Pediatrics for Emergency Physicians Network
Instructor Guide

Session I : Introduction / Basic Pediatrics for Emergency Physicians

Teaching points to be driven home :

1. **89% of pediatric patient ED visits in the U.S. are seen by EM (ie-non-P EM) physicians In community ED's (ie-NOT Pediatric ED's), but only 15- 25% of an individual MD's pts**
2. **What is the main difference between evaluating a child vs an adult pt in the ED ?**

Pretest probability of serious illness :
ADULTS : High ---→ Focused, brief H&P --→ lots of testing ---→ + results
CHILDREN : Low --→ Most ED pts lack serious disease --→ tests not useful

CLINICAL DILLEMA :

Mixed in with all those kids coming to ED who are well-appearing without any sig. PMH and the usual acute complaints (ie- fever, respiratory illness, vomiting, etc), There is one or two pts who are really really sick and in the early stages of their illness they look EXACTLY the same as all those other kids who are well.

So how do you screen out that sick kid ?

Labs/ Imaging ---→ Not useful ; because :

1) **Not cost effective or efficient, since vast majority of pts are well:**
   Most tests will be negative
   Lots of false positives created, creating additional unnecessary testing & callbacks
2) **Even the sick kids will often have negative tests (ie-EKG, XRAYS, labs, etc)**
   Ie- tests are not effective in capturing those kids
   WHICH RETURNS US TO THE CLINICAL DILLEMA :

What is the screening test in the ED to identify who that sick kid is ?

Answer : 3 things--→ 1. General Appearance of the child
2. Vital Signs
3.COMPLETE H&P on every patient

Discussion of each of these 3 points:

1. **General Appearance of the child:**
   Concept of 'age-appropriate behavior' and well-appearance varies with age
   Acquiring this skill should be major goal during Peds ED rotation

2. **Vital Signs : Vary with Age**
   REVIEW : VS's mnemonics for HR, RR, weights, BP according to age
   CLARIFY : Concept of what is 'EXTREME VITAL SIGNS ' + significance
   Concept of 'PERSISTENT' extreme vital signs vs transient
   Upper Limit Normal HR vs Average HR's in HR mnemonics
   Normal HR and RR for ages that fall between cutoffs listed
   Effect of fever on HR + RR
   Weight as a vital sign (drugs/fluids all wt-based)
   Illustrate importance of estimating wt (ie- epi for arrest,etc

IMPORTANT POINT :
The combo of General Appearance + Vital Signs, when taken together, yields much richer and valuable information in the Pediatric pt than in the Adult patient –ie-
ADULTS---→ Triage tool only
Kids - ----→ Indicates child is well ** ****(If no significant PMH or risk factors for disease + onfirmed by a full H&P which is w/o any red-flags + reliable follwup)**

Because there is so much decision-making riding on these Vital Signs (ie- together with the General Appearance), you MUST always take your own vitals, namely HR and RR, YOURSELF !!
Interobserver reliability between triage nurse and MD vitals
Count RR for 30 seconds; concept of physiologic apnea
Auscultate RR and HR most accurate
Counting HR's that are fast

So when you first enter room to evaluate a pediatric pt :
Before : Look at chart triage vitals & classify as normal, fast, or extreme
First : General appearance + ABC's
Second : Take your own vitals (HR + RR)
Third : H&P

3. THE FULL H&P : WHY A FULL H&P ON EVERY PATIENT ?

1. **Fist of all, how can a 4 day old baby get a full-ie- extensive -H&P?**
   Ie- they've only been around for 4 days! Ie- What's there to know?

   POINTS: The perinatal history of both mother + baby (ie- GBS, Herpes, NICU stay, no. days till d/c, etc)
   The most important part of hx in a baby: The Feeding Hx-ie- Baby's main activity +
   The stress test of the baby

   REVIEW: Features of a complete feeding history
   Two earliest signs of dehydration by hx and physical : behavior Δ
   ↓ urine output

2. **The H&P confirms the Vitals + General Appearance**
   Ie- No red flags in the H&P confirms your VS+Appearance that child is well OR Flags that the pt is really sick.
   Example case: 5 week old vomits bile x 1, followed by 3 more milk-only Vomits, in ED symptoms resolved and baby nl + feeding
   ? Management : ?discharge ?testing ? admit
   Point: Dx is volvulus --- Testing (ie- blood, XRAYS) would be negative
   Symptoms completely resolved
   Exam totally wnl
   ONLY TIPOFF: H&P
   Point 2: Role-play vomiting baby: Now that YOU know importance of ANY bilious vomit, you are going to DIG for it on your history AND that's how Peds is-ie- the tipoff that saves you is in H&P, NOT in the testing!
   Point 3: Role-play pure yellow vomit, to make point that yellow is bile If <4 months old.

3. **BUT why a FULL H&P on everyone !? ie- Why not just a focused H&P –ie- just get a good vomiting history and description. (?)**

Think about this : When evaluating a baby or toddler YOU are like a "vet"
Ie- no communication from pt ie- like a puppy or kitten
So the parent is ALSO like a vet!
Ie- they also can't communicate with the baby!
"My baby has trouble breathing, belly pain, etc"---How Does the parent know?

POINT: Parents often have a gestalt (and are often correct!) that "something" is wrong with their child, but not always identifying the correct problem (ie- baby crying and touching ear or belly becomes "ear pain" or "belly pain", but may not be real problem, so you need to investigate beyond chief complaint and find out EXACTLY what parent is seeing i-e via a full H&P on EVERY patient, or you'll miss the sick kids and make wrong diagnoses on a regular basis.

EXAMPLES : 1 Chief complaint : fever
Diainosis: malrotation

2 Chief complaint: vomitng
Diagnosis: sepsis

3 Chief complaint : vomiting
Diagnosis: dehydration (normal spit up, not vomit but ↓ uo on full H&P; was due to poor breast milk production).

4. **BUT does EVERY pt really need full H&P? –ie- looking in ears & throat of pt with belly pain?**
   1. **Atypical presentations –ie- Strep pharyngitis as abdominal pain**
      Asthma as abdominal pain & vomiting
   2. **Comparison of ears & throat exmas in kids to upt in female adults with abdominal pain**

POINTS: 1 ALL pts need FULL H&P
2 Red flags are often in the H&P, and missed by tests
3 Sick babies with life-threatening illness may appear well
You need a complete history !!! (+ physical)
4 DON'T ignore a positive finding in hx or physical just because baby looks great---he's just gonna return later to ED very sick!

CASE : Present a well-appearing pt with stable (ie- not extreme) vital signs :
2 yo male with fever x 3 days.
Triage vitals: T 101 HR 140 RR 30 SAO2 99%

Ques 1 – What do you think of those vitals (ie- nl, fast, or extreme)
How does fever effect the vitals
Approximate weight of the pt
Ques 2- Go into see pt, what do you do First? (ie- ABC + appearance)
Second? (ie- Vitals yourself)
Third? (ie- Full H&P)

CASE: A similar pt chief complaint, but with extreme vitals and ill-appearing :
2 yo male with fever x 3 days.
Triage vitals: T 101 HR 166 RR 40 SAO2 98%

Ques 1 – What do you think of those vitals (ie- HR extreme, RR ↑ but not extreme)
Vitals corrected for fever (HR still extreme; RR would be normal)
Approximate weight of the pt.

Ques 2 - Go in to see pt, what do you do First? ie- ABC + Appearance
(pt low-energy + mottled)
Second? Ie-Vitals yourself
(same , extreme HR)
Third ? ie- RCA + initiate care PRN
Fourth? Ie- Full H&P

1) **Define RCA (ie- The Rapid Cardiopulmonary Assessment :**
Purpose; The Exam itself; The 5 Indications for the Exam

2) **Main point of this case: All pts get a full-H&P, but not always in same order**
Ie- potentially sick/unstable pts first need to be
Identified and resuscitated and THEN do full H&P

In reality, this is different from sick/unstable adults, who still may NEVER get a full H&P in the ED. (ie-skim, ears, etc)

SUMMARY POINT ABOUT THE RCA :

ALL pediatric patients must have a full H&P in the ED, but the issue is when: 2 types of patients:

Well-appearing/ vitals not extreme: ABC/Appearance→ VS's→ Full H&P
Sick-looking OR extreme vitals: ABC/Appearance→VS →RCA/Resus→Full H&P

******** *** END MODULE I (Basics)***********