than CPAP
  - Lin J, High-flow nasal cannula therapy for children with bronchiolitis: a systematic review and meta-analysis. *Arch Dis Child.* 2019;104:564–76.
- Safe for use on pediatric floors
- May increase LOS (1.5 v. 1.8d)-*JAMA.* 2023;329(3):224-234. doi:10.1001/jama.2022.21805
- Rescue therapy

From *PEDIATRICS* 1965

- Since acute viral bronchiolitis is thus a self-limited disease of relatively good prognosis, the principle of primum non nocere should temper frustrated anxiety to do something-anything-to relieve severe dyspnea. Simple physical exhaustion may determine the fate of an infant laboring to meet his metabolic requirements for oxygen. His energies should not be frittered away by the annoyance of unnecessary or futile medications and procedures.

- *Wright and Beem, Pediatrics 1965;35;334*