KHSC-KGH Roles and Responsibilities Chart:
Stroke Activation and Administration of IV Thrombolysis Endovascular Thrombectomy (EVT), or IV Thrombolysis+EVT

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Function	Components	Responsible Person
Communication re: activation of Acute Stroke Protocol	• Pre-hospital pre-notification: Communicate with Regional Stroke Center ED. Upon scene departure, advise KGH that Stroke Protocol is en route and estimated time of arrival • Additional updates to ED while en route to include establishment of IVs or if patient becomes unstable	Paramedic
	• Call or delegate a KGH staff member to call Switchboard to alert Stroke Team: Stroke Protocol - XX minutes out	ED Charge Nurse
	• Initiate Stroke Protocol call • Call KHSC-KGH staff listed in Appendix A • Ensure that all members on the Stroke Team are aware that patient is on the way to the ED, and estimated time of arrival	Switchboard
Communication re: External Calls Requesting EVT Stroke Team (e.g., from Telestroke, CritiCall, BGH-QHC)	• Page the Neurologist on Call for Stroke and the EVT Interventional Radiologist on Call (see Appendix B)	Switchboard
	• If EVT is possible, contact Switchboard to initiate Stroke Protocol • If patient is unstable/intubated, also contact Kidd 2 ICU Intensivist and Kidd 2 ICU Charge Nurse and ED Charge Nurse o RT will be notified if patient is intubated by ICU team	Attending Neurologist
Patient Registration	• Register patient as soon as patient arrives in ED	ED Registration Clerk

Initial ED evaluation including medical screening by ED physician or Neurologist	• Ambulance triage in ED
	• If patient walks into ED, perform rapid triage with recognition of stroke symptoms
	• Ask ED Registration Clerk to register patient if not already done
	• Notify CT of patient's arrival in ED
	  o ED physician or Neurologist ensures that KGH staff member has notified CT of patient's arrival in ED
	• Upon patient arrival at central desk near Section A:
	  o Paramedic reports last seen well, symptoms, medical conditions and medications if available, vital signs and glucometer reading
	  o ED physician or Neurologist does immediate medical screen to ascertain if patient is potential stroke patient
		Triage-trained Nurse
		
		ED Charge Nurse
		ED Unit Clerk
		
		Paramedic
		
		Attending Neurologist or ED Physician-first to arrive

Stroke Call cancellation if needed	• After arrival in the ED and ED physician or Neurologist has done initial screen, if stroke activation is to be cancelled, notify or delegate a KGH staff member to call Switchboard • Switchboard repeats calls to those listed in Appendix A and notes "Stroke Protocol cancelled"	ED Charge Nurse Switchboard
CT Readiness	• Ensure that patient is "next on scan", and that CT scan is ready for stroke patient within 10 minutes of arrival to ED	CT Technologist
Repatriation planning	• If Attending Physician suspects that patient may not be an IV thrombolysis or EVT candidate, and will qualify for repatriation back to a bypassed community hospital ED, Dispatch will be immediately contacted to request that the EMS crew be held up to regulated timeframe, while decision is made as to IV	Attending Neurologist or ED Physician

	thrombolysis +/-EVT candidacy, medical stability and medical diagnosis	
Medical assessment and clinical decision making	• Initial assessment re: candidacy for IV thrombolysis with TNK or rt-PA administration and/or EVT • Completion of NIH Stroke Scale (included in the Stroke Assessment form found in Stroke Protocol package)	Attending Neurologist Neurology House staff under supervision of Attending Neurologist
Preparation of patient before CT Scan	• Print blood labels • 2 peripheral IVs - (1 IV with 18 Gauge needle in Rt. ACF is preferred- if unable, use 20 Gauge; must be above the hand) • Bloodwork sent to lab using Acute Stroke Protocol package yellow labeled blood tubes. Attending Physician directs Nurse to draw bloodwork before or after CT. Waiting for bloodwork results is not mandatory to make decision for IV thrombolysis +/-EVT	ED Nurse
Lab Blood Work	• Lab processes bloodwork STAT and informs ED of results ASAP	Lab
Patient Transport to CT Suite	• Patient to remain on EMS stretcher until CT • Follow patient to CT suite with ED stretcher, monitor, pump, transport kit, and TNK or rt-PA from Omnicell • Transport patient to CT suite • Prior to CT scan, switch paramedic's monitor to ED monitor in CT suite, check leads are moved away from center chest area • Ensure jewelry, dentures, and hearing aids are removed • Care for patient in CT Suite • Before Paramedics leaves KGH, report is given to ED Nurse	ED Nurse Stroke Team ED Nurse Paramedic
Consent processes	• Patent and family education is ongoing to prepare for consent	Attending Neurologist
Consent for CT+/-CTA	• Verbal consent is obtained for IV contrast for CTA if this is to be used, and is documented in chart. If verbal consent cannot be obtained, emergency consent procedures are followed and documented	CT Technologist
Medical Management & Decision Making	• Neurologist views CT scan +/-multiphase CTA and/or RAPID perfusion imaging with Neuroradiology • Inclusion/Exclusion Criteria for TNK/rt-PA is used to determine thrombolytic therapy candidacy • Neurologist will use ESCAPE trial criteria and KGH Stroke EVT Checklist to determine candidacy for EVT • If patient is candidate for administration of IV thrombolysis and/or EVT, then patient will be transferred to Neurology Service • Medical management and clinical decision-making surrounding initial and any additional radiological imaging performed (i.e., CT Perfusion, MRI, MRA, Angiography). Interpretation of imaging. Decisions re indications for pursuing additional diagnostic imaging. This is done keeping "time is brain" in mind • Accountability regarding clinical interpretation of diagnostic imaging and decision regarding treatment choice re: administration of IV TNK or rt-PA, and/or EVT	Attending Neurologist Attending Neurologist and Interventional Radiologist (when appropriate)

Communication re IV thrombolysis +/-EVT & Bed Planning	• <u>If the patient is a candidate for IV Thrombolysis with Tenecteplase (TNK) or Alteplase (rt-PA):</u>
	  ○ Notify D4ICU Charge Nurse
	• <u>If the patient is a candidate for EVT +/-IV thrombolysis</u>:
	  ○ Notify Interventional Radiologist
	  ○ Notify IR Technologist and IR Charge Nurse
		Attending Neurologist
		ED Charge Nurse
		
		Attending Neurologist
		Interventional Radiologist

	▪ After hours: Call back EVT team via Switchboard see Appendix B o Notify D4ICU or K2ICU(+ Intensivist) o If after hours and patient returning to ED to await IVR EVT team on call back, notify ED Charge Nurse o Notify Operations Manager to locate or confirm critical care bed in D4ICU or K2ICU & help with nurse staffing	Interventional Radiologist Attending Neurologist ED Nurse D4ICU Charge Nurse/IR Charge Nurse
IR suite triaging	• In cases of more than one patient requiring emergent IR procedures in IR suite, clinical decision & plan regarding most appropriate triage care must be executed in consultation with all Attending Physicians responsible for care of all patients requiring emergent IR procedures. Triage follows the principle that EVT/ IA rt-PA in appropriate stroke patients is an Emergency	Daily Operations Team for IR Suite with Attending Neurologist
For patients who are not candidates for IV thrombolysis administration +/-EVT: admission or repatriation from ED	If patient's clinical situation is not appropriate for administration of IV thrombolysis +/-EVT, then patient may: A) be transferred to neurosurgery B) be admitted via neurology to KGH Acute Stroke Unit – using order sets for those **not** receiving IV thrombolysis C) remain under care of ED physician or attending neurologist while arrangements are made for patient to be repatriated back to local bypassed ED • In the case of C) ED to ED repatriation o Dispatch must be immediately notified regarding the repatriation transport needs of the patient o Criteria for repatriation from KGH ED to bypassed ED site: ▪ Established medical diagnosis ▪ Patient no longer needs tertiary care ▪ Investigations that are NOT available at local facility are complete ▪ Communication has occurred with patient/family/substitute decision-maker • **Reminder**: D4ICU Charge Nurse or K2ICU Charge Nurse and Operations (Ops) Manager should be notified if a critical care bed is not needed for the patient	Attending Neurosurgery Attending Neurologist Attending Physician (ED or neurologist) ED Charge Nurse
Obtain consent for IV thrombolysis	NOTE: this process begins PRIOR to CT to prepare for timely decision post CT. • Patient or substitute decision-maker is provided appropriate and specific information regarding risks and benefits of the planned procedure, and sufficient time is given to patient/family to give informed consent • For IV TNK or rt-PA administration, verbal consent is obtained from patient or substitute decision-maker	Attending Neurologist
EVT +/- IV thrombolysis consent	• For EVT +/-thrombolysis administration written consent is obtained from patient or substitute decision-maker using appropriate Radiology Consent Form o Part A: Explained to patient and consent obtained by Neurologist o Part B: Explained to patient and consent obtained by Interventional Radiologist	Attending Neurologist and Interventional Radiologist

IV thrombolysis or EVT +/-thrombolysis if unable to consent	• If patient is unable to consent, and there is no substitute decision-maker at KGH, verbal consent over the telephone may be obtained from substitute decision-maker • In a case where patient is unable to give consent, and substitute decision-maker cannot be contacted, Neurologist and Interventional Radiologist (if EVT, IA rt-PA) is responsible for making decision to treat patient based on clinical judgment • Rationale for treatment decision and reasons why consent could not be obtained must be documented • Fill in and sign Emergency Consent Form	Attending Neurologist Attending Neurologist and Interventional Radiologist (if EVT, IA rt-PA)
Consent withdrawal	• Responsibility to assess and communicate with patient or substitute decision-maker in circumstances where consent is withdrawn during TNK or rt-PA administration +/-EVT • Clinical reassessment as part of ongoing monitoring and confirmation of consent • Assess competency to provide consent	Attending Neurologist (for IV thrombolysis) Attending Neurologist and Interventional Radiologist (for EVT, IA rt-PA)
If IV Thrombolysis is Administered without EVT		
Administration of IV thrombolysis in CT Suite	• Direct ED RN to prepare for IV TNK or rt-PA • Write order for IV thrombolysis in chart/Entry Point • MD or ED/Critical Care RN administer IV TNK; MD administers bolus dose of rt-PA while RN prepares infusion pump and begins rt-PA infusion (TNK does not require infusion)	Attending Neurologist Neurology House staff under supervision of Attending Neurologist
Patient assessment & monitoring during and following TNK bolus or rt-PA infusion	• Follow Acute Ischemic Stroke CCP re IV thrombolysis +/- EVT • IV rt-PA infusion start in CT Suite (only for rt-PA NOT TNK) • Transport patient back to ED after CT Scan • CNS Scale & VS q 15 min for 2 hours then q 1 hour for 22 hours, follow CCP • Assess patient's airway, comfort, and level of consciousness, sedation, and agitation • Continuous SpO_2 & cardiac monitoring • Monitor for angioedema & bleeding • Keep patient NPO • Change patient into hospital gown • ECG post initiation of IV thrombolysis	ED Nurse
Patient transfer to D4ICU bed	• Acute Ischemic Stroke Thrombolysis/EVT QBP Order Set is completed in Entry Point • Communicate with D4ICU Charge Nurse re: bed planning; stroke patients' readiness for transfer • Monitor in accordance with Acute Ischemic Stroke CCP while awaiting transfer to Unit	Attending Neurologist ED Charge Nurse
If EVT with or without IV Thrombolysis		
Clinical decision re EVT	• Decision to proceed with EVT after multiphase CTA/RAPID imaging is interpreted	Attending Neurologist and Interventional Radiologist
Communication & Bed Location	• Notify family-inform family to wait in IVR Waiting Room • Notify CT Suite or ED that IVR suite is ready • D4ICU or K2ICU Charge Nurse informs IVR of bed location • Contact Ops Manager if delay in locating bed	IR Charge Nurse or IR Nurse or Technologist if after hours D4ICU or K2ICU Charge Nurse & IR Nurse

Patient to receive IV thrombolysis	• See above for IV thrombolysis • Prepare IVR Suite while patient is receiving IV thrombolysis in CT or ED	IR Nurse and IR Technologist

Prepare patient for EVT +/-IA rt-PA procedure	• Ensure patient is in hospital gown with no underwear
	• If potential candidate for EVT, insert foley catheter (if patient is to receive TNK or rt-PA, insert foley catheter prior to TNK or rt-PA)
	• Ensure 2 working IVs
	• Transport patient to IVR when IVR suite is ready
	• Prepare patient for procedure including:
	  ○ Place patient on continuous SpO_2 & cardiac monitoring
	  ○ Shave prep both groins-only if absolutely necessary
	• Administer conscious procedural sedation & follow Procedural Sedation Policy& IVR Procedure Order Set
		ED Nurse +/-IR Nurse
		
		IR Nurse

Monitor patient during procedure	• Follow standard IVR care processes including:
	  ○ Continuous SpO_2 & Cardiac monitoring
	  ○ BP monitoring
	  ○ Assess patient's airway, comfort, and level of consciousness, sedation, and agitation
	• Monitor for angioedema and bleeding
	• Keep patient NPO
		Interventional Radiologist and IR Nurse

Medical management of patient in IVR suite	• As a general principle, patients undergoing procedures are under the immediate care of the procedural physician although that physician may seek consultative support from referring and other physicians • IR Technologists and IR Nurses assist with procedure • Attending Neurologist is available in IVR suite to assist as needed • Decision making regarding modifying/aborting planned EVT procedure	Interventional Radiologists with consultation as required with the Attending Neurologist
Medical Management of Sedation	• Ordering sedation and analgesia as required per IVR Procedure Order Set (Adult) • When no Anesthesiologist is present, medical management of a patient who develops complications in IVR suite, including consultation of other medical services (i.e. Anesthesiology) is initiated by Interventional Radiologist in consultation with the Neurologist • If there is concern about patient's airway or LOC in the IVR suite, a code 99 for Anesthesiology is to be called • If patient arrives intubated, decision is made to contact Anesthesiology as needed • If Anesthesiologist is present, patient monitoring, sedation and analgesia will be responsibility of the Anesthesiologist	Neurologist with Interventional Radiologist ICU Intensivist Anesthesiologist
Femoral Sheath Removal	• Check ACT & remove sheath per IVR Femoral Arterial Sheath Removal Nursing Policy & Procedure & Arterial Sheath Removal Order Set • Apply bandage to puncture site • If Angio-Seal is not applied post procedure and femoral sheath remains in situ-complete Arterial Sheath Removal Order Set • IR Nurse removes femoral sheath wherever the patient is located per Arterial Sheath Removal Order Set	IR Nurse Interventional Radiologist IR Nurse

For Cases Where EVT is Aborted	• In the case that EVT is aborted, the Ops Manager is contacted to locate appropriate bed	Attending Neurologist
Transfer patient to Davies 4 ICU or K2 ICU	• Notify D4ICU Charge Nurse or K2ICU Charge Nurse when procedure is completed • Contact Ops Manager if delay in locating bed • Handover report in IVR to K2ICU Nurse/ICU Intensivist if patient going to K2ICU bed • IR Nurse returns ED portable monitor to ED • Transfer patient with Stroke Team to D4ICU or K2ICU • Neurologist gives hand over report once patient has been transferred to D4ICU or K2ICU	IR Charge Nurse or IR Nurse if after hours Attending Neurologist
Protocol Coordination		
Protocol Coordination Functions	• Facilitate Stroke Protocol as it relates to external bodies (paramedic services, base hospital, central ambulance communication center, other hospitals) • Facilitate the Stroke Protocol internally	Regional Director & Regional Stroke Best Practice Coordinator, Stroke Network of Southeastern Ontario Stroke Specialist Case Manager and Stroke Neurologist

Appendix A

Acute Stroke Protocol Team Activation by Switchboard

DAYS:

Staff Neurologist on Call and Neurology Fellow
Neuroradiologist
PGY2 (or PGY1 if PGY2 is post call)
ED Charge Nurse
ED Registration Clerk
Ops Manager
Stroke Specialist Case Manager (page)
CT technologist
Admitting
Core Lab
Regional Director, Stroke Network of Southeastern Ontario (leave message)

After hours, weekends, and holidays:

Staff Neurologist on Call
Neurology Fellow (if on call)
Radiology resident on call
ED Charge Nurse
ED Registration Clerk
Ops Manager
CT technologist (on call)
Admitting
Core Lab
Stroke Specialist Case Manager (leave message)
Regional Director, Stroke Network of Southeastern Ontario (leave message)

When all have confirmed, call ED and report, "all have confirmed".

Appendix B

Switchboard Guide: Endovascular 'EVT' Stroke Team External call Requesting EVT