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Findings Concerning for Abusive Head Trauma

- Retinal hemorrhages
- Traumatic retinoschisis
- Subdural hematoma with or without skull fracture
- Unexplained intracranial injury
- Unexplained scalp injury or skull fracture
- Cerebral ischemia on neuroimaging

Exclusion criteria:

- Injury due to motor vehicle or bike accident
- Non-abusive injury witnessed by multiple people
- Known injury occurring at birth

Additional Medical Evaluation

(Based on SCAN recommendations; usually requires admission)

Laboratory Testing

- Obtain CBC, PT, PTT
- Obtain factor VIII level and factor IX level
- Obtain fibrinogen and D-dimer, if there is history of neurologic compromise
- Review newborn screen

Radiologic Testing

- Obtain MRI/MRV of head and total spine
- Discuss need for sedation/anesthesia with radiology (avoid sedation if possible)

Ophthalmologic Exam

- Place Ophthalmology consult for a dilated exam
- Discuss timing of exam with admitting team, as dilation can impact neurologic exams

Reference

Anderst, J., et al. (2022). Evaluation for bleeding disorders in suspected child abuse. *Pediatrics*, 150(4), e2022059276. <https://doi.org/10.1542/peds.2022-059276>

When a Report is Needed

- A social worker will complete a PAR to document a psychosocial assessment if concern for potential abuse. A PAR is initiated whenever abuse is under consideration. A PAR does not mean a child protective services report will be made
- If a mandated reporter believes in good faith there is a reasonable cause to suspect abuse, a hotline report must be made without unnecessary delay to the appropriate state agency and/or law enforcement.

Patient undergoing medical evaluation following head CT for suspected abusive head trauma (AHT)

Initial Steps

- Stabilize as needed prior to further evaluation
- If not at Adele Hall, transfer to CMKC Adele Hall ED
- Children with abusive head trauma may have other injuries; therefore, review the [Child Physical Abuse Clinical Pathway](#) and utilize associated Power Plans before continuing

Does the CT head show an intracranial injury?

No

Off Pathway.

A normal CT or CT with skull fracture alone **does not** rule out intracranial injury

- If ongoing concern for AHT, consult SCAN Physician to discuss additional work-up
- If other ongoing neurological concerns, consider [differential diagnosis](#) and consult Neurology to discuss additional work-up
- Refer back to [Child Physical Abuse Clinical Pathway](#) as needed

Consult

- Consult Neurosurgery
- Consult Trauma
- **Consult Social Work**
- Consult SCAN

Review

Review results with SCAN Physician. **Additional evaluation** may be indicated, based on SCAN recommendations

Update Social Work and request assistance with On-Site Safety Precautions (1:1 observation and/or visitor restrictions, refer to [Abuse/Neglect Process Flowchart](#) for details)

Communicate

- [Clearly communicate process with families](#)
- **Provider and Social Work Education**
- Ensure closed loop communication with all teams involved

Collaborate with Social Work and determine if a report to child protective services and/or law enforcement is needed

Admit to Trauma Surgery, unless otherwise directed by Trauma

[Inpatient Management](#)

Differential Diagnosis

- Accidental head trauma
- Accidental toxic ingestion
- Birth trauma
- Congenital condition (e.g., *glutaric aciduria - type 1, Menkes disease*)
- Neoplastic condition
- Seizures/epilepsy
- Meningitis/encephalitis
- Focal intracranial infection, refer to [Focal Intracranial Infection Clinical Pathway](#)
- Stroke, refer to [Stroke Clinical Pathway](#)
- Obstructive hydrocephalus
- Bleeding disorder
- Vascular abnormalities (e.g., *aneurysm, hereditary hemorrhagic telangiectasia*)

This list is not all inclusive of possible differential diagnoses

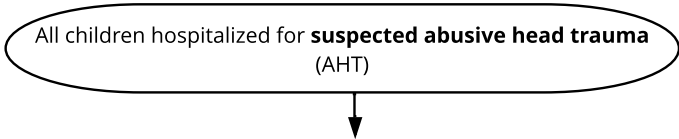
Provider and Social Work Education Videos

Conversations about suspected child abuse can be challenging. These 5-minute videos demonstrate effective communication with families.

Available to Children's Mercy providers and social workers through the [Child Abuse Toolkit](#)

Abbreviations:

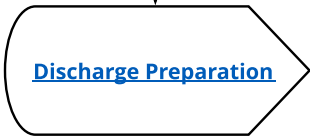
PAR = Patient At Risk Assessment
PICU = Pediatric Intensive Care Unit
SCAN = Safety, Care, and Nurturing



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Triage and Acute ICU care, (e.g. fluids & electrolytes, ICP management, EEG monitoring) are outside the scope of this pathway. Follow unit specific protocols to stabilize the child and medically manage the traumatic and/or anoxic brain injury.
For Children's Mercy ICU providers, refer to internal "Severe Traumatic Brain Injury Guideline."

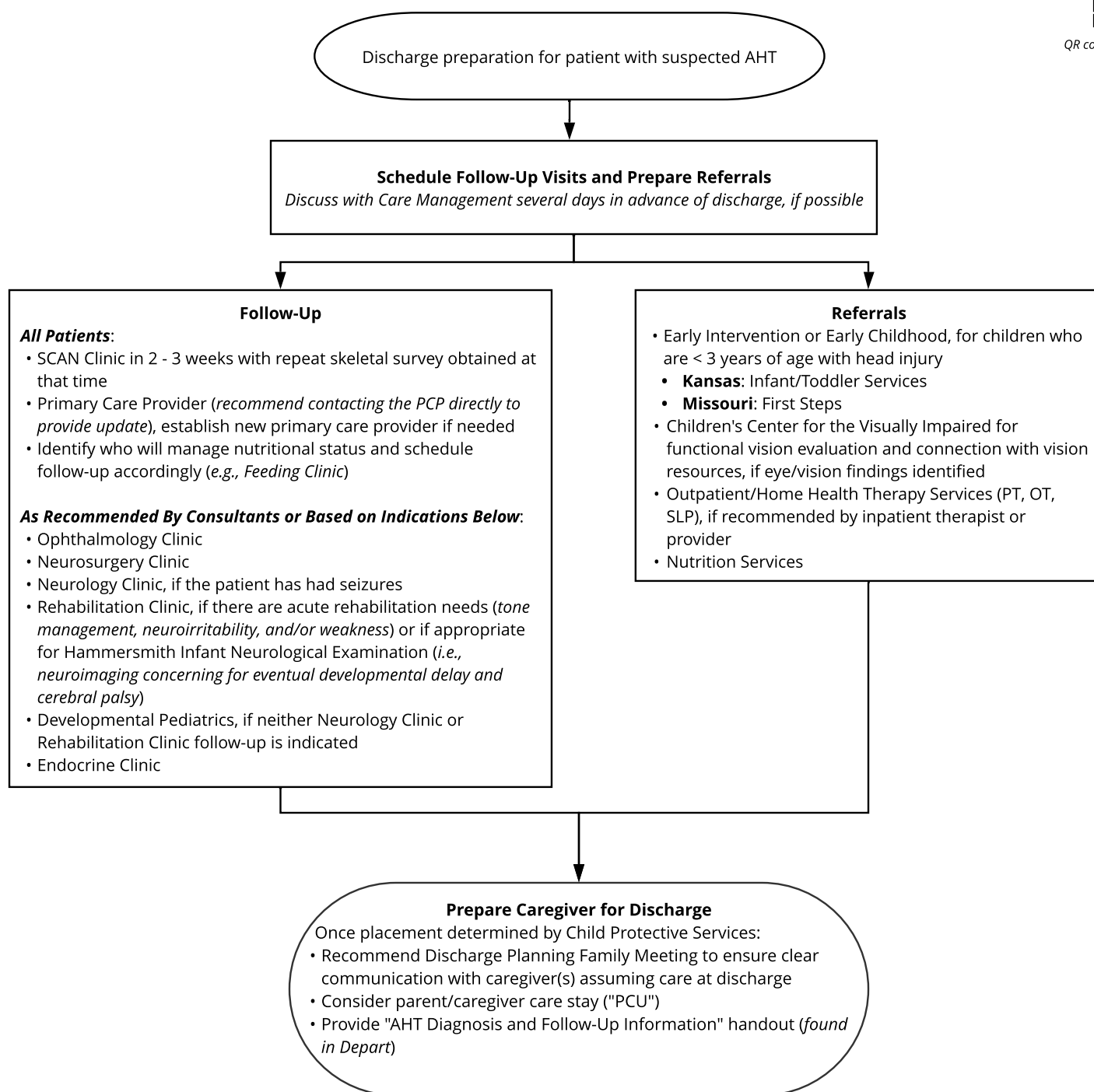
Additional Inpatient Management Based on Severity of Injury			
When transferring between teams (<i>Intensive Care, Neurosurgery, Gen Peds, Rehabilitation</i>) communicate about pending/incomplete action items			
Injury Severity based on post-resuscitation Glasgow Coma Scale (GCS)			
	Mild (13-15)	Moderate (9 -12)	Severe (≤ 8)
<div>Consults</div> <div>Timing can vary based on the child's needs. Some consults may take place in ICU vs Med/Surg</div>	<ul style="list-style-type: none">• Trauma• SCAN• Social Work• Ophthalmology• Neuropsychology Service• Endocrinology• On case-by-case basis:<ul style="list-style-type: none">• Rehabilitation Medicine• Physical Therapy• Occupational Therapy• Speech Therapy• Neurology• Neurosurgery	<ul style="list-style-type: none">• Trauma• SCAN• Social Work• Neurosurgery• Ophthalmology• Rehabilitation Medicine• Neuropsychology Service• Endocrinology• On case-by-case basis:<ul style="list-style-type: none">• Neurology• Physical Therapy• Occupational Therapy• Speech Therapy	<ul style="list-style-type: none">• Trauma• SCAN• Social Work• Neurosurgery• Ophthalmology• Neurology• Rehabilitation Medicine• Neuropsychology Service• Endocrinology• Physical Therapy• Occupational Therapy• Speech Therapy• Audiology (<i>most appropriate at end of stay</i>)• On case-by-case basis:<ul style="list-style-type: none">• Palliative Care Team
Seizure prophylaxis and monitoring	<div>Mild/Moderate</div> <div>If concern for clinical or subclinical seizure, contact Neurology to consider long-term EEG and/or antiepileptic medications</div>		<div>Severe</div> <ul style="list-style-type: none">• EEG monitoring for at least 24 hrs• Levetiracetam for minimum of 7 days. <i>If there are no seizures in 7 days, may discontinue.</i>• Additional recommendations per Neurology
Endocrine evaluation	<div>All Levels of Severity</div> <ul style="list-style-type: none">• BMP• Cortisol (8 am), ACTH (8 am), IGF - 1, prolactin• TSH, free T4• If urine output is > 5 cc/kg/hour over 3 - 4 hours, obtain: serum sodium, serum osmolality, urine sodium, urine specific gravity, urine osmolality		
Additional work-up for suspected abuse	Await SCAN consult recommendations		
Be aware of sub-acute complications such as DI, SIADH, cerebral salt wasting, seizures, obstructive hydrocephalus, autonomic instability			



Abbreviations:
DI = Diabetes insipidus
ICP = Intracranial pressure
SCAN = Safety, Care, and Nurturing
SIADH = Syndrome of Inappropriate Antidiuretic Hormone



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Abbreviations:

AHT = Abusive Head Trauma
OT = Occupational Therapy
PT = Physical Therapy
SCAN = Safety, Care, and Nurturing
SLP = Speech Language Pathologist