Radiology Reporting Online

Out of hours CT Clinical Guidelines

All out of hours CT requests should be discussed with the Radiologist at RRO by a referrer of ST3 level or above. Specialist associates (SAS) are also allowed to refer.

Head CT should be arranged locally according to the following guidelines and sent to RRO for reporting.

Patients must be able to lie still for the scan and be accompanied by a suitable health care professional for monitoring purposes.

Head Injury - Adults

When to perform a CT head scan within 1 hour

- GCS less than 13 on initial assessment in the emergency department
- GCS less than 15 at 2 hours after the injury on assessment in the emergency department.
- Suspected open or depressed skull fracture.
- Any sign of basal skull fracture (haemotympanum, 'panda' eyes, cerebrospinal fluid leakage from the ear or nose, Battle's sign).
- Post-traumatic seizure.
- Focal neurological deficit.
- More than 1 discrete episode of vomiting.

When to perform a CT head scan within 8 hours

For adults with any of the following risk factors who have experienced some loss of consciousness or amnesia since the injury

- Age 65 years or older.
- Any history of bleeding or clotting disorders.
- Dangerous mechanism of injury (a pedestrian or cyclist struck by a motor vehicle, an occupant ejected from a motor vehicle or a fall from a height of greater than 1 metre or 5 stairs).
- More than 30 minutes' retrograde amnesia of events immediately before the head injury.

Cervical spine injury – Adults

For adults who have sustained a head injury and have any of the following risk factors, perform a CT cervical spine scan within 1 hour of the risk factor being identified:

- GCS less than 13 on initial assessment.
- The patient has been intubated.
- Plain X-rays are technically inadequate (for example, the desired view is unavailable).
- Plain X-rays are suspicious or definitely abnormal.
- A definitive diagnosis of cervical spine injury is needed urgently (for example, before surgery).

- The patient is having other body areas scanned for head injury or multi-region trauma.
- The patient is alert and stable, there is clinical suspicion of cervical spine injury and any of the following apply:• age 65 years or older
- dangerous mechanism of injury (fall from a height of greater than 1 metre or 5 stairs; axial load to the head, for example, diving; high-speed motor vehicle collision; rollover motor accident; ejection from a motor vehicle; accident involving motorised recreational vehicles; bicycle collision)
- focal peripheral neurological deficit
- paraesthesia in the upper or lower limbs.

Stroke

Brain imaging should be performed immediately for people with acute stroke if any of the following apply:

- indications for thrombolysis or early anticoagulation treatment
- on anticoagulant treatment
- a known bleeding tendency
- a depressed level of consciousness (Glasgow Coma Score below 13)
- unexplained progressive or fluctuating symptoms
- papilloedema, neck stiffness or fever
- severe headache at onset of stroke symptoms.

In other circumstances head CT can be performed the next day.

CT is NOT indicated for transient ischaemic attack.

Fits

Indicated out of hours if:

- Status epilepticus not responding to medical treatment
- Persistent focal neurological signs

? Subarachnoid haemorrhage

CT indicated
SAH is not excluded. If CT is negative, a lumbar puncture should be performed.

? Meningitis

- Impaired consciousness
- Focal neurological signs
- Fits

In other cases lumbar puncture can be performed without a CT scan

Body CT
Should be requested by a middle grade or above, after discussion with the clinical consultant.
Discuss the case with the RRO radiologist who will protocol the scan.
Intravenous contrast is usually required and so renal function should be available before the scan apart from exceptional circumstances.

Major Trauma
According to local guidelines and requested by the trauma team leader.

CT Pulmonary Angiogram
Not usually performed out of hours except where:

- Thrombolysis indicated
- Anticoagulation is contraindicated.

Other indications for out-of-hours body CT:

- ?Acute aortic dissection
- Acute surgical abdomen, if required for immediate management
- Suspected ruptured aortic aneurysm
- GI bleeding (CT angiography) if persistent active bleeding and endoscopy has not identified the cause.

CT KUB

For renal colic is not usually performed out of hours. These may be requested following discussion with the urology team in the context of: Acute urosepsis, known solitary kidney, acute renal impairment

CT assessment of fractures

Not usually performed out of hours unless required for immediate operative management. Should be scheduled with the radiographer for a next morning slot.

RRO CT scanning protocols
Images should be sent **only** in the following format:

Scan Type	Optimum slice thickness	Algorithm	Max acceptable slice thickness	Plane
Brain, Spine, Facial bones, Musculoskeletal	1 mm	Soft tissue and bone	1.5 mm	Axial only
Chest, Abdomen, Pelvis	1 mm	Soft tissue only	2 mm	Axial only