

Patient Details:
Name:
Hospital Number:
NHS Number:
Date of Birth:
Address:

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Stroke Care Pathway and clerking proforma – Bronglais

.....03

Arrival in CT Date: _____ Time: _____ Location: _____	Onset of Symptoms Date: _____ Time: _____ On waking: Y/N Exact ☐ Best estimate ☐ Last seen well ☐
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Attending staff	Name	Grade	Bleep/phone
Clinician			
Clinician			
Clinician			
Nurse			
Other			

Is this a stroke?

Rosier score	Score	
1 Has there been loss of consciousness or syncope?	Y (-1pt)	No (0pts)
2 Has there been seizure activity?	Y (-1pt)	No (0pts)
3 Is there a NEW ACUTE onset (or on awakening from sleep) of the following:		
a. Asymmetrical facial weakness	Y (+1pt)	No (0pts)
b. Asymmetrical arm weakness	Y (+1pt)	No (0pts)
c. Asymmetrical leg weakness	Y(+1pt)	No (0pts)
d. Speech disturbance	Y(+1pt)	No (0pts)
e. Visual field defect / ophthalmoplegia	Y(+1pt)	No (0pts)
Total Score: _____ (-2 to +5) NB: A total score of 1 – 5 is suggestive of stroke. Stroke is unlikely but not excluded if total score is ≤ zero. Clinical judgement should be used.		

Provisional diagnosis: Stroke ☐
Non Stroke ☐ (specify)

Useful contact numbers

Bronglais numbers	
Stroke CNS	308886
Stroke consultant	307131
Bed manager/nurse prac.	308880
Team leader ED	307615
Porters	307026 or 305570
<i>Thrombectomy referral: to be considered, patient must score above 6 on NIHSS and have a modified Rankin score of 2 or below. Currently we have no accepting site overnight. For overnight referrals: refer to Cardiff who can consider the case in the morning.</i>	
Cardiff Thrombectomy centre contacts (University hospital Wales)	Refer via referapatient from 8am until 1pm
Stroke unit C4	02921 842881
CNS team	02921 840916
UHW patient flow/site	02921 845665 02921 845666
Bristol Thrombectomy centre (South mead)	Refer via referapatient from 1pm until 10pm
Southmead hospital stroke consultant	007784 359723

CNS	01174 149092
SOUTH WALES TRAUMA DESK (single point of contact for all transfers for thrombectomy)	0300 303 5635

National Institutes of Health Stroke Scale - NIHSS

1a. Level of Consciousness	0 = Alert ; keenly responsive 1 = Not alert ; but rousable by minor stimulation 2 = Not alert ; requires repeated stimulation to attend 3 = Unresponsive ; reflex movements only	Admission	24 hrs
1b LOC Questions Ask patient the month and his/her age	0 = Answers both questions correctly 1 = Answers one question correctly 2 = Answers neither question correctly		
1c. LOC Commands Open & close eyes and grip & release non-paretic hand	0 = Performs both tasks correctly 1 = Performs one task correctly 2 = Performs neither task correctly		
2. Best Gaze Horizontal movements only	0 = Normal 1 = Partial gaze palsy 2 = Forced Deviation not overcome by oculoccephalic manoeuvre		
3. Visual Fields	0 = Normal 1 = Partial Hemianopia 2 = Complete Hemianopia 3 = Bilateral Hemianopia (blind: including cortical blindness)		
4. Facial Palsy	0 = Normal 1 = Minor paralysis (flattened nasolabial fold, asymmetry on smiling) 2 = Partial paralysis (total or near total paralysis of lower face) 3 = Complete paralysis of one or both sides (absence of facial movement in the upper and lower face)		
5. Motor Function – Arm	0 = Normal ; limb holds 90° or 45° for 10 seconds - no drift 1 = Drift ; limb holds 90° or 45° for but drifts down before full 10 seconds but does not hit bed or other support 2 = Some effort against gravity 3 = No effort against gravity ; limb falls 4 = No movement UN= Untestable; joint fused or amputated	R L 0 ☐ ☐ 1 ☐ ☐ 2 ☐ ☐ 3 ☐ ☐ 4 ☐ ☐ UN ☐ ☐	R L 0 ☐ ☐ 1 ☐ ☐ 2 ☐ ☐ 3 ☐ ☐ 4 ☐ ☐ UN ☐ ☐
6. Motor Function – Leg	0 = Normal ; leg holds 30° position for 5 seconds 1 = Drift ; leg falls by end of 5 second period but does not hit bed 2 = Some effort against gravity 3 = No effort against gravity 4 = No Movement UN= Untestable; joint fused or amputated	R L 0 ☐ ☐ 1 ☐ ☐ 2 ☐ ☐ 3 ☐ ☐ 4 ☐ ☐ UN ☐ ☐	R L 0 ☐ ☐ 1 ☐ ☐ 2 ☐ ☐ 3 ☐ ☐ 4 ☐ ☐ UN ☐ ☐
7. Limb Ataxia Finger/nose & heel/shin both sides. Ataxia <i>disproportionate</i> to weakness only	0 = No Ataxia or paralysed/comatose/does not understand 1 = Present in one limb 2 = Present in two limbs UN= Untestable only if amputation or joint fusion		
8. Sensory	0 = Normal ; no sensory loss 1 = Mild to moderate sensory loss , aware of touch 2 = Severe to total sensory loss		

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9. Best Language	0 = No Aphasia 1 = Mild to moderate aphasia ; loss of fluency or comprehension 2 = Severe aphasia ; fragmented communication 3 = Mute, global aphasia ; no useable speech or auditory comprehension		
10. Dysarthria	0 = Normal 1 = Mild to moderate dysarthria ; slurring of words, at worst can be understood with some difficulty 2 = Severe dysarthria ; near unintelligible or unable to speak (out of proportion to aphasia) UN = Untestable due to intubation or other physical barrier	0 ☐ 1 ☐ 2 ☐ UN ☐	0 ☐ 1 ☐ 2 ☐ UN ☐
11. Extinction & Inattention	0 = No abnormality 1 = Inattention or extinction to bilateral simultaneous stimulation in one sensory modality (visual, tactile, auditory, spatial or personal) 2 = Profound hemi-inattention or extension to more than one modality		
Signature:		TOTAL SCORE	

Initial Assessment		
Date:	Time:	Dr completing:



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Presenting complaint – clinical history:

Which area of the brain explains presenting symptoms (if any)

Social history

Past medical history:

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Medications:

Allergies:

Vascular Risk factors

Heart Failure	Yes	No	Hyperlipidaemia	Yes	No
Hypertension	Yes	No	Smoking – history = ____yrs Ex-smoker? ☐	Yes	No
MI/Ischaemic Heart Disease	Yes	No	Alcohol Excess	Yes	No
Atrial Fibrillation – known/new (circle)	Yes	No	Previous stroke/TIA	Yes	No
Peripheral Vascular Disease	Yes	No	Family history of stroke	Yes	No
Diabetes – known/new (circle)	Yes	No			

Additional PMH

PE/DVT	Yes	No	CKD	Yes	No
COPD/ asthma	Yes	No	Arthritis	Yes	No
Cognitive impairment	Yes	No	Epilepsy	Yes	No
Malignancy	Yes	No			

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General Examination:

Cardiovascular

Respiratory

Abdominal

Other

Neurology

Vital signs on arrival		Time:		CT head	Scan time: _____	
				CTA (if needed)	Scan time: _____	
BP	HR (bpm)	BM	Swallow screen	Date:	Outcome: Pass / Fail	
				Time:	Sign: _____	
Sats (SpO2)	Temp (°C)	RR (rpm)	GCS	Baseline Blood Tests: (Hba1C, FBC, U&E, LFT, Gluc, clotting, Lipids, CRP and EGFR)		Sign: _____

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CT head results	Blood results					
Size of haematoma _____ ASPECTS score _____	WBC		Creat		Trig	
	HB		Bilir		Ca	
	PLT		Prot		Phos	
	HCT				CRP	
	MCV		Alb		ESR	
	Neuts		Glob		Clotting	
ECG	Na		ALP		INR	
	K		ALT		Hba1C	
	Urea		Chol			
	Chest x-ray					

Impression: Stroke/not stroke. If not stroke – transfer to A & E for assessment

IPCS ☐ if no contraindications – see below

Severe PVD		Severe skin inflammation		Non pitting chronic lymphoedema	
Severe peripheral neuropathy		Severe CHF		Suspected VTE/ superficial thrombophlebitis	

Aspirin ☐



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Management plan

Discussion with patient/family

Acute stroke management

Treatment options

1. Rapid thrombolysis after ischaemic stroke – door to needle target is 30 minutes

All patients with and NIHSS of 1 or above should be considered for thrombolysis. It is valid for up to 4½ hours of stroke symptom onset.

For use after 4½ hours or “wake up” stroke – please contact stroke consultant. At weekends – consultant on call.

2. Thrombectomy - can be referred as well as thrombolysed

All patients up to 24 hours post stroke onset should be considered for thrombectomy if NIHSS is 6 or above. For “wake up” strokes, time of onset should be waking – this is different from thrombolysis. Current times for thrombectomy are subject to change - please contact Nurse practitioner (308880) if unsure. Please refer to page 19

3. Rapid blood pressure control in intracerebral haemorrhage (ICH)

For those patients who present within 6 hours of ICH with a blood pressure in excess of 150mmHg (systolic) – see page 20 for guidance.

Please refer all patients with ICH to neurosurgery in Cardiff via www.referapatient.org

All stroke patients benefit from admission to an acute stroke unit within 4 hours of admission to hospital.

NB: If for thrombolysis – you will need to ensure repeat CT scan is ordered and repeat NIHSS assessment organised for 24-48hrs post thrombolysis.

Thrombolysis

Presentation within 4.5 hours of symptom onset

Patients with acute ischaemic stroke, regardless of age or stroke severity, in whom treatment can be started within 4.5 hours of known onset and exclusion of intracranial haemorrhage by appropriate imaging techniques, should be considered for thrombolysis (See criteria).

Criteria for Stroke Thrombolysis

Inclusion Criteria	Y	N
Clinical signs and symptoms of definite acute stroke		
Clear time of onset & presentation within 4.5 hours of onset		
Treatment can start 4.5 – 9 hours , mid-point of sleep if a wake-up, with CTA perfusion mismatch (alteplase only)		
Haemorrhage excluded by CT scan		
Relative Exclusion Criteria – use clinical judgement	Y	N
Stroke or serious head injury within 3 months (D/W Stroke team)		
Systolic BP > 185mmHg and Diastolic BP > 110mmHg – BP reduction required prior to thrombolysis		
Major surgery / external heart massage / obstetric delivery within 14 days		
GI haemorrhage / urinary tract haemorrhage within 21 days		
History of intracranial haemorrhage, aneurysm, neoplasm, spinal or cranial surgery of haemorrhagic retinopathy		
Blood glucose <3 mmol/l or >22 mmol/l		
Seizure at onset		
Premorbid dependency – consider modified Rankin score (page 16)		
Acute pancreatitis/ oesophageal varices/ulcerative GI disease within 3 months/aortic aneurysm/ active hepatitis/cirrhosis		
Puncture of non-compressible blood vessel last 14 days		
Could the patient be pregnant?- seek expert advice		
Absolute Exclusion Criteria	Y	N
Known clotting disorder		
Patient on therapeutic LMWH, Warfarin with INR > 1.7 or DOAC (Apixaban, Rivaroxaban, Dabigatran, Edoxaban) use within the last 48 hours - check compliance. (Discuss coagulation profile with haematology if necessary)		
Symptoms suggestive of Sub Arachnoid Haemorrhage even if CT normal		
Bacterial endocarditis /pericarditis		



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Thrombolysis care pathway

CONSENT TO TREATMENT

	Yes	No	Unsure
1. Does the patient have capacity to consent to treatment?			
2. People close to the patient (unpaid carers / relatives) have been consulted as appropriate.			
3. Taking all of the above factors into account, is thrombolysis judged to be in the patients best interests?			
Information to be given BEFORE administration of Alteplase/Tenecteplase			
If the patient fulfils the inclusion criteria with no exclusions, then Tenecteplase/Alteplase is a licenced treatment for acute ischaemic stroke and so <u>written consent is not required.</u> If possible there should be an agreement from the patient +/- relative; this is known as assent not consent (Good Clinical Practice) Any explanation should include: - Stroke Diagnosis. - This treatment, dissolves the blood clot blocking the artery and allows blood to get back to the brain. Evidence indicates that the drug works if given up to 4.5 hours of the stroke starting. - The patient should be informed that they have a 1 in 8 chance of making a significant improvement in their symptoms and there is a 1 in 18 chance of causing a symptomatic intracranial haemorrhage.			
Signed:	Date:	Time:	

First line:

TENECTEPLASE (Metalyse®)

For use up to 4.5 hours after symptom onset only

Metalyse® (Tenecteplase) is dose banded according to body weight, based on a **dose of 0.25mg/kg. Maximum single dose of tenecteplase is 5,000 units (25 mg).**

- Using patient's body weight (estimate can be used), read across the table below to identify the appropriate dose to prescribe.
- Prescribe the dose on the 'Prescriptions for once only medication, pre-anaesthetic medication and once-only antimicrobials' section on the front of the drug chart
- Additional contraindication** (to those listed above): - Hypersensitivity to **gentamicin** - Consider alteplase as alternative.

Patient's body weight (kg)	Tenecteplase dose (units)	Tenecteplase dose (mg)	Corresponding volume of reconstituted solution (ml)
<60*	3,000 units	15	3.0
60 to 69	3,500 units	17.5	3.5
70 to 79	4,000 units	20.0	4.0
80 to 89	4,500 units	22.5	4.5
≥ 90	5,000 units	25.0	5.0

*Benefit-risk of tenecteplase treatment should be carefully evaluated in patients weighing 50 kg or less due to limited availability of data. Consider alteplase in patients who weigh 50kg or less.

Only use 25mg vials of tenecteplase

Administration

- Slowly add 5ml of sterile water for injections to the vial
- Swirl gently to avoid foaming. Do not use if it contains particles
- The final concentration is 1000units in 1ml (5mg in 1ml)
- Transfer the required dose into the syringe

Tenecteplase is given as a single intravenous bolus over 10 seconds

Do not administer tenecteplase in a line containing glucose

Thrombolysis commenced:

Weight:		Dose given:	
Date:	Time: ____hrs/____mins	Location:	
Signed:	Date:	Time:	

Second line:

ALTEPLASE

For use in extended window/wake up strokes: only under direct instruction from stroke consultant

For all other cases (within 4.5 hours of symptom onset) – see tenecteplase dosing page

Prescribing - total alteplase (tPA) dose = 0.9mg per kg; (maximum dose 90mg)

10% of the dose to be given as loading dose, the remainder infused over 60 minutes via syringe pump.

- Using patient's body weight (estimate can be used) read across chart below to identify doses to prescribe.
- Prescribe the loading dose in the "stat doses" section of the chart.
- Prescribe the infusion in the "intravenous infusions" section of the chart.

Administration

- Add 50ml water for injection to 50mg alteplase vial to give 1mg in 1ml solution (Use diluents and transfer set provided). Agitate gently to reconstitute - **DO NOT SHAKE** vial.
- Let vial stand for 2-3 minutes to allow large bubbles to dissipate (slight foaming is common).
- Draw up **loading dose** into 10ml syringe and administer intravenously over 2-3 minutes
- Draw up infusion dose into 1 or 2 x 60ml syringes as per table.
- Label infusion syringes with "Drug added" labels.
- Administer infusion dose over **60 minutes** via syringe pump.

Patient weight (kg)	Patient weight (st and lb)	Loading dose (mg) bolus given over 2-3 mins	Infusion over 60 minutes (mg) Infusion rate ml/hour	Number of infusion syringes	Volume in syringe 1 (ml)	Volume in syringe 2 (ml)	Vials required
30	4st 10lb	2.7	24	1	24		1 x 50mg
35	5st 7lb	3.2	28	1	28		1 x 50mg
40	6st 4lb	3.6	32	1	32		1 x 50mg
45	7st 1lb	4.1	36	1	36		1 x 50mg
50	7st 12lb	4.5	41	1	41		1 x 50mg
55	8st 9lb	5.0	45	1	45		1 x 50mg
60	9st 6lb	5.4	49	1	49		1 x 50mg & 1 x 10mg
65	10st 3lb	5.9	53	1	53		1 x 50mg & 1 x 10mg
70	11st	6.3	57	1	57		1 x 50mg & 1 x 20mg
75	11st 11lb	6.8	61	2	26	35	1 x 50mg & 1 x 20mg
80	12st 8lb	7.2	65	2	30	35	2 x 50mg
85	13st 5lb	7.7	69	2	34	35	2 x 50mg
90	14st 2lb	8.1	73	2	38	35	2 x 50mg
95	14st 13lb	8.6	77	2	42	35	2 x 50mg
100	15st 10lb	9.0	81	2	46	35	2 x 50mg
> 100	> 15st 10lb	9.0	81	2	46	35	2 x 50mg



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Date	Medicine (Approved Name)	Batch number	Dose	Route	Prescribers signature	Date given	Time given	Given by	Checked by

PRESCRIPTION FOR ONCE ONLY THROMBOLYSIS TREATMENT

Patient Details:
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Agreement to thrombolysis obtained from Consultant

Yes No

If 'Yes'

- ☐ Commence thrombolysis **bolus and start infusion** in CT suite
- ☐ Transfer arranged to **Acute Stroke Unit (Ystwyth ward)**
- ☐ Neuro-protective measures initiated (BM/Temp/O₂/BP/Hydration Control)
- ☐ Continuous cardiac monitoring commenced
- ☐ No Aspirin, heparin, warfarin, Dipyridamole, Clopidogrel, or NSAIDs
- ☐ No Central or arterial lines or NG tubes in first 24 hours

Please prescribe tenecteplase/alteplase on patient's medication chart

NB: Bolus dose to be prescribed as a stat dose

If alteplase, infusion to be prescribed on intravenous infusion page

Commence the following:

- ☐ 15 minute physiological and neurological observations
- ☐ Continuous cardiac monitoring
- ☐ Transfer to ASU

Thrombolysis discontinued due to complications (see page 11):

Date:

Time: ____ hrs/ ____ mins

Reason for discontinuation:

Signed:

Date:

Time:

Complications of thrombolysis & appropriate intervention

STOP THE ADMINISTRATION IF ANY OF THE FOLLOWING OCCUR

COMPLICATION	INTERVENTION
ANAPHYLAXIS Rapid fall in BP, urticarial rash, new wheezing or breathlessness	- Stop infusion and refer to anaphylaxis guidelines on resus trolley - Call consultant on call
HYPOTENSION BP systolic $\leq$ 100mmHg	Often transient - Oxygen therapy, head tilt if BP $\leq$ 100 systolic - Consider IV fluid challenge and monitor closely
UNCONTROLLED HYPERTENSION BP systolic rises to $\geq$ 185/ 105mmHg sustained after 5 minutes, or associated with neuro deterioration of any sort	2 readings, 5 -10 minutes apart Target BP = 185/105 Repeat and monitor every 15 minutes If Systolic $\geq$185 mmHg or Diastolic $\geq$ 105mmHg First Line: Labetalol 10mg IV over 2 minutes. May repeat or double every 10 minutes to a total dose of 150mg Or: Give initial dose then infusion at 2mg/min, titrated to 8mg/min as needed Second line: Administer GTN 10 micrograms/min & titrate
LIKELY PRIMARY INTRACEREBRAL HAEMORRHAGE Major systemic bleeding Neuro deterioration of 2 points on GCS eye/motor scale – FOR URGENT CT SCAN	- Suspect if headache, nausea and vomiting, fall in GCS, new focal neurological signs or acute hypertension Discontinue alteplase infusion if still running - Basic resuscitation and check for new neurological deficit - Check fibrinogen, PT, PTT, FBC, group and save $\geq$ Arrange urgent CT scan If bleed confirmed (for Intracerebral OR life threatening systemic bleeding) give the following: 10 units cryoprecipitate if fibrinogen $\leq$ 1.5g/l. <u>This should be ordered immediately while a coagulation screen is underway.</u> This comes from Blood Bank and takes 30 minutes to thaw. 1-2 ATU (Adult Therapeutic Doses) of platelets, if count $\leq$ 100. These come from Blood Centre Discuss with Consultant Haematologist for further intervention & management /possible recombinant Factor VII administration

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Monitoring & care protocol for patients receiving Thrombolysis:

Requirement	Rationale
1. Continuous cardiac monitoring for up to 72hrs	Monitoring allows early warning of cardiac complications and arrhythmias. e.g. Atrial fibrillation, Myocardial Infarction
2. Physiological and Neurological monitoring – (total of 24 hours) 15min x 2hrs 30min x 6hrs 60min x 16hrs	Monitoring allows early recognition of complications arising from administration of alteplase. If any cause for concern, report immediately to medical team, document and increase observations accordingly. Any deterioration in GCS during thrombolysis may be attributed to suspected major bleeding or intracranial haemorrhage, prompting discontinuation of alteplase infusion and calling the medical team immediately. An urgent CT scan should be performed. Although alteplase has a short half-life in the circulation (minutes), the drug will continue to act on a thrombosis for many hours.
3. Bed Rest for 24 Hours	Reduces the risk of injury during the active life of the alteplase.
4. No Arterial Punctures or Central Lines	Lowers the risk of extensive uncontrolled bleeding from vulnerable sites. An exception may be made if continuous arterial monitoring is required following the administration of some antihypertensive drugs.
5. No Naso-Gastric Tube for 24 hours	Increased risk of oesophageal haemorrhage when passing a NG tube whilst alteplase is active.
6. No Urinary Catheterisation (for first 30 minutes of thrombolysis administration)	During the first 30 minutes following administration of alteplase, there is a great risk of causing trauma and haemorrhage during catheterisation.
7. No Aspirin, Dipyridamole, Clopidogrel, Heparin, Warfarin or NSAIDs	Heparin, Clopidogrel, Dipyridamole, Aspirin and Warfarin prevent platelet aggregation and should be avoided to lower the risk of over anticoagulation. NSAIDs should be avoided due to gastrointestinal side effect which may cause bleeding.
8. Repeat NIHSS & CT Brain Scan between 24 -48 hours post thrombolysis	To help exclude any intracranial bleeding complications. Once CT is completed /no bleeding complications, aspirin is usually started (or recommenced).

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Post Thrombolysis CT brain scan:

This should be done between 24 -48 hours post-thrombolysis
(NB: requires new CT referral form to be completed)

Date: _____ Time: _____

Report Outline:

Antiplatelet medication (if no haemorrhage on post thrombolysis CT)

☐ Aspirin 300mg daily prescribed

NIHSS Score

☐ NIHSS repeated at 24/48 hours post thrombolysis (see page 15).

Pre Thrombolysis NIHSS Score: _____

Post Thrombolysis NIHSS Score: _____

Stroke Thrombectomy Pathway for Hywel Dda Health Board

Monday – Friday 8am – 1pm	Otherwise (inc bank holidays)
University Hospital of Wales	Southmead, Bristol
Referrals 8am-1pm, MUST arrive by 3pm	Referrals 6am-12MN, MUST arrive by 10PM
Referral via Refer-A-Patient Select correct hospital, then Mechanical Thrombectomy Provide telephone number of referring clinician.	
Criteria: Last known well <24 hours. Pre morbid MRs <2. NIHSS >6. Large vessel occlusion confirmed on CT angiogram.	
NO NEED to transfer images, can be viewed on WCP	Ask Radiology to transfer images via Biotronics 3D
DO NOT DELAY THROMBOLYSIS IF INDICATED	
Transport to be arranged through South Wales Trauma Network Desk 0300 303 5635	
Inform patient and relatives/family that there is no guarantee that surgery will happen, and it may not be successful. Transfer back will happen as soon as they are medically stable, and there is a bed for them.	

Immediate Management of Primary Intra cerebral Haemorrhage

Reversal of anticoagulants

- Stop anticoagulation immediately
- Bloods including FBC, U&E, Coagulation, INR
- Find out patient weight, anticoagulant dose & when last taken
- Urgent reversal of anticoagulants – within 1 hour

Warfarin	1. 5 - 10 mg IV Vitamin K 2. Prothrombin complex concentrate - IV Octaplex 30 units / kg (rounded to nearest 500 units / vial – do not exceed 3000 iu in a single dose) 3. Check INR 6 hours after Octaplex
Apixaban, Rivaroxaban, Edoxaban (factor Xa inhibitors)	1. Consider Prothrombin complex concentrate - IV Octaplex 25 units / kg (rounded to nearest 500 units / vial – do not exceed 3000 iu in a single dose)
Dabigatran	1. Consider IV Idarucizumab (Praxbind) 2. If idarucizumab is unavailable, 4-factor prothrombin complex concentrate may be considered.

Acute Blood Pressure Management

Patients with acute spontaneous intracerebral haemorrhage with a systolic BP of 150-220 mmHg should be considered for urgent treatment within 6 hours of symptom onset.

Target systolic blood pressure - 130-139 mmHg within one hour and sustained for at least 7 days unless:

- The Glasgow Coma Scale score is 5 or less
- The haematoma is very large and death is expected
- A macro vascular or structural cause for the haematoma is identified
- Immediate surgery to evacuate the haematoma is planned, in which case BP should be managed according to a locally agreed protocol.

Follow local protocol for acute management (1st line labetalol, 2nd line – GTN)

Commence oral anti-hypertensive treatment at the earliest opportunity

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Recommended Neurological observations - 1st 24 hours (including BP)

If BP stable & within target range

	Frequency
First 2 hours	Every 15 minutes
Next 6 hours	Every 30 minutes
Next 8 hours	Hourly
Next 8 hours	2 hourly

Unless

- Otherwise agreed with senior medical staff (document decision).
- Using acute BP lowering treatment - follow local protocol for observations.

Escalate immediately & consider reimaging if neurological deterioration or worsening of symptoms, and revert to ½ hourly observations at a minimum or ¼ hourly if still in first 2 hours.

Additional Recommendations

- Refer patients (via www.referapatient.org) who develop hydrocephalus for consideration of surgical intervention (i.e. insertion of an external ventricular drain.)
- Consider CTA / MRA within 48 hours of onset in patients aged between 18-70 years who were independent, without a history of cancer, and not taking an anticoagulant. Except if they are aged more than 45 years with hypertension and the haemorrhage is in the basal ganglia, thalamus, or posterior fossa.