



# Trauma Imaging

<b>Source Document:</b>	North West Children's Major Trauma Operational Delivery Network (ODN) Clinical Guidelines
<b>Version:</b>	4
<b>Ratification Date:</b>	10/11/2023

## Children's Major Trauma Imaging Guidelines

The North West Children's Major Trauma ODN endorses the Paediatric Trauma Protocols produced by the Royal College of Radiologists (RCR) and have adopted these as the basis for network imaging guidelines.

The full guidance is available from the RCR:

[https://www.rcr.ac.uk/system/files/publication/field\\_publication\\_files/BFCR\(14\)8\\_paeds\\_trauma.pdf](https://www.rcr.ac.uk/system/files/publication/field_publication_files/BFCR(14)8_paeds_trauma.pdf)

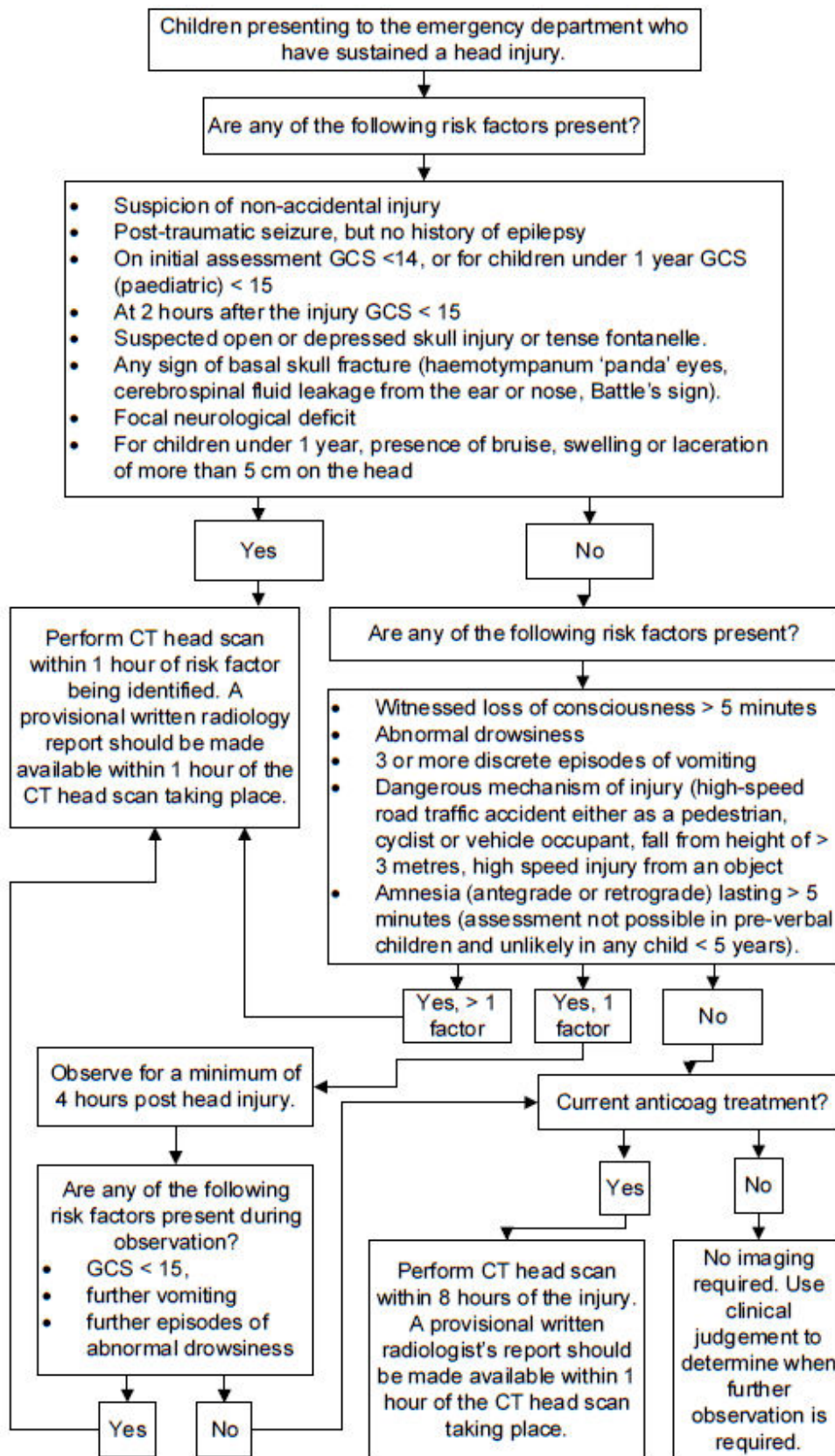
Algorithms from that document have been appended for quick reference.

### Additional Guidance for Secondary Transfers

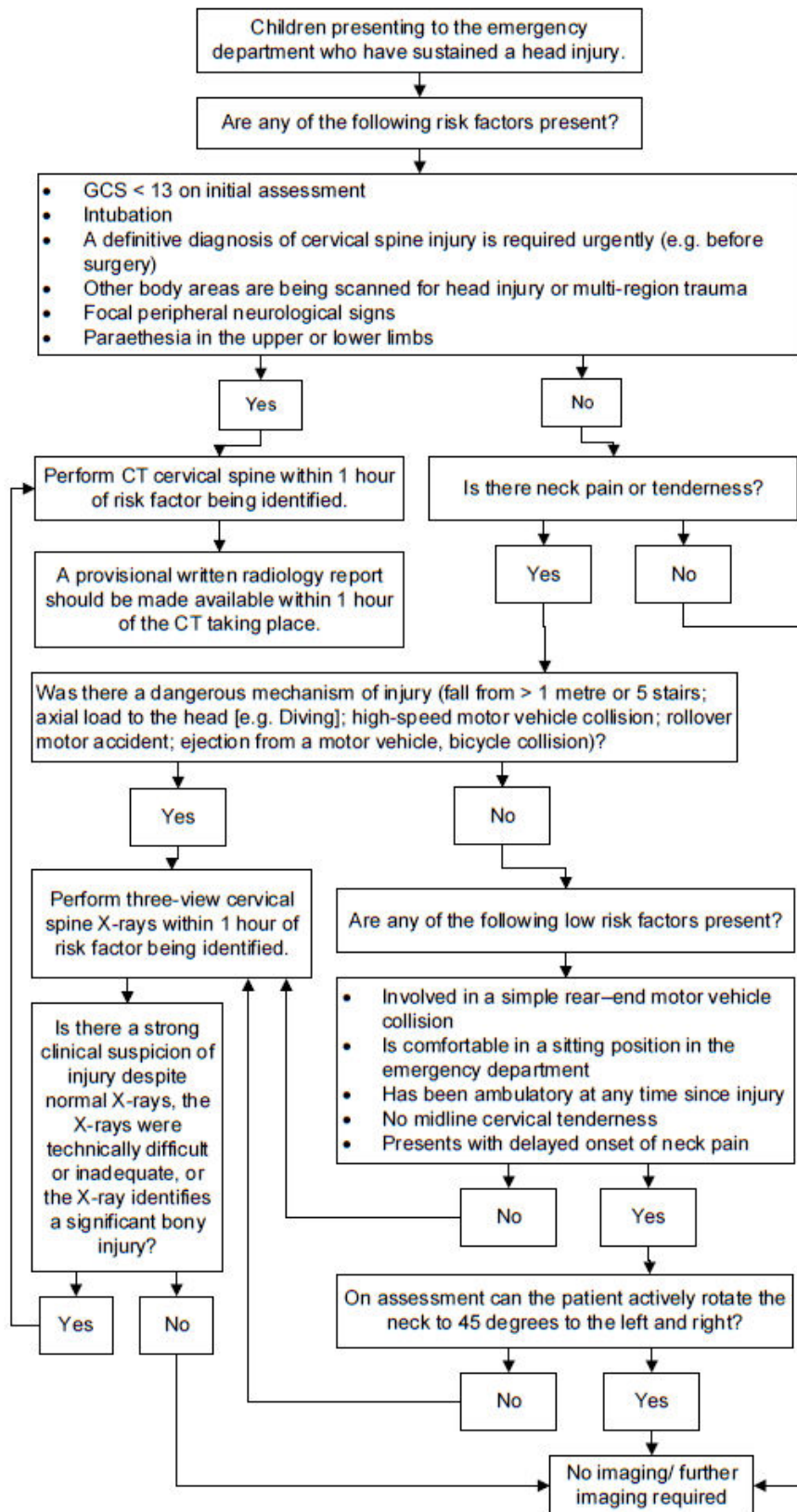
Where the child is initially received in a Trauma Unit (TU) or local Emergency Hospital (LEH) prior secondary transfer to a Children's Major Trauma Centre (ChMTC):

- Decisions regarding imaging performed at the TU/LEH should be made following discussion between TTL at the TU/LEH and ChMTC if time allows.
- For the patient who has an emergency transfer (Category 2 Trauma Transfer) – If local CT not performed, then plain X-rays of the Chest should be performed and reviewed prior to transfer. If there is suspicion of pelvic or hip injury, then a plain X-ray of the Pelvis should also be obtained and reviewed prior to transfer.
- This, together with a primary survey clinical assessment, should enable any injuries requiring emergency treatment, or with a potential for deterioration *en route* are identified.
- When imaging has been performed at the TU or LEH the transferring team must ensure that the images are available on the PACs system or if the PACs system is not available copies of the images must be sent with the patient on disc.

## Suspected Head Injury



## Suspected Cervical Spine Injury



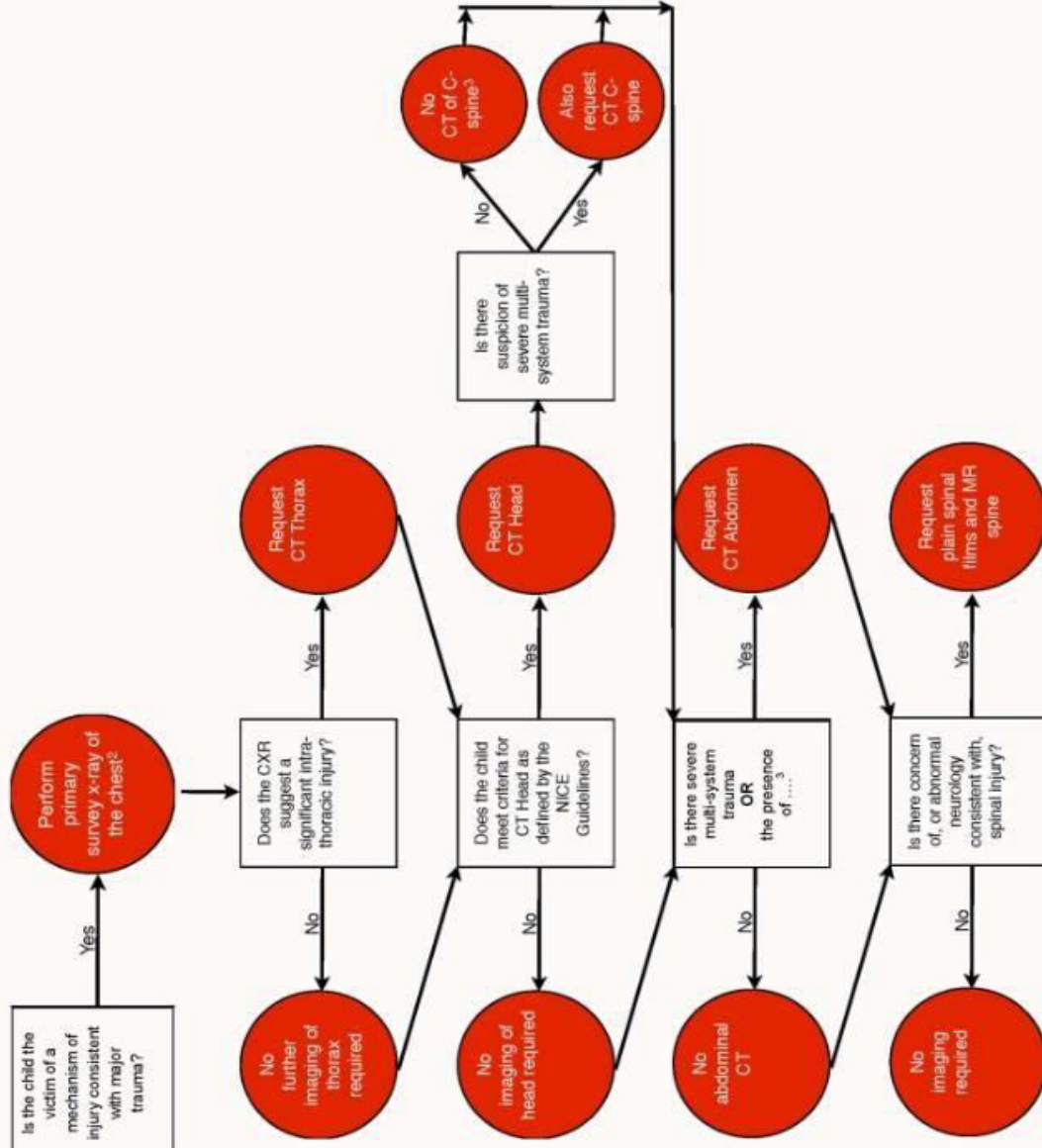
## Indications for CT Thorax

- Penetrating trauma - requires contrast enhanced CT
- Abnormal plain chest x-ray
- High clinical suspicion of injury. Consider in patient who has evidence of multisystem trauma and who is:
  - Patient intubated prior to hospital assessment
  - Unconscious patient
  - Haemodynamically unstable
  - Unable to oxygenate adequately

## Indications for CT Abdomen and Pelvis

- Lap belt or handlebar injuries
- Abdominal wall bruising
- Abdominal tenderness in a conscious patient
- Abdominal distension
- Clinical evidence of persistent hypovolaemia; for example, persistent unexplained tachycardia or shock
- Blood from rectum or nasogastric tube or urethra
- Consider the need for CT Abdomen in children who have been intubated prior to hospital assessment, especially where there is evidence of multisystem trauma

# Emergency department paediatric major trauma imaging decision tool



- Notes**
1. A primary survey pelvic X-ray is not indicated in the paediatric population
  2. If there is clinical suspicion of isolated C-spine injury plain C-spine films are normally sufficient to exclude bony injury
  3. i) Lap belt injury  
 ii) Abdominal wall ecchymosis  
 iii) Abdominal tenderness in conscious patient  
 iv) Abdominal distension  
 v) Persistent hypovolaemia  
 vi) PR or NG blood



The North West Children's  
Major Trauma Network