Dominican Hospital
Policy and Procedure

SUBJECT: 8610pc-440 **Code Stroke Alert**

DATE APPROVED: 8/10/23 Replaces statement issued on: 1/12/23

PURPOSE

To identify the roles and responsibilities of Hospital personnel during a Code Stroke Alert for appropriate care.

PROCEDURE

1. Emergency Department (ED) Code Stroke Alert (paged overhead). A Code Stroke Alert is called by the ED personnel if the time of last seen normal is under 24 hours.

    a. ED Triage Nurse – Walk in Arrival

        i. Triage Nurse assess for acute symptoms of stroke for each patient presenting at the ED entrance utilizing **B**-**E**-**F**-**A**-**S**-**T** assessment criteria:

            B: Sudden loss of balance or incoordination (ataxia)
            E: Sudden onset of loss of vision, double or blurred vision, or fixed gaze
            F: Sudden onset facial droop
            A: Sudden onset arm or leg weakness
            S: Sudden onset slurred speech or loss of speech
            T: Time of symptom onset and last time normal

        ii. If stroke is suspected utilizing **B**-**E**-**F**-**A**-**S**-**T** criteria in the triage area, the Triage RN will:

            A. Call the Hospital Operator to initiate a Code Stroke Alert and notify the ED Charge Nurse.
            B. Take patient's vital signs (VS) and obtain a fingerstick blood sugar (FSBS).
            C. Place order for stat Heat CT (Cerner Order: CT Head Stroke Protocol).
            D. Arrange for immediate transport to the Computerize Tomography CT scan without stopping in the ED.

    b. ED Nurse – Emergency Medical Services (EMS) Arrival

        i. Functions as the Code Stroke Alert primary Nurse
        ii. Obtains order for STAT CT Brain immediately upon the patient's arrival after positive **B**-**E**-**F**-**A**-**S**-**T** exam by the ED Medical Doctor (MD) or ED RN if ED MD is not available.

iii. Receives handoff and FSBS from EMS during immediate transport to the CT scan on the EMS gurney.
iv. After the CT head scan is complete and the patient has returned to the ED, the ED Nurse will:

A. Establish IV access with 2 lines above the wrist
B. Monitors and documents patients vital signs, O2 saturation, and neurological status
C. Obtains weight in kilograms and documents in the chart
D. Arrange for STAT lab work
E. Ensures that a STAT electrocardiogram (EKG) is completed

v. Ensures that NIH Stroke Scale score is obtained
vi. If tenecteplase is ordered, notifies Pharmacy at phone extension 27752 of STAT tenecteplase to be removed from Omnicell order including patient weight.
vii. If patient is to receive IV tenecteplase, the ED RN will:

A. Ensure SBP is under 185 mmHg; medicate as indicated
B. Obtain IV tenecteplase kit from Omnicell
C. Consider a repeat NIHSS score prior to administration of IV tenecteplase if there are changes in the neuro exam
D. Double checks tenecteplase dose with a second RN
E. Give IV tenecteplase bolus over 5 seconds
F. While patient is in the ED, performs post IV tenecteplase injection VS and neuro assessments per protocol; every 15 minutes for 2 hours, every 30 minutes for 6 hours, then every hour for 16 hours. The assessments are charted in the 'Focused Neurological Band' in Cerner.
G. Provides handoff to ICU RN upon patient transfer.

viii. Notifies pharmacy ASAP if tenecteplase plan is canceled
ix. Performs the nursing bedside swallow screen for dysphagia

c. ED Physician

i. Responds to patient's bedside within 10 minutes of presentation
ii. Functions as the Code Stroke Alert team leader unless care is assumed by the consulting Neurologist
iii. Conducts a brief neurological assessment for stroke symptoms
iv. If that stroke assessment is positive also assesses for Large Vessel Occlusion (LVO) signs and symptoms

A. If LVO signs and symptoms are present, relay this information to the consulting Neurologist.

v. Refer to the ACUTE STROKE INCLUSION/EXCLUSION TNK WORKSHEET, page 9.

d. Neurologist

   i. When consulted by the ED MD, responds by phone within 15 minutes.
   ii. Collaborates with the ED Physician to determine appropriate timely treatment, including review of the ELIGIBILITY RECOMMENDATIONS FOR IV TNK (AIS), pages 12-17, and/or Endovascular Therapy Transfer Reference Sheet, page 11.

   If the patient is determined to be a candidate for IV TNK, the Neurologist sees the patient in a timely fashion unless it will delay appropriate care.

e. Laboratory

   i. Immediately respond to Code Stroke by sending a Phlebotomist to site located by the Operator.
   ii. Obtains blood specimens STAT per protocol once patient has returned from the CT scan.
   iii. Follows Laboratory policy and procedure 7500.1309 Phlebotomy of Code Protocol and Trauma
   iv. Reports results within 45 minutes of order placement

f. Radiology/CT Technologist

   i. CT brain scan is number one priority
   ii. Prepares CT suite for Code Stroke Alert patient STAT after receiving page
   iii. Notifies Radiologist of pending scan and necessity of STAT reading. If Code Stroke Alert occurs during after-hours 19:00 to 07:00 (weekdays) or Saturday/Sunday 16:30 to 08:00, notifies interpreting Radiologist from remote telemedicine service.
   iv. Radiologist reports CT scan results to the ED Physician or Neurologist immediately within 20 minutes of completion.

g. Pharmacy

   i. Ensures that IV tenecteplase is in the Omnicell

h. Administrative Coordinator/House Supervisor

   i. Arranges for staffing needs and transfer of patient to critical care and telemetry
   ii. If the patient is considered stable and can be transferred, a Med/Surg order and discontinuation of the NIHSS is to be obtained from the primary provider or Neurologist

i. Rapid Response Team (RRT) RN

A. RRT RN responds to ED within 5 minutes of Code Stroke Alert page and assists as necessary

j. Admitting Physician

i. Continues to perform neurologic examinations as indicated
ii. Preferentially uses the appropriate stroke order set in electronic medical system

2. In-patient Code Stroke Alert including Acute Rehabilitation Unit (ARU)

a. Primary Care Nurse

i. Identifies if there is a suspicion of stroke using **B**-**E**-**F**-**A**-**S**-**T** criteria:

B: Sudden loss of balance or incoordination (ataxia)
E: Sudden onset of loss of vision, double or blurred vision, or fixed gaze
F: Sudden onset facial droop
A: Sudden onset arm or leg weakness
S: Sudden onset slurred speech or loss of speech
T: Time of symptom onset and last time normal

ii. Notifies RRT RN STAT at extension 27801 or 7801
iii. Remains with patient until RRT RN or MD arrives
iv. Provides an SBAR of the events to include time last normal and time that stroke symptoms were first noted
v. Accepts direction(s) from RRT RN or MD as delegated

b. Rapid Response Team (RRT) Nurse

i. Call by floor RN regarding positive stroke findings (**B**-**E**-**F**-**A**-**S**-**T**)
ii. RRT RN response within 5 minutes
iii. RRT RN receives SBAR from floor RN
iv. RRT RN performs **B**-**E**-**F**-**A**-**S**-**T** exam
v. RRT RN calls on-call Neurologist and reports findings
vi. If instructed by Neurologist, will call the Hospital Operator at extension 6666 to page a Code Stroke Alert
vii. If the RRT RN is unable to contact the on-call Neurologist within 10 minutes and there are positive **B**-**E**-**F**-**A**-**S**-**T** findings, the RRT RN will call the Hospital Operator at extension 6666 to page a Code Stroke Alert
viii. RRT RN will ensure the following:

A. Code Stroke orders are entered into Cerner

B. At least 1 peripheral IV or saline lock is in place, placement of transport monitor for cardiac, BP, and pulse oximetry monitoring.
C. Obtaining FSBS prior to CT transport
D. Rapid transport and accompanying patient to CT scan
E. After the CT scan is complete and discussion with the Neurologist or attending MD, will return patient to the appropriate floor

ix. If patient is a tenecteplase candidate, the RRT RN will:

A. Notify pharmacy of IV tenecteplase order with accurate weight
B. Notify Administrative Coordinator/House Supervisor of ICU admission
C. Transport patient from CT to ICU
D. Ensure 2 peripheral IV lines are in place
E. Ensure SBP is under 185 mmHg, medicate as indicated
F. Place Foley Cath, if indicated
G. Ensure if further diagnostic tests are indicated (labs, CXR, EKG) and order
H. Perform NIHSS scoring prior to IV tenecteplase administration
I. Double check the dose with a second RN
J. Gives IV tenecteplase bolus over 5 seconds
K. Review with the ICU RN the post IV tenecteplase VS and neurological assessment protocol schedule: every 15 minutes for 2 hours, every 30 minutes for 6 hours, and every 1 hour for 16 hours. The assessments are charted in the 'Focused Neurological Band' in Cerner.
L. RRT will perform a bedside Swallow Screen
M. Ensure timely completion of post IV tenecteplase VS and neuro assessment
N. Provide handoff to ICU RN when able

c. Intensive Care Unit/PACU

i. Notify RRT RN at extension 27801
ii. In addition, immediately notify the Intensivist/Surgeon if patient is under the care of the Intensivist/Surgeon Team

d. Hospital Operator

i. Upon notification by RRT RN, initiates Code Stroke Alert emergency procedure for the PBX system, including overhead page.

e. Primary or Charge Nurse

i. Call RRT RN STAT for any patient with suspicion of acute onset of stroke using the **B**-**E**-**F**-**A**-**S**-**T** assessment criteria. Provides complete (Situation, Background, Assessment, and Recommendation) SBAR report of patient status and last time normal and time stroke symptoms first noted documentation.
ii. Assures attending physician on-call has been notified
iii. Assists RRT RN to obtain weight in kilograms
iv. Obtains and documents STAT finger sticks glucose, vital signs, and O_2 saturation
v. Assist with monitoring and documentation of patient status
vi. Arranges and assists with transport of patient of CT within 10 minutes of CT order placement
vii. Notifies family of responsible party of changes in patient's condition

f. Neurologist

i. Responds by phone to RRT RN notification by calling RRT at extension 27801 or 462-7801 within 15 minutes
ii. If the patient is determined to be a candidate for IV TNK, sees the patient in a timely fashion
iii. Guides the team as a leader in collaboration with the attending/covering physician to ensure timely treatment

The following personnel will respond within 5 minutes of Code Stroke Alert notification by Hospital Operator:

g. Laboratory

i. Reports to patient's bedside STAT after CT head scan is completed and obtains blood specimens per stroke orders received.
ii. Follow laboratory policy and procedure for processing Stroke Protocol orders
iii. Reports results within 45 minutes of order receipt

h. Radiology/CT Technologist/Radiology Transport Assistants

i. CT Technologist verifies need for CT by calling RRT RN at extension 27801 or 7801 and notifies RRT RN when CT is ready.
ii. Radiology Transport Assistants: Upon notification of Code Stroke Alert, will obtain gurney and bring to area of Code Stroke Alert
iii. Prepares CT suite for Code Stroke Alert patient STAT after receiving page
iv. Notifies Radiologist of pending scan and necessity of STAT reading. If Code Stroke Alert occurs after hours, notifies interpreting Radiologist at Stat Rad.

v. Radiologist reports results to Neurologist or attending/covering Physician within 45 minutes of order receipt and within 20 minutes of completion

i. Pharmacy

i. Ensures the tenecteplase is loaded in the Omnicell

j. EKG Technician

i. Reports to patient's bedside and obtains EKG STAT after CT head scan is completed. RRT RN obtains EKG when EKG Technicians is not on duty

k. Administrative Coordinator/Nursing Supervisor

i. Ensures that the necessary personnel have responded and excess personnel have returned to their duties
ii. Assists in notification of attending/covering Physician and family, if needed
iii. Obtains necessary equipment if not readily available
iv. Arranges for staffing needs and transfer of patient to critical care or telemetry as needed
v. Assists team members when necessary

3. Emergent Care of Hemorrhage Strokes

a. Above protocol where applicable and following additional parameters:

i. Blood pressure to be maintained in prescribed range as noted in orders
ii. Monitoring for symptoms of expanding hemorrhage by Nurses and staff with follow up CT as indicated by Provider

4. Transfer to a Higher Level of Care

a. Neurologist or Emergency Physician will contact the preferred receiving center for possible transfer

i. If the preferred receiving center accepts the referral and coordinates transportation, the Neurologist or Emergency Physician will notify *All Access* for data and tracking purposes
ii. If the preferred receiving center is willing to accept the referral, but is unable to coordinate transportation, *All Access* will be notified of the referral and requested to arrange transportation
iii. If the preferred receiving center is unable to accept the referral, contact *All Access* to locate an alternate receiving facility and arrange transport

5. Responsible Committees

   Stroke Committee reports to Internal Medicine, Neurology and Quality Improvement Committees.

Appendix A: Acute Stroke Inclusion/Exclusion Tenecteplase Worksheet

Appendix B: Mechanical Thrombectomy Criteria Endovascular Therapy Transfer Checklist

Appendix C: Eligibility Recommendations for IV Tenecteplase in Patients with Acute Ischemic Stroke (AIS)

REFERENCES

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Policy Review Committee 8/10/23
Quality Improvement and Patient Safety Council 9/27/23
Medical Executive Committee 10/10/23
Dominican Hospital Community Board 11/15/23

Appendix A

ACUTE STROKE INCLUSION/EXCLUSION TENECTEPLASE WORKSHEET

YES	NO	IV TNK: UP TO 3 HOURS AFTER STROKE ONSET INCLUSION CRITERIA: All inclusion criteria must be marked "YES"
		Diagnosis of acute stroke causing measurable neurological deficit
		Onset of symptoms or last seen at baseline state less than 4.5 hours prior to tenecteplase bolus
		Age 18 years old or older
YES	**NO**	**EXCLUSION CRITERIA: All exclusion criteria must be marked "NO"**
		CT scan findings of acute intracranial hemorrhage
		Ischemic stroke within the last 3 months
		Severe head trauma within the past 3 months
		Intracranial/instraspinal surgery within the past 3 months
		History of intracranial hemorrhage
		Symptoms suggestive of subarachnoid hemorrhage
		GI malignancy or GI hemorrhage in the past 21 days
		Platelets < 100,000/mm^3
		INR > 1.7
		Treatment dose of LMWH within 24 hours (DVT prophylaxis dose OK)
		Dose of thrombin inhibitors or factor Xa inhibitors within 48 hours
		Infective endocarditis
		Aortic arch dissection
		Intra-axial intracranial neoplasm (meningioma OK)
		Blood pressure > 185mmHg systolic or > 110mmHg diastolic despite treatment
		Serum glucose < 50mg/dL
YES	**NO**	**RELATIVE EXCLUSION CRITERIA (NEUROLOGY CONSULTATION RECOMMENDED)**
		Age over 80 years old
		Severe stroke with NIHSS over 25
		Any anticoagulant use (regardless of lab results)
		History of BOTH diabetes and previous stroke

Appendix B

Mechanical Thrombectomy Criteria Endovascular Therapy Transfer Checklist

If time of onset is less than 24 hours, consider transfer to a Comprehensive Stroke Center for mechanical endovascular thrombolytic therapy.

Stanford Stroke Transfer Center: (650) 723-4696

All Access Transfer Line: (855) 455-7872

HCA Transfer Hotline (for GSH or Regional Hospitals): (888) 722-3648

Mechanical Thrombectomy Endovascular therapy with Stent Retriever Criteria:

1. **Functional independence prior to hospital admission**
2. **Occlusion of the Internal Carotid Artery (ICA) or Middle Cerebral Artery (MCA)**
3. **Age > 18 years**
4. **NIHSS score or greater than or equal to 6**

Appendix C

ELIGIBILITY RECOMMENDATIONS FOR IV TENECTEPLASE IN PATIENTS WITH ACUTE ISCHEMIC STROKE (AIS)

	INDICATIONS
Within 3 hours	IV tenecteplase is recommended for selected patients who may be treated within 3 hours of ischemic stroke symptom onset or patient last known well or at baseline state.
Age	Age 18 years old or older, IV tenecteplase administration within 3 hours is equally recommended for patients under 80 and over 80 years of age.
Severity	For severe stroke symptoms, IV tenecteplase is indicated within 3 hours from symptom onset of ischemic stroke. Despite increased risk of hemorrhagic transformation, there is still proven clinical benefit for patients with severe stroke symptoms.
	For patients with mild but disabling stroke symptoms, IV tenecteplase is indicated within 3 hours from symptoms onset of ischemic stroke. There should be no exclusion for patients with mild but nonetheless disabling stroke symptoms, in the opinion of the treating physician, from treatment with IV tenecteplase because there is proven clinical benefit for those patients.
Blood Pressure	IV tenecteplase is recommended in patients whose blood pressure can be lowered safely (to under 185/110) with antihypertensive agents, with the physician assessing the stability of the blood pressure before giving IV tenecteplase.
Blood Glucose	IV tenecteplase is recommended in otherwise eligible patients with initial glucose levels over 50 mg/dL
CT	IV tenecteplase is recommended in the setting early ischemic changes on CT scan of mild to moderate extent (other than frank hypo density).
Prior Antiplatelet Therapy	IV tenecteplase is recommended for patients taking antiplatelet drug monotherapy before stroke on the basis of evidence that the benefit Tenecteplase outweighs a possible small increased risk of symptomatic ICH.
	IV tenecteplase is recommended for patients taking antiplatelet drug combination therapy (e.g., aspirin and clopidogrel) before stroke on the basis of evidence that the benefit of alteplase outweighs a probable increased risk of symptomatic ICH.
End-Stage Renal Disease	In patients with end-stage renal disease on hemodialysis and normal aPTT, IV tenecteplase is recommended. However, those with elevated aPTT may have elevated risk of hemorrhagic complications.
	Contraindications
Time of onset	IV tenecteplase is not recommended in ischemic stroke patients who have an unclear time and/or unwitnessed symptom onset and in whom the time last known to be at baseline state or awoke with stroke with time last known to be at baseline is over 3 or 4.5 hours.
CT	IV tenecteplase should not be administered to a patient whose CT reveals an acute intracranial hemorrhage.
Ischemic Stroke within 3 months	Use of IV tenecteplase in patients presenting with acute ischemic stroke who have had a prior ischemic stroke within 3 months may be harmful.
Severe head trauma within 3 months	In acute ischemic stroke patients with recent severe head trauma (within 3 months), IV tenecteplase is contraindicated.
Intracranial/intraspinal surgery within 3 months	For patients with AIS and a history of intracranial/spinal surgery with the prior 3 months, IV tenectplase is potentially harmful.
History of intracranial hemorrhage	IV tenecteplase administration in patients who have a history of intracranial hemorrhage is potentially harmful.
Subarachnoid hemorrhage	IV tenecteplase is contraindicated in patients presenting with symptoms and signs most consistent with an SAH.
GI malignancy or GI bleed within 21 days	Patients with a structural GI malignancy or recent bleeding event within 21 day of their stroke event should be considered high risk, and IV tenecteplase administration is potentially harmful.
Coagulopathy	The safety and efficacy of IV tenecteplase for acute stroke patients with platelets under 100,000/mm^3, INR over 1.7, aPTT over 40 seconds or PT over 15 seconds are unknown and IV tenectplase should not be administered.
Low Molecular Weight Heparin (LMWH)	IV tenecteplase should not be administered to patients who have received a treatment dose of LMWH within the previous 24 hours.
Thrombin inhibitors or factor Xa inhibitors	The use of IV tenecteplase in patients taking direct thrombin inhibitors or direct factor Xa inhibitors has not been firmly established but may be harmful. IV tenectplase should not be administered to patients taking direct thrombin inhibitors or direct factor Xa inhibitors unless laboratory tests such

	as aPTT, INR, platelet count, ecarin clotting time, thrombin time, or appropriate direct factor Xa activity assays are normal or the patient has not received a dose of these agents for over 48 hours (assuming normal renal metabolizing function). (tenecteplase could be considered when appropriate laboratory tests such as aPTT, INR< ecarin clotting time, thrombin time, or direct factory Xa activity assays are normal or when the patient has not taken a dose of these anticoagulants for over 48 hours and renal function is normal).
Glycoprotein IIb/IIIa receptor inhibitors	Antiplatelet agents that inhibit the glycoprotein IIb/IIIa receptor should not be administered concurrently with IV tenecteplase outside a clinical trial.
Infective Endocarditis	For patients with AIS and symptoms consistent with infective endocarditis, treatment with IV tenecteplase should not be administered because of the increased risk of intracranial hemorrhage.
Aortic Arch Dissection	IV tenecteplase in AIS known or suspected to associate with aortic arch dissection is potentially harmful and should not be administered.
Intra-axial intracranial neoplasm	IV tenecteplase treatment for patient with AIS who harbor an intra-axial intracranial neoplasm is potentially harmful.
	ADDITONAL RECOMMENDATIONS FOR TREATMENT WITH IV ALTEPLASE (Consider Neurologist Consult)
Extended 3- to 4.5-hour window	For patients over 80 years of age presenting the 3- to 4.5- hour window, IV tenecteplase is safe and can be as effective as in younger patients.
	For patients taking Warfarin and with an INR under or equal to 1.7 who present in the. - To 4.5-hour window, IV tenecteplase appears safe and may be beneficial.
	In AIS patients with prior stroke and diabetes mellitus presenting in the 3- to 4.5- hour window, IV tenecteplase may be as effective as treatment in the 0- to 3- hour window and may be a reasonable option.
Severity 0- to 3-hour window	Within 3 hours from symptom onset, treatment of patients with mild ischemic stroke symptoms that are judged as no disabling may be considered. Treatment risks should be weighed against possible benefits; however, more study is needed to further define the risk-to-benefit ratio.
Severity 3- to 4.5-hour window	For otherwise eligible patients with mild stroke presenting in the 3- to 4.5- hour window IV tenecteplase may be as effective as treatment in the 0- to 3-hour window and may be a reasonable option. Treatment risks should be weighed against possible benefits. The benefit of IV tenecteplase between 3 and 4.5 hours from symptom onset for patients with very severe stroke symptoms (NIHSS > 25) is uncertain.
Preexisting disability	Preexisting disability does not seem to independently increase the risk of symptomatic ICH after IV tenecteplase, but it may be associated with less neurological improvement and higher mortality. Thrombolytic therapy with IV tenecteplase for acute stroke patients with preexisting disability (mRS score $\geq$2) may be reasonable, but decisions should take into account relevant factors, including quality of life, social support, place of residence, need for a caregiver, patient's and families' preferences, and goals of care.
	Patients with preexisting dementia may benefit from IV tenecteplase. Individual considerations such as life expectancy and premorbid level of function are important to determine whether Alteplase may offer a clinically meaningful benefit.
Early Improvement	IV tenecteplase treatment is reasonable for patients who present with moderate to severe ischemic stroke and demonstrate early improvement but remain moderately impaired and potentially disabled in the judgement of the examiner.
Seizure at onset	IV tenecteplase is reasonable in patients with a seizure at the time of onset of acute stroke if evidence suggests that residual impairments are secondary to stroke and not a postictal phenomenon.
Blood glucose	Treatment with IV tenecteplase in patients with AIS who present with initial glucose levels under 50 or over 400 mg/dL that are subsequently normalized and who are otherwise eligible may be reasonable.
Coagulopathy	The safety and efficacy of IV tenecteplase for acute stroke patients with a clinical history of potential bleeding diathesis or coagulopathy are unknown. IV tenecteplase may be considered on a case-by-case basis.
	IV tenecteplase may be reasonable in patients who have a history of warfarin use and an INR $\leq$ 1.7 and/or a PT under 15 seconds.
Dural puncture	IV tenecteplase may be considered for patients who present with AIS even in instances when they may have undergone a lumbar dural puncture in the preceding 7 days.
Arterial puncture	The safety and efficacy of administering IV tenecteplase to acute stroke patients who have had an arterial puncture of a no compressible blood vessel in the 7 days preceding stroke symptoms are uncertain.
Recent major trauma	In AIS patients with recent major trauma (within 14 days) not involving the head, IV tenecteplase

	may be carefully considered, with the risks of bleeding from injuries related to the trauma weighed against the severity and potential disability from the ischemic stroke.
Recent major surgery	Use of IV tenecteplase in carefully selected patients presenting with AIS who have undergone a major surgery in the preceding 14 days may be considered, but the potential increased risk of surgical-site hemorrhage should be weighed against the anticipated benefits of reduced stroke related neurological deficits.
GI and genitourinary bleeding	Reported literature details a low bleeding risk with IV tenecteplase administration in the setting of past GI/genitourinary b tenecteplase leeding. Administration of IV tenecteplase in this patient population may be reasonable. (Note: Tenectplase administration within 21 days of a GI bleeding event is not recommended.)
Menstruation	IV tenecteplase is probably indicated in women who are menstruating who present with AIS and do not have a history of menorrhagia. However, women should be warned that alteplase treatment could increase the degree of menstrual flow.
	Because the potential benefits of IV tenecteplase probably outweighs the risks of serious bleeding in patients with recent or active history of menorrhagia without clinically significant anemia or hypotension, IV tenecteplase administration may be considered.
	When there is a history of recent or active vaginal bleeding causing clinically significant anemia, then emergency consultation with a gynecologist is probably indicated before a decision about IV tenecteplase is made.
Extracranial cervical dissections	IV tenecteplase in AIS known or suspected to be associated with extracranial cervical arterial dissection is reasonably safe within 4.5 hours and probably recommended.
Intracranial arterial dissection	IV tenecteplase usefulness and hemorrhagic risk in AIS known or suspected to be associated with intracranial arterial dissection remain unknown, uncertain, and not well established.
Unruptured intracranial aneurysm	For patients presenting with AIS who are known to harbor a small or moderate-sized (under 10 mm) unruptured and unsecured intracranial aneurysm, administration of IV tenecteplase is reasonable and probably recommended.
	Usefulness and risk of IV tenecteplase in patients with AIS who harbor a giant unruptured and unsecured intracranial aneurysm are not well established.
Intracranial vascular malformation	For patients presenting with AIS who are known to harbor an unruptured and untreated intracranial vascular malformation, the usefulness and risks of administration of IV tenecteplase are not well established.
	Because of the increased risk of ICH in this population of patients, IV tenecteplase may be considered in patients with stroke with severe neurological deficits and a high likelihood of morbidity and mortality to outweigh the anticipated risk of ICH secondary to thrombolysis.
Cerebral microbleeds	In otherwise eligible patients who have previously has a small number (1-10) of cerebral microbleeds demonstrated on MRI, administration of IV tenecteplase is reasonable.
	In otherwise eligible patients who have previously had a high burden of cerebral microbleeds (over 10) demonstrated on MRI, treatment with IV tenecteplase may be associated with an increased risk of symptomatic ICH, and the benefits of treatment are uncertain. Treatment may be reasonable if there is the potential for substantial benefit.
Extra-axial intracranial neoplasms	IV tenecteplase treatment is probably recommended for patients with AIS who harbor an extra-axial intracranial neoplasm.
Acute MI	For patients presenting with concurrent AIS and acute MI, treatment with IV tenecteplase at the dose appropriate for cerebral ischemia, followed by percutaneous coronary angioplasty and stenting if indicated, is reasonable.
Recent MI	For patients presenting with AIS and a history of recent MI in the past 3 months, treating the ischemic stroke with IV tenecteplase is reasonable if the recent MI was non-STEMI.
	For patients presenting with AIS and a history of recent MI in the past 3 months, treating the ischemic stroke with IV tenecteplase is reasonable if the recent MI was a STEMI involving the right or inferior myocardium.
	For patients presenting with AIS and a history of recent MI in the past 3 months, treating the ischemic stroke with IV tenecteplase is reasonable if the recent MI was a STEMI involving the left anterior myocardium.
Other cardiac diseases	For patients with major AIS likely to produce severe disability and acute pericarditis, treatment with IV tenecteplase alteplase may be reasonable. Urgent consultation with a cardiologist is recommended in this situation.
	For patients presenting with moderate AIS likely to produce mild disability and acute pericarditis, treatment with IV tenecteplase is of uncertain net benefit.
	For patients with major AIS likely to produce severe disability and known left atrial or ventricular thrombus, treatment with IV tenecteplase may be reasonable.
	For patients presenting with moderate AIS likely to produce mild disability and known left atrial or

	ventricular thrombus, treatment with IV tenecteplase is of uncertain net benefit.
	For patients with major AIS likely to produce severe disability and cardiac myxoma, treatment with IV tenecteplase may be reasonable.
	For patients presenting with major AIS likely to produce severely disability and papillary fibroelastoma, treatment with IV tenecteplase may be reasonable.
Procedural stroke	IV tenecteplase alteplase is reasonable for the treatment of AIS complications of cardiac or cerebral angiographic procedures, depending on the usual eligibility criteria.
Systemic malignancy	The safety and efficacy of tenecteplase in patients with current malignancy are not well established. Patient with systemic malignancy and reasonable (over 6 months) life expectancy may benefit from IV tenecteplase if other contraindications such as coagulation abnormalities, recent surgery, or systemic bleeding do not coexist.
Pregnancy	IV tenecteplase administration may be considered in pregnancy when the anticipated benefits of treating moderate or severe stroke outweigh the anticipated increased risks of uterine bleeding.
	The safety and efficacy of IV tenecteplase in the early postpartum period (under 14 days) have not been well established.
Ophthalmological conditions	Use of IV tenecteplase in patients presenting with AIS who have a history of diabetic hemorrhagic retinopathy or other hemorrhage ophthalmic conditions is reasonable to recommend, but the potential increased risk of visual loss should be weighed against the anticipated benefits of reduced stroke-related neurological deficits.
Sickle cell disease	IV tenecteplase for adults presenting with an AIS with known sickle cell disease can be beneficial.
Illicit drug use	Treating clinicians should be aware that illicit drug use may be contributing factor to incident stroke. IV tenecteplase is reasonable in instances of illicit drug use-associated AIS in patients with no other exclusions.
Stroke mimics	The risk of symptomatic intracranial hemorrhage in the stroke mimic population is quite low; thus, starting IV tenecteplase is probably recommended in preference over delaying treatment to pursue additional diagnostic studies.

Appendix D

Performance Goals:

1. Door to Provider – less than 10 minutes
2. Door to Head CT – less than 20 minutes (2018 Guideline)
3. Door to Head CT Results – less than 45 minutes
4. Door to Lab Draw – less than 25 minutes
5. Door to Lab Results – less than 45 minutes

Primary Goal for Target: Stroke Phase III

Door to Needle Target Goals:

1. Door to IV Thrombolytic Therapy (TNK)
    a. Less than 30 minutes (50% of all cases treated)
2. Door to IV Thrombolytic Therapy (TNK)
    a. Less than 45 minutes (75% of all cases treated)
3. Door to IV Thrombolytic Therapy (TNK)
    a. Less than 60 minutes (85% of all cases treated)

Door-In – Door-Out

Transfer to higher level of care less than 120 minutes (Joint Commission)