Stroke care pathway from ED to CT and the improvement of patient time from CT scan to thrombolysis.

Plymouth Hospitals NHS Trust

NICE Guidelines (*[CG68] 1.3.2.1)* state that brain imaging should be performed immediately for people with acute stroke (in overs 16's) if any of the following apply:

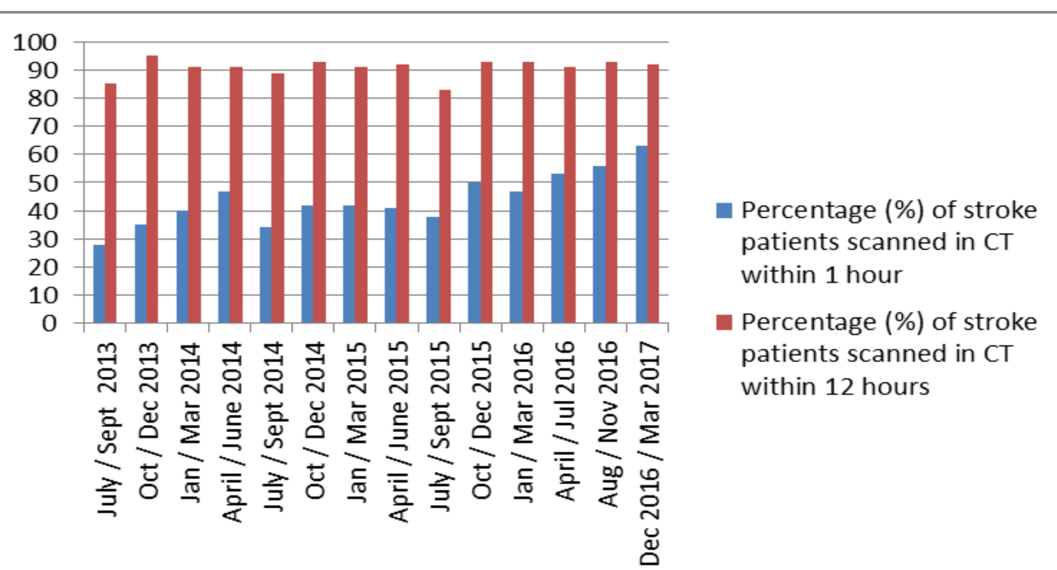
- indications for thrombolysis or early anticoagulation treatment
- on anticoagulant treatment
- a known bleeding tendency
- a depressed level of consciousness (GCS <13)
- unexplained progressive or fluctuating symptoms
- papilloedema, neck stiffness or fever
- severe headache at onset of stroke symptoms.

For all people with acute stroke without indications for immediate brain imaging, scanning should be performed as soon as possible (*NICE Clinical guideline [CG68] 1.3.2.2)*

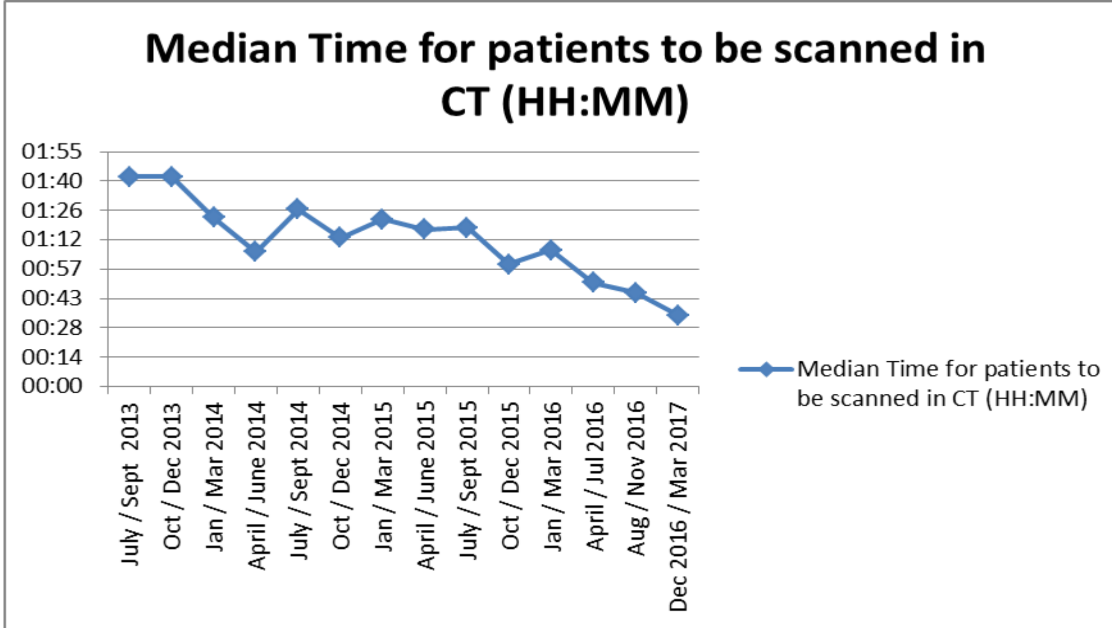
Administration of Alteplase should be as early as possible and within 4.5hours of onset of stroke symptoms. (Clinical guideline [CG68] 1.4.1.1)

AIM

To compare data to highlight improvement percentages of patients' receiving CT imaging within 1hour and up to 12hours, and to re-evaluate and confirm recommendations for further service improvement.



Data provided by SSNAP over period from July 2013 until March 2017.



CURRENT PRACTICE

ED ASSESSMENT OF ACUTE STROKE age 18 years or over

Indications: All strokes in-hours (08:30-21:00)

PRE-ALERT

- Complete the ATMIST form adequately and accurately and in particular:
  - Name, Date of birth, Onset time, ETA
- Inform Receptionist of details to pre-register patient (use ePCR information if available)
- Call the stroke team at ETA ≤ 15 minutes (see below)

REGISTRATION OF PATIENT - RECEPTIONIST (applicable to acute stroke patients only)

- Pre-register acute stroke patient using information provided in ATMIST as per protocol

CLINICAL INFO / PRESENTATION BEFORE PATIENT ARRIVES

- Generate a CT head request based on the pre-registered Hospital ID provided by Receptionist
- Put ROSIER stamp on CT request
- **Scan request in at ED X-ray**
- ☎ 2222 (Switchboard) to activate Stroke Co-ordinator, Stroke Registrar & CT Radiographer

ON PATIENT ARRIVAL

- Meet the paramedics in the corridor and do ROSIER check
- Confirm patient is same as pre-registered details, attach wrist-band
- Confirm/insert size 18 (green) cannula into Left anti-cubital fossa
- Confirm patient safe to go direct to CT (GCS ≥ 10)
- Direct paramedics with nurse escort to the CT scanner
- Paramedics hand-over patient to nurse escort, retrieve ambulance trolley once patient is in scanner and depart, sign-off Mobi-Med Smart en-route back to vehicle

RETURN FROM CT TO ED – NURSE CONTROLLER

- identifies a Resus bay for patient in anticipation of thrombolysis before they return from CT
- arranges for trolley to be taken to CT, in preparation for patient to return to ED
- amends EDIS to reflect location of patient in Resus, arrange for actual time of arrival to be amended and clinically comment why there are differences in arrival times

FOLLOW-UP

- Nurse controller to send a trolley to collect patient from CT
- Stroke team to decide further treatment such as thrombolysis or reversal of anti-coagulation
- Complete your documentation
- Request a Burrator (Acute Stroke Unit) bed for patient
- Hand over care to neurology team

Acute stroke presenting between 2100 - 0830

Process pre-alert in a similar way to the above
Request CT head once patient is on EDIS
Bleep 0308 (duty medical registrar)
Medical registrar to assess patient in ED after CT to decide treatment e.g. thrombolysis
Request a Burrator (Acute Stroke Unit) bed for patient

ED Clinical guidelines - in collaboration with neurology & CT dept.
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How has some of the recommendations from the CQC currently impacted the acute stroke care of PHNT?

- It was recommended by CQC to implement a 'Thrombolysis bag' to aid in reducing delays in administering IV TPA.

This has allowed for an increase of patients receiving thrombolysis on the CT scanner (when sufficient history and blood pressure etcetera has also been checked).

- Routine tasks such as ECG, changing patients clothes etcetera should be postponed until after thrombolysis.

This is being carried out in addition to the assessment of the patient outside CT scanning room when in use and on entering CT scanning room.

- *Weekly meetings are held maximising review and feedback to all*
- *Current employment of 3 specialist stroke nurses (in-hours)*
- *Education and awareness of the urgency of strokes (treated as urgent as trauma patients) amongst the imaging and emergency team*

Our SSNAP score has increased from a D (Jan-March 2016) to a B (Dec 2016-March 2017)

Recommendations to further increase improvement

- Correct cannula siting on patient arrival to CT
- To develop a pathway in which CT Radiographers can e-vet CT head and CT Angiograms for strokes, reducing the time from request to e-vetting (IRMER2000 compliance).
- Continued use of the stroke bleep via switchboard.
- Continued clear communication between all members of staff involved in patient pathway, including that of stroke arrival time to CT and organising a trolley to take patients back to ED.
- Audit into reporting time out of hours compared to that of in hours.
- Mimic process of trauma patients – include a scribe and timer into the pathway.
- Standardise all stroke requests for potential stroke within 6 hours – lack of CTA request may give the impression that that request may be less urgent.
- Electronic EDIS system doesn't talk to CRIS
- Undertake further audits of delays

Hélène Baudains CT Radiographer. Data from SSNAP 2013-2017, CQC report June 2016, Dr Will Adams, Colin Stuckey, Edna Piper.