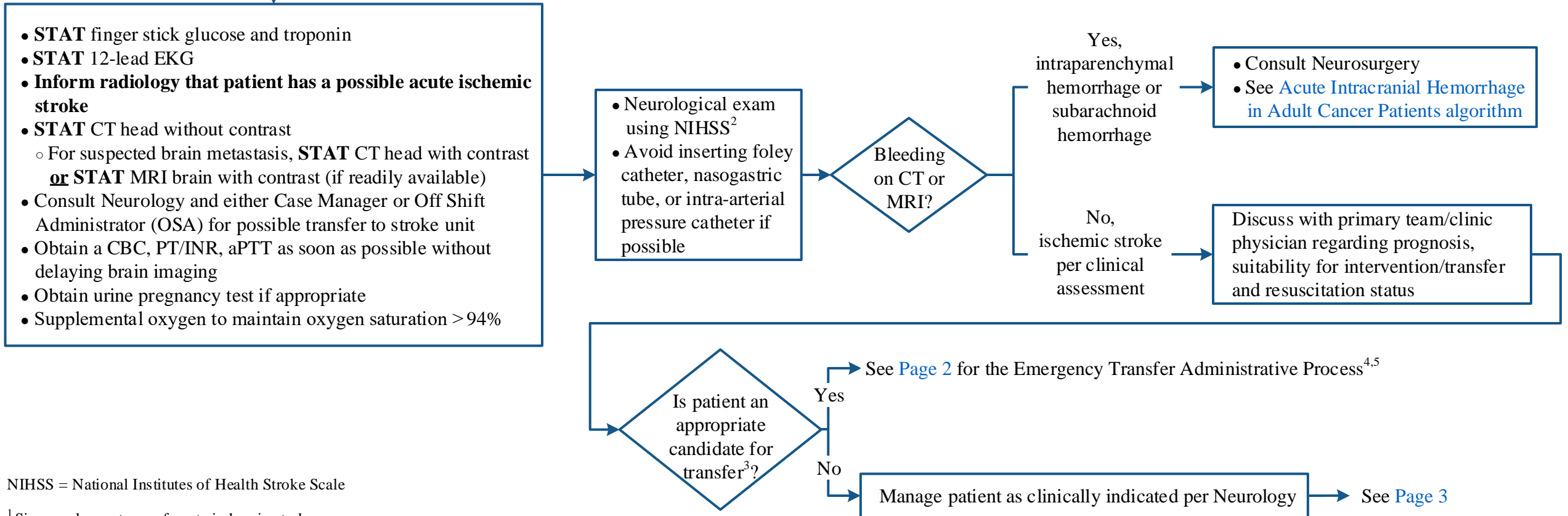


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INITIAL ASSESSMENT

Signs and symptoms of acute ischemic stroke¹



NIHSS = National Institutes of Health Stroke Scale

¹ Signs and symptoms of acute ischemic stroke:

- Numbness and/or paralysis to face, arm or leg (especially on one side)
- Sudden confusion
- Trouble seeing in one or both eyes

² See [Appendix A](#) for NIHSS

³ Physician may make the determination prior to Neurology consult to prevent any transfer delays especially for patients in the Mays Clinic and Emergency Center. Time permitting, Neurology may assist with determining if a patient is a candidate for endovascular intervention for large vessel occlusion at a stroke center.

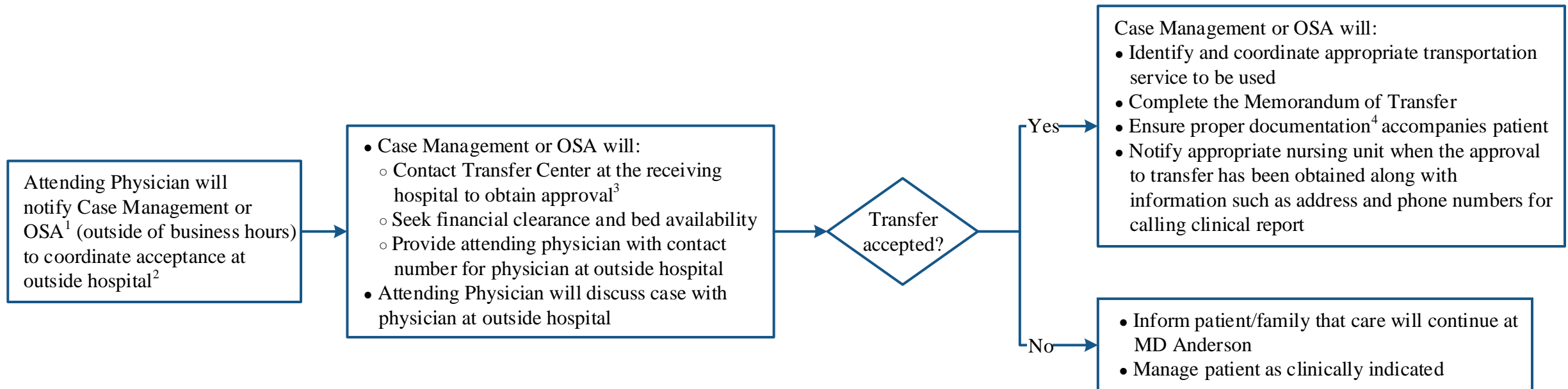
⁴ Neurology to determine if alteplase should be given at MD Anderson Cancer Center prior to transfer depending on transfer process time

⁵ If transfer physician or Neurology determines patient has a contraindication for thrombolysis, and there are no contraindications for aspirin, may give aspirin 325 mg PO prior to transfer

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EMERGENCY TRANSFER ADMINISTRATIVE PROCESS

DISPOSITION



¹ Contact Case Management or OSA via operator

² Refer to UTMDACC Institutional Transfer Policy (#CLN0614)

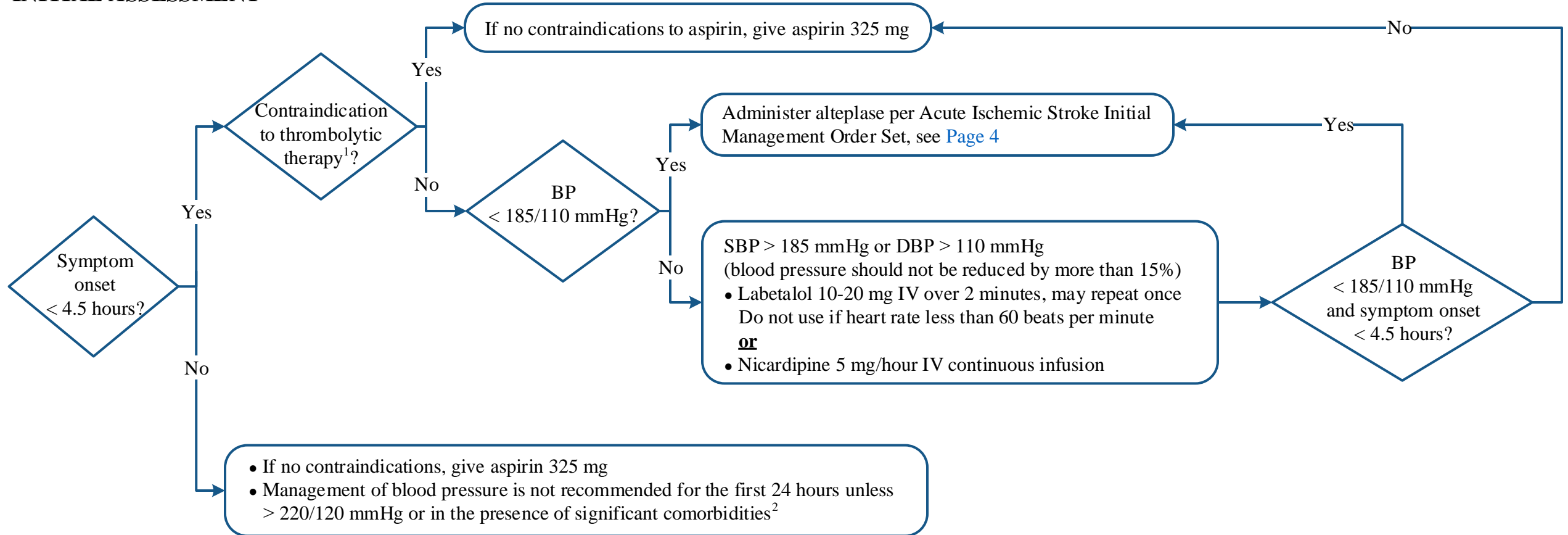
³ Discuss with Attending Physician regarding preference for receiving hospital based on clinical scenario. See [Appendix B: Texas Medical Center \(TMC\) Hospital Contact Information](#). If transfer approval is not promptly obtained, Case Management to contact alternate hospitals to avoid delay.

⁴ Documentation:

- “Face sheet”
- Medical records to include a current reconciled medication list and transfer orders per primary care team
- Others as appropriate

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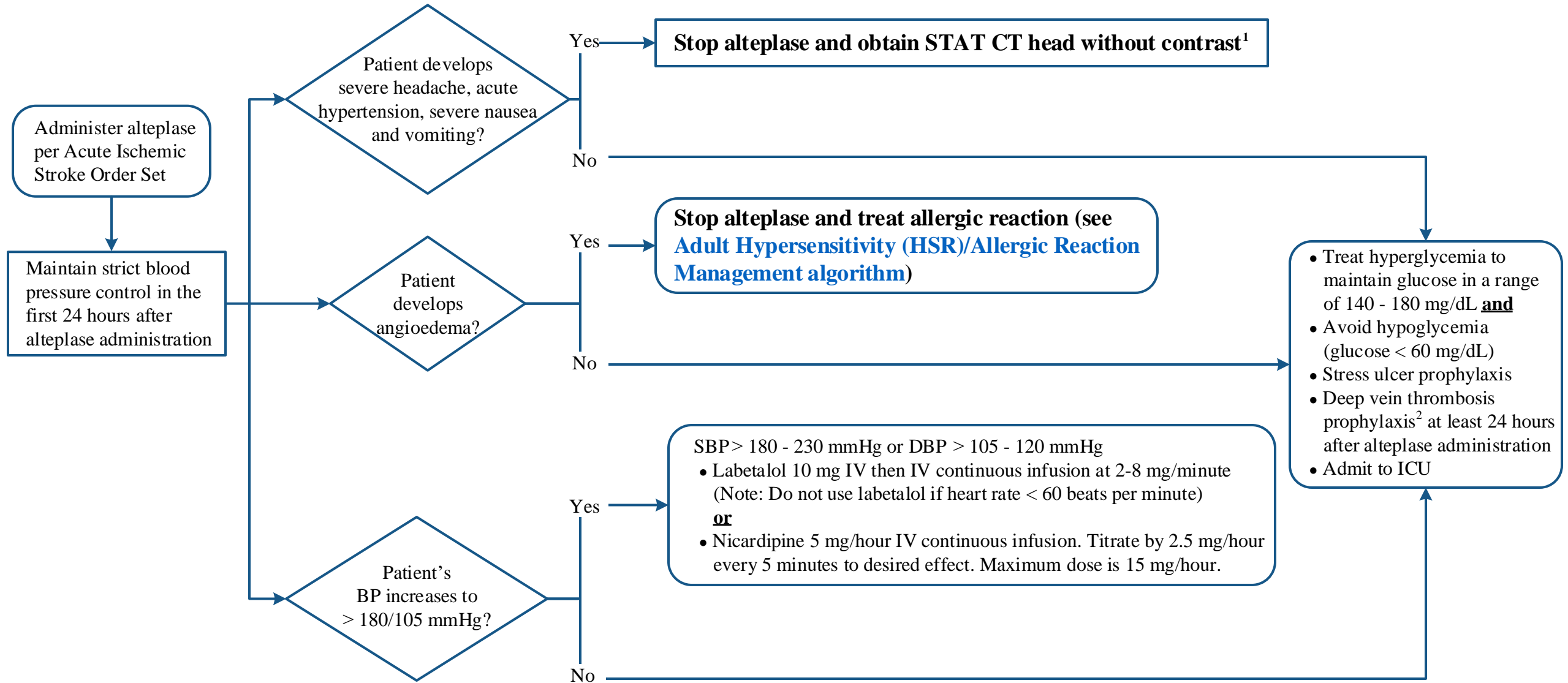
INITIAL ASSESSMENT



¹ For contraindications to Thrombolytic Therapy, see [Appendix C](#)

² Examples of significant comorbidities: severe cardiac failure, aortic dissection, or hypertensive encephalopathy

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¹ Consult benign hematology at this point

² Mechanical and/or pharmacological

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APPENDIX A: National Institutes of Health Stroke Scale (NIHSS)

	Title	Responses	Score
1A	Level of consciousness	0 – Alert and responsive 1 – Arousable to minor stimulation 2 – Arousable to painful stimulation 3 – Reflex responses or unarousable	
1B	Orientation questions • Ask patient's age and month	0 – Both correct 1 – One correct (or dysarthria, intubated, foreign language) 2 – Neither correct	
1C	Response to commands • Open/close eyes and grip and release hand	0 – Both correct (ok if impaired by weakness) 1 – One correct 2 – Neither correct	
2	Gaze • Horizontal extraocular movement	0 – Normal 1 – Partial gaze palsy; abnormal gaze in 1 or both eyes 2 – Forced eye deviation or total paresis	
3	Visual field • Use visual threat if necessary	0 – No visual loss 1 – Partial hemianopia, quadrantanopia, extinction 2 – Complete hemianopia 3 – Bilateral hemianopia or blindness	
4	Facial movement	0 – Normal 1 – Minor facial weakness 2 – Partial facial weakness 3 – Complete unilateral palsy (upper and lower face)	
5	Motor function (arm) – arms outstretched for 10 seconds • Left • Right	0 – No drift before 5 seconds 1 – Drift but doesn't hit bed 2 – Some antigravity effort, but can't sustain 3 – No antigravity effort, but even minimal movement counts 4 – No movement at all X – Unable to assess due to amputation, fusion, fracture	Left:
			Right:

Continued on next page

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APPENDIX A: National Institutes of Health Stroke Scale (NIHSS) - continued

	Title	Responses	Score
6	Motor function (leg) – raise leg 30 degrees supine for 5 seconds <ul style="list-style-type: none"> • Left • Right 	0 – No drift before 5 seconds 1 – Drift but doesn't hit bed 2 – Some antigravity effort, but can't sustain 3 – No antigravity effort, but even minimal movement counts 4 – No movement at all X – Unable to assess due to amputation, fusion, fracture	Left:
			Right:
7	Limb ataxia <ul style="list-style-type: none"> • Check finger-nose-finger; heel-shin; and score if only out of proportion to paralysis 	0 – No ataxia 1 – Ataxia in upper or lower extremity 2 – Ataxia in upper and lower extremity X – Unable to assess due to amputation, fusion, fracture	
8	Sensory <ul style="list-style-type: none"> • Use safety pin 	0 – No sensory loss 1 – Mild-moderate unilateral loss but pt aware of touch 2 – Total loss, patient unaware of touch	
9	Language <ul style="list-style-type: none"> • Name objects; use repeating 	0 – Normal 1 – Mild-moderate aphasia 2 – Severe aphasia 3 – Mute, global aphasia, coma	
10	Articulate <ul style="list-style-type: none"> • Read a list of words 	0 – Normal 1 – Mild-moderate; slurred but intelligible 2 – Severe; unintelligible or mute X – Intubation or mechanical barrier	
11	Extinction/neglect <ul style="list-style-type: none"> • Simultaneously touch patient on both hands, show fingers in both visual fields, ask about deficit 	0 – Normal, non detected 1 – Neglects 1 sensory modality 2 – Profound neglect in more than one modality	

Score ≥ 25	Very severe neurological impairment
Score 5-24	Mild to severe neurological impairment
Score < 5	Mild impairment

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APPENDIX B: Texas Medical Center (TMC) Hospital Contact Information

	Memorial Hermann TMC	CHI St. Luke's TMC	Methodist TMC
For Transfers:	Transfer Center (713) 704-2500	Transfer Center (832) 355-2233	Transfer Center (713) 441-6804

Additional contacts based on indication:

	Memorial Hermann TMC	CHI St. Luke's TMC	Methodist TMC
Stroke	On-call Stroke pager (281) 262-8800	On-call Stroke pager (713) 404-3224 On-call Neurointensivist via transfer center	---
Vascular bleeding	Dr. Sunil Sheth (832) 325-7080 (office)	---	Dr. Orlando Diaz (713) 398-3543 (cell) (713) 768-0945 (pager)

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APPENDIX C: Contraindications to Thrombolytic Therapy

<p>ABSOLUTE CONTRAINDICATIONS</p> <p>Patient history:</p> <ul style="list-style-type: none"> • Ischemic stroke or severe head trauma in the previous 3 months • Previous intracranial hemorrhage • Intra-axial intracranial neoplasm • Gastrointestinal malignancy or hemorrhage in the previous 21 days • Intracranial or intraspinal surgery within the prior 3 months <p>Clinical:</p> <ul style="list-style-type: none"> • Symptoms suggestive of subarachnoid hemorrhage • Persistent blood pressure elevation (systolic \geq 185 mmHg or diastolic \geq 110 mmHg) • Active internal bleeding • Presentation consistent with infective endocarditis • Stroke known or suspected to be associated with aortic arch dissection • Acute bleeding diathesis, including but not limited to conditions defined under hematologic <p>Hematologic:</p> <ul style="list-style-type: none"> • Platelet count $<$ 100 K/microliter¹ • Current warfarin use with an INR $>$ 1.7 or PT $>$ 15 seconds or aPTT $>$ 40 seconds or PT $>$ 15 seconds¹ • Current use of treatment dose LMWH in the past 24 hours (e.g., to treat VTE and ACS); this exclusion does not apply to prophylactic doses (e.g., to prevent VTE) • Current use of direct thrombin inhibitors (dabigatran) or direct factor Xa inhibitors (rivaroxaban, apixaban, and edoxaban) within 48 hours assuming normal renal function² <p>Head CT:</p> <ul style="list-style-type: none"> • Evidence of hemorrhage • Extensive regions of obvious hypodensity consistent with irreversible injury 	<p>RELATIVE CONTRAINDICATIONS</p> <ul style="list-style-type: none"> • Only minor and isolated neurologic signs or rapidly improving symptoms • Serum glucose $<$ 50 mg/dL ($<$ 2.8 mmol/L)³ • Serious trauma in the previous 14 days • Major surgery in the previous 14 days • History of gastrointestinal bleeding (remote) or genitourinary bleeding • Seizure at the onset of stroke with postictal neurologic impairments⁴ • Pregnancy • Arterial puncture at a noncompressible site in the previous seven days⁵ • Large (\geq 10 mm), untreated, unruptured intracranial aneurysm⁵ • Untreated intracranial vascular malformation⁵ <p>ADDITIONAL CONTRAINDICATION IF SYMPTOM ONSET 3-4.5 HOURS⁶</p> <ul style="list-style-type: none"> • Age $>$ 80 years • Oral anticoagulant use regardless of INR • Severe stroke (NIHSS score $>$ 25, see Appendix A) • Combination of both previous ischemic stroke and diabetes mellitus <p>ACS = acute coronary syndrome aPTT = activated partial thromboplastin time INR = international normalized ratio LMWH = low molecular weight heparin PT = prothrombin time VTE = venous thromboembolism</p>
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¹ Although it is desirable to know the results of these tests, thrombolytic therapy should not be delayed while results are pending unless there is clinical suspicion of a bleeding abnormality or thrombocytopenia, the patient is currently on or has recently received anticoagulants (e.g., heparin, warfarin, a direct thrombin inhibitor, or a direct factor Xa inhibitor), or use of anticoagulants is not known. Otherwise, treatment with intravenous tPA can be started before availability of coagulation test results but should be discontinued if the INR, PT, or aPTT exceed the limits stated in the table, or if platelet count is $<$ 100 K/microliter.

² Consult Benign Hematology

³ Patients may be treated with intravenous alteplase if glucose level is subsequently normalized

⁴ Alteplase is reasonable in patients with a seizure at stroke onset if evidence suggests that residual impairments are secondary to acute ischemic stroke and not to a postictal phenomenon

⁵ The safety and efficacy of administering alteplase is uncertain for these relative exclusions

⁶ Although these were exclusions in the trial showing benefit in the 3-4.5 hour window, intravenous alteplase appears to be safe and may be beneficial for patients with these criteria, including patients taking oral anticoagulants with an INR $<$ 1.7

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This practice consensus statement is based on majority opinion of the Ischemic Stroke work group experts at the University of Texas MD Anderson Cancer Center for the patient population. These experts included:

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