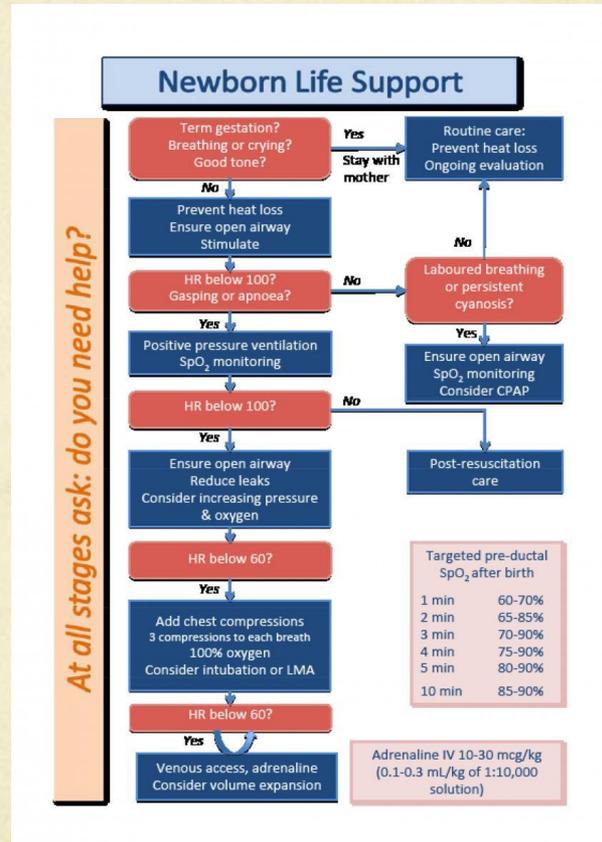


PAEDIATRIC PEARLS

What I will (try to) cover

- Neonatal Resuscitation
- Dealing with the difficult child
- Vomiting (not always gastro)
- Asthma (and other things wheezy)
- IO skills
- Trauma
- Sepsis
- Tricks with wound closure

NEONATAL RESUSCITATION



Neonatal resuscitation

- Pink Warm and Sweet
- Premature babies (<28/40): 25/5, polythene bag, cover head
- Meconium
- Air vs oxygen
- 0.9% saline, adrenaline, o neg blood
- Retrieval/specialist care

A TRIP TO THE VET???



PLAY DEAD

DEALING WITH THE DIFFICULT CHILD

- Why?
- Non pharmacological
- Analgesics
- Anxiolytics/sedatives

Analgesics

- Topical anaesthetics
- Sucrose
- IN fentanyl
- Oral oxycodone
- Nitrous sedation ?

Sedatives/anxiolytics

Is it really safe to sedate the child in your institution?

- Nitrous sedation
- Midazolam (RCH CPG on Analgesia and Sedation)
 - Oral/buccal 0.5mg/kg - 1mg/kg (max 15mg)
 - IN 0.6mg/kg (max 10mg)
(tastes bad, dilute with cordial)
- Consider transfer (Ketamine/OT)

Day 41: He's getting suspicious

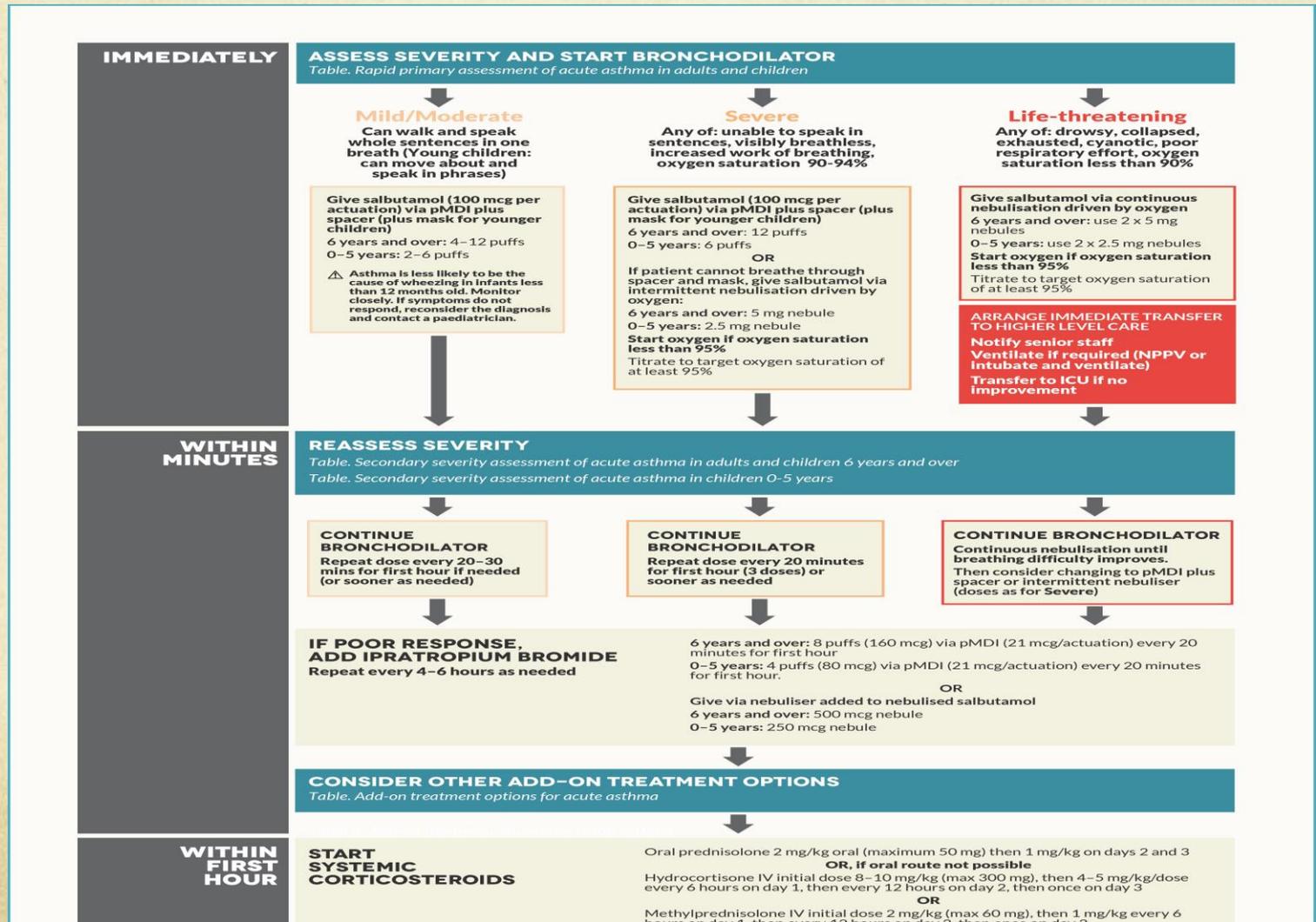


Its projectile!

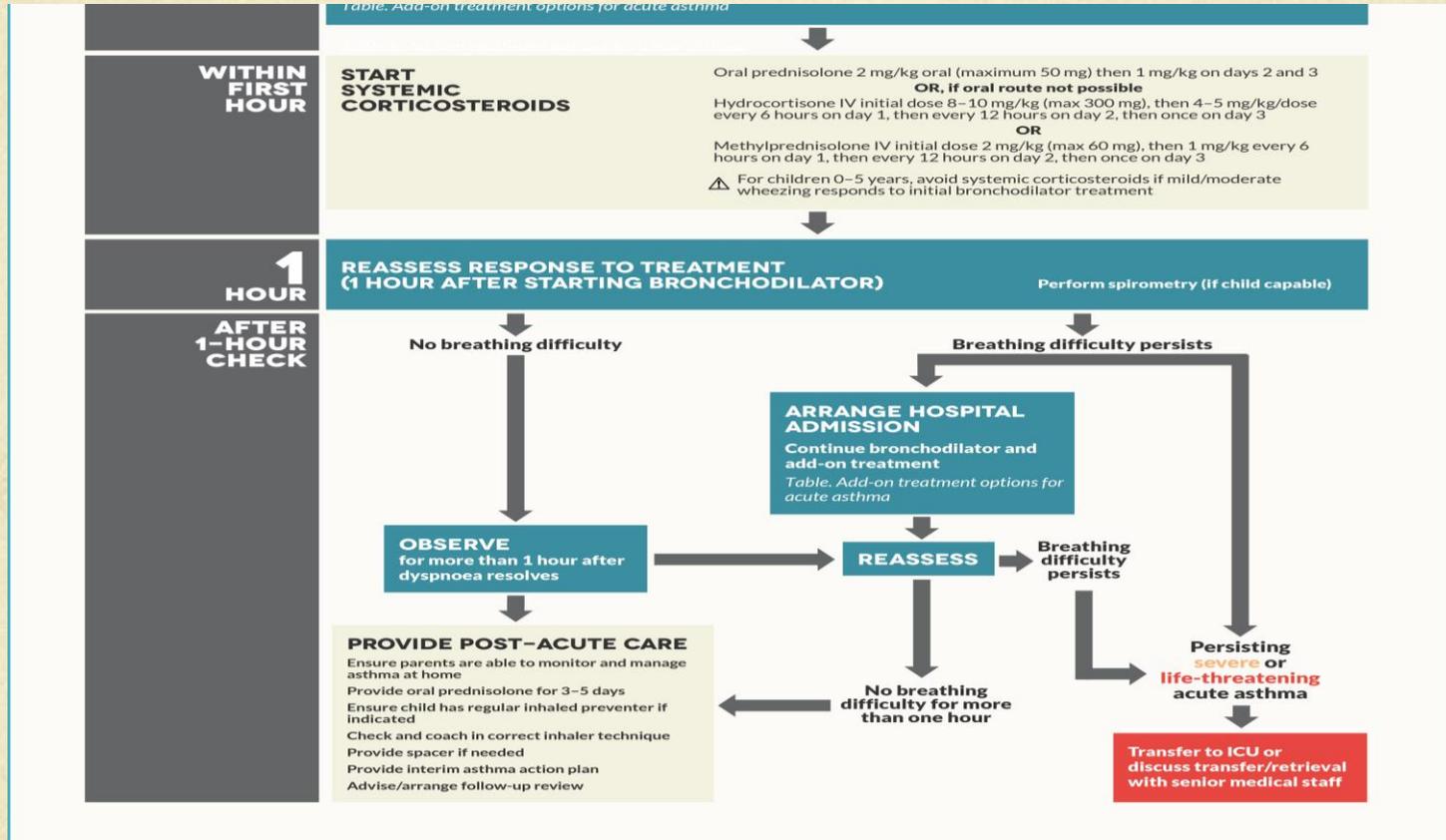
- Vomiting does not always mean gastro
 - Severe abdominal pain
 - Persistent diarrhea >10days
 - Blood in stool
 - Looks unwell/shocked
 - Bilious vomiting
 - No diarrhea
 - Very young
- Consider anti-emetics
- What is the BGL?
- Exclude UTI
- NG rehydration (rapid vs slow)
- Review, review, review



All that wheezes is not asthma



All that wheezes is not asthma



Therapies in asthma

- Beta agonists
- Ipratropium Bromide
- Steroids
- Magnesium
- Aminophylline
- Bipap
- Intubation/Ventilation

Asthma vs Bronchiolitis

American Academy
of Pediatrics



DEDICATED TO THE HEALTH OF ALL CHILDREN™

Guidance for the Clinician in
Rendering Pediatric Care

CLINICAL PRACTICE GUIDELINE

Clinical Practice Guideline: The Diagnosis, Management, and Prevention of Bronchiolitis

abstract

This guideline is a revision of the clinical practice guideline, "Diagnosis and Management of Bronchiolitis," published by the American Academy of Pediatrics in 2006. The guideline applies to children from 1 through 23 months of age. Other exclusions are noted. Each key action statement indicates level of evidence, benefit-harm relationship, and level of recommendation. Key action statements are as follows: *Pediatrics* 2014;134:e1474–e1502

FREE

Shawn L. Ralston, MD, FAAP, Allan S. Lieberthal, MD, FAAP, H. Cody Meissner, MD, FAAP, Brian K. Alverson, MD, FAAP, Jill E. Baley, MD, FAAP, Anne M. Gadomski, MD, MPH, FAAP, David W. Johnson, MD, FAAP, Michael J. Light, MD, FAAP, Nizar F. Maraqa, MD, FAAP, Eneida A. Mendonca, MD, PhD, FAAP, FACMI, Kieran J. Phelan, MD, MSc, Joseph J. Zorc, MD, MSCE, FAAP, Danette Stanko-Lopp, MA, MPH, Mark A. Brown, MD, Ian Nathanson, MD, FAAP, Elizabeth Rosenblum, MD, Stephen Sayles III, MD, FACEP, and Sinsi Hernandez-Cancio, JD

KEY WORDS

bronchiolitis, infants, children, respiratory syncytial virus, evidence-based, guideline

Differentials and considerations

- When does bronchiolitis need referral?
- Bronchodilators in bronchiolitis?
 - Escalation: humidification, peep
- Viral induced wheeze
- Viral pneumonitis

Viral Induced Wheeze

The NEW ENGLAND
JOURNAL *of* MEDICINE

ESTABLISHED IN 1812

JANUARY 22, 2009

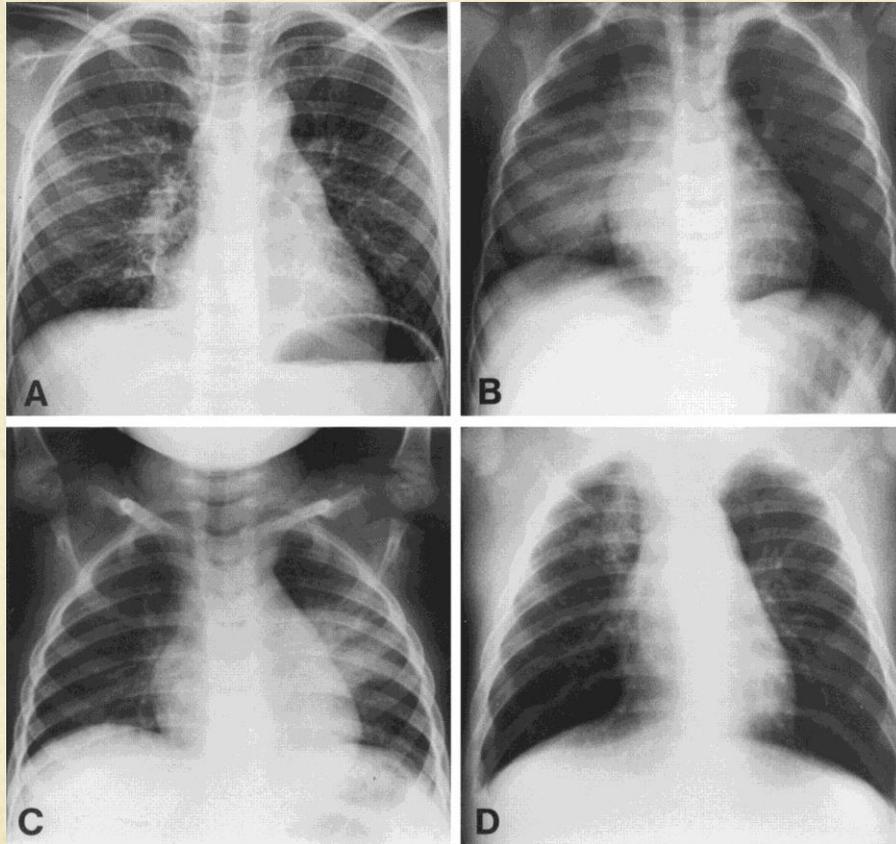
VOL. 360 NO. 4

Oral Prednisolone for Preschool Children with Acute Virus-Induced Wheezing

Jayachandran Panickar, M.D., M.R.C.P.C.H., Monica Lakhanpaul, M.D., F.R.C.P.C.H., Paul C. Lambert, Ph.D.,
Priti Kenia, M.B., B.S., M.R.C.P.C.H., Terence Stephenson, D.M., F.R.C.P.C.H., Alan Smyth, M.D., F.R.C.P.C.H.,
and Jonathan Grigg, M.D., F.R.C.P.C.H.

ABSTRACT

Paediatric Pneumonia



To give or not to give (antis) ?

ORIGINAL ARTICLE

Differentiation of bacterial and viral pneumonia in children

R Virkki, T Juven, H Rikalainen, E Svedström, J Mertsola, O Ruuskanen

Thorax 2002;**57**:438–441

See end of article for authors' affiliations

Correspondence to:
Dr O Ruuskanen,
Department of Pediatrics,
Turku University Hospital,
Kiinamyllynkatu 4-8,

Background: A study was undertaken to investigate the differential diagnostic role of chest radiographic findings, total white blood cell count (WBC), erythrocyte sedimentation rate (ESR), and serum C reactive protein (CRP) in children with community acquired pneumonia of varying aetiology. **Methods:** The study population consisted of 254 consecutive children admitted to hospital with community acquired pneumonia diagnosed between 1993 and 1995. WBC, ESR, and CRP levels were determined on admission. Seventeen infective agents (10 viruses and seven bacteria) were searched for. Chest radiographs were retrospectively and separately reviewed by three paediatric radiologists. **Results:** A potential causative agent was found in 215 (85%) of the 254 cases. Bacterial infection was found in 71% of 137 children with alveolar infiltrates on the chest radiograph, while 72% of the 134 cases with a bacterial pneumonia had alveolar infiltrates. Half of the 77 children with solely interstitial infiltrates on the chest radiograph had evidence of bacterial infection. The proportion of patients with

INTRAOSSEOUS SKILLS

PAEDIATRIC TRAUMA

Injury, Int. J. Care Injured 43 (2012) 2006–2011



Contents lists available at SciVerse ScienceDirect

Injury

journal homepage: www.elsevier.com/locate/injury



Paediatric and adolescent trauma care within an integrated trauma system

Conor Deasy^{a,c,*}, Belinda Gabbe^a, Cameron Palmer^b, Franz E. Babl^b, Catherine Bevan^b,
Joe Cramer^b, Warwick Butt^{b,c}, Mark Fitzgerald^c, Rodney Judson^d, Peter Cameron^{a,c}

^a Monash University, Department of Epidemiology and Preventive Medicine, Australia

^b Royal Children's Hospital and Murdoch Children's Research Institute, Melbourne, Australia

^c The Alfred Hospital, Melbourne, Australia

^d Royal Melbourne Hospital, Australia

PAEDIATRIC TRAUMA

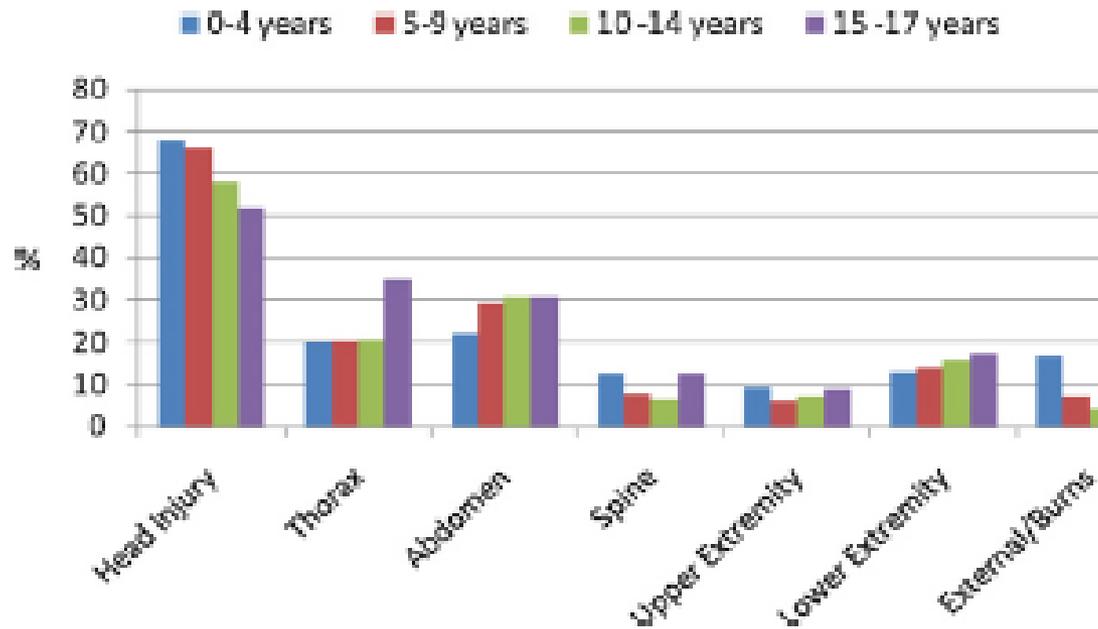


Fig 1. Percent of patients with given injury by age group (AIS > 2 except head injury which includes AIS > 3). (For interpretation of the references to color in the artwork of Fig. 1, the reader is referred to the web version of the article.)

PAEDIATRIC TRAUMA

- Notify retrieval services early/transfer
- ABCs, stabilize and ship out
- Analgesia
- Access

PAEDIATRIC TRAUMA



Paediatric Emergency Medicine
#FOAMeD CEM Curriculum Based
August 2013

Head Injuries In Children

NICE Guidelines (very similar to CHALICE)

Are any of the following present?

- 1. Witnessed loss of consciousness lasting > 5 minutes
- 2. Abnormal pupillary or retinal reflexes lasting > 5 minutes
- 3. Abnormal drowsiness
- 4. 3 or more discrete episodes of vomiting
- 5. Clinical suspicion of non-accidental injury
- 6. Non-traumatic seizure but no history of epilepsy
- 7. Age > 1 year GCS < 14 on assessment in the emergency department
- 8. Age < 1 year GCS < 15 on assessment in the emergency department
- 9. Suspicion of open or depressed skull injury or tense fontanelle
- 10. Any sign of basal skull fracture (haemorrhage, tearing eyes, conjunctival fluid leakage from ears or nose, Battle's sign)
- 11. Focal neurological deficit
- 12. Age < 1 year, presence of bruise, swelling or laceration > 5 cm on the head
- 13. Dangerous mechanism of injury (high speed road traffic accident either as pedestrian, cyclist or vehicle occupant, fall from > 3 m, high speed injury from a projectile or an object)

Yes → Request CT scan immediately

No → No imaging required now

CATCH NPV 99.8%, sensitivity 100%

Minor Head Injury:

- Injury in the past 24 hours AND
- Witness LOC
- Definite amnesia
- Witnessed disorientation
- Persistent vomiting (more than one episode)
- Persistent irritability in a child < 2

AND:

High risk (need for neurological intervention)

1. Glasgow Coma Scale score < 15 at 2 h after injury
2. Suspected open or depressed skull fracture
3. History of worsening headache
4. Irritability on examination

Medium risk (brain injury on CT scan)

5. Any sign of basal skull fracture (eg, haemotympanum, 'raccoon' eyes, otorrhoea or rhinorrhoea of the CSF, Battle's sign)
6. Large, boggy haematoma of the scalp
7. Dangerous mechanism of injury (eg, motor vehicle crash, fall from elevation 3ft (91cm) or 5 stairs, fall from bicycle with no helmet)

PECARN Decides who NOT to CT

<2 NPV 100%, sensitivity 100%

Any 1 of following?

GCS 14
AMS
Palpable skull fx

YES → CT (4.4% risk of cTBI)

NO

1 or more of following?

Non-frontal hematoma
LOC ≥ 5 sec
Severe injury mechanism*
Not acting normal per parent

YES → OBS vs CT (0.9% risk of cTBI)

NO → NO CT (<0.02% risk of cTBI)

AGE < 2 YRS

OBS vs CT

Use clinical gestalt:

- MD experience
- Multi vs isolated finding
- Worsening sx after obs
- Age < 3 months
- Parental preference

>2 NPV 99.95%, sensitivity 96.8%

Any 1 of following?

GCS 14
AMS
Signs of basilar skull fx

YES → CT (4.3% risk of cTBI)

NO

1 or more of following?

LOC
No vomiting
Severe injury mechanism*
Severe headache

YES → OBS vs CT (0.9% risk of cTBI)

NO → NO CT (<0.05% risk of cTBI)

AGE ≥ 2 YRS

OBS vs CT

Use clinical gestalt:

- MD experience
- Multi vs isolated finding
- Worsening sx after obs
- Parental preference

Radiation Risk

- 2-3 brain CTs triples the risk of tumour
- 5-10 brain CTs triples risk of leukaemia
- 10,000 patients a head CT might cause a brain tumour and a leukaemia in 1 person

Organ	Year	Age	Sex	CT	Relative Risk
Brain	2007	0-14	M	1	1.0
Brain	2007	0-14	F	1	1.0
Brain	2007	0-14	M	2	1.5
Brain	2007	0-14	F	2	1.5
Brain	2007	0-14	M	3	2.0
Brain	2007	0-14	F	3	2.0
Brain	2007	0-14	M	4	2.5
Brain	2007	0-14	F	4	2.5
Brain	2007	0-14	M	5	3.0
Brain	2007	0-14	F	5	3.0
Brain	2007	0-14	M	6	3.5
Brain	2007	0-14	F	6	3.5
Brain	2007	0-14	M	7	4.0
Brain	2007	0-14	F	7	4.0
Brain	2007	0-14	M	8	4.5
Brain	2007	0-14	F	8	4.5
Brain	2007	0-14	M	9	5.0
Brain	2007	0-14	F	9	5.0
Brain	2007	0-14	M	10	5.5
Brain	2007	0-14	F	10	5.5
Brain	2007	0-14	M	11	6.0
Brain	2007	0-14	F	11	6.0
Brain	2007	0-14	M	12	6.5
Brain	2007	0-14	F	12	6.5
Brain	2007	0-14	M	13	7.0
Brain	2007	0-14	F	13	7.0
Brain	2007	0-14	M	14	7.5
Brain	2007	0-14	F	14	7.5
Brain	2007	0-14	M	15	8.0
Brain	2007	0-14	F	15	8.0
Brain	2007	0-14	M	16	8.5
Brain	2007	0-14	F	16	8.5
Brain	2007	0-14	M	17	9.0
Brain	2007	0-14	F	17	9.0
Brain	2007	0-14	M	18	9.5
Brain	2007	0-14	F	18	9.5
Brain	2007	0-14	M	19	10.0
Brain	2007	0-14	F	19	10.0
Brain	2007	0-14	M	20	10.5
Brain	2007	0-14	F	20	10.5
Brain	2007	0-14	M	21	11.0
Brain	2007	0-14	F	21	11.0
Brain	2007	0-14	M	22	11.5
Brain	2007	0-14	F	22	11.5
Brain	2007	0-14	M	23	12.0
Brain	2007	0-14	F	23	12.0
Brain	2007	0-14	M	24	12.5
Brain	2007	0-14	F	24	12.5
Brain	2007	0-14	M	25	13.0
Brain	2007	0-14	F	25	13.0
Brain	2007	0-14	M	26	13.5
Brain	2007	0-14	F	26	13.5
Brain	2007	0-14	M	27	14.0
Brain	2007	0-14	F	27	14.0
Brain	2007	0-14	M	28	14.5
Brain	2007	0-14	F	28	14.5
Brain	2007	0-14	M	29	15.0
Brain	2007	0-14	F	29	15.0
Brain	2007	0-14	M	30	15.5
Brain	2007	0-14	F	30	15.5
Brain	2007	0-14	M	31	16.0
Brain	2007	0-14	F	31	16.0
Brain	2007	0-14	M	32	16.5
Brain	2007	0-14	F	32	16.5
Brain	2007	0-14	M	33	17.0
Brain	2007	0-14	F	33	17.0
Brain	2007	0-14	M	34	17.5
Brain	2007	0-14	F	34	17.5
Brain	2007	0-14	M	35	18.0
Brain	2007	0-14	F	35	18.0
Brain	2007	0-14	M	36	18.5
Brain	2007	0-14	F	36	18.5
Brain	2007	0-14	M	37	19.0
Brain	2007	0-14	F	37	19.0
Brain	2007	0-14	M	38	19.5
Brain	2007	0-14	F	38	19.5
Brain	2007	0-14	M	39	20.0
Brain	2007	0-14	F	39	20.0
Brain	2007	0-14	M	40	20.5
Brain	2007	0-14	F	40	20.5
Brain	2007	0-14	M	41	21.0
Brain	2007	0-14	F	41	21.0
Brain	2007	0-14	M	42	21.5
Brain	2007	0-14	F	42	21.5
Brain	2007	0-14	M	43	22.0
Brain	2007	0-14	F	43	22.0
Brain	2007	0-14	M	44	22.5
Brain	2007	0-14	F	44	22.5
Brain	2007	0-14	M	45	23.0
Brain	2007	0-14	F	45	23.0
Brain	2007	0-14	M	46	23.5
Brain	2007	0-14	F	46	23.5
Brain	2007	0-14	M	47	24.0
Brain	2007	0-14	F	47	24.0
Brain	2007	0-14	M	48	24.5
Brain	2007	0-14	F	48	24.5
Brain	2007	0-14	M	49	25.0
Brain	2007	0-14	F	49	25.0
Brain	2007	0-14	M	50	25.5
Brain	2007	0-14	F	50	25.5
Brain	2007	0-14	M	51	26.0
Brain	2007	0-14	F	51	26.0
Brain	2007	0-14	M	52	26.5
Brain	2007	0-14	F	52	26.5
Brain	2007	0-14	M	53	27.0
Brain	2007	0-14	F	53	27.0
Brain	2007	0-14	M	54	27.5
Brain	2007	0-14	F	54	27.5
Brain	2007	0-14	M	55	28.0
Brain	2007	0-14	F	55	28.0
Brain	2007	0-14	M	56	28.5
Brain	2007	0-14	F	56	28.5
Brain	2007	0-14	M	57	29.0
Brain	2007	0-14	F	57	29.0
Brain	2007	0-14	M	58	29.5
Brain	2007	0-14	F	58	29.5
Brain	2007	0-14	M	59	30.0
Brain	2007	0-14	F	59	30.0
Brain	2007	0-14	M	60	30.5
Brain	2007	0-14	F	60	30.5
Brain	2007	0-14	M	61	31.0
Brain	2007	0-14	F	61	31.0
Brain	2007	0-14	M	62	31.5
Brain	2007	0-14	F	62	31.5
Brain	2007	0-14	M	63	32.0
Brain	2007	0-14	F	63	32.0
Brain	2007	0-14	M	64	32.5
Brain	2007	0-14	F	64	32.5
Brain	2007	0-14	M	65	33.0
Brain	2007	0-14	F	65	33.0
Brain	2007	0-14	M	66	33.5
Brain	2007	0-14	F	66	33.5
Brain	2007	0-14	M	67	34.0
Brain	2007	0-14	F	67	34.0
Brain	2007	0-14	M	68	34.5
Brain	2007	0-14	F	68	34.5
Brain	2007	0-14	M	69	35.0
Brain	2007	0-14	F	69	35.0
Brain	2007	0-14	M	70	35.5
Brain	2007	0-14	F	70	35.5
Brain	2007	0-14	M	71	36.0
Brain	2007	0-14	F	71	36.0
Brain	2007	0-14	M	72	36.5
Brain	2007	0-14	F	72	36.5
Brain	2007	0-14	M	73	37.0
Brain	2007	0-14	F	73	37.0
Brain	2007	0-14	M	74	37.5
Brain	2007	0-14	F	74	37.5
Brain	2007	0-14	M	75	38.0
Brain	2007	0-14	F	75	38.0
Brain	2007	0-14	M	76	38.5
Brain	2007	0-14	F	76	38.5
Brain	2007	0-14	M	77	39.0
Brain	2007	0-14	F	77	39.0
Brain	2007	0-14	M	78	39.5
Brain	2007	0-14	F	78	39.5
Brain	2007	0-14	M	79	40.0
Brain	2007	0-14	F	79	40.0
Brain	2007	0-14	M	80	40.5
Brain	2007	0-14	F	80	40.5
Brain	2007	0-14	M	81	41.0
Brain	2007	0-14	F	81	41.0
Brain	2007	0-14	M	82	41.5
Brain	2007	0-14	F	82	41.5
Brain	2007	0-14	M	83	42.0
Brain	2007	0-14	F	83	42.0
Brain	2007	0-14	M	84	42.5
Brain	2007	0-14	F	84	42.5
Brain	2007	0-14	M	85	43.0
Brain	2007	0-14	F	85	43.0
Brain	2007	0-14	M	86	43.5
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Brain	2007	0-14	F	88	44.5
Brain	2007	0-14	M	89	45.0
Brain	2007	0-14	F	89	45.0
Brain	2007	0-14	M	90	45.5
Brain	2007	0-14	F	90	45.5
Brain	2007	0-14	M	91	46.0
Brain	2007	0-14	F	91	46.0
Brain	2007	0-14	M	92	46.5
Brain	2007	0-14	F	92	46.5
Brain	2007	0-14	M	93	47.0
Brain	2007	0-14	F	93	47.0
Brain	2007	0-14	M	94	47.5
Brain	2007	0-14	F	94	47.5
Brain	2007	0-14	M	95	48.0
Brain	2007	0-14	F	95	48.0
Brain	2007	0-14	M	96	48.5
Brain	2007	0-14	F	96	48.5
Brain	2007	0-14	M	97	49.0
Brain	2007	0-14	F	97	49.0
Brain	2007	0-14	M	98	49.5
Brain	2007	0-14	F	98	49.5
Brain	2007	0-14	M	99	50.0
Brain	2007	0-14	F	99	50.0
Brain	2007	0-14	M	100	50.5
Brain	2007	0-14	F	100	50.5

PAEDATRIC HEAD TRAUMA

Indications for neuroimaging include:

- Definitive:
 - Signs of #BOS
 - Focal Neurological deficit
 - Open or depressed skull fractures
 - GCS < 8, unresponsive, abnormal respirations due to HI

- Relative Indications:
 - LOC > 5mins
 - Persistent vomiting
 - Suspicion of NAI
 - GCS persistently <14
 - Known bleeding tendency
 - Dangerous mechanism
 - Large burise/laceration, hematoma
 - (post traumatic seizure, not immediately after)

PAEDIATRIC TRAUMA

- C spine injuries:
 - Immobilization (does not always equal a collar!)
 - Do not correct a traumatic torticollis
 - NEXUS
 - Imaging
 - Typical patterns
 - Analgesia

PAEDIATRIC TRAUMA

- Chest injuries:
 - Uncommon, blunt trauma
 - Different pattern of injury due to differences between adult and child chest
 - Lung Contusion > Rib fractures > Pneumothorax > Flail Chest > other injuries
 - Treatment: Analgesia and Oxygenation

PAEDIATRIC TRAUMA

- Abdominal Injuries:
 - Nearly 50% transport related
 - Spleen > Liver > Kidney > Pancreas > GU tract > GI tract > other
 - Differences in injury pattern
 - Concerning features: mechanism, handle bar injuries, seat belt marks, straddle injuries, bruising, penetrating injuries, suspicion of NAI
 - Conservative management common
 - Treatment: Analgesia and hemodynamic stability

Jimmy,
Answer me!!
Please!



SEPSIS

2005 WHO data shows 80% of global child deaths due to 4 severe infections (pneumonia, malaria, neonatal sepsis and diarrhoea)

Mortality estimated at 10%

Every hour of delay to antibiotics once hypotensive increases mortality by 7.6%

SEPSIS

SIRS: temperature <36 or > 38

HR >90

RR >24

WCC >12 or < 4

SEPSIS: SIRS + focus

SEVERE SEPSIS: Sepsis + organ dysfunction

SEPTIC SHOCK: Severe sepsis + hypotension in spite of fluid resuscitation or requirement for inotropes

PAEDIATRIC SEPSIS

- SIRS (need either temp or WCC changes)
- HR, RR, BP values are age specific
- Septic shock does not require hypotension
- Instead:
 - Hypotension OR
 - Vasoactive drug requirement OR
 - Two of the following: BE >-5 , lactate >4 , UO $<0.5\text{mls/kg/hr}$, CRT >4 secs, core to toe gradient > 3 deg

SEPSIS

Circulatory and respiratory insufficiency suggested by:

tachycardia

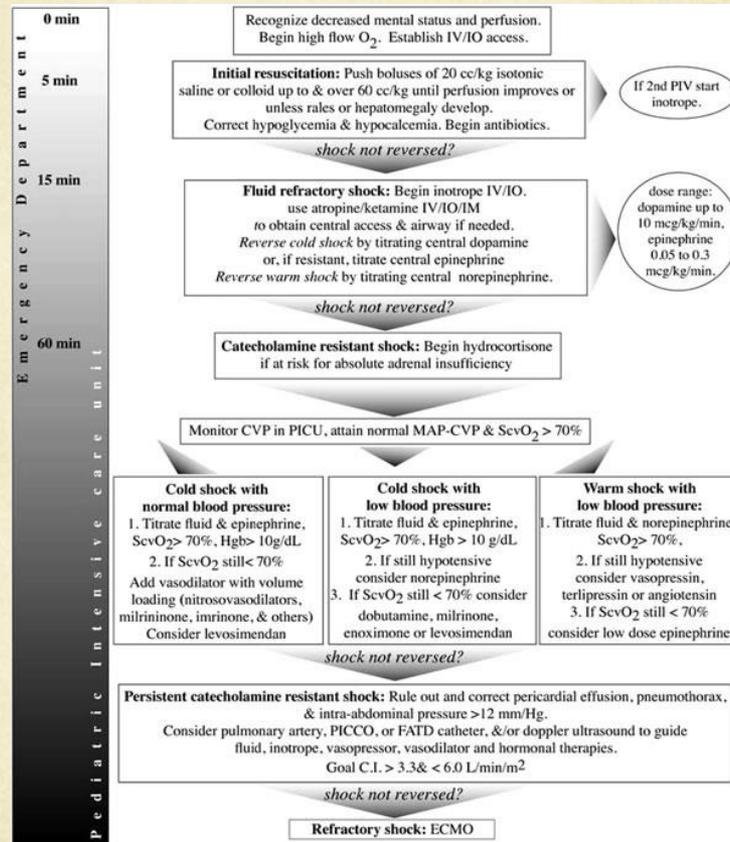
tachypnoea, increased respiratory distress, hypoxia

poor peripheral perfusion (prolonged cap refill,
cold peripheries)

confusion/alerted mentation

metabolic acidosis

SEPSIS



SEPSIS

Paediatric Sepsis 6

Severe sepsis is a **CLINICAL EMERGENCY**. Signs and symptoms of sepsis in children can be subtle and deterioration to shock rapid. Early initiation of simple treatment has been shown to improve outcomes.

YOU CAN MAKE A DIFFERENCE

Patient Name: _____ Date of Birth: _____ Unit number: _____

Recognition:

If a child with suspected or proven infection AND has at least 2 of the following:

- Core temperature < 36°C or > 38.5°C
- Inappropriate tachycardia (Refer to local criteria / APLS Guidance)
- Altered mental state (Including: sleepiness / irritability / lethargy / floppiness)
- Reduced peripheral perfusion / prolonged capillary refill

Think: could this child have SEPSIS or SEPTIC SHOCK?

If in doubt, consult a senior clinician.

Time Initials

--	--

Complete all elements within 1 hour

Respond with Paediatric Sepsis 6:

Time Initials

1. Give high flow oxygen:

--	--

2. Obtain intravenous or intraosseous access and take blood tests:

--	--

- Blood cultures
- Blood glucose - treat low blood glucose
- Blood gas (+ FBC, lactate & CRP as able for baseline)

3. Give IV or IO antibiotics:

--	--

- Broad spectrum cover as per local policy

4. Consider fluid resuscitation:

--	--

- Aim to restore normal circulating volume and physiological parameters
- Titrate 20 ml/kg Isotonic Fluid over 5 - 10 min and repeat if necessary
- Caution with fluid overload > Examine for crepitations & hepatomegaly

5. Involve senior clinicians / specialists early:

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6. Consider inotropic support early:

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- If normal physiological parameters are not restored after ≥ 40 ml/kg fluids
- NB adrenaline or dopamine may be given via peripheral IV or IO access

Record any reasons for variation from Paediatric Sepsis 6 overleaf

SEPSIS

- SEVERE SEPSIS (UNKNOWN CSF)

FLUCLOXACILLIN + CEFOTAXIME

- SEVERE SEPSIS (NORMAL CSF)

FLUCLOXACILLIN + GENTAMICIN

- NEONATAL SEPSIS

CEFOTAXIME + BENZYL PENICILLIN

KFC witness



protection program

Tricks for Wound Closure



PEDIATRIC EMERGENCY MEDICINE PRACTICE

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Management Of Wounds In The Pediatric Emergency Department

The parents of a 13-year-old bring their son to the emergency department after the glass coffee table on which he was sitting broke under his weight, about a half-hour ago. The patient has sustained multiple lacerations to both forearms. The parents state that they were able to stop all bleeding prior to coming to the ED, but they continue to maintain pressure over a larger cut on his right arm. You wonder how many of these lacerations are going to require closure. The boy's past medical history reveals that as a

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Authors

Paul J. Sagerman, MD

Associate Professor, Pediatrics, Wake Forest University Baptist Medical Center, Winston Salem, NC

Allison S. McBride, MD

Assistant Professor, Pediatrics and Emergency Medicine, Wake Forest University Baptist Medical Center, Winston Salem, NC

Elizabeth E. Halvorson, MD

Resident, Pediatrics, Wake Forest University Baptist Medical Center, Winston Salem, NC

Peer Reviewers

Mona Baharestani, PhD, APN, CWON, CWS

Wound Specialist/ Education & Research, James H. Quillen Veterans Affairs Medical Center, Johnson City, TN

Tricks for Wound Closure

- Random facts:
 - Infection rate of 3.5%
 - Primary closure < 18 hours, probably longer for clean neat wounds in vascular areas
 - Not much evidence for topical antimicrobial solutions, Generous irrigation important (saline? Cochrane says tap water)

Analgesia, anxiolysis and anaesthesia

- Distraction therapy
- Oral midazolam but beware SE
- Deep sedation needs anesthetic conditions/monitoring
- Topical anesthetic solution (ALA, laceraine)

Thank you for your time.