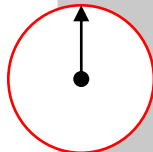

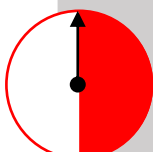

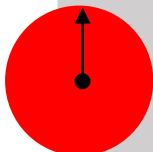


Massachusetts Acute Stroke: Idealized **DIDO** Protocol

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