

### Patients Meeting Regional Acute Stroke Protocol Criteria

- **Paramedics bypass** to closest hospital that delivers thrombolysis +/- EVT (KGH or Quinte Health Care (QHC) - Bellefonte General Hospital site) **within 6 hr time window**. Outside that 6-hr time window, paramedics transport patient to local hospital ED. Paramedics are starting to use LAMS (large vessel occlusion (LVO) screening tool) to screen for potential EVT candidacy & are giving hospitals "heads up" if LAMS or LVO +ve.
- **Community Hospital EDs** in our region follow **Regional Acute Stroke Protocol (ASP) ED Transfer Guide** (pink poster) which includes eligibility criteria for transfer to KGH ED for patients presenting with stroke symptoms **within 24 hr time window**. Before transferring, hospital ED contacts KGH ED letting charge nurse know of patient meeting Acute Stroke Protocol (ASP), starts IV & bloodwork (if time permits while waiting for ambulance), & faxes pertinent info to KGH ED. Same ASP applies to in-hospital acute strokes.
  - Hospitals are using **LVO screening tool- ACT FAST** to guide decision-making for patients presenting **between 6-24 hrs** of stroke symptom onset. If ACT-FAST +ve, they arrange ASP transfer to KGH ED.
  - If uncertain about meeting ASP, community physician contacts neurologist on call for stroke at KGH.
- **QHC-Bellefonte General (BGH)** manages ASPs for Hastings & Prince Edward counties using provincial telestroke system for thrombolysis (tPA) & to guide decision-making for EVT. QHC-BGH site completes RAPID CT perfusion to determine **transfer to KGH ED for EVT consideration**.  
If between **6-24 hours & ACT-FAST positive & presenting at Prince Edward Memorial County (Picton), Trenton Memorial, or North Hastings (Bancroft) hospitals**, patients are **sent directly to KGH ED, bypassing BGH**.
- **Campbellford Memorial** usually transfers to Peterborough unless patient presents between 4-24 hours & ACT-FAST positive (4 hrs vs usual 6 hrs as Campbellford is further away); then Campbellford completes CT/CTA & physician contacts KGH neurologist on call for stroke re potential transfer to KGH for EVT consideration.

### Patients NOT Meeting Regional Acute Stroke Protocol Criteria

See above map boxes for **HPE (Bellefonte)**, **KFL&A (Kingston)** and **LLG (Brockville)** Stroke Unit Care transfer locations.

**Lennox & Addington County General Hospital (Napanee) Transfer to KGH** (L&ACGH ED follows [transfer algorithm](#))

**High Risk**- Ongoing stroke symptoms or within last 48 hrs

- **Stroke neurology service** determines from L&ACGH physician report whether to transfer to KGH.
- If non-disabling symptoms & ready for home, patient still comes to KGH for imaging, stroke consult in ED- contact Stroke Prevention Clinic (SPC) neurologist to see if they can see patient in ED (week day hours only).

**Increased Risk**- No symptoms within 48 hrs but symptoms occurred within last 2 weeks & ready for home

- L&ACGH physician makes arrangements for urgent outpatient CT+ CD or CTA within 24 hrs & KGH SPC follow up

**Lower Risk**- No symptoms within last 2 weeks

- L&ACGH physician discharges & refers to KGH SPC & will be worked-up within ~ 1 month

### Hemorrhagic Stroke

If stroke symptom(s) & brain hemorrhage on plain CT, community hospital physician contacts KGH neurologist on call for stroke. May need to arrange urgent consult to neurosurgery & transfer to KGH ED. If not needing neurosurgery transfer, patient still needs stroke unit care (or ICU) at Bellefonte General (**HPE**), Brockville General (**LLG**) or KGH (**KFL&A**).

## Regional Acute Stroke Protocol

### Acute Stroke Protocol of Southeastern Ontario 11/04/2019

#### Emergency Transfer Guide

**Patients who present with features of an acute ischemic stroke may be eligible for thrombolytic therapy and/or endovascular thrombectomy at Kingston General Hospital.**

#### Inclusion Criteria

- Patient is suspected of having ischemic stroke.
- Clear and credible time of symptom onset can be established and patient can reach KGH:
  - Within 6.0 hours of onset
  - OR
  - Within 6-24 hours of onset if ACT-FAST screen is positive
- \*Time of onset is the time patient was last seen well.
- \*Time is Brain. The sooner patient arrives at KGH, the greater potential for better outcomes.
- \*KGH Stroke team requires 1 hour from KGH ED door to treatment.
- Pregnancy is **NOT** a contraindication.
- Age < 18 years is **NOT** a contraindication.

#### Exclusion Criteria

- Unknown onset of symptoms or patient last seen well > 24hours.
- Complete resolution of neurological signs (TIA).
- Serious co-morbidity with limited lifespan (e.g., advanced cancer, advanced dementia).
- If uncertain about whether patient meets Acute Stroke Protocol criteria, contact Neurologist on Call for Stroke at KGH

**The following steps are recommended if the patient meets eligibility criteria and is stable for transfer:**

- Step 1** Arrange for ambulance transfer by calling dispatch. Inform the dispatcher that patient fits "**Acute Stroke Protocol**"
- Step 2** Call KGH Emergency Department. Ask to speak to the Charge Nurse and inform them you have a patient that meets the "**Acute Stroke Protocol**"
- Phone (613) 549-6666 extension 7003**
- Step 3** Complete the following if time permits (**never delay transfer to complete**):
- A. Preferred:
- 1 IV (no glucose solutions unless required)
  - 1 saline lock started with an 18 gauge needle in the right antecubital fossa unless contraindicated
- B. Optional (if time still permits):
- CBC, electrolytes, urea, creatinine, troponin, INR, PTT, glucose, pregnancy test (βHCG) if indicated
  - ECG
- Step 4** Fax blood work and all relevant patient information to KGH Emergency Department:
- Fax (613) 548-2420**

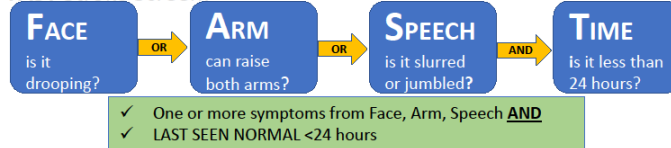
## ACT- FAST PROCESS

### TRIAGE TOOLS for Acute Stroke < 24 hours

Adapted from Toronto Stroke Network & Ambulance Clinical Triage for Acute Stroke Treatment\* Zhao et al. Stroke 2018;49:945-951



#### FAST Stroke Screen:



IF ≤ 6 hours, refer to Pink Poster to activate Acute Stroke Protocol  
IF 6 -24 hours, Complete **ACT-FAST**

#### ACT-FAST Stroke Screen:

**"ARM"** (one-sided arm weakness)

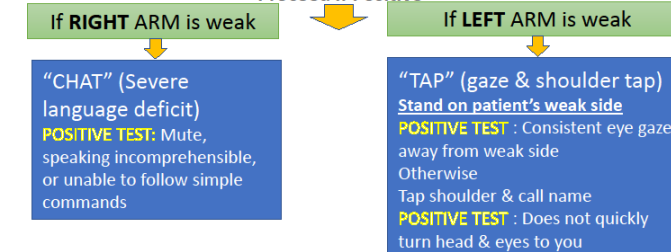
Position both arms at 45° from horizontal with elbows straight

**POSITIVE TEST:** One arm falls completely within 10 seconds

**For patients that are uncooperative or cannot follow commands:**

**POSITIVE TEST:** Witness minimal or no movements in one arm & movements in other arm

#### Proceed if Positive



#### Proceed if Positive

Physician will assess EVT Eligibility (Positive if All Criteria Met)

1. Deficits are NOT pre-existing (mild deficits now worse are acceptable as true deficits)
2. Living at home independently- must be independent with hygiene, personal care, walking
3. Does NOT have stroke mimics: seizure preceding symptoms, Hypoglycemia = glucose less than 2.8 mmol/L, Active malignancy with brain lesions

#### Proceed if Positive

Refer to Pink Poster to Activate Acute Stroke Protocol