

Massachusetts Acute Stroke: Idealized **DIDO** Protocol

	ED Clerk	ED Nurse	CT Tech	ED Doctor
Pre-arrival	<ul style="list-style-type: none"> Receive prenotification from EMS, obtain family contact details if possible (for non-EMS stroke arrivals use a triage screen to identify stroke pts and activate team) Activate ED Stroke Team to meet EMS at hospital entrance 	<ul style="list-style-type: none"> Retrieve ED Stroke kit, prepare for IV, labs, transport to scanner, Prepare and transport weighing stretcher to CT scan 	<ul style="list-style-type: none"> Prepare for arrival of patient, alert radiologist on call to expect STAT scan 	<ul style="list-style-type: none"> Notification as part of ED Stroke Team activation to meet patient at ambulance entrance Contact family if possible
Arrival to 15mins	<ul style="list-style-type: none"> Initiate rapid registration process Auto-Launch (activate transport) for all patients with NIHSS ≥ 10 or FAST-ED ≥ 4 	<ul style="list-style-type: none"> Review EMS fingerstick glucose test, vital signs, obtain new vitals if indicated Place IV (adequate gauge to perform CTA) Draw and send STAT Stroke labs Transfer to CT scanner Determine patient weight 	<ul style="list-style-type: none"> Clear scanner for CT imaging, load the injector 	<ul style="list-style-type: none"> Assess for stroke severity (i.e. NIHSS, FAST-ED) Order STAT head CT/CTA and retrieve ED Stroke kit Activate Auto-Launch (activate transport) for all patients with NIHSS ≥ 10 or FAST-ED ≥ 4 Consult Neurology/Telestroke/Receiving center if indicated
15-30mins	<ul style="list-style-type: none"> Initiate transfer request "Code Stroke" 	<ul style="list-style-type: none"> Reconstitute tPA dosing after head CT shows no hemorrhage Administer thrombolytic after plain head CT and CTA are complete (ideally at the scanner) 	<ul style="list-style-type: none"> Obtain STAT non-contrast head CT Proceed directly to CTA head and neck Alert radiologist on call Transmit images to receiving hospital 	<ul style="list-style-type: none"> Proceed to CTA without renal function labs if patient has no known history of renal dysfunction Order IV thrombolytic if CT read by Stroke Team shows no hemorrhage, (at scanner) Assess for possible LVO on CTA
30-45mins		<ul style="list-style-type: none"> Monitor post-tPA Retrieve remaining labs Compile family contact details, provide updates 	<ul style="list-style-type: none"> Ensure successful transmission of images to receiving hospital 	<ul style="list-style-type: none"> Confirm appropriateness of transfer with Receiving center Confirm transfer with EMS and ED team
45-60mins	<ul style="list-style-type: none"> Confirm transfer Prepare record for transmission/transport 	<ul style="list-style-type: none"> Package patient for transfer, expedite EMS turnaround Provide patient handoff to EMS 		<ul style="list-style-type: none"> Expedite EMS turnaround Update family

60mins Transport patient to Receiving Center



Legend and Glossary - the following expands or explains terms in the idealized process diagram

Stroke Team:

- Single call/page activation of the entire stroke team should be established, including scanner technologists and radiologist.
- Activation threshold should be low, with the team then standing down if not needed.

ED Stroke Kit:

- A single pack containing the requirements for tPA administration.
- Typical contents are: tPA (Alteplase 100mg), tubing, a timer to display times, IV blood pressure medications and pump, IV cannulas.
- Store in Omnicell.
- Include printed exclusion and inclusion criteria, dosing instructions and checklist in the kit.

Rapid registration:

- Ideally pre-register patient prior to actual patient arrival. This will allow orders to be placed and ready for the incoming patient. Otherwise streamline patient registration. This may involve a mobile registration station on wheels to allow travelling with the patient.

STAT vitals:

- Vitals may be deferred based on EMS values and obtained in CT scanner or immediately prior to tPA delivery. Vitals must be obtained prior to drug administration to ensure appropriate BP.

STAT labs:

- Point of care labs are recommended if possible as a mechanism for saving time. Remember that only a fingerstick glucose is required before for tPA delivery if there is no concern for bleeding diathesis.

Auto Launch:

- The goal with Auto Launch is to minimize the time lost in activation of transfer vehicles.
- This requires an arrangement with an EMS service provider for activation. Agreement should reflect interfacility transfer (IFT) expectations, including timing and activation protocols. Identify EMS capability for IFT to identify a transport partner.
- Activate Auto Launch for all patients with NIHSS ≥ 10 or FAST ED ≥ 4 , as this population has the highest likelihood of requiring transfer, irrespective of diagnosis.

Administer thrombolytic:

- Administration of tPA should happen after plain head CT and CTA are complete, ideally at the scanner. Consider tPA bolus after head CTA and then prepare the infusion while CTA is obtained.
- DO NOT transport patient back to ED to get tPA before returning to the scanner for CTA.

Reference

Powers WJ, Rabinstein AA, Ackerson T, Adeoye OM, Bambakidis NC, Becker K, Biller J, Brown M, Demaerschalk BM, Hoh B, Jauch EC, Kidwell CS, Leslie-Mazwi TM, Ovbiagele B, Scott PA, Sheth KN, Southerland AM, Summers DV, Tirschwell DL; on behalf of the American Heart Association Stroke Council. Guidelines for the early management of patients with acute ischemic stroke: 2019 update to the 2018 guidelines for the early management of acute ischemic stroke: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke*. 2019;50:e344–e418 doi: 10.1161/STR.0000000000000211. Available at: <https://www.ahajournals.org/doi/abs/10.1161/STR.0000000000000211>.