

Name MRN DOB	VCU Health System MCV Hospitals and Physicians Richmond, Virginia 23298 Acute Stroke Orders
Patient Identification	

Physician Orders		Cerner Careset - ED: Acute Stroke	Nursing Doc.	
Initials	Time		Initials	Time
		Page *50 Stat/Level 1. State: "This is an Acute Stroke Alert Page"		
Laboratory *ATTENTION: BEFORE Head CT, send the following labs*				
		CBC w 5 Part Diff, Stat		
		PT, INR, Stat		
		APTT, Stat		
		Basic Met, Stat		
		CK, Stat		
		CK-MB, Stat		
		Myoglobin, Stat		
		Troponin 1, Stat		
		Urinalysis Stat w mic on pos		
		Alcohol Stat Serum		
		Drug Scrn Comp U, Stat (Urine Tox Screen)		
		HCG Qual UR, Stat (Pregnancy Screen for female of child bearing potential)		
		Lipid Profile, , Routine in AM *ATTENTION: Lipid Profile does NOT include LDL Cholesterol*		
		LDL Cholesterol, Routine in AM *ATTENTION: Must order LDL separately*		
Diagnostic Tests				
		EKG: 12 Lead Non Heart Station; priority: Code Blue, Indications: CVA		
Radiology *ATTENTION: Head CT to be done AFTER labs sent*				
		CT: Head w/o contrast; Priority 1: Life Threatening, r/o CVA		
		Chest AP xray, portable; Priority 1: Life Threatening ; If evidence of acute cardiac or pulmonary disease		

General Orders

	Nasal oxygen at 2 L/min, if O ₂ sat <92%		
	Start 2 venous access lines, IV NS at 75 cc per hour (no glucose)		
	Place patient in monitored bed (continuous BP, P, R, O ₂ sat, temperature)		
	Perform neuro checks every _____ min		
	Perform bedside water swallow test before any oral meds, fluids or food. Passed _____ Failed _____		
	NPO except medication ordered		

Medications (Note: No oral meds, fluids or food until bedside water swallow test passed)

	IV-TPA per protocol		
	Aspirin: 325mg PO 81mg PO 300mg PR Now		
	For BP Management, see BP Guidelines		

MD: _____
Signature Printed Name/Stamp or Provider # Date Time

MD: _____
Signature Printed Name/Stamp or Provider # Date Time

Nurse: _____/_____
Printed Name Initials Date Time

Nurse: _____/_____
Printed Name Initials Date Time

Name MRN (Patient Identification)	VCU Health System MCV Hospitals and Physicians Richmond, Virginia 23298 Stroke Care Plan Swallowing Screen
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Patient is NPO (for all oral medication, fluid, and food) until screened.
Perform screening tasks in order and do not skip any questions; stop when instructed to do so.
Note that other factor besides those listed below may preclude safe swallowing.

SECTION ONE: Screening for Dysphagia			
If "Yes" is the response to statement 1 below, STOP the screening. The patient remains NPO for all oral medication, fluid, and food until able to be tested for swallowing. If the response is "No" in Section One, proceed to Section Two.			
1.	Decreased level of consciousness, unable to follow commands, or severely agitated	<input type="checkbox"/> Yes STOP	<input type="checkbox"/> No
SECTION TWO: Screening Procedure for PO Medication Only			
If "Yes" is the response to either of the statements 2 or 3, STOP the screening. The patient remains NPO until evaluated by a MD, PA, NP or Speech-Language Pathologist. If the response is "No" to all of the statements below, the patient is NPO except for medication with sips of water.			
2.	Give patient a sip (approximately 1 teaspoon) of water to drink Observe for the following: Choking, coughing, drooling, gurgling before, during or after swallow, delay in swallowing, effortful swallow, other signs of swallowing problem, pocketing liquid in mouth or wet voice after the swallow.	<input type="checkbox"/> Yes STOP	<input type="checkbox"/> No
3.	Give patient a half a cup (approximately 60 ml) of water to drink. Let patient drink at own rate Observe for the following: Choking, coughing, drooling, gurgling before, during or after swallow, delay in swallowing, effortful swallow, other signs of swallowing problem, pocketing liquid in mouth or wet voice after the swallow.	<input type="checkbox"/> Yes STOP	<input type="checkbox"/> No
SECTION THREE: Screening Procedure for PO Food or Fluid			
If "Yes" is the response to any of the statements 4-7, STOP the screening. The patient remains NPO for food and fluid until evaluated by a Speech-Language Pathologist or physician. If the response is "No" to all of the statements below, the patient may have a PO diet.			
4.	Patient has aspiration pneumonia	<input type="checkbox"/> Yes STOP	<input type="checkbox"/> No
5.	Prior to admission, patient or caregiver reports difficulty swallowing medications, liquids or solids, or coughing/choking episodes when eating	<input type="checkbox"/> Yes STOP	<input type="checkbox"/> No
6.	Voice has a weak vocal quality (hoarse, wet gurgly voice), or patient has no voice	<input type="checkbox"/> Yes STOP	<input type="checkbox"/> No
7.	Unable to volitionally cough, or abnormal cough, or unable to manage saliva, or excessive drooling or thick profuse secretions	<input type="checkbox"/> Yes STOP	<input type="checkbox"/> No
Relative contraindications for PO food and fluid: The following statements 8-11 are relative contraindications for PO food or fluid, depending on severity of impairment.			
8.	Facial droop, asymmetry of facial features, or inability to close lips or fully retract lips into a smile	<input type="checkbox"/> Yes	<input type="checkbox"/> No
9.	Tongue deviation from midline on protrusion, or inability to protrude tongue	<input type="checkbox"/> Yes	<input type="checkbox"/> No
10.	New onset slurred speech (dysarthria)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
11.	Oral pocketing	<input type="checkbox"/> Yes	<input type="checkbox"/> No

_____/_____
Printed Name Initials Signature _____/_____
Date and Time of Screening

Name MRN Patient Identification	VCU Health System MCV Hospitals and Physicians Richmond, Virginia 23298 Stroke Care Plan Aspiration Precautions
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- 1. First meal given to patient should be observed by a nurse or other qualified care provider.**
- 2. If patient has any difficulty swallowing during meal, make NPO.**
- 3. Have the patient in an upright position while eating or drinking.**
- 4. Keep patient in an upright position at least 30 minutes after eating or drinking.**
- 5. Have patient eat slowly and take small bites of food and chew well before swallowing.**
- 6. Have patient take small sips of liquid.**
- 7. No straws for drinking liquids.**
- 8. Minimize distractions while patient is eating or drinking.**
- 9. Provide good mouth care.**
- 10. Have bedside suction equipment available at all times.**
- 11. Consult physician for signs or symptoms of aspiration pneumonia.**

Name MRN DOB Patient Identification	VCU Health System MCV Hospitals and Physicians Richmond, Virginia 23298 Acute Stroke Blood Pressure Management
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Blood Pressure Management Guidelines 1st 24 Hours

Blood pressure management is based on individual factors. A cautious approach to treatment is recommended. Patients who have other medical indications for aggressive treatment of BP should be treated as indicated (eg acute MI, pulmonary edema, hypertensive encephalopathy, aortic dissection).

Ischemic Stroke patients not eligible for thrombolytic therapy including IV-TPA

- Systolic BP < 220 or Diastolic BP < 120 mmHg: Observe unless other medical indication for treatment
- Systolic BP > 220 or Diastolic BP >120 mmHg or MAP >120 mmHg: Initiate treatment, goal to lower BP 15% over 1st 24 hrs
- Diastolic BP >140 mmHg: Nitroprusside 0.5 mcg/kg/min IV infusion as initial dose, goal to lower diastolic BP 10-15%

Ischemic Stroke patients eligible for thrombolytic therapy including IV-TPA

- Systolic BP <185 or Diastolic BP <110 mmHg: Observe unless other medical indication for treatment
- Systolic BP >185 or Diastolic BP >110 mmHg: Initiate treatment

Ischemic Stroke patients during and after thrombolytic therapy including IV-TPA

- Maintain BP <180/105 mmHg
- Monitor BP every 15 min during treatment and 1 hr after treatment, then every 30 min for 6 hrs, then every 1 hr for 16 hrs
- BP <180/105 mmHg: Observe unless other medical indication for treatment
- BP >180/105 mmHg: Initiate treatment

Spontaneous Intracerebral Hemorrhage (ICH)

- Systolic BP <180 mmHg or MAP <130 mmHg: Consider close monitoring with no specific treatment
- Systolic BP >180 mmHg or MAP >130 mmHg and NO ELEVATION ICP: Initiate treatment; target BP 160/90 mmHg or MAP 110 mmHg
- Systolic BP >180 mmHg or MAP >130 mmHg and ELEVATED ICP: Consult Neurosurgery to monitor ICP and initiate treatment to target cerebral perfusion pressure (CPP) >60-80 mmHg
- Systolic BP >200 mmHg or MAP >150 mmHg: Initiate continuous IV treatment

Spontaneous Subarachnoid Hemorrhage (SAH)

- MAP <130 mmHg and no end organ damage: Consider close monitoring with no specific treatment
- MAP >130 mmHg or end organ damage: Initiate treatment

Agents for Blood Pressure Management (Labetalol, Nicardipine preferred initial treatment)

Labetalol: IV bolus 5-20 mg every 15 min; IV infusion 2 mg/min (max 300 mg/day)

Nicardipine: IV infusion 5-15 mg/hr

Esmolol: IV bolus 250 mcg/kg loading dose; IV infusion 25-300 mcg/kg/min

Enalapril: IV bolus test dose 0.625 mg, monitoring for precipitous BP lowering, then 1.25-5 mg IV bolus every 6 hrs

Hydralazine: IV bolus 5-20 mg every 30 min

Nitroglycerin: IV infusion 20-400 mcg/min

Nitropaste: 1-2 inches

Nitroprusside: IV infusion 0.1-10 mcg/kg/min

Name MRN DOB Patient Identification	VCU Health System MCV Hospitals and Physicians Richmond, Virginia 23298 IV-TPA Administration Protocol
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IV-TPA Dosing: See IV-TPA dosing table

1. Dose: 0.9 mg/kg (maximum dose of 90 mg)
2. Give 10% as IV bolus over 1 minute followed by the remaining 90% as IV infusion over 60 min.

IV-TPA Dosing Table

Weight (lbs)	Weight (kg)	Total IV-TPA Dose at 0.9 mg/kg (mg = ml)	IV-TPA Bolus Dose (mg = ml)	Discard Quantity of TPA (Not for infusion) (mg = ml)	Infusion Rate (ml/hr)
220+	100.0+	90.0	9.0	10.0	81.0
210	95.5	86.0	8.6	14.0	77.4
200	90.9	81.8	8.2	18.2	73.6
190	86.4	77.8	7.8	22.2	70.0
180	81.8	73.6	7.4	26.4	66.2
170	77.3	69.6	7.0	30.4	62.6
160	72.7	65.4	6.5	34.6	58.9
150	68.2	61.4	6.1	38.6	55.3
140	63.6	57.2	5.7	42.8	51.5
130	59.1	53.2	5.3	46.8	47.9
120	54.5	49.1	4.9	50.9	44.2
110	50.0	45.0	4.5	55.0	40.5
100	45.5	41.0	4.1	59.0	36.9

IV-TPA Administration:

1. Verify the bolus dose, the discard quantity, and the infusion rate
2. Verify patency of IV site and tubing connections
3. Verify that the blood pressure cuff is attached to other arm
4. Give bolus dose IV push over 1 minute
5. Administer infusion dose IV over 60 minutes
6. Document start date and time of bolus dose and infusion
7. At the end of the infusion, inject 20 ml of normal saline into the bag and purge the pump to empty the line completely of TPA
8. Document end date and time of infusion.

Monitoring during and after IV-TPA infusion:

1. Maintain BP < 180/105 mmHg for at least 24 h per guidelines
2. BP every 15 min for 2 h, then every 30 min for 6 h, then every 1 h until 24 h after IV-TPA
3. Neuro checks every 15 min during IV-TPA infusion, then every 30 min for 6 h, then every 1 h until 24 h after IV-TPA infusion
4. Pulse oximeter O₂ sat ≥ 92% using oxygen cannula or mask
5. Tylenol 650 mg po/pr every 4 h prn T > 99.4; cooling blanket prn T > 102, set to avoid shivering
6. Obtain non-contrast Head CT 24 h after completion of IV-TPA infusion
7. No antiplatelet agents or anticoagulants until post-IV-TPA Head CT results known
8. No Foley catheter, nasogastric tube, arterial catheter or central venous catheter for 24 h post IV-TPA or unless absolutely necessary
9. If during or after IV-TPA administration patient has acute neurologic deterioration or new headache, or acute hypertension, or nausea and vomiting:
 - a. Notify MD
 - b. Discontinue IV-TPA infusion
 - c. Send labs stat (PT/PTT/CBC/PLT/Fibrinogen/Type and cross x3 units)
 - d. Obtain stat non-contrast Head CT
 - e. Prepare to administer 4-6 units of cryoprecipitate
 - f. Prepare to administer 6-8 units of platelets (or 1 unit of single donor platelets)

