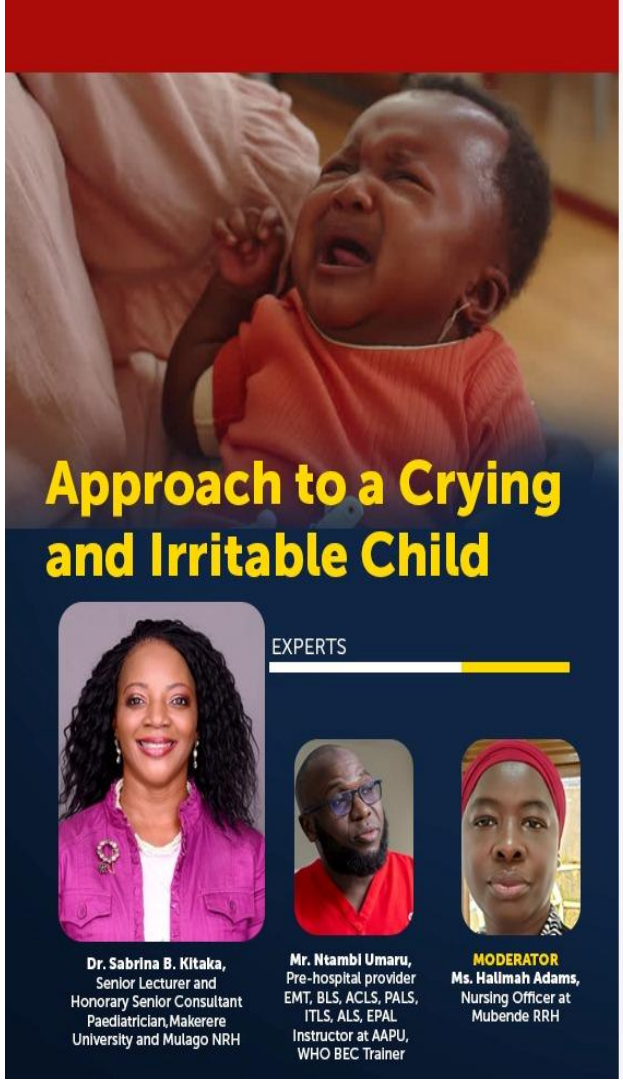
EMS ECHO 105



This session will delve into areas such as;

1. Key history in a crying and irritable child
2. Pre-hospital assessment, scene care and transportation of a crying and irritable child
3. Acute Care Unit assessment & investigations for a crying and irritable child
4. Medico-legal considerations for a child with suspected non-accidental trauma
5. Acute Unit management (clinical & mental health) of a crying and irritable child
6. Acute Care disposition plan for a crying and irritable child

scan to register

FRIDAY
21st November 2025
2-4pm EAT
Use link;
https://shorturl.at/HUecG

Case Presenter
Dr. David Mwirumubi,
EM Resident at MakCHS

Chat Questions
Dr Ojambo Gerald,
Paediatrician & Neonatologist at Masaka RRH

Brief History

3y/F brought to the PACU by mother & maternal aunt due to inconsolable crying, irritability and refusal to bear weight on right leg for 2 days. Mother reported that the child is clumsy and falls a lot, resulting in multiple bruises X1/52 & leg pains with progressive pallor and decreased appetite for 1 month. However no specific mechanism was provided for the severe leg injury

Primary Survey (Emergency Assessment)

A	Patent; child was crying and talking; no stridor.
B	Breathing is non-labored, symmetrical. Breath sounds are clear on auscultation. No grunting or flaring. RR 38/min; equal air entry; no wheeze or crackles; SpO_2 92% on room air.

Primary Survey (Emergency Assessment)

C	HR 148, BP 92/50 mmHg; capillary refill ~4 s; peripherally warm; pulses palpable; no active external bleeding	
D	AVPU – responds to voice, irritable but consolable; pupils equal and reactive; moves all limbs but cries when right thigh is touched. RBS: 5.2 mmol/L (Normal)	
E	Temp 37.5°C. Multiple bruises of varying ages: Fading yellow-brown bruises on upper arms and back	Fresh ecchymoses over right thigh and left flank, Small circular bruises over buttocks, No obvious open wounds or deformity, but tenderness over right thigh

What are the emergent Conditions to consider?

- Occult head injury
- Internal abdominal injury
- Toxic Ingestion
- Sepsis
- Non-accidental trauma (NAT)
- Pain crisis (musculoskeletal or visceral)

What are the emergency Conditions?

THREATS	*PRIORITY*	*Findings*	*Associated Risk*	*Immediate Action Taken*
B	Severe Respiratory Distress	RR: 38 b/min Clear breath sounds	It can lead to respiratory fatigue.	supplemental oxygen via nasal prongs at 2 L/min Continuous pulse oximetry monitoring
C	Septic shock	HR: 148 bpm CRT: 4 s (Prolonged)	Multiple end-organ damage	Secured an IV line started a fluid bolus of 0.9% Normal Saline (20mL/kg = 250 mL) over 20 minutes
	Hypovolemic shock	Cool extremities Weak peripheral pulses, deformed limb	Multiple end-organ damage	Administer IV analgesia Crossmatch and prepared for blood transfusion.

Interventions to stabilize the patient

Great!

We have started to stabilize the patient
…let’s gather more details!

SAMPLE History

Signs & Symptoms	**Chief**: Refusal to bear weight on right leg 2/52, multiple bruises 1/52, progressive pallor 1/12 **Constitutional**: restlessness, increased irritability, decreased activity. **Sign**: Pain and tenderness in right thigh, patterned bruising (linear on the back, circular on limbs), conjunctival and palmar pallor
Allergies	• No Known Drug Allergies
Medications	• No regular medications. • Last medication was a course of Coartem for malaria 4 months ago

SAMPLE History

Past Medical History	Born at term by SVD, vaccinations are up to date, occasional uncomplicated malaria, and this is her index admission
Last Oral Intake	Last drank water and ate some maize porridge (posho) approximately 3 hours ago
Events Leading Up to Presentation	The mother reports h/o child being "clumsy" and unwitnessed falling, with no specific mechanism for the severe leg injury or patterned bruises. History from the maternal aunt suggests a rapid escalation of bruising coinciding with periods of care by the mother's boyfriend, who is alleged to use harsh physical discipline

What are all the possible differentials

and

what would you be looking for on examination to support these?

Secondary Survey (Head-to-toe examination)

RELEVANT POSITIVES	RELEVANT NEGATIVES
General: Irritable, avoids caregiver, clings to nurse. **Head & Face:** Normocephalic. No scalp hematomas. A small, old bruise on the left cheek. **Eyes:** Conjunctival pallor. No subconjunctival hemorrhages. **Ears:** Tympanic membranes normal. No bruising behind the ears. **Oral Cavity:** No torn frenulum or dental injuries. **Chest & Abdomen:** Chest wall is non-tender. Abdomen: Guarding, mild tenderness RUQ, with no hepatosplenomegaly or masses. **Skin:** Patchy hyperpigmented scars not consistent with toddler play injuries. **Back & Buttocks:** Multiple bruises, some in clusters, inconsistent with a single fall.	**Genitalia & Anus:** Normal female genitalia with no signs of trauma. No anal fissures or bruising. **Musculoskeletal:** **Right Femur:** Obvious deformity, swelling, and exquisite tenderness. Clinical diagnosis of a fractured right femur. **Neurologically:** Cranial nerves II-XII intact. Normal power and sensation in upper limbs and left lower limb. Reduced movement of right arm; child cries when lifted. **Behavioral Signs of Abuse:** •Flinches when mother approaches. •Becomes calmer when mother left the room.

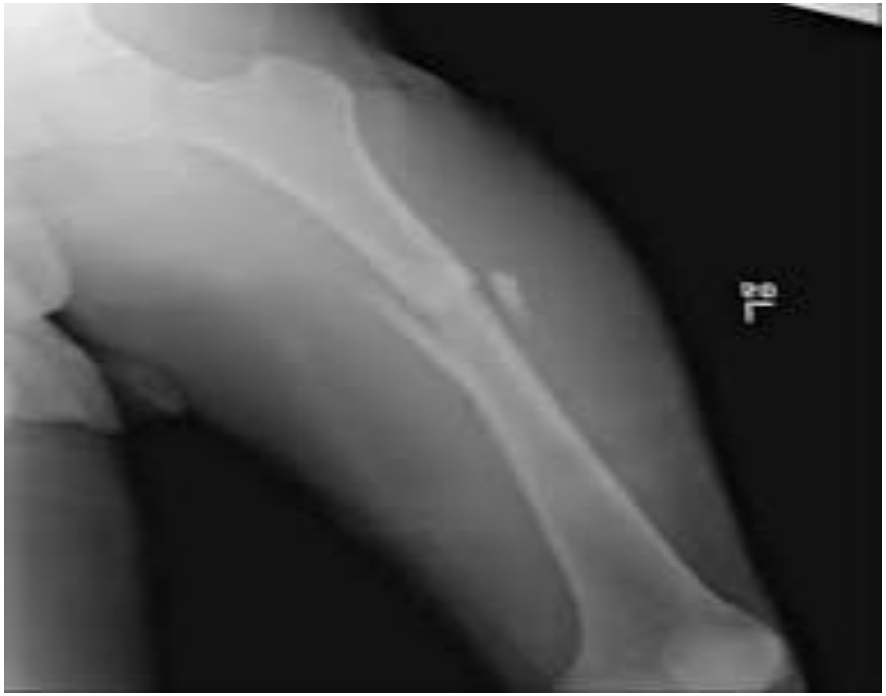
What are all the possible differentials we need to look for?

Category	Differential
Infectious	- Sepsis
Trauma or Toxin	- Soft tissue injury - ?Fracture of the right femur - Traumatic brain injury - Non-accidental trauma
Haematologic	- Coagulopathy (e.g. haemophilia, von Willebrand's Disease) - Thalassemia (e.g. β-thalassemia minor)
Metabolic	- Nutritional Iron Deficiency
Neoplastic	- Haematologic malignancy (e.g. leukaemia)

Investigations

Investigation	Result
Blood Glucose:	5.2 mmol/L (Normal).
Malaria Rapid Diagnostic Test (RDT):	**Negative.**
Complete Blood Count (CBC):	Hb: 7.2 g/dL, MCV: 68 fL, MCH: 22 pg, RDW: 18% Reticulocyte Count: 1.0%, Platelets: 450,000/µL WBC: 9,000/µL (Normal)
Abdominal Ultrasound	unremarkable
X-ray Right Femur: Skeletal Survey:	Confirmed a transverse, mid-shaft fracture of the right femur. Ordered to look for other fractures. Reveals two old, healing posterior rib fractures on the left side.
Group and Crossmatch:	O Rhesus Positive. 1 unit of packed red blood cells was cross-matched and booked.

Investigations



- Abdominal Ultrasound scan requested and done, but the results were lost

Impressions

1. Non-Accidental Trauma (Child Physical Abuse) with Nutritional Iron Deficiency Anaemia

2. Accidental Trauma with Coincidental Iron Deficiency Anaemia

3. Anaemia of Chronic Disease

Supportive Management

- Maintain airway in neutral position; supplemental O2 via NP at 2 L/min, continuous pulse oximetry
- A large-bore IV cannula was inserted
- Started maintenance IV fluids: D10% 600 mL IV over 24hrs at 25 mL/h plus N/S 0.9% 550 mL IV over 24 hours at 23 mL/h (total ≈ 48 mL/h, 1150 mL/24 hr)
- Splinting: Right leg immobilized in a Thomas splint for comfort and fracture stabilization.

Specific Management

Anemia	- Transfused with O+ PRBCs (12.5kgx15mL/kg=187.5mL) over 4 hrs - Pre-medicated with IV PCM for fever prophylaxis - Monitored vital signs every 15 mins (first hr), then hourly
Iron Deficiency	- Haemoforte Syrup 37.5mg (6.25ml) o.d x1/12 - Tabs Vitamin C 100mg o.d x 5/7 to enhance absorption - Tabs albendazole 200 mg start was given
Fracture	- TT 0.5mL was given - IV ampicillin 500mg tds x 2/7 - Referral to the Orthopaedic team for evaluation and likely application of a Hip Spica Cast.

Disposition Plan

Admission: Admitted to ward 16 for close monitoring during blood transfusion, pain management, and further workup.

Multidisciplinary Team Involvement:

- Paediatric Social Worker: was Activated immediately. To conduct a detailed psychosocial assessment, interview the mother and aunt separately, and liaise with local child protection services.
- Orthopaedic Team: Was Consulted for definitive fracture management.

- Child Safeguarding: The mother and her boyfriend were not allowed unsupervised contact with the child while in the hospital.

A Suspicion of Child Abuse Form (form 3) is completed and filed with the hospital administration and the designated Child Protection Focal Person. The case was formally reported to the Probation and Social Welfare Officer.

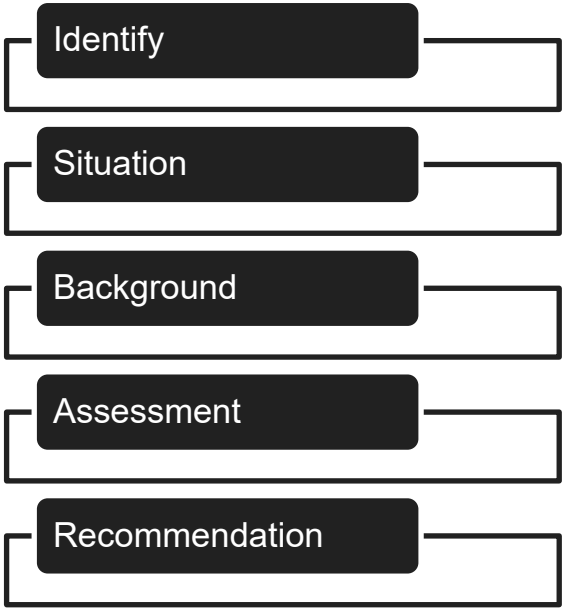
Thank you

And now for the pre-hospital perspective…

Prehospital team:

What do you need to prepare for pre-hospital care for this patient?

- Staff
- Patient
- Equipment / Medications
- Mode of transport
- Documentation/Handover
- Medico-legal considerations



Mr Ntambi Umaru, Pre-hospital provider EMT, BLS, ACLS, PALS, ITLS, ALS, EPAL Instructor at AAPU, WHO BEC Trainer

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Project ECHO

Call details History

3y/F brought to the PACU by mother & maternal aunt due to inconsolable crying, irritability and refusal to bear weight on right leg for 2 days. Mother reported that the child is clumsy and falls a lot, resulting in multiple bruises X1/52 & leg pains with progressive pallor and decreased appetite for 1 month. Hx was vague and inconsistent; no specific mechanism was provided for the severe leg injury

safety

Personal	Ensure your personal ans crew members safer, PPE,
scene	The area /home where the patient is picked from, the enviroment(animals& others), distance between, day of the week,
Patient	Number of patients, presentation of patient, condition presenting, **SEEK CONCET**

Essential

Urgent attention from a paediatric specialist. Given the symptoms, I'd recommend transporting the child to a hospital with a pediatric emergency department and involving the following specialists:

- Paed EM Physician: For initial assessment and stabilization.
- Paediatric Orthopedic Surgeon: To evaluate the right leg pain and potential fracture or infection.
- Paediatric Hematologist/Oncologist: To assess for possible leukemia/other malignancies given the pallor, clumsiness, & decreased appetite.

Personal/ambulance crew

The best person to manage this patient would be a Pediatric Emergency Physician who can coordinate care with other specialists. an EMT with EPALS & NLS background is important for the ambulance crew

The best staff to pick up the crying baby would typically be a healthcare provider with pediatric experience, such as a pediatric nurse or a pediatric emergency medicine specialist. However, in a situation where the child is showing signs of a potentially serious condition like the one described, it's crucial to prioritize the child's safety and medical needs.

Key Equipment

- **Pediatric first aid kit,** supplies like bandages, antiseptic wipes and paediatric
- **Oxygen and ventilation,** for potential respiratory issues
- **Cardiac monitor** to check the baby's heart rate and oxygen saturation
- **Thermometer**, to check the baby`s temperature

Blankets, cloths

Rapid Assessment

A	Air way is clear: Crying child and talking
B	Breathing with no efforts on visal, chest raise and falls. No Breathing sounds hard (grunting or flaring No wheeze,crackles . RR 28/min; clear chest air entry; ; with the plusoxmeter SpO_2 92%
C	Circulation feel the extrimities , check the capillary refill and feel for the puls(use inverted `J `) while in transit remembers to do BP 92/58 mmHg; HR, capillary refill ~2–3 s

Rapid Assessment

D	Disability on the fractured limb (swelling, unable to stand on it), baby responds to voice, responds to light with pen light pupils equal and reactive; moves all limbs but cries when the right thigh is touched. do an RBS: 5.2 mmol/L (Normal), use AVPU
E	expose baby, feel the body temperature ,report skin bruises
	Prepare to transport by calling the reciving facility - Use ESBA

Plan Your Transport

Given the child's condition, I'd recommend Ambulance transport to the hospital. Here's why:

Monitoring and Care: Ambulance personnel can provide continuous monitoring and care during transport.

Immobilization: The child's limb can be immobilized and stabilized during transport.

Emergency Intervention: Any deterioration can be quickly addressed with emergency interventions.

Priority Access: Ambulance transport often grants priority access to emergency services upon arrival.

HANDOVER - ISBAR

I: I'm Umaru, emergency responder. I'm handing over a 3-year-old patient.

S: The patient is presenting with inconsolable crying, irritability, and refusal to bear weight on the right leg for 2 days.

B: Caregivers report a 1/12 h/o clumsiness, frequent falls, pallor, and decreased appetite.

A: I assess possible fracture, infection. The patient is stable but in pain.

R: I recommend urgent evaluation at a pediatric emergency department for further management. The patient's limb is immobilized, and analgesics were administered.

Thank you

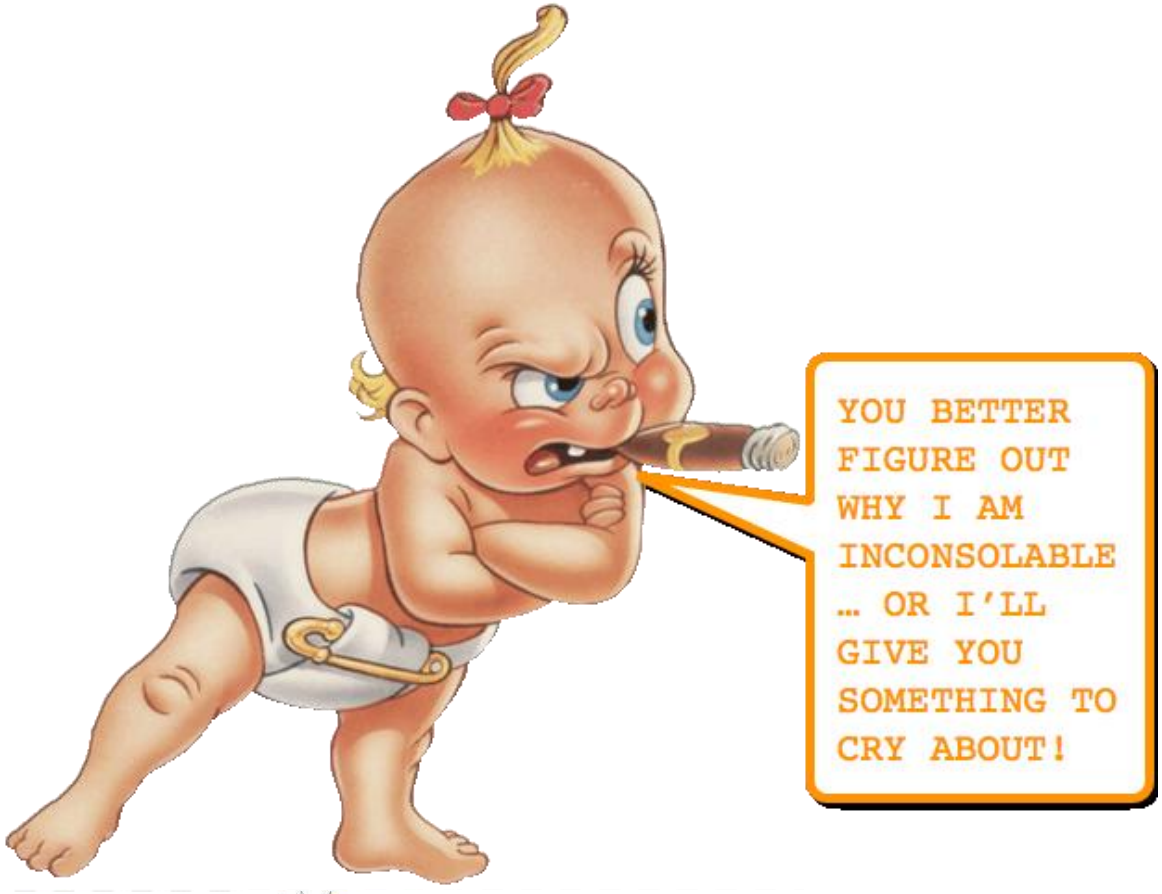
Now, let's dive into the Acute Care Management of this Patient's condition

Dr Sabrina B. Kitaka, Senior Lecturer and Honorary Senior Consultant Paediatrician, Makerere University and Mulago NRH

How should you approach this patient as an ACU doctor?

Approach to a crying and irritable Child

Dr Sabrina Bakeera-Kitaka,MD,PhD
Dept of Paediatrics , Makerere University
21st Nov 2025


YOU BETTER FIGURE OUT WHY I AM INCONSOLABLE … OR I'LL GIVE YOU SOMETHING TO CRY ABOUT!

- Without question, one of the most challenging tasks in life is to raise a child. The degree of difficulty of this challenge is heightened when that child becomes "**inconsolable**." Since a young infant or child has a limited repertoire to convey illness, constant crying needs to be taken seriously by anyone working in the in the Emergency Department. So, before you jump to the conclusion that this is merely "**Colic**" in a 2-month-old, here are some entities that should be at the top of your DDx when evaluating the **inconsolable child**.

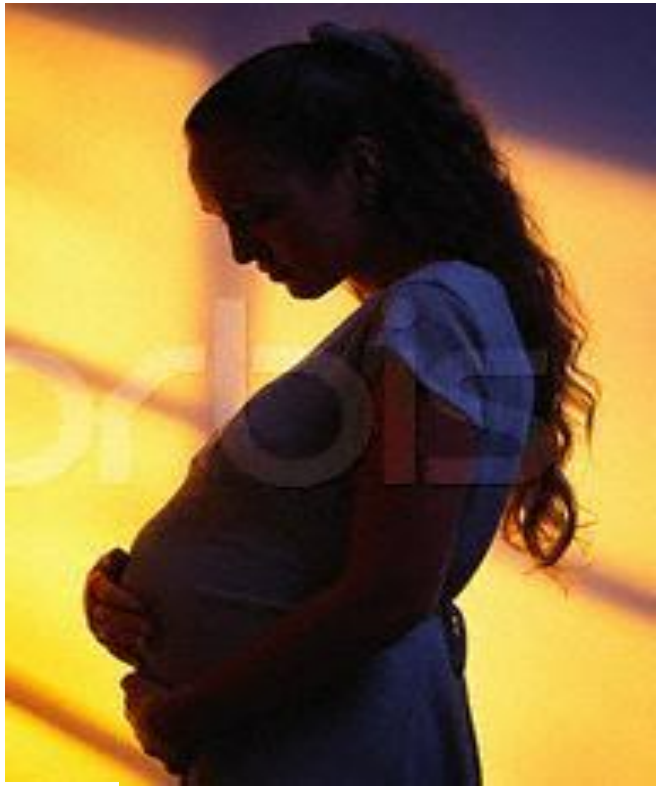
<u>Colic also has some criteria…</u> so **not all crying is colic**!

- **Colic:**
  - **10-26%** of infants experience colic
  - Excessive crying for:
    - **>3 hrs per day,**
    - **>3 days per week,**
    - **>3 weeks in duration**
  - Can begin as early as 2nd week of life
  - Peaks around 6th week of life
  - Should resolve by 16th week of life.

Inconsolable Child: But, What About Colic?

The characteristics of young mothers are common across the regions of the world:
-Little education,
-Rural dwelling,
-Poor.
-Marginalized.

Source: Growing up global: The Changing Transitions to Adulthood in Developing Countries (National Research Council, 2015).



Moral of the Morsel

- A **thorough history and physical exam will be the best tool** to help you determine the cause of the crying. [*Freedman, 2009*]
- **Be diligent**: pry open the mouth, look in the diaper area, examine each appendage (large and small).
- **Don't be in a hurry to diagnose colic**!

Every child should not only survive, but thrive, and grow up to transform their society

Helpful Pneumonic: IT CRIES

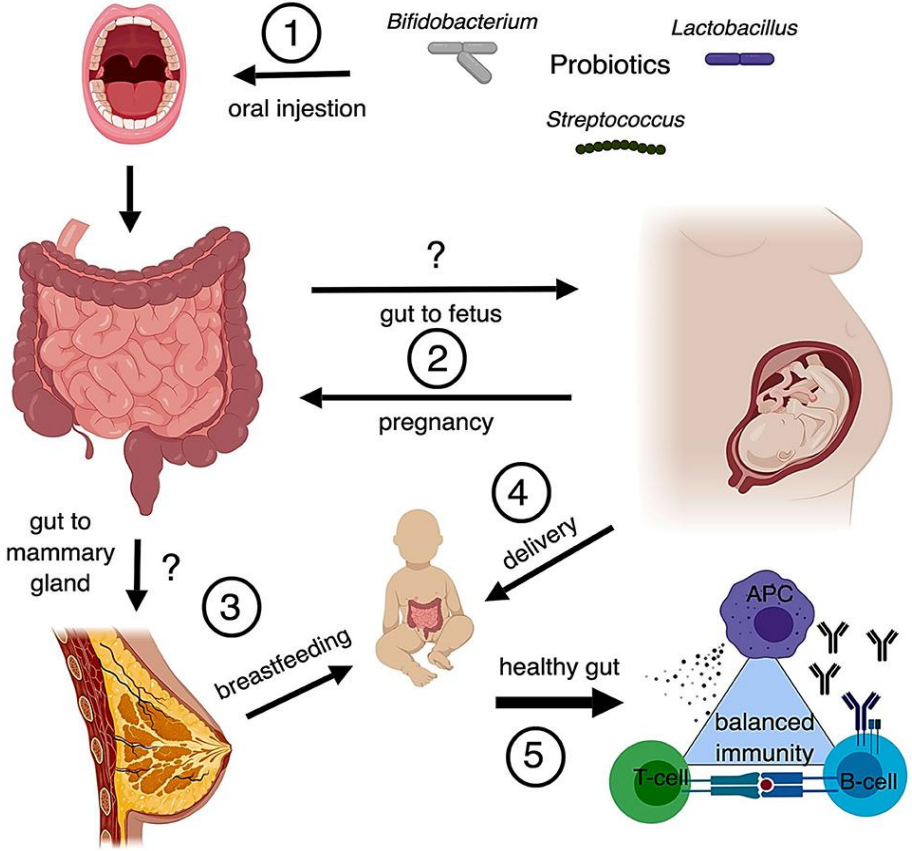
- **I** = Infections (ex, UTI, Meningitis, Sepsis)
- **T** = Trauma (ex, Subdural Hematoma, Fractures, Non-accidental trauma)
- **C** = Cardiac Disease (ex, SVT)
- **R** = Reaction to meds, Reflux, Rectal/Anal Fissure
- **I** = Intussusception
- **E** = Eyes (ex, corneal abrasion, foreign body, glaucoma)
- **S** = Strangulation, Surgical Processes (ex, Hernia, Testicular/Ovarian Torsion)

Inconsolable Child: Head to Toe Exam is Key!

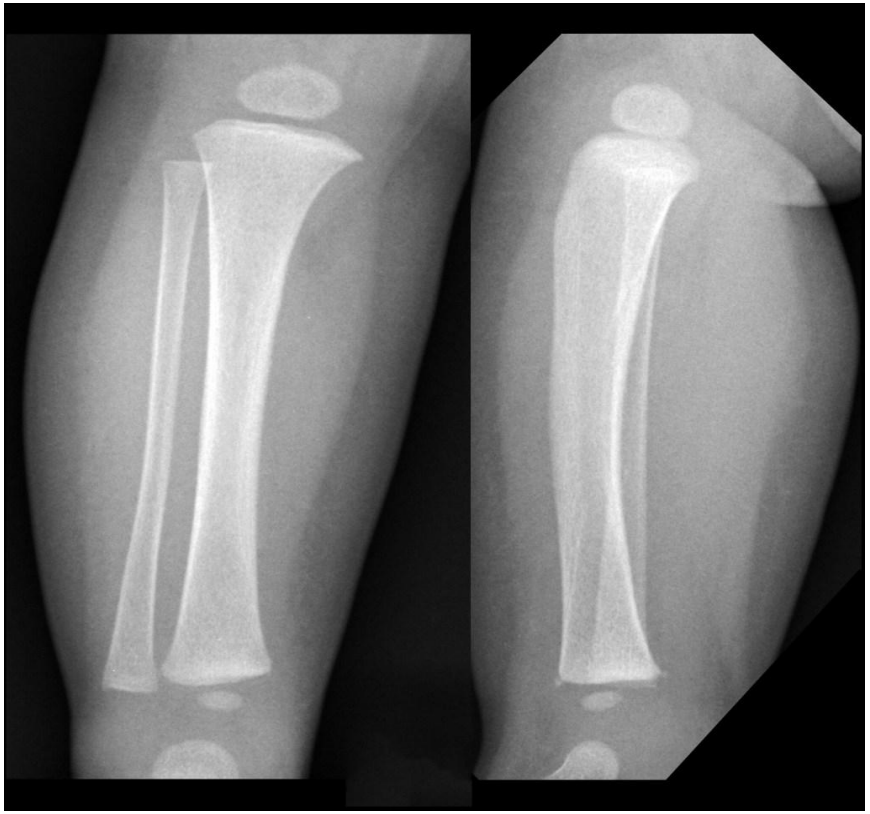
- **Head**
  - Neuro exam – change in MS? Hypoglycemia??
  - Full fontanelle – space-occupying lesion? Infection?
  - Hematoma or Ecchymosis – Trauma?
- **Eyes**
  - Corneal abrasion? Little kids often have talons for fingernails. [*Harkness, 1989*]
  - Eversion of eyelid for retained FB
  - Red eye and excessive tearing? Congenital conjunctivitis? Glaucoma?
- **Ears**
  - Acute Otitis Media
  - Retained FB

- **Mouth**
  - Stomatitis?
  - Thrush?
  - Strawberry tongue? (Kawasaki Disease?)
  - Dehydration?
- **Chest**
  - Rib fractures
  - Pneumothorax
  - Pneumonia

- **Heart**
  - Dysrhythmia (ex, SVT)
  - Congenital heart disease
- **Abdomen**
  - Medical
    - UTI
    - Masses?
    - Hepatomegaly?
  - Surgical
    - Intussusception
    - Appendicitis
    - Volvulus
    - Bowel Perforation
    - Hirschsprung Disease



- **Diaper Region**
  - Testicular/Ovarian torsion
  - Incarcerated hernia
  - Hair Tourniquet
  - Anal fissure
- **Extremities**
  - Hair tourniquet
  - Fractures
  - Sickle cell disease
  - Septic joint
  - Post-vaccination (ex, DPT)
- **Skin**
  - Cellulitis
  - Petechiae, purpura, etc.
  - Toxidromes?



Common and benign causes

- Basic needs: Hunger, thirst, a wet diaper, or feeling cold
- Discomfort: Gas, teething, or irritation from clothing
- Normal infant crying: Crying is a normal form of communication that can peak in frequency and duration between two weeks and four months of age.

- **Infantile colic:** Episodes of unexplained crying that don't have a clear medical cause.
- **Reflux:** Gastroesophageal reflux disease (GERD) can cause discomfort.
- **Constipation/Gas:** Difficulty passing stools or excessive gas can be painful.
- **Food allergies:** Non-IgE-mediated food allergies can cause fussiness

Serious causes to rule out

- **Infections:**
  - Urinary tract infections are the most common organic cause of inconsolable crying, especially in newborns.
  - Other infections like sepsis, pneumonia, or meningitis are also possible.
- **Surgical emergencies:**
  - Conditions such as intussusception (a telescoping of the intestine)
  - Incarcerated inguinal hernia can cause severe pain.

- **Others:**
- **Hair tourniquet:** A strand of hair wrapped tightly around a toe or finger can cause extreme pain.
- **Corneal abrasion:** An injury to the eye can be a source of significant pain.
- **Non-accidental trauma:** Child abuse should always be considered, especially if the history is unclear and the baby appears unwell.
- **Increased intracranial pressure:** Less common, but a serious possibility.

When to be concerned

- Temp >38 o C
- Infant cries more when moved or held.
- Infant vomiting.
- Infant refuses to eat or drink for more than 8 hours.
- Any swelling, a rash, or lethargy.
- Any changes in the poop, such as blood.
- Any concerns about baby's health or safety.
- If a parent feels overwhelmed or unable to cope, as this could indicate postnatal depression or a need for immediate support.

Adolescents are children aged 10-19 years

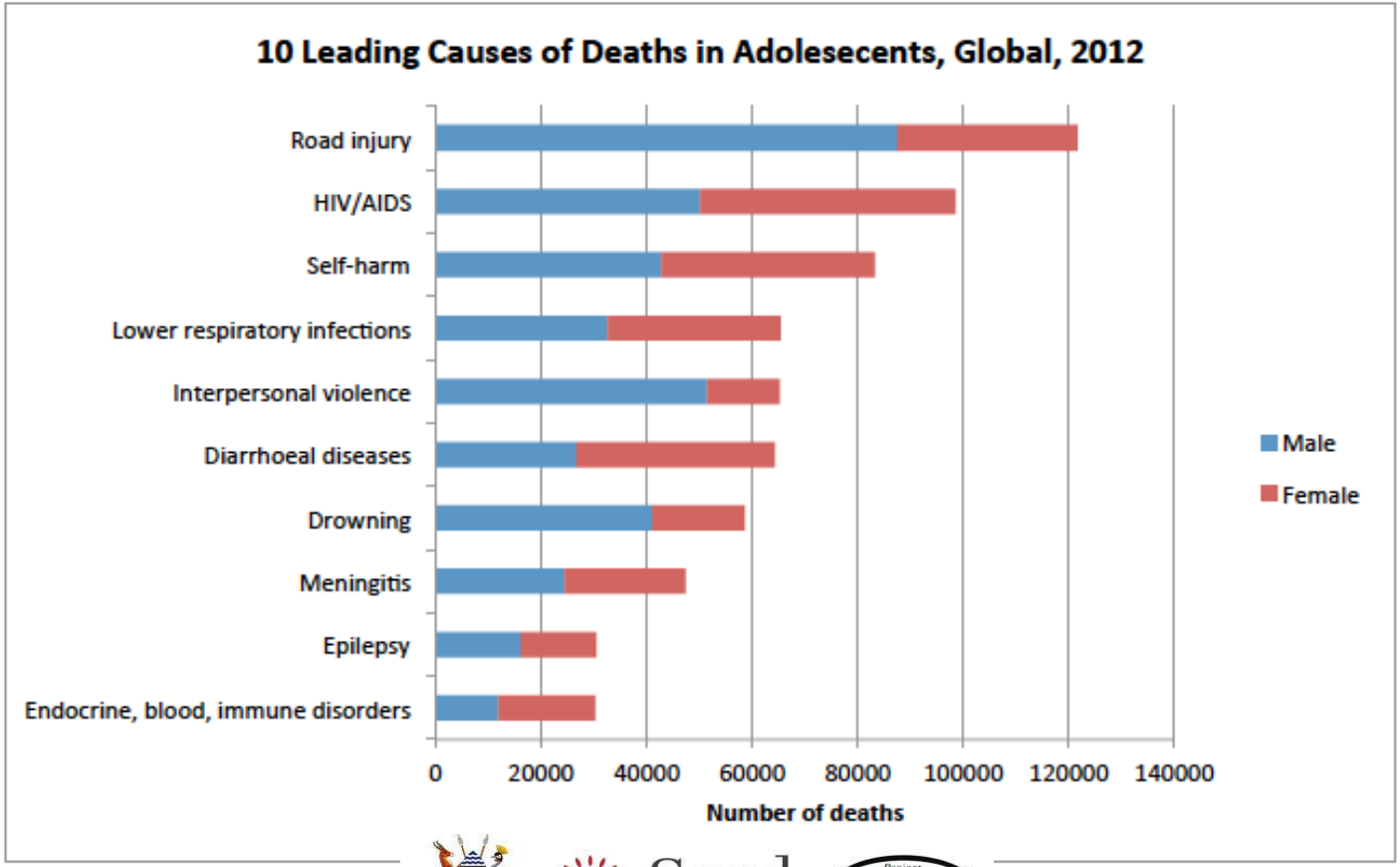
‘Adolescents are not big children, and they are not small adults, they are a special group of people, and we should reach out to them’

Sports-related trauma,

eg fractures, muscle

tears, heartbreak

Top 10 causes of global deaths among adolescents by sex



We must promote SAFETY!

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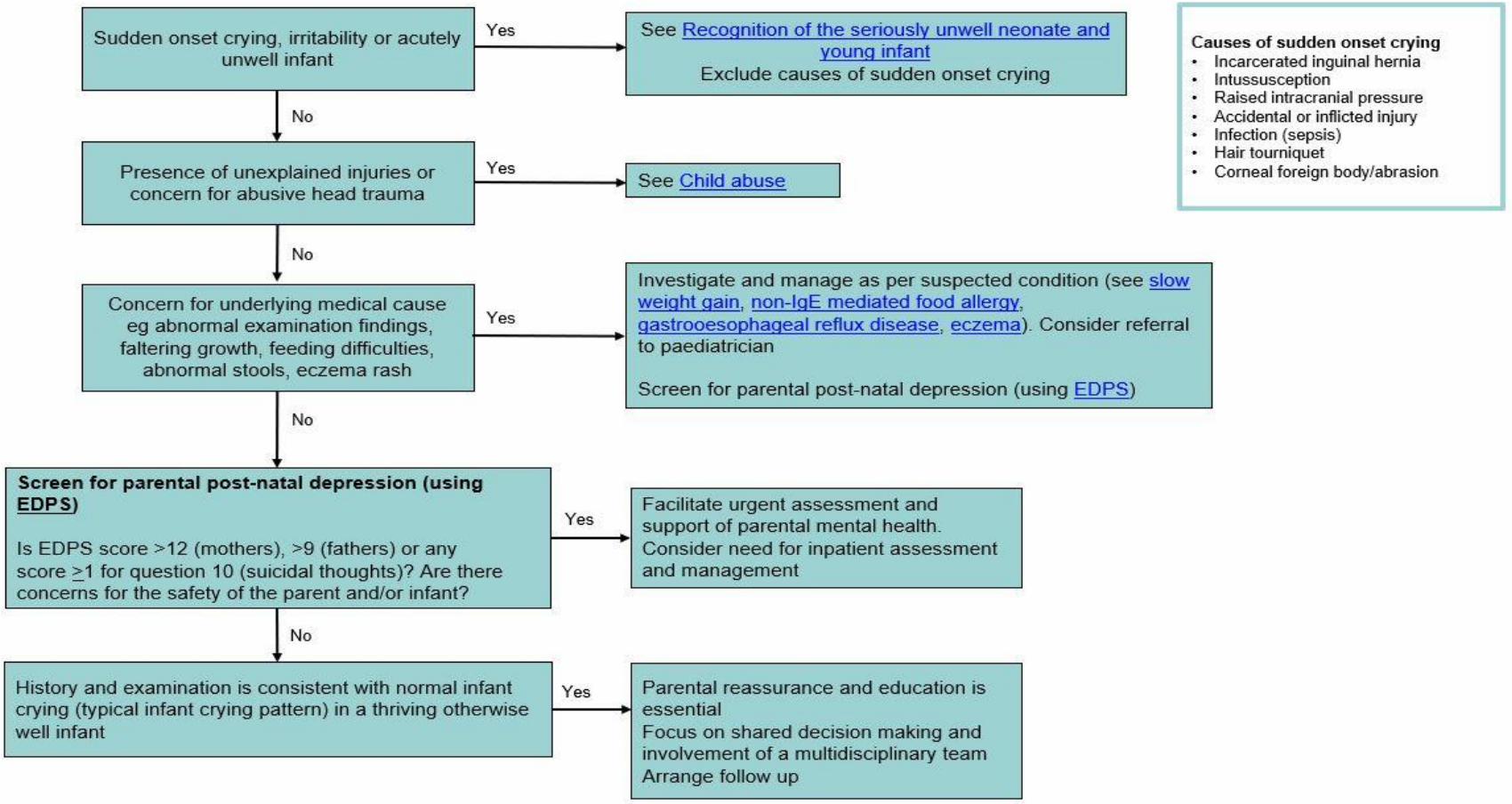
The differential diagnosis for an inconsolable infant includes basic needs like hunger, discomfort, or tiredness, as well as common medical issues such as colic, reflux, and constipation.

More serious causes range from infections (like UTIs or sepsis) and surgical emergencies (like intussusception or incarcerated hernia) to less common issues like food allergies, hair tourniquets, or even a corneal abrasion.

A thorough medical history and physical exam are crucial, and certain "red flag" symptoms require urgent medical attention.


Sudden onset crying, irritability or acutely unwell infant
Yes
See Recognition of the seriously unwell neonate and young infant
Exclude causes of sudden onset crying
No
Presence of unexplained injuries or concern for abusive head trauma
Yes
See Child abuse
No
Concern for underlying medical cause eg abnormal examination findings, faltering growth, feeding difficulties, abnormal stools, eczema rash
Yes
Investigate and manage as per suspected condition (see slow weight gain, non-IgE mediated food allergy, gastrooesophageal reflux disease, eczema). Consider referral to paediatrician
Screen for parental post-natal depression (using EDPS)
No
Screen for parental post-natal depression (using EDPS)
Is EDPS score >12 (mothers), >9 (fathers) or any score ≥1 for question 10 (suicidal thoughts)? Are there concerns for the safety of the parent and/or infant?
Yes
Facilitate urgent assessment and support of parental mental health.
Consider need for inpatient assessment and management
No
History and examination is consistent with normal infant crying (typical infant crying pattern) in a thriving otherwise well infant
Yes
Parental reassurance and education is essential
Focus on shared decision making and involvement of a multidisciplinary team
Arrange follow up
Causes of sudden onset crying
Incarcerated inguinal hernia
Intussusception
Raised intracranial pressure
Accidental or inflicted injury
Infection (sepsis)
Hair tourniquet
Corneal foreign body/abrasion

Acknowledgements

- Department of Paediatrics Makerere University
- EMS ECHO

Thank you