ACTEAST
Atlantic Canada Together
Enhancing Acute Stroke Treatment

ACTEAST Improvement Package

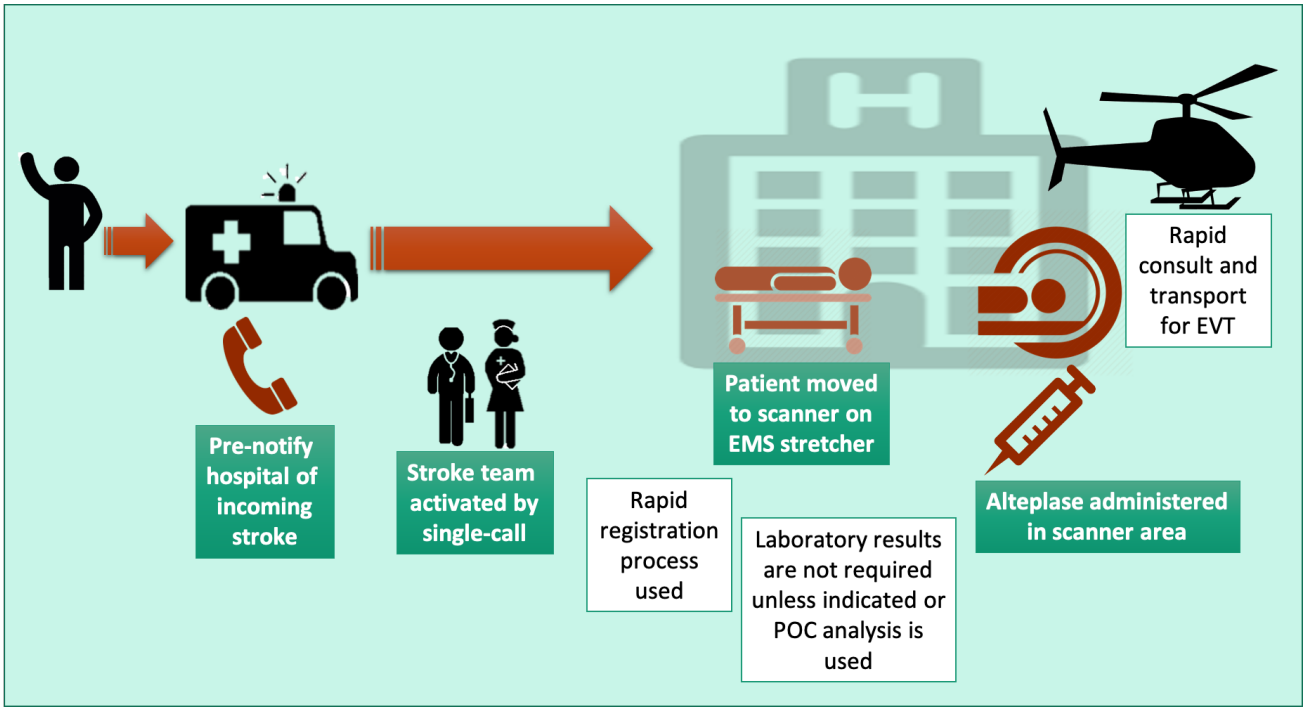
ACTEAST (Atlantic Canada Together Enhancing Acute Stroke Treatment) is providing this package to all of Stroke Centres participating in the ACTEAST Project. The ACTEAST goals are to

- **Improve the percent of ischemic stroke patients that receive thrombolysis or EVT (endovascular thrombectomy) by 5%**
- **To reduce the door-to-needle time to median of 30 minutes**
- **To reduce the door-in-door-out time to a median of 50 minutes for patients being transferred for EVT**

Full details of the ACTEAST project: https://www.dal.ca/sites/acteast.html

This package presents the key changes that are recommended for implementation at your hospital. In addition this package, your site should have specific protocols and documents for each of these changes.

The following figure shows a schematic of all the key strategies to improve DTN and transfer for EVT:



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Pre-Notification and Stroke Team Activation

If EMS has recognized an **Acute Stroke**, they should:

- Pre-notify the hospital that they are coming in with an **acute stroke patient**
- Provide estimated time of arrival
- Ensure that two IV lines are in-place (one an 18 gauge right antecubital where possible)

The hospital should use this pre-notification to activate the care team for the stroke patient:

- Develop a single-call activation process if possible such as pager notification to the **entire** care team
- Early activation should include: **Neurologist** (if available at site), **ED physician**, **ED nurse**, **stroke nurse** (if available at site), and **CT (CTA) technologist**
- Care team needs to be ready for the incoming stroke patient

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Rapid Registration Process

A rapid registration process should be used to ensure that there are no delays in entering the CT(CTA) imaging and other orders. How this is achieved is dependent on the local context and policies of your hospital. Examples include:

- **Registration as *Unknown***, which uses generic numerals
  - This is a similar process as used for trauma patients
  - The actual patient information will need to be linked afterwards
- **Pre-registration process**, where the clerk registers a patient using information provided by paramedics prior to patient arrival
- **Quick registration process**, where only minimal information such as the first and last names are entered upon arrival

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Patient Moved to Scanner on EMS Stretcher

This is the direct-to-CT or stretcher-to-CT process, where the patient is moved directly to the CT scanner:

- Once the patient arrives, the full care team should **swarm** patient in the triage area
  - **Assess ABCs** to ensure patient is stable enough to go to scanner
  - Obtain history from paramedics
  - Ensure IVs in place for both thrombolysis and CTA
- Patient should **not** be moved to an ED bed prior to CT unless the patient is medically unstable and requires urgent critical care or resuscitation
- A **tPA kit** should be ready and taken with the patient to the scanner
  - The kit should contain medication to manage hypertension, seizures and nausea in addition to alteplase (tPA) medication, dosing charts, and tubing
- A quick NIHSS or neuro exam should be completed on the way to the CT

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Do Not Wait for Lab Work

Unless the patient is known to be on warfarin or a novel anti-coagulation medication, or there is a known history of a bleeding disorder, liver cirrhosis, or other medical condition that increases susceptibility to bleeding, **do not wait for blood work results**. There can be rapid laboratory protocols in place to ensure fast turnaround of results if the patient is on an anti-coagulation medication:

- Point-of-Care INR testing machine can be put in place
- Rapid or STAT lab process for acute stroke patients can be put in place

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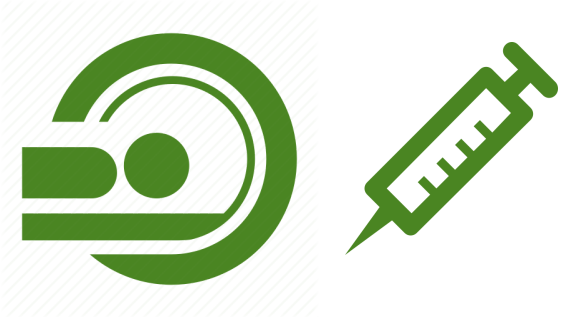
Alteplase (tPA) Administered in Scanner Area or Telehealth Area



Once the decision to treat the patient with alteplase (tPA) has been made, no time should be wasted, and you should avoid moving the patient to an ED bed or in-patient unit.

- The alteplase (tPA) should be **mixed immediately** upon decision to treat patient
- The **tPA kit** should be with the patient to avoid delays in obtaining drug

For Hospitals that have Neurology in-House (or in cases where the ED Physician makes decision to treat patient with alteplase (tPA))

- The initial bolus should be administered while the patient is still in the scanner or in the imaging area

For Hospitals that require telestroke for tPA decision

- The initial bolus should be administered while the patient is still in the telehealth bay

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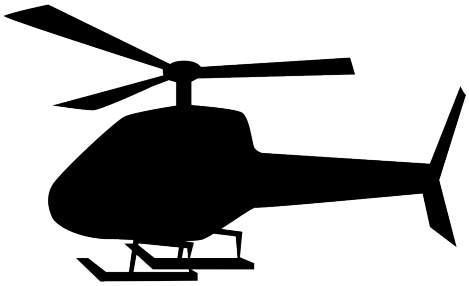
Rapid Transfer Process for EVT



To reduce the transfer time for patients that are being transported for EVT, consider the following:

- The CT and CTA scan must be done together for all acute stroke patients
  - Treatment with alteplase and EVT should be considered together
- For patients with severe stroke symptoms, a **"heads-up" call** can be made to EMS that an emergency transfer may be required while the consult is being conducted
- Once the scan is complete, the stroke centre and the consulting neurologist should both **actively try to connect** for the consult
- Decision to transfer should be made quickly and the transport arranged

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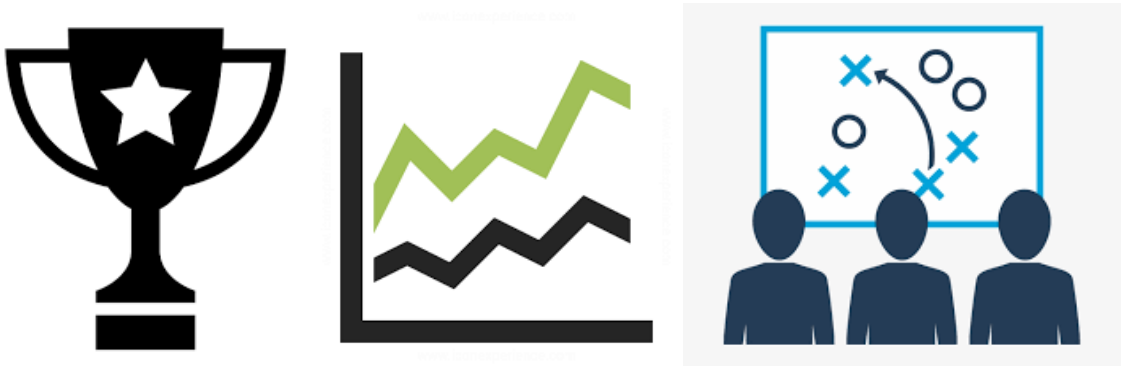
Other Improvement Strategies



Additional strategies that can result in improvement include the following:

- Giving a reward such as a pin to the care team (ED Nurse, ED physician, paramedics, DI technologist, radiologist, neurologist) for each case where the patient was treated in 30 minutes or less
- Sharing data with all personnel involved in the treatment of acute stroke patients on a regular basis
    - Primary emphasis should be on door-to-needle times
    - Transfer times can also be shared: door-in-door-out times (time from arrival at your hospital to time to departure from your hospital for EVT)
- After each thrombolysis, conduct a quick huddle to review what went well and what aspects can be improvement for the next case

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Resources

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