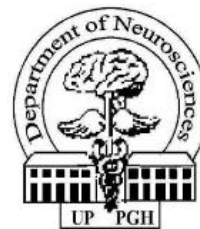




PHILIPPINE GENERAL HOSPITAL
The National University Hospital
University of the Philippines Manila
DEPARTMENT OF NEUROSCIENCES

Taft Avenue, Manila
PHIC-Accredited Health Care Provider
ISO 9001: 2008 Certified
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STROKE FORM

PATIENT DATA																							
Case Number				Contact Number																			
Name				Age		Sex																	
Admission Date				Date & Time of Ictus																			
Co-Morbidities ___ (1) Hypertension; control _____ ___ (2) Diabetes mellitus; control _____ ___ (3) Dyslipidemia _____ ___ (4) Ischemic Heart Disease ___ (5) Myocardial Infarction ___ (6) Valvular Heart Disease ___ (7) Non-Valvular Atrial Fibrillation ___ (8) Prior stroke/TIA; number of prior events: ___ ___ (9) Other _____				Vices		Smoker ___ (a) Never ___ (c) Current <20 sticks/day ___ (b) Past ___ (d) Current ≥20 sticks/day Alcohol intake ___ (a) yes ___ (b) no Illicit drug use ___ (a) yes ___ (b) no Others: _____																	
Premorbid MRS		0		1		2		3		4		5											
CLINICAL PRESENTATION																							
Hours Post Ictus		Prior consult with another hospital?		Yes		No		ICH Score		0		1		2		3		4		5		6	
GCS		NIHSS		BP		HR		RR		T		O2		CBG									
DIAGNOSTICS										PROTOCOL COMPLIANCE													
<input type="checkbox"/> CT Scan <input type="checkbox"/> MRI										<input type="checkbox"/> yes: <input type="checkbox"/> MCA protocol <input type="checkbox"/> HICH protocol <input type="checkbox"/> no, reason: _____													
HEMORRAGE					INFARCT																		
Location:					ASPECTS:																		
Hematoma Volume:					Territory:																		
IV Extension: <input type="checkbox"/> yes <input type="checkbox"/> no																							
COURSE																							
Clinical Deterioration: <input type="checkbox"/> yes <input type="checkbox"/> no								Referred to NSS?		<input type="checkbox"/> yes <input type="checkbox"/> no													
Stroke Progression/ Hematoma Expansion: <input type="checkbox"/> yes <input type="checkbox"/> no								Surgical Intervention: (Write type & date)		<input type="checkbox"/> yes: _____ Date done: _____ - _____ <input type="checkbox"/> no													
BP range x 48H: _____ CBG Range x 48 H: _____								Intubation:		<input type="checkbox"/> yes <input type="checkbox"/> no													
Nosocomial infection ___ (1) None ___ (2) Pneumonia ___ (3) Catheter-related UTI								Length of Hospital Stay															
OUTCOME																							
<input type="checkbox"/> DISCHARGE: RIC _____					<input type="checkbox"/> MORTALITY					<input type="checkbox"/> HAMA / THOC / HPR													
MRS:					PCOD:					REASON:													
NIHSS:																							
3 month MRS:																							
3 month NIHSS:																							

NIHSS

1a.	Level of Consciousness: (Alert, Drowsy, etc.)	0=Alert 1=Drowsy 2=Stuporous 3=Coma
1b.	LOC Questions: (Month, Age)	0=Answers both correctly 1=Answers one correctly 2=Both incorrect
1c.	LOC Commands: (Open & Close Eyes; Make fist & Let go)	0=Obeys both correctly 1=Obeys one correctly 2=Both incorrect
2.	Best Gaze: (Eyes follow examiner's finger/ face horizontally)	0=Normal 1=Partial gaze palsy 2=Forced deviation
3.	Visual: Test visual fields upper and lower quadrants on both sides.	0=No visual loss 1=Cannot see in 1 quadrant 2=Cannot see in 2 quadrants 3=Cannot see in any quadrant
4.	Facial Palsy: (Show teeth, raise eyebrows, and squeeze eyes shut)	0=Normal 1=Minor paralysis 2=Partial paralysis 3=Complete paralysis
5a	Right Arm Motor Extend the arms with palms down 90 degrees (if sitting) or 45 degrees (if supine). Drift is scored if the arm falls before 10 seconds. Begin with the non-paretic limb.	0=No drift for elapsed time 1=Drift (But does not hit bed) 2=Can't resist gravity (Drifts to bed) 3=No effort against gravity (Falls to bed quickly, but can move limb) 4=No movement. U=Untestable
5b	Left Arm Motor	
6a	Right Leg Motor With pt in the supine position, extend the legs 30 degrees. Drift is scored if the leg falls before 5 seconds.	
6b	Left Leg Motor	
7.	Limb Ataxia: Perform finger-nose-finger and heel-shin tests on both sides.	0=Absent 1=Present in one limb 2=Present in two limbs
8.	Sensory: Pin-prick to face, arm, leg, trunk. Compare side to side.	0=Normal; no sensory loss 1=Mild to moderate loss 2=Severe to total loss
9.	Best Language: Name items, describe a picture, and read sentences. Tests ability to express ideas verbally.	0=Normal; No aphasia 1=Mild to moderate aphasia 2=Severe aphasia 3=No usable speech
10.	Dysarthria: Evaluate speech clarity by pt repeating listed words.	0=Normal Articulation 1=Mild to Mod Dysarthria 2=Nearly unintelligible or Worse U=Intubated or other physical barrier
11.	Extinction & Inattention Using touch & visual stimuli, evaluate for extinction or inattention.	0=No Neglect 1=Inattention or extinction in one sensory modality. 2=Complete Neglect

GCS

Glasgow Coma Scale

Eye opening	
Spontaneous	4
To speech	3
To pain	2
No response	1

Verbal response

Alert and oriented	5
Disoriented	4
Speaking but nonsensical	3
Moans	2
No response	1

Motor response

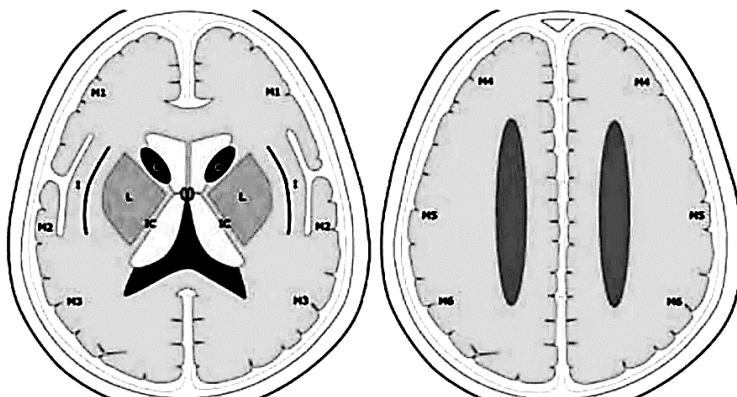
Follows commands	6
Localizes pain	5
Withdraws to pain	4
Decorticate flexion	3
Decerebrate extension	2
No response	1

MRS

Table 14. Modified Rankin Scale (MRS)

- 0 No symptoms
- 1 No significant disability, despite symptoms; able to perform all usual duties and activities
- 2 Slight disability; unable to perform all previous activities but able to look after own affairs without assistance
- 3 Moderate disability; requires some help, but able to walk without assistance
- 4 Moderately severe disability; unable to walk without assistance and unable to attend to own bodily needs without assistance
- 5 Severe disability; bedridden, incontinent, and requires constant nursing care and attention
- 6 Death

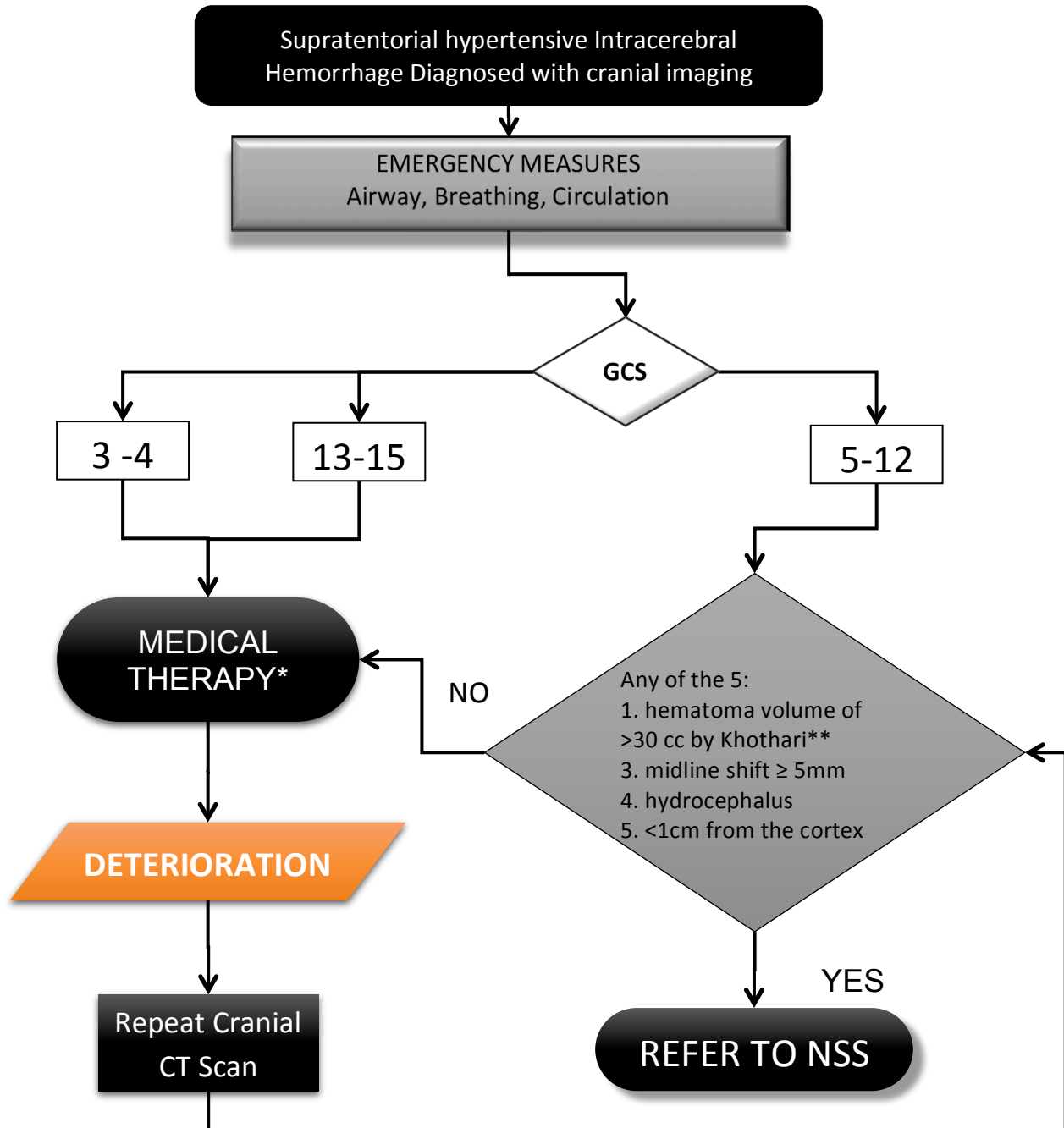
Alberta Stroke Program Early CT Score (ASPECTS)

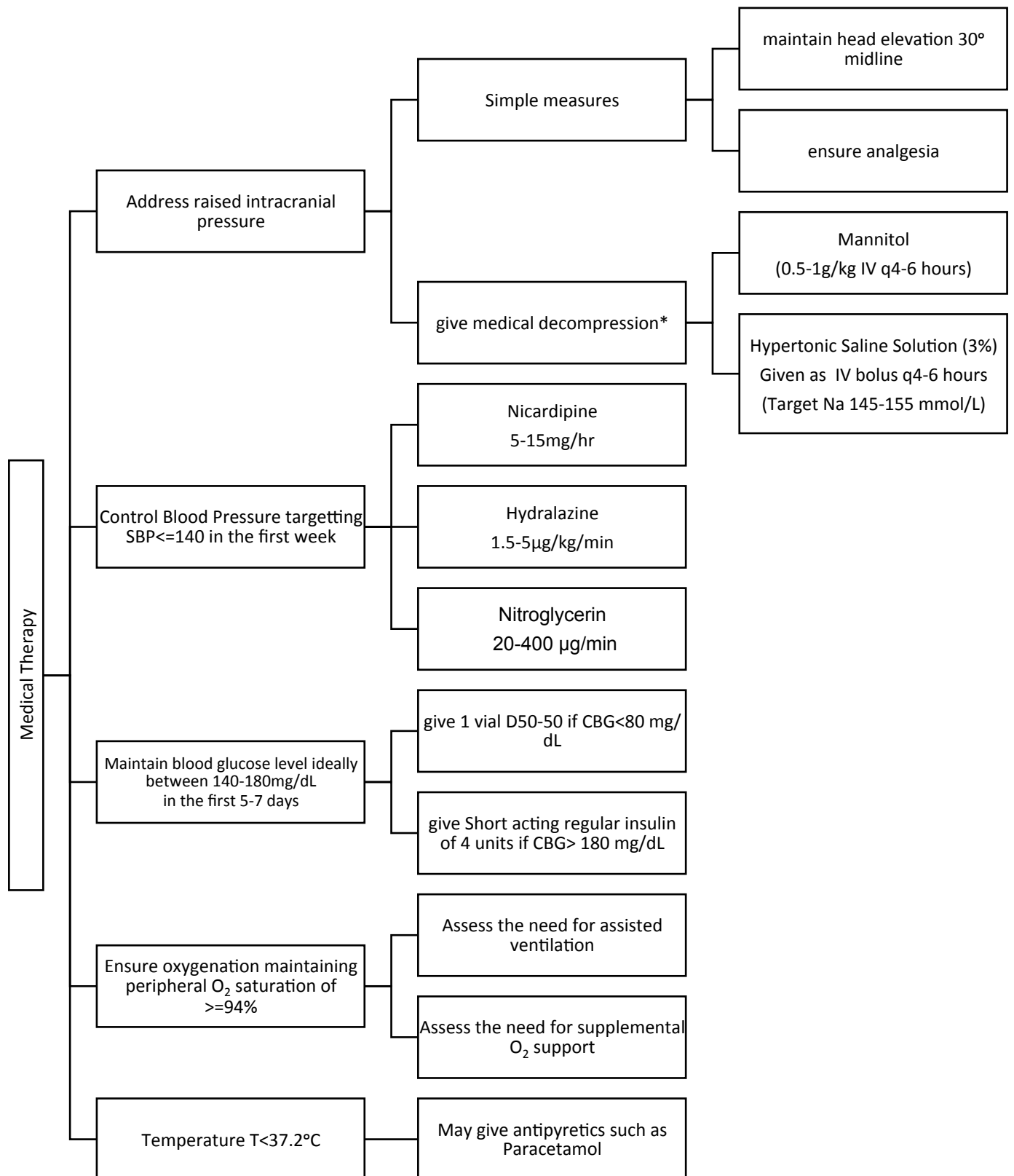


ICH Score

GCS	
3-4	2 pts
5-12	1 pt
13-15	0 pts
ICH volume	
≥ 30cm ³	1 pt
< 30 cm ³	0 pts
IVH	
Yes	1 pt
No	0 pts
Location	
Infratentorial	1 pt
Supratentorial	0 pts
Age	
≥ 80 yrs	1 pt
< 80 yrs	0 pts

CLINICAL PATHWAY FOR SUPRATENTORIAL HYPERTENSIVE INTRACEREBRAL HEMORRHAGE





CLINICAL PATHWAY FOR MALIGNANT MCA INFARCTS

(Adapted from the STATE Criteria of the Massachusetts General Hospital Stroke Service¹)

PATIENTS WITH SUSPECTED LARGE MCA INFARCT

Age 18-65

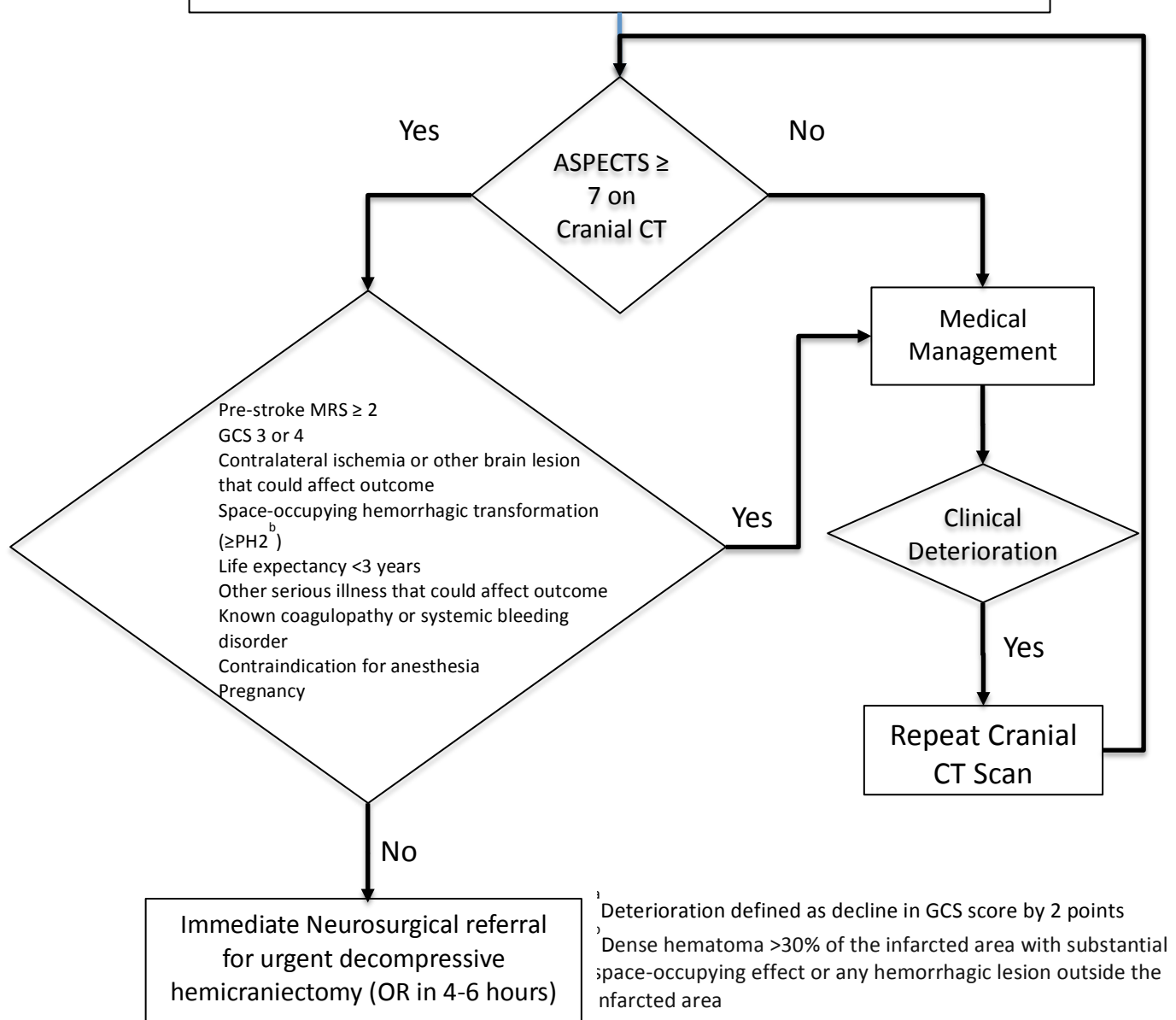
GCS 5-8 or NIHSS >15 (non-dominant) or NIHSS >20 (dominant)

Pre-morbid MRS <3

Hemiplegia, forced eye deviation, aphasia, contralateral neglect

Consult within first 48 hours of symptom onset

No comorbidities OR controlled comorbidities



TREATMENT ALGORITHM¹

Assign the patient into one of 3 categories:

A. **MOST LIKELY to benefit from early hemicraniectomy** (meets all STATE criteria)

1. Consult neurosurgery emergently
2. Proceed for hemicraniectomy within the defined timeframes
3. Admit to the Neuro ICU before and after the procedure for close neurological monitoring and medical treatment
4. For patients who meet all STATE criteria except for drowsiness, these patients should be admitted the Neuro ICU and closely monitored. If they develop drowsiness, they should be sent for hemicraniectomy.

B. **UNCERTAIN to benefit from early hemicraniectomy** (age <75 yrs and meets many but not all STATE criteria)

1. Hemicraniectomy is offered as a compassionate therapy if there is consensus among the treating teams and family that the patient would want to proceed recognizing that there is uncertainty as to the benefit.
2. Regardless of the decision to proceed with hemicraniectomy, if full aggressive treatment is requested by family and felt appropriate by treating team, then admit the patient to an intensive care unit, preferably the Neuro ICU, for close neurological monitoring and medical treatment.

C. **UNLIKELY to benefit from early hemicraniectomy** (age >75 yrs or terminal illness or signs of active herniation)

1. Hemicraniectomy will not be offered
2. If full aggressive treatment is requested by family and felt appropriate by treating team, then admit the patient to an intensive care unit, preferably the neuroICU, for close neurological monitoring and medical treatment. If there are previously expressed wishes about limitations on aggressive care or the treating team feels that the patient's prognosis is so poor that aggressive treatment is not warranted, then an informed discussion with the family should precede a decision about intensive care admission and management.

Pre-surgical and Surgical Management

- A. If hemicraniectomy is offered, withhold anti-coagulation and anti-platelets until deemed safe post-procedure with input from neurosurgery
- B. For adequate external decompression, the size of the bone flap removed should ideally be **12 cm (anterior-posterior) by 9 cm (superior-inferior), combined with duraplasty.**
- C. Temporal lobectomy may be considered during the procedure, at the neurosurgeon's discretion. If performed, tissue should be submitted for neuropathological examination.
- D. The bone flap should be placed in a subcutaneous abdominal pouch or stored in the bone bank.

Post-surgical Management

- A. Admit the patient to an intensive care unit, preferably the Neuro ICU. The Neurocritical Care attending will be the attending of record.
- B. Once appropriate, a protective helmet should be worn until the bone flap is replaced.
- C. The bone flap should be replaced as soon as the patient can tolerate the surgery, preferably within 12 weeks, unless the patient develops intercurrent infections or other complications requiring delay.

Medical (Adjunctive) Therapy

Although not proven efficacious, medical strategies may reduce the risk of developing fulminant brain edema. These strategies should be used in all patients with large MCA stroke and as an adjunct to hemicraniectomy (if the patient is deemed eligible). They should not be used to defer or delay hemicraniectomy if STATE criteria are met.

- A. **General management:** patients with raised intracranial pressure require special attention to pain relief, avoidance of noxious stimuli, proper head positioning, adequate oxygenation, maintenance of normothermia, and prevention of DVT. Avoid oral or gastric feedings if the patient is likely to go to surgery imminently.
- B. **Hyperventilation:** a temporary measure to reduce ICP if signs of brain herniation develop. Should be avoided unless other measures are exhausted and there is a plan to proceed immediately to surgery.
- C. **Osmotic therapy:** Mannitol 0.5-1.5g/kg IV q4-6 hours or Hypertonic Saline Solution (3%) given as IV bolus q4-6 hours (Target Na 145-155 mmol/L)
- D. **Invasive ICP monitoring** (subarachnoid screw or bolt) is not required to determine suitability for decompressive surgery. An external ventricular drain should be considered if brain imaging shows evidence of acute hydrocephalus. It may be useful to monitor the ICP post-operatively if there is concern that the decompression was insufficient