Regional Paramedic Program for Eastern Ontario

Emergency Stroke Care

How are we doing?

Southeast Regional & District
Acute Stroke Protocol Committee
May 2021

with thanks to

All 5 Paramedic Services

Regional Paramedic Program of Eastern Ontario (S. Duncan) for Stroke Report

QHC and KHSC

strokenetwork SOUTHEASTERN ONTARIO

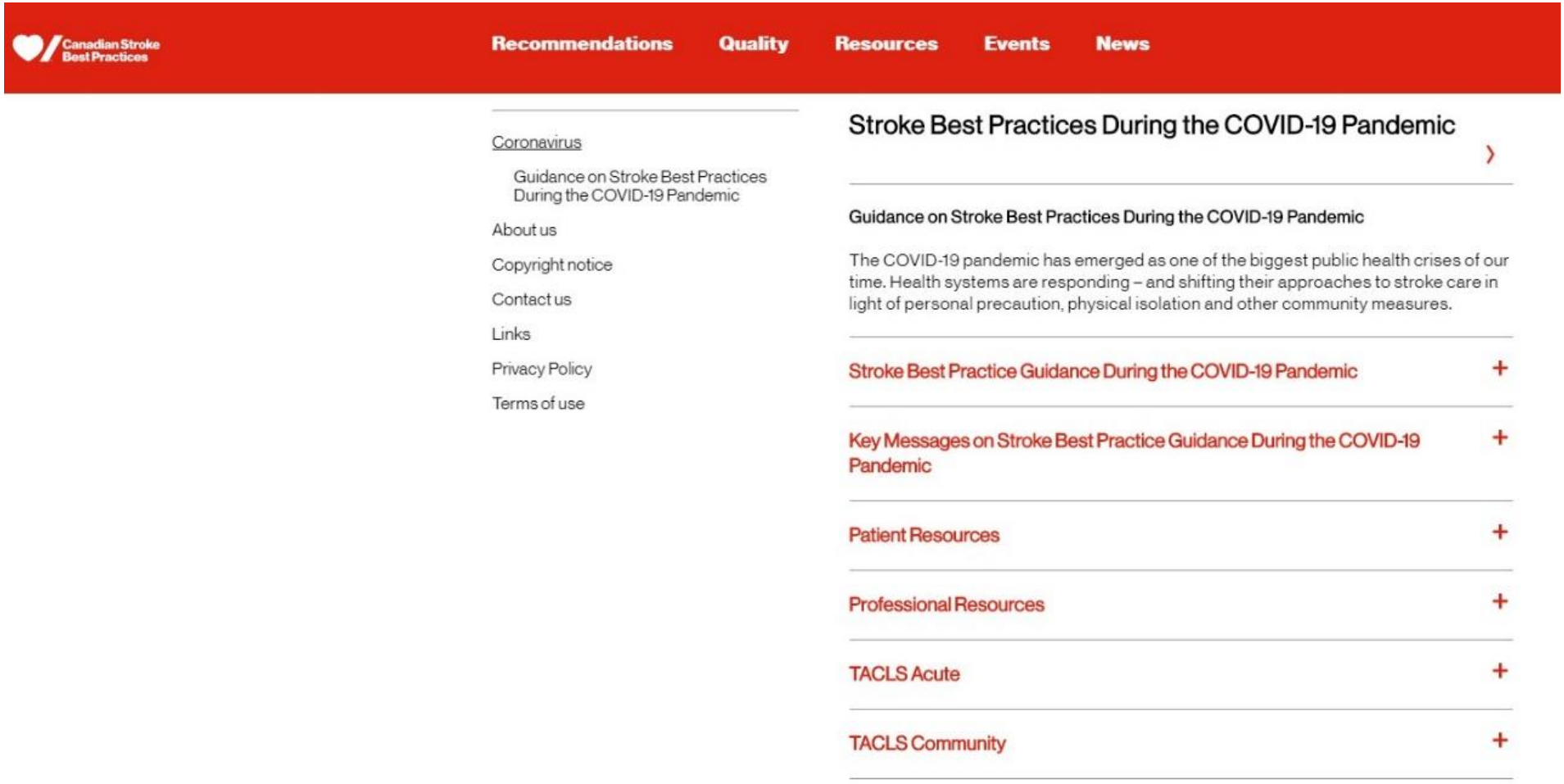
What is included in this slide deck?

- Due to COVID-19 the annual 2021 Regional Acute Stroke Protocol (RASP) evaluation meeting has been cancelled
- As per Previous years, these evaluation slides have been prepared for your review:
  - Links to COVID-19 stroke care guidelines & resources;
  - Ontario CTAS stroke data before and after COVID-19 Pandemic;
  - Annual data trends from KHSC, QHC and RPPEO on stroke ASP volumes, % treated, DTN times, stroke volumes by paramedic service, transfers etc;
  - Endovascular Treatment (EVT) outcomes, including the 6 to 24 hour time window;
  - Inpatient stroke unit utilization and mortality graphs
  - Reminders regarding changes in the paramedic prompt card, LVO screening tools and walk-in protocols related to extended time window for treatment.
- If you have any concerns about Acute Stroke Protocol (ASP) processes, please do not hesitate to be in touch – contacts provided on last slide
- **Thank you** for all you are doing to keep emergency stroke care protocols working well - Dr Jin and Cally Martin.

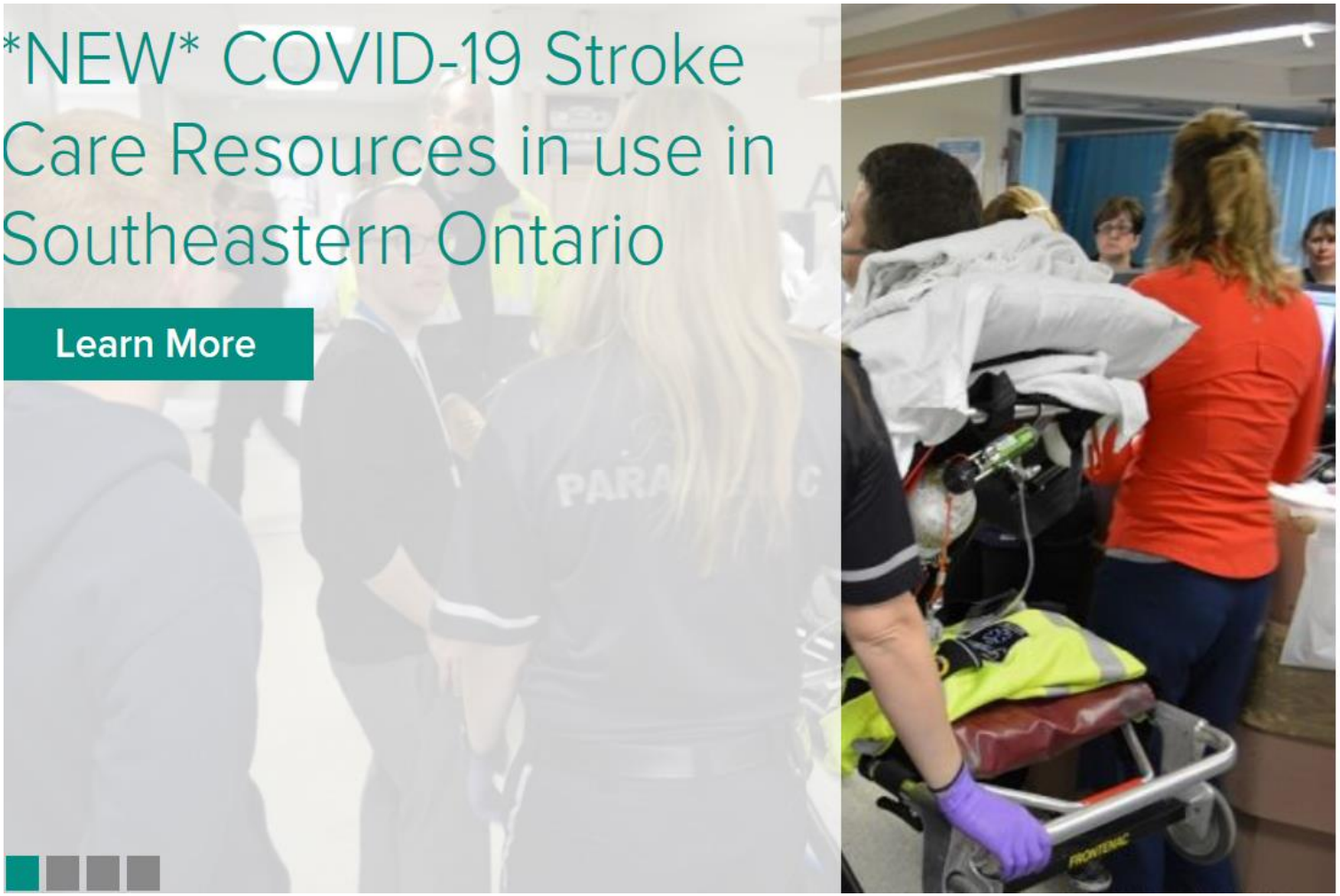
strokenetwork
SOUTHEASTERN ONTARIO

Stroke Care During COVID-19

https://www.strokebestpractices.ca/



Stroke Care Resources during COVID-19 Pandemic www.strokenetworkseo.ca



Public Awareness during COVID-19

Stroke is a medical emergency. Do not hesitate.
Call 9-1-1 even during the COVID-19 pandemic.

Learn the signs of stroke

F ace is it drooping?

A rms can you raise both?

S peech is it slurred or jumbled?

T ime to call 9-1-1 right away.

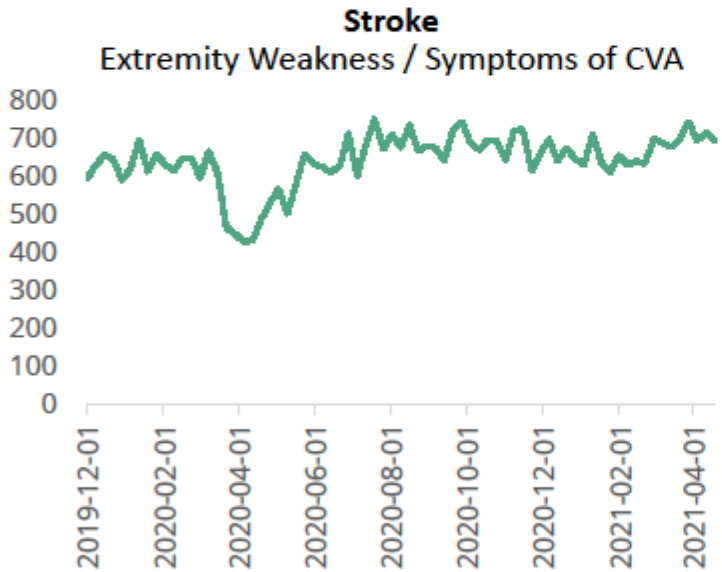
heartandstroke.ca/FAST

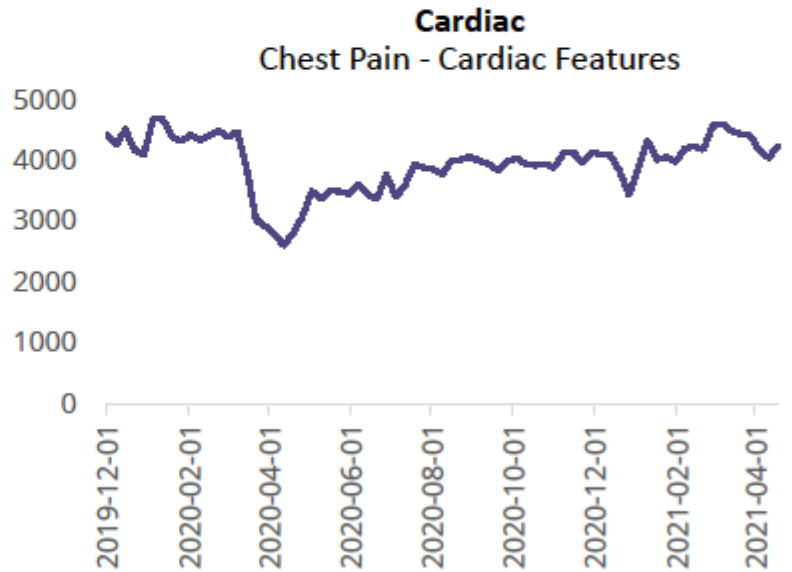
Heart&Stroke™

Ontario eCTAS data:
Stroke-related ED Visits during COVID-19

Stroke and Cardiac eCTAS Presentations

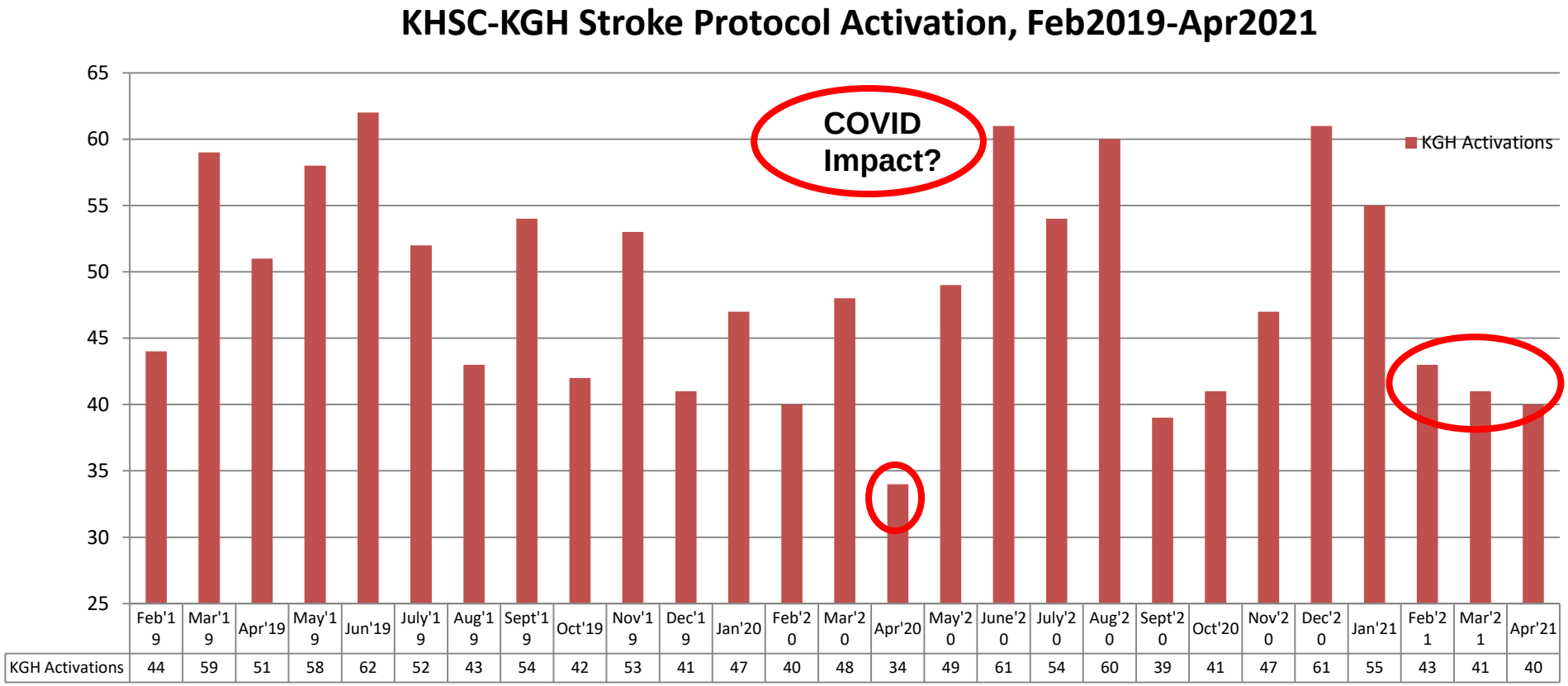
Patients have continued to seek care at EDs since grey lockdown and stay at home orders were implemented in March/April





KHSC-KGH Stroke Activations

COVID Impact?

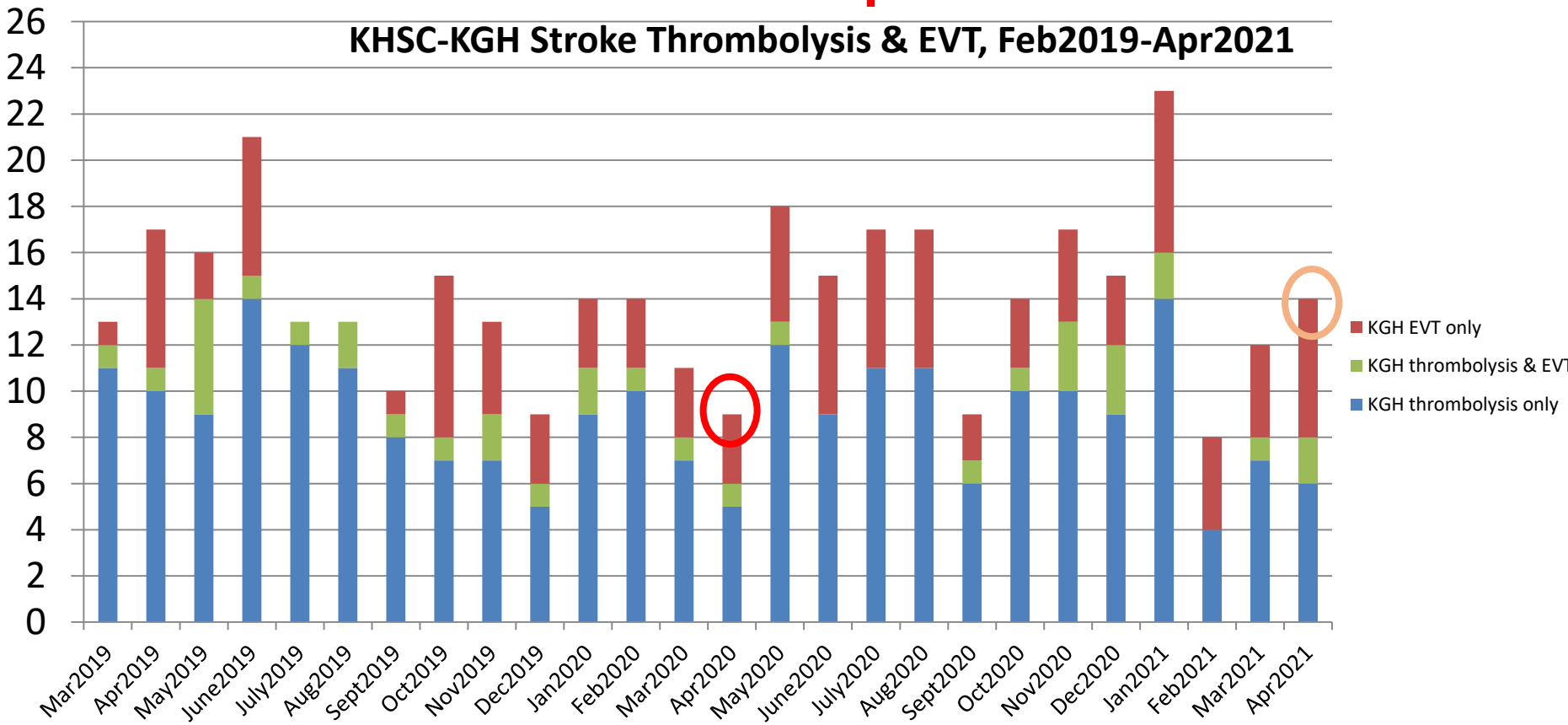


	Feb'19	Mar'19	Apr'19	May'19	Jun'19	July'19	Aug'19	Sept'19	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20	Apr'20	May'20	June'20	July'20	Aug'20	Sept'20	Oct'20	Nov'20	Dec'20	Jan'21	Feb'21	Mar'21	Apr'21
KGH Activations	44	59	51	58	62	52	43	54	42	53	41	47	40	48	34	49	61	54	60	39	41	47	61	55	43	41	40

Unlike the Ontario e-CTAS data, at KHSC we have observed decreased stroke presentation to ED in April 2020 and again in 2021. NOTE: Overall KHSC ED volumes were low in April but resuming more normal trends in May.

KHSC-KGH Stroke Hyperacute Rx

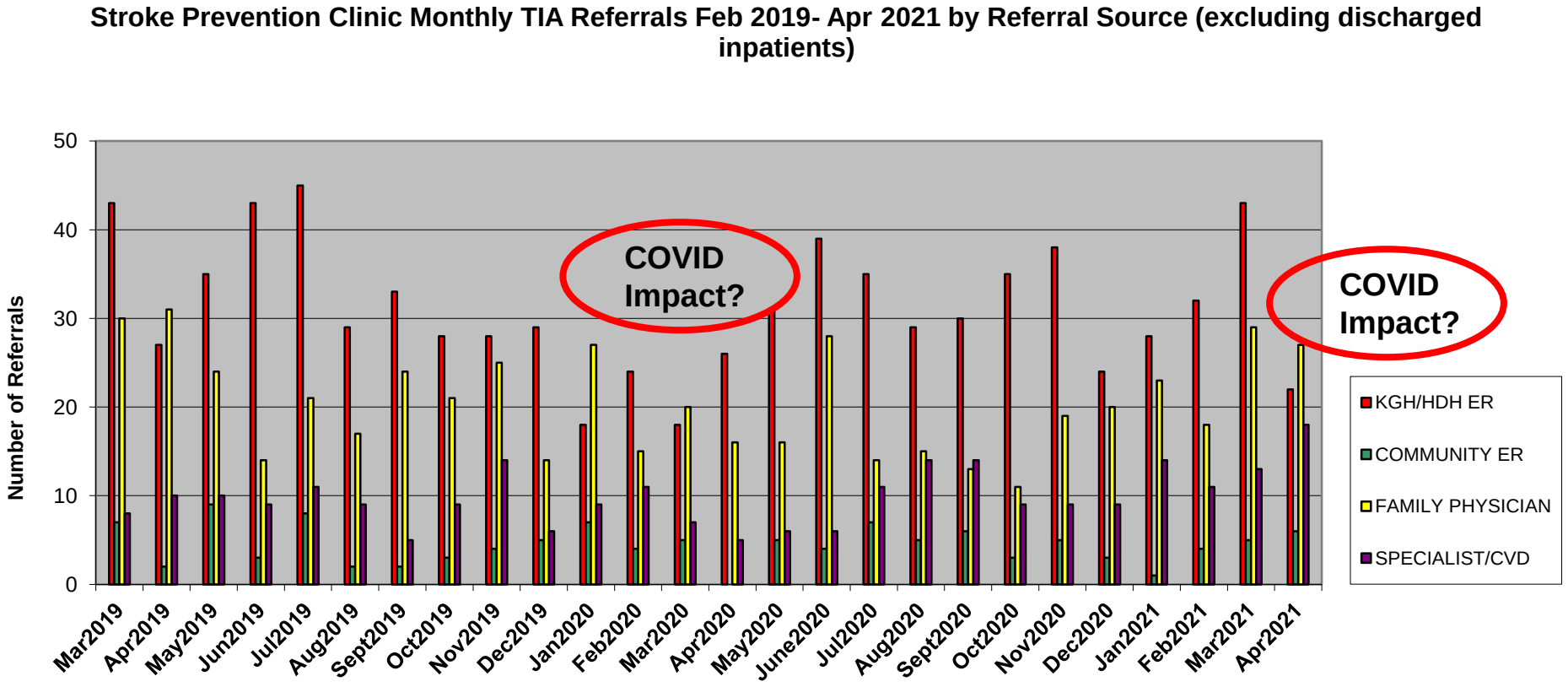
COVID Impact?



- **Decrease in access to hyperacute Rx in April 2020 but less impact in April 2021**
  - **Appears that those with most severe strokes are still presenting to ED**
- **Concern is access to secondary prevention for those with minor stroke and TIA**

KHSC-KGH Stroke Prevention Clinic

COVID Impact?



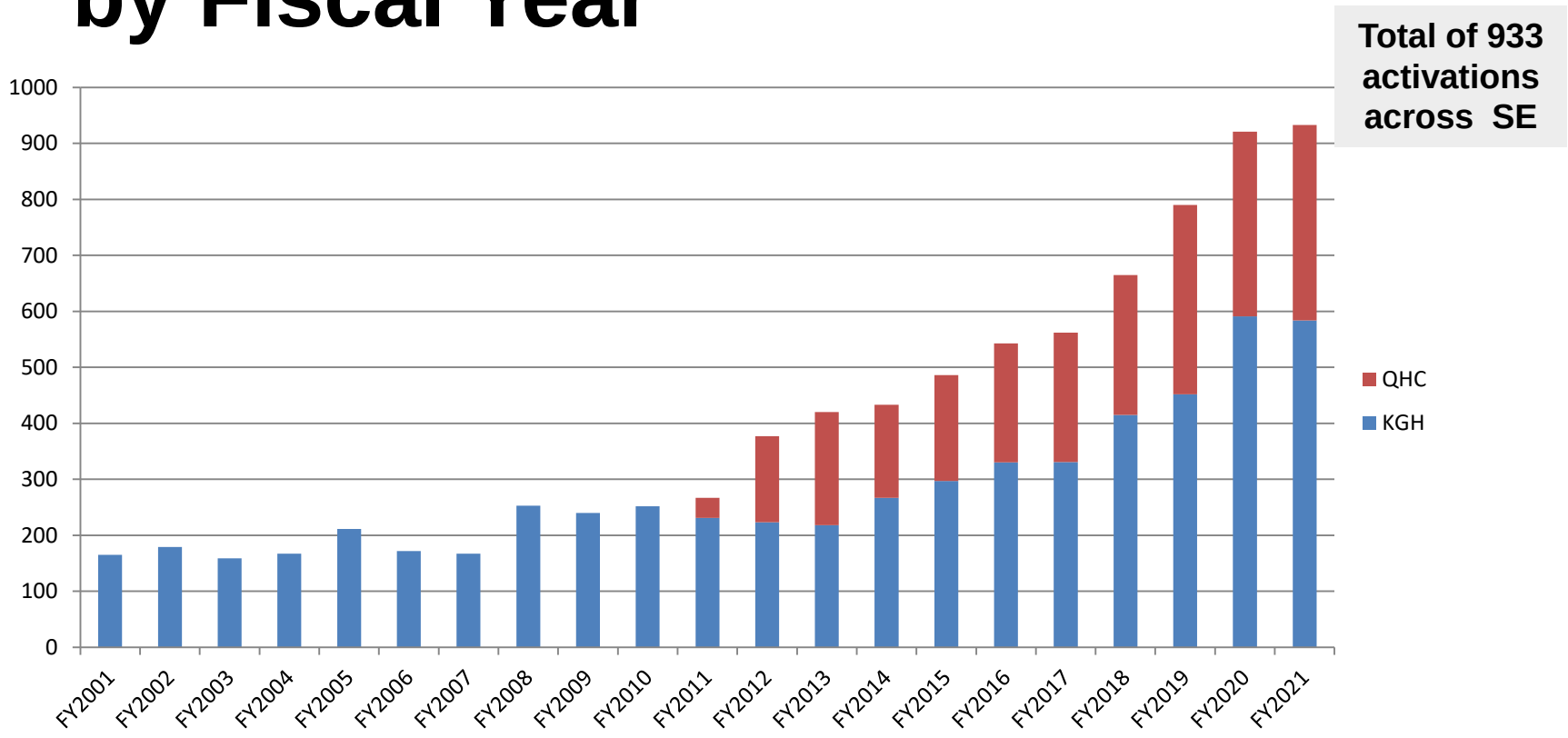
- **Decrease in TIA referrals from ED <u>and</u> family practice in April 2020**
- **Decrease in referrals from ED but family practice referrals sustained April 2021**
- **Concern is to sustain access to secondary prevention for minor stroke and TIA**

KGH + QHC

stroke protocol activations
and
hyperacute treatment volumes

strokenetwork
SOUTHEASTERN ONTARIO

SEO ASP Activations KGH/QHC by Fiscal Year



2020-21 – 933 stroke protocol activations at QHC and KHSC

Includes 121 In-hospital stroke protocol activations

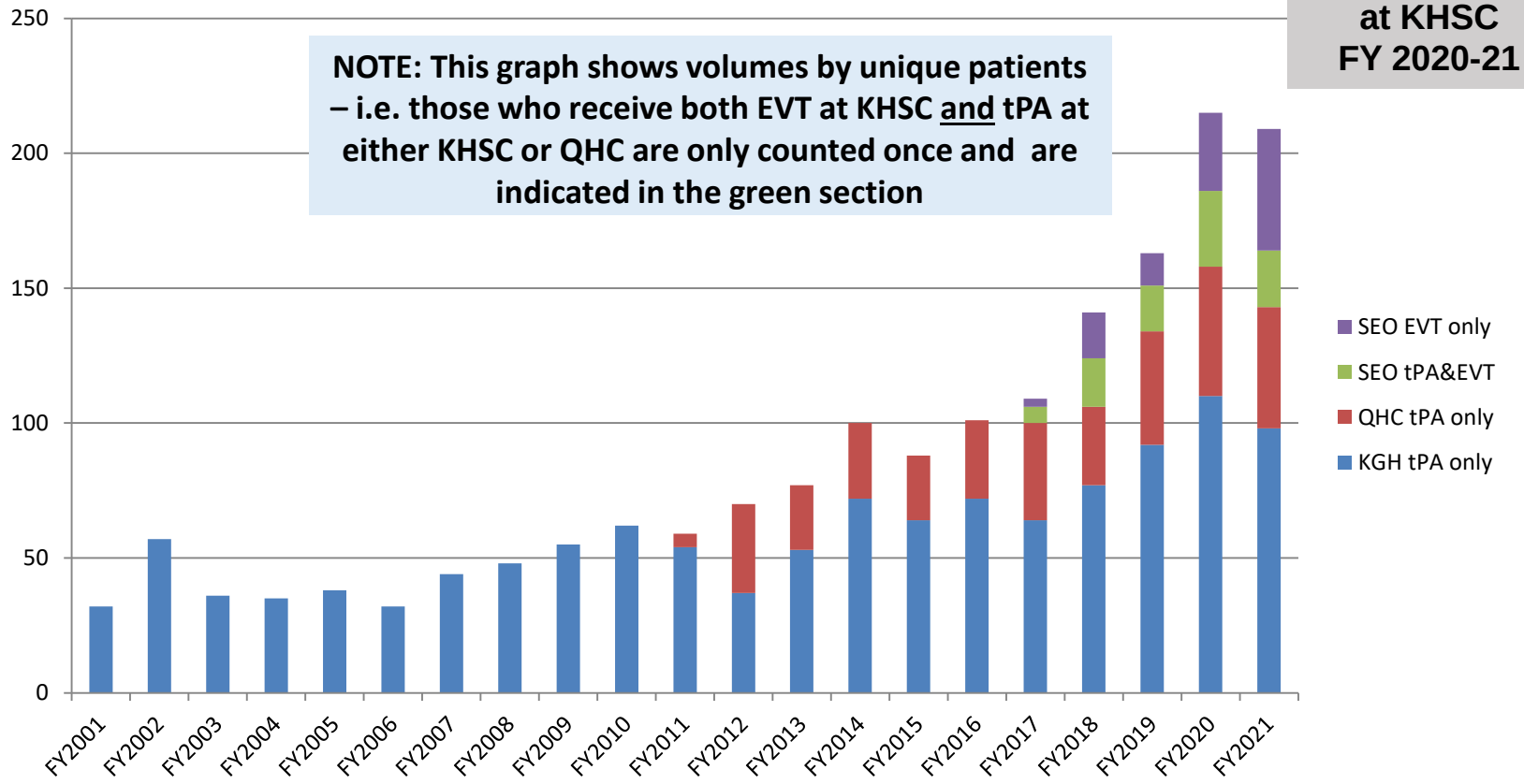
Note re In-hospital activations:

- **growth from 78 last FY - due to ↑ time window**
- **83 at KGH – 6 treated (2 tPA + 4 EVT); 38 at QHC – 0 tPA**
- **7% of KHSC in-hospital activations received Rx**

KGH/QHC tPA and EVT Volumes by Fiscal Year – unique patients

66 EVT cases at KHSC FY 2020-21

NOTE: This graph shows volumes by unique patients – i.e. those who receive both EVT at KHSC and tPA at either KHSC or QHC are only counted once and are indicated in the green section



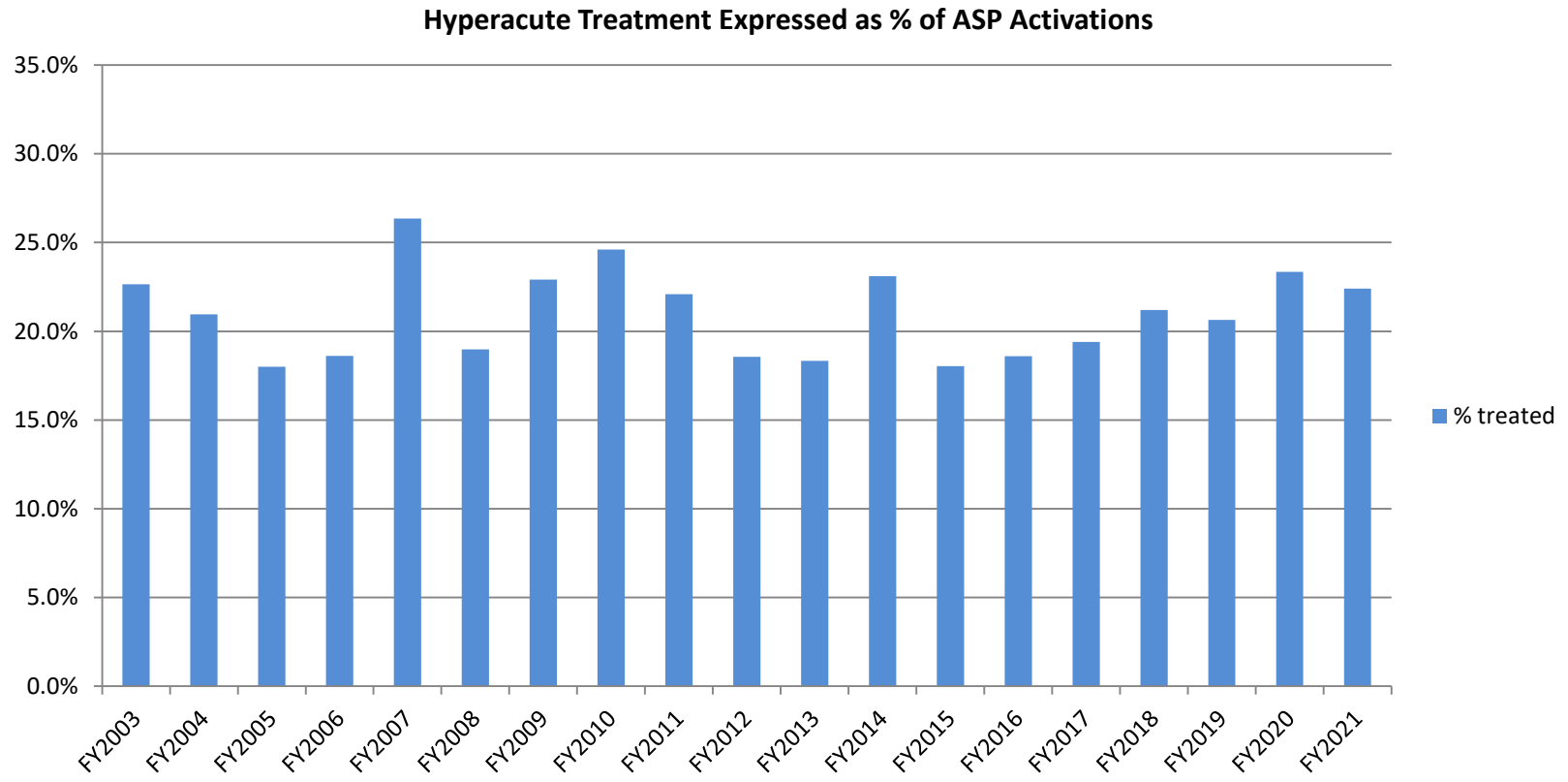
Growth in EVT rates; *RAPID* imaging contributes to patient selection

Median Door-to Needle (DTN) times:

2020-21 KGH 27 mins; QHC 37 mins and still improving – last Q 27.5 mins!

Key factors: EMS pre-notification; stay on EMS stretcher to CT; tPA in CT suite

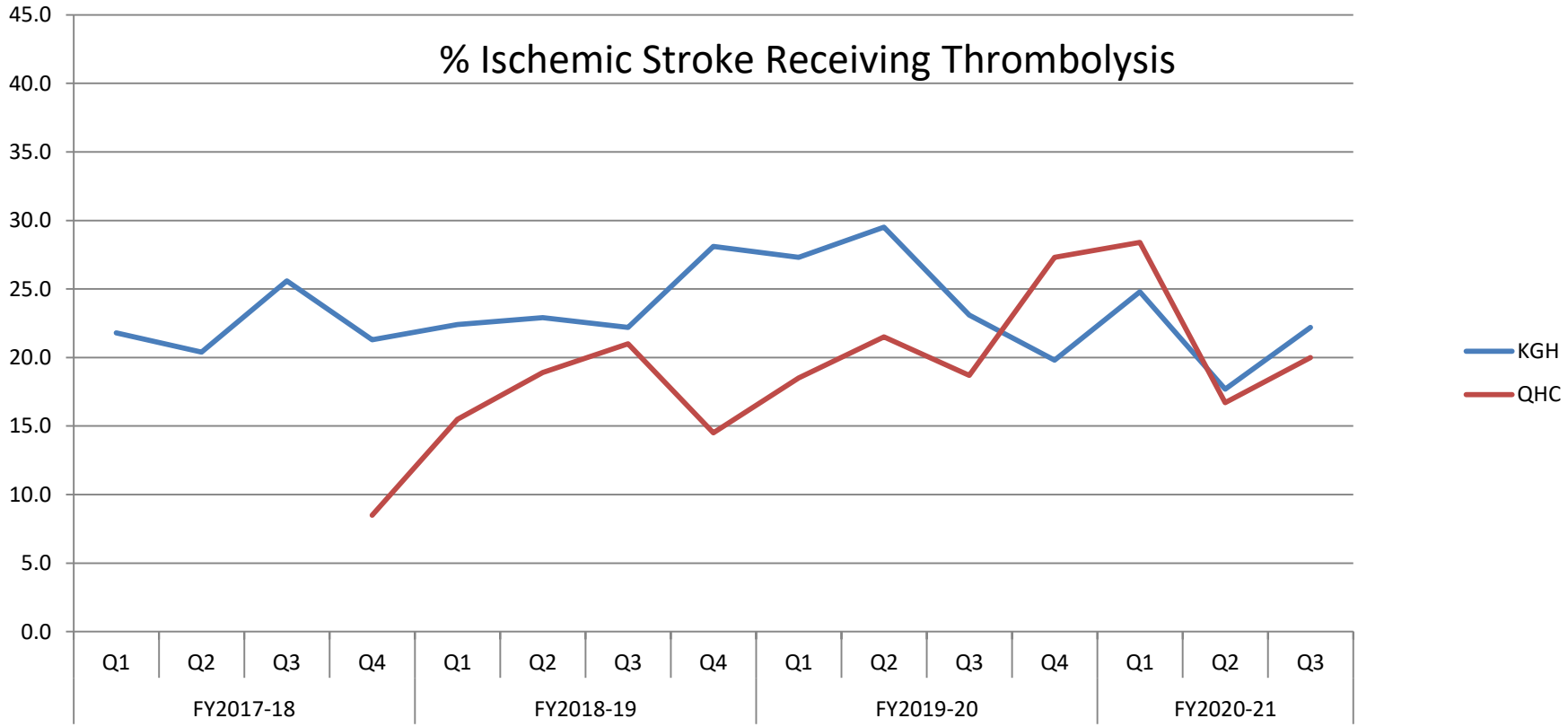
SE Region: % Stroke Activations Treated with tPA or EVT at KGH & QHC by FY



Per slide 11 - Volumes of stroke activations have risen each year.
Per slide 12 - Volumes treated have stabilized this year.
Over past 4 years, across the region, % activations treated with tPA, EVT or both have ranged between 20 and 25%

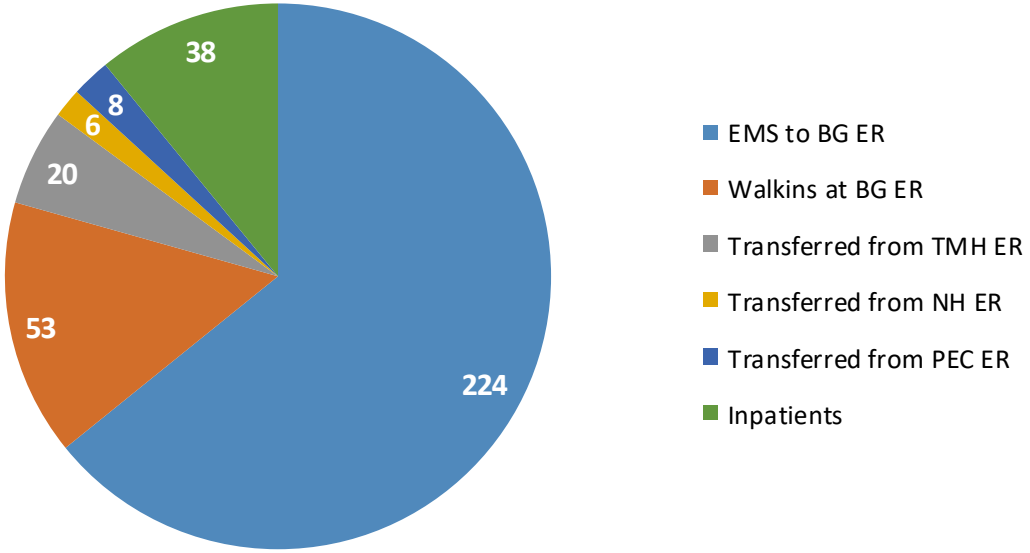
% Ischemic Stroke Receiving Thrombolysis

Source: SE Stroke Dashboard CIHI NACRS & 340 2017-2021



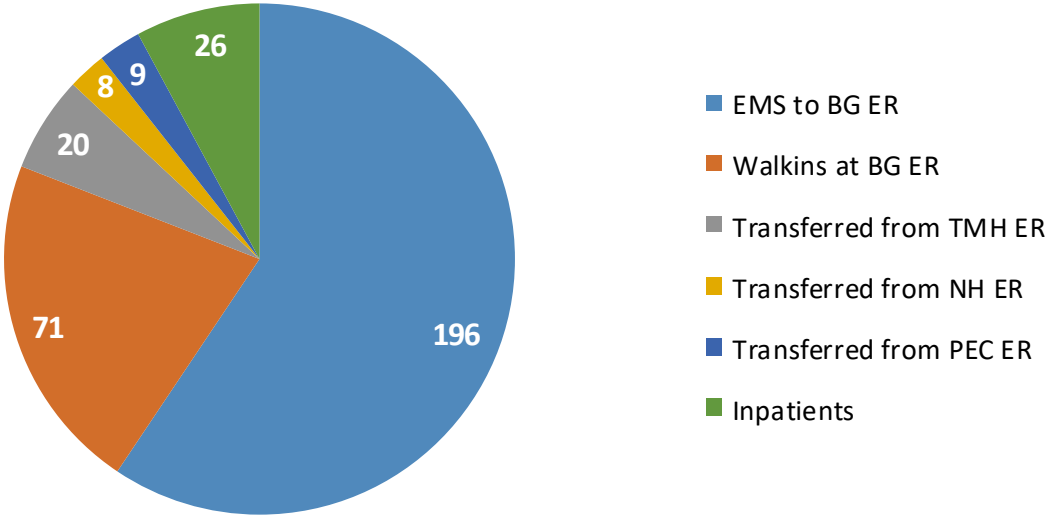
Over recent years, % ischemic stroke patients who received thrombolysis has generally ranged between 20 and 30% at both KGH and QHC

QHC Code Stroke Activations (20/21)



QHC Data

QHC Code Stroke Activations (19/20)



QHC DTN QI Work

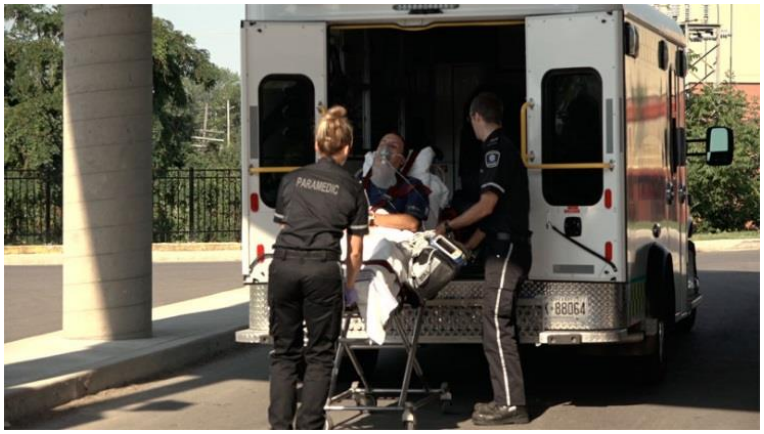
- Kaizen Event held July 2019 to target stroke emergency care
- Focus was to improve 4 key areas:
  - √ Reduce practice variation
  - √ Improve nursing teamwork in ICU and ED
  - √ Renew momentum and ownership for hyperacute care
  - √ Reduce door-to-needle (DTN) times for tPA
- By FY 2020-21 QHC had reduced median DTN from 60 to **37 mins**!
- Work is ongoing

Most recent quarter:

2020-21 Q3 DTN of **27.5** mins!

CONGRATS

to the QHC team!



strokenetwork
SOUTHEASTERN ONTARIO

Regional Paramedic Program for Eastern Ontario

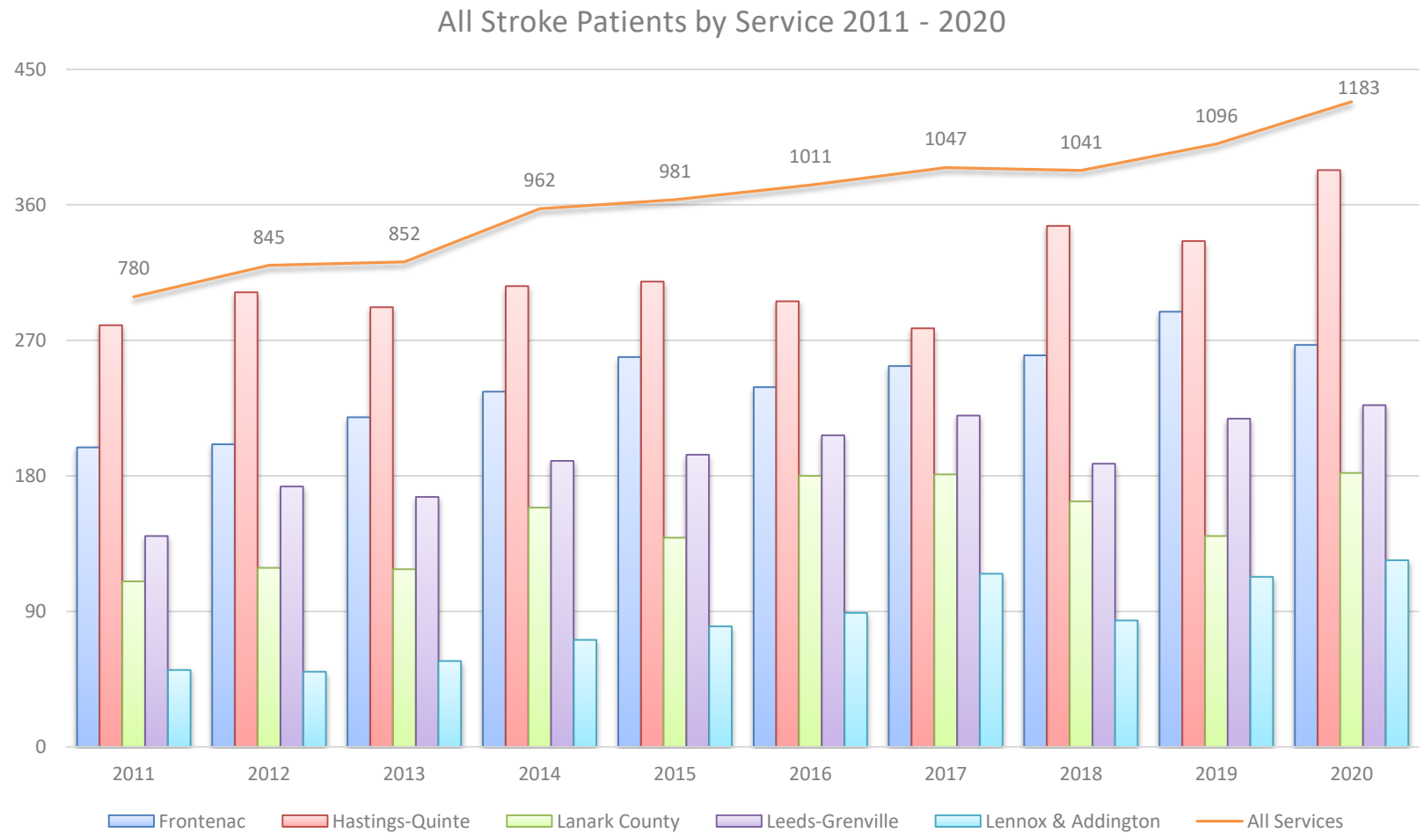
Stroke Report 2020

Calendar Year 2020 – with thanks to Susan Duncan and Ben De Mendonca

strokenetwork SOUTHEASTERN ONTARIO

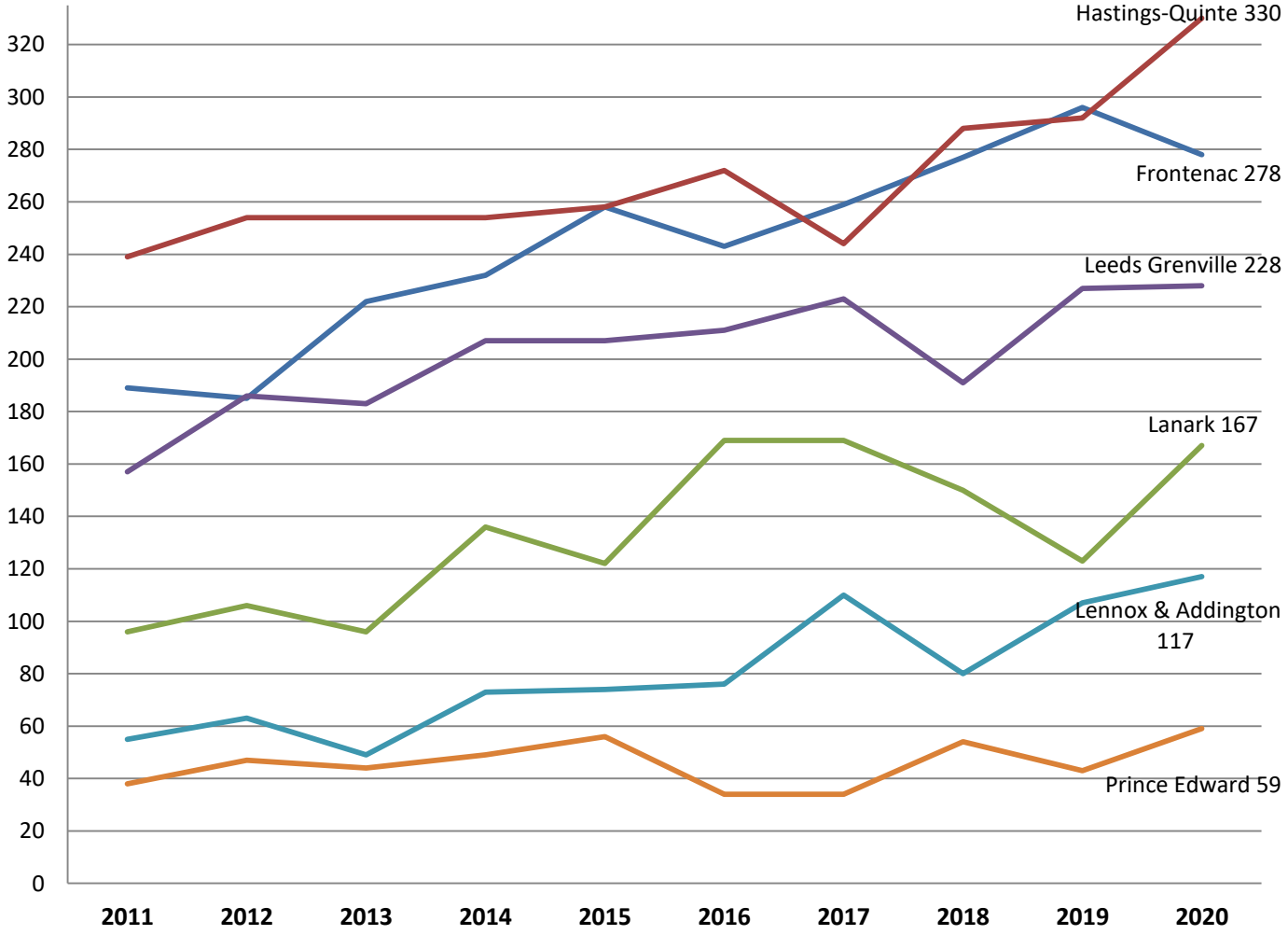
All Stroke Patients by Paramedic Service x 10 yrs

Data Source: RPPEO Stroke Report CY 2020



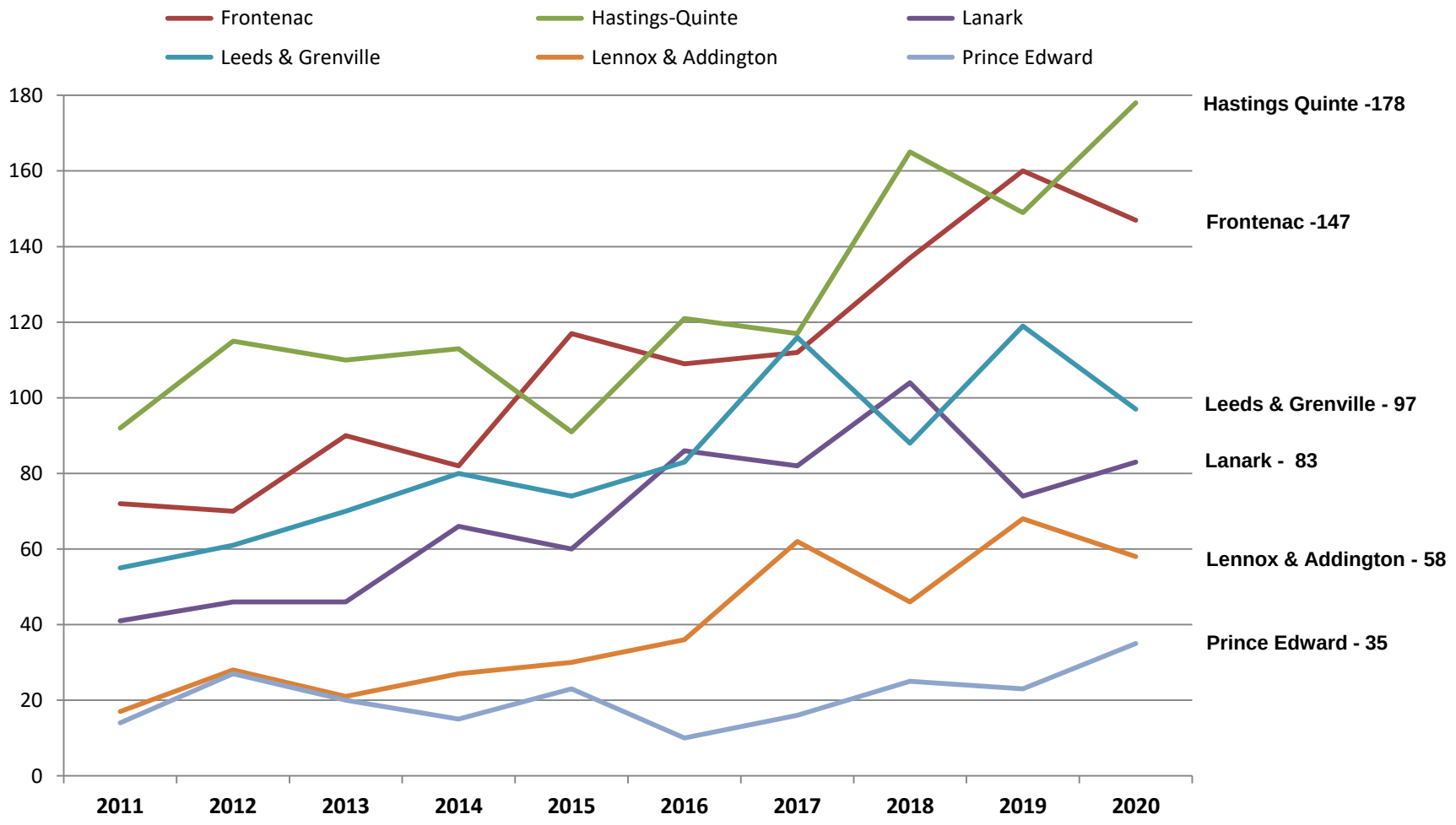
Growth in ALL Stroke Calls by Local Area over past 10 years

Data Source: RPPEO 2020 Stroke Report



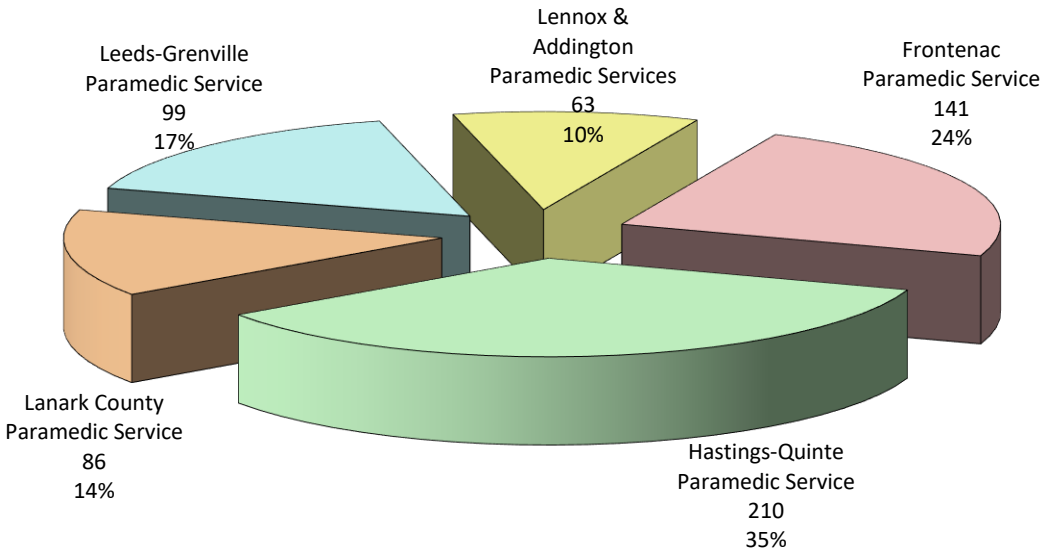
Growth in Stroke Protocol Calls by Area over past 10 years

Data Source: RPPEO 2020 Stroke Report



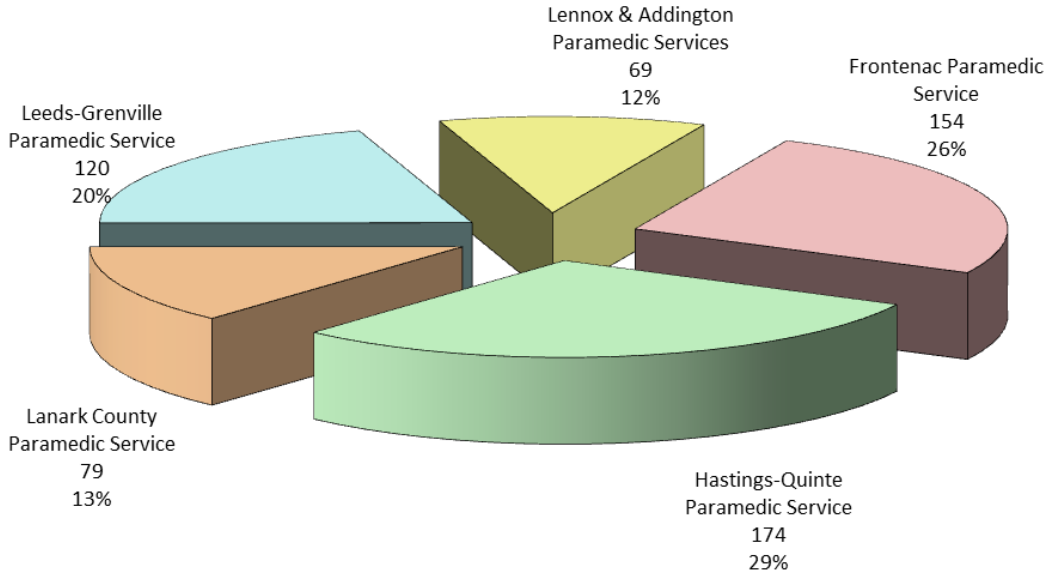
ACUTE STROKE PROTOCOL (ASP) PATIENTS IN 2020 (N=599) BY RESPONDING PARAMEDIC SERVICE

Data Source: RPPEO 2020 Stroke Report

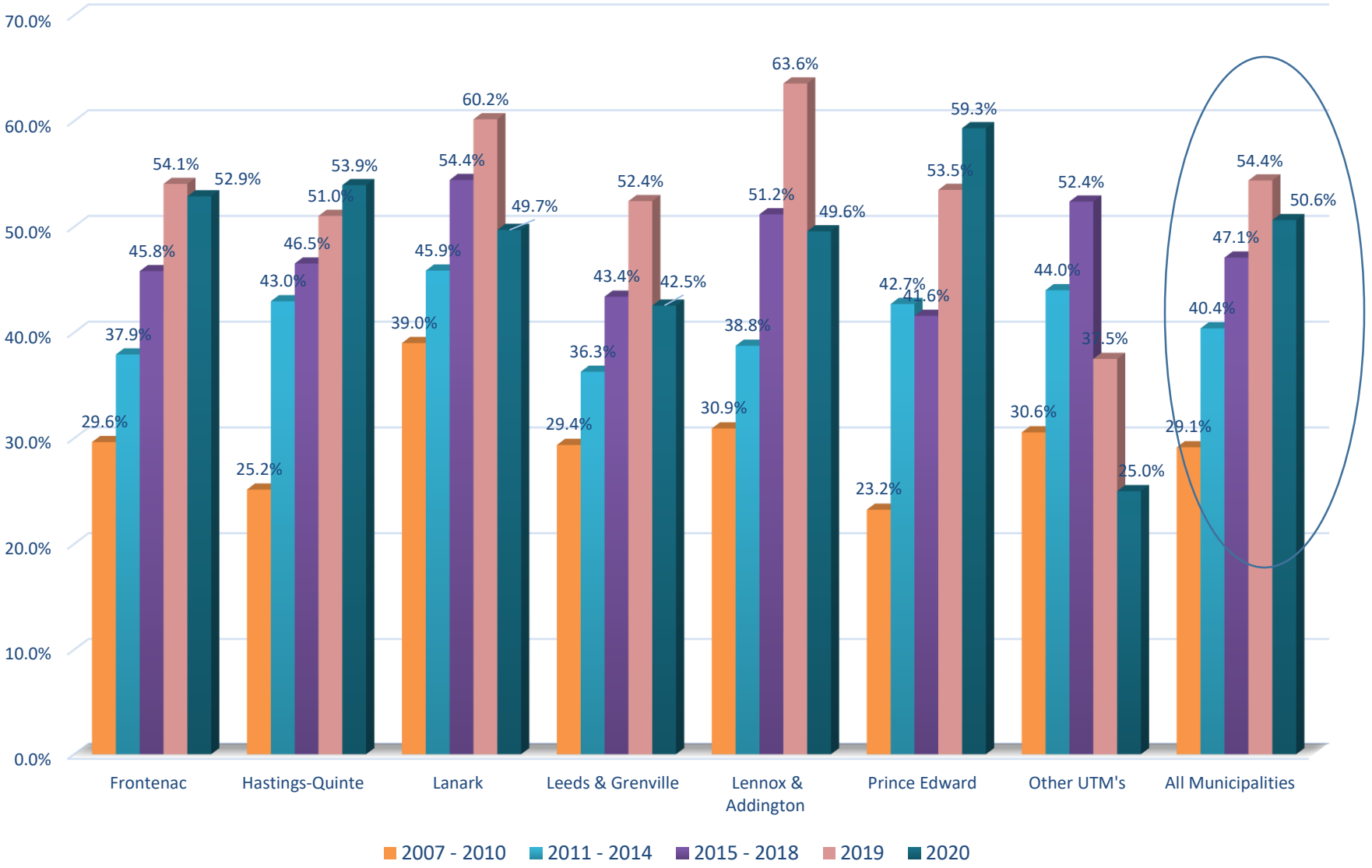


2020 ASP stroke calls by service N=599

2019 ASP stroke calls by service N=596



% STROKE PATIENTS TRANSPORTED IN EACH COUNTY WHO MET ACUTE STROKE PROTOCOL
Data Source: RPPEO 2020 Stroke Report



Transfers vs Bypass 2012-2020

Data Source: RPPEO 2020 Stroke Report

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Stroke Centre is closest	161 (46%)	176 (49%)	165 (43%)	165 (41%)	183 (41%)	191 (38%)	220 (39%)	253 (42%)	251 (42%)
Bypass	133 (38%)	146 (41%)	135 (35%)	168 (42%)	183 (41%)	210 (41%)	224 (40%)	237 (40%)	236 (39%)
Transfers	**56 (16%)**	**38 (11%)**	**86 (22%)**	**66 (17%)**	**82 (18%)**	**107 (21%)**	**121 (21%)**	**106 (18%)**	**112 (19%)**
TOTAL	**350**	**360**	**386**	**400**	**448**	**508**	**565**	**596**	**599**

Reasons for the transfers in 2020:

- **41 were brought by private car (37% of transfers)**
- **14 In-hospital strokes**
- **42 brought to local ED – 8 were TIA, 18 outside time window**
- **12 EVT transfers after 6 hour time window**

Home location for the 41 patients arriving by car

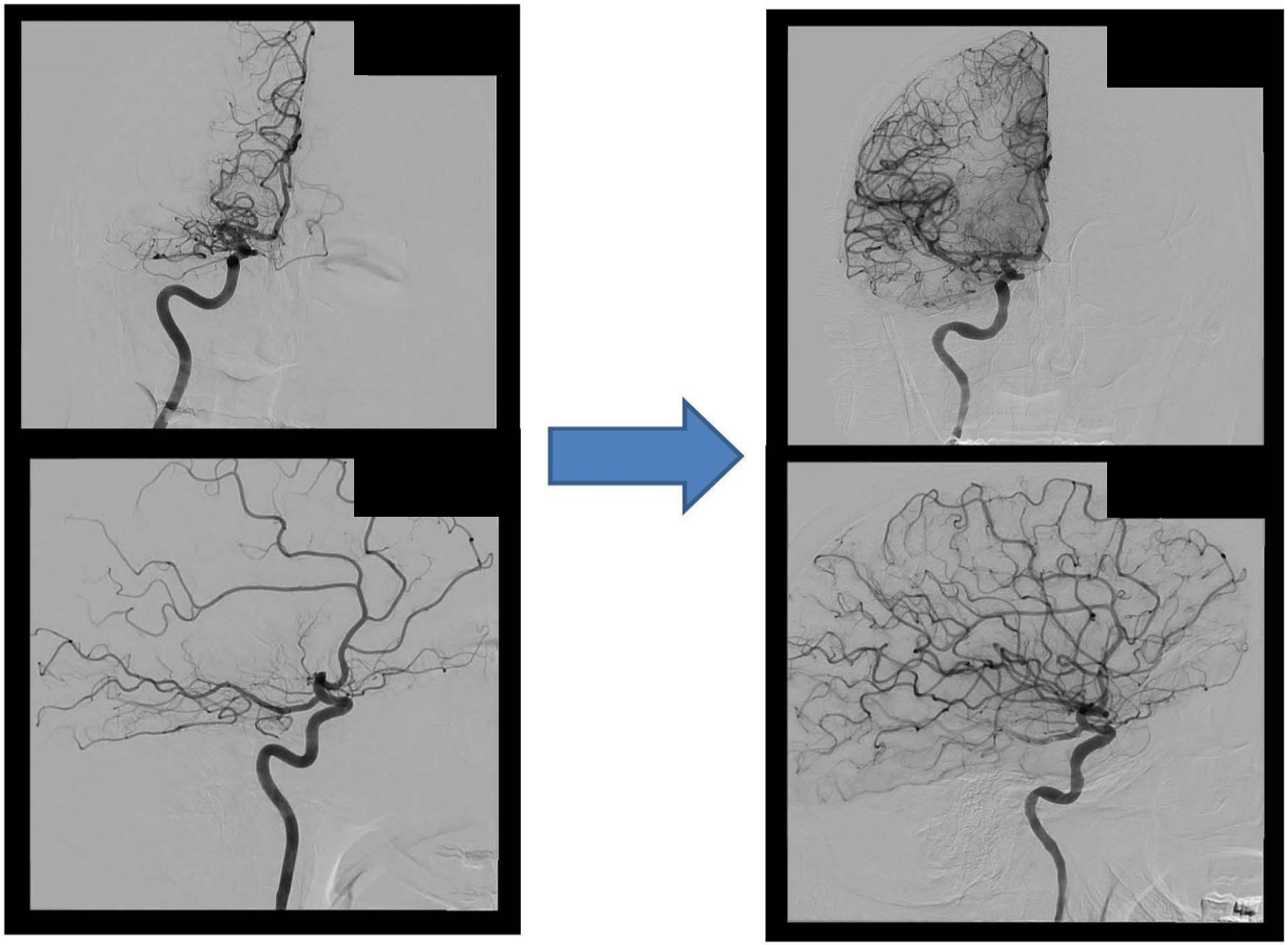
Almonte 1	Napanee 3
Bancroft 1	**Perth 9**
Brockville 4	Picton 2
Carleton Place 4	**Smiths Falls 6**
Kemptville 2	**Trenton 6**
Kingston 3	

Contraindications for transport under ASP

Data Source: RPPEO 2020 Stroke Report

Unable to determine when patient last seen normal				36
Unable to deliver patient to stroke centre within timeline				208
	6 - 12 hours	86		
	12 - 24 hours	95		
	greater than 24 hours	27		
Patient was unconscious or unstable				23
Terminally ill or palliative care patient				12
Seizure at onset of symptoms				13
Symptoms resolved prior to paramedic departing scene				283
Symptoms mild				3
Patient refused				2
Should have been ASP				4
Total				584

KHSC EVT Outcomes to Date



KHSC EVT Process Times – last 2 yrs

CURRENT - 2020-21
63 anterior and 3 posterior cases

Current KHSC median times for Anterior cases

- Door to CT: **14 mins**
  (ON target 15 mins)
- Door to Needle: **25 mins**
  (ON target 30 mins)
- Door to Puncture: **47 mins**
  (ON target 60 mins)
- Door to First Reperfusion: **68 mins**
  (ON target 90 mins)

LAST YEAR - 2019-20
55 anterior and 2 posterior cases

Past KHSC median times for Anterior cases

- Door to CT: **12 mins**
  (ON target 15 mins)
- Door to Needle: **22 mins**
  (ON target 30 mins)
- Door to Puncture: **41 mins**
  (ON target 60 mins)
- Door to First Reperfusion: **58 mins**
  (ON target 90 mins)

Hôpital Hotel Dieu Hospital

Hôpital Général de Kingston General Hospital

Kingston Health Sciences Centre
Centre des sciences de la santé de Kingston

KHSC EVT Current Outcomes

Target*: 46% with 90 day Modified Rankin Scale (MRS) score of ≤ 2 (minimal to no disability)
***based on Hermes Meta-Analysis**

TOTAL of 196 cases to March 31 2021: 185 Anterior and 11 posterior

Most recent analysis FY 2020-21 :

63 anterior, 3 posterior circulation cases

- ~5 to 6 cases per month (ongoing growth from last fiscal)
- Geographic distribution: HPE – 22; KFLA – 26 (8 from L&A); LLG – 16
  (plus 1 from Campbellford; 1 from Toronto)
- 32/66 cases treated after hours; 17/66 received tPA
- Average age 68 years (41 to 94 years); 34 female/32 male

For the 63 anterior cases

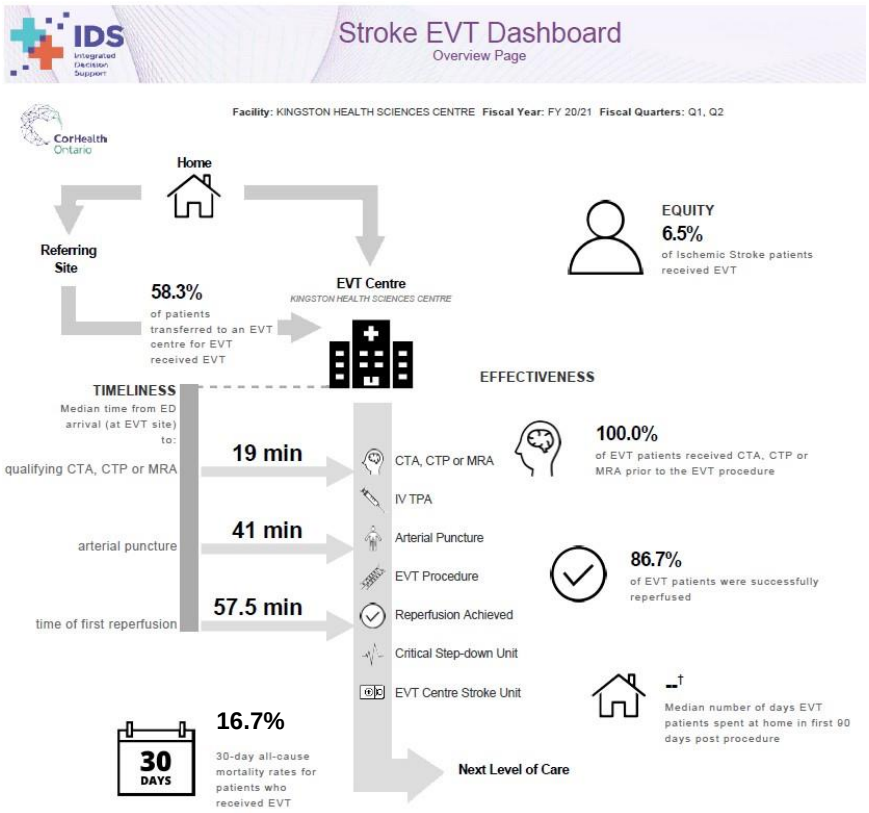
- 29/63 (46.0%) with minimal to no disability MRS </= 2 (meets published target)
- 15/63 (23.8%) with moderate disability
- 4/63 (6.3%) with severe disability
- 15/63 (23.8%) mortality

NEW! 24 cases treated between 6 and 24 hours in FY 2020-21

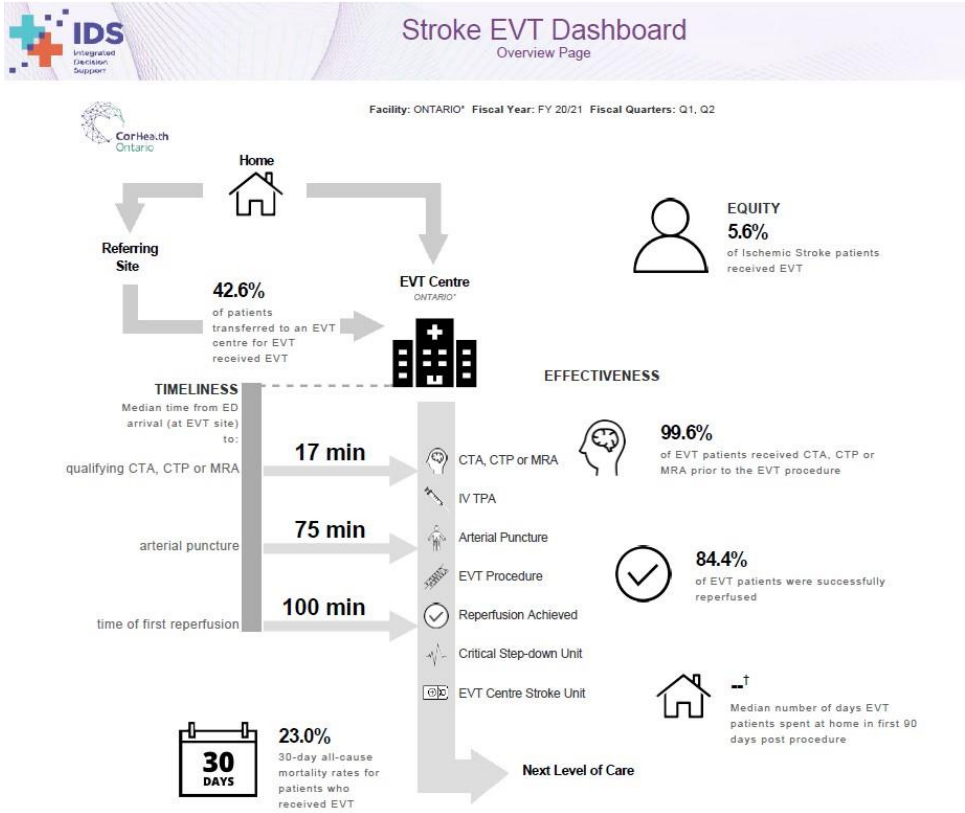
- 22 Anterior cases & 2 Posterior case – 15 from HPE; 4 from KFLA and 5 from LLG
- Disability Outcomes:
  - 37.5% minimal to no disability (also meets target)
  - 29.2% moderate; 12.5% severe and five deaths (20.8% mortality)

CorHealth Ontario EVT Report
March 2020-21 – Q1, Q2

Kingston



Ontario



Hôpital Hotel Dieu Hospital

Hôpital Général de Kingston General Hospital

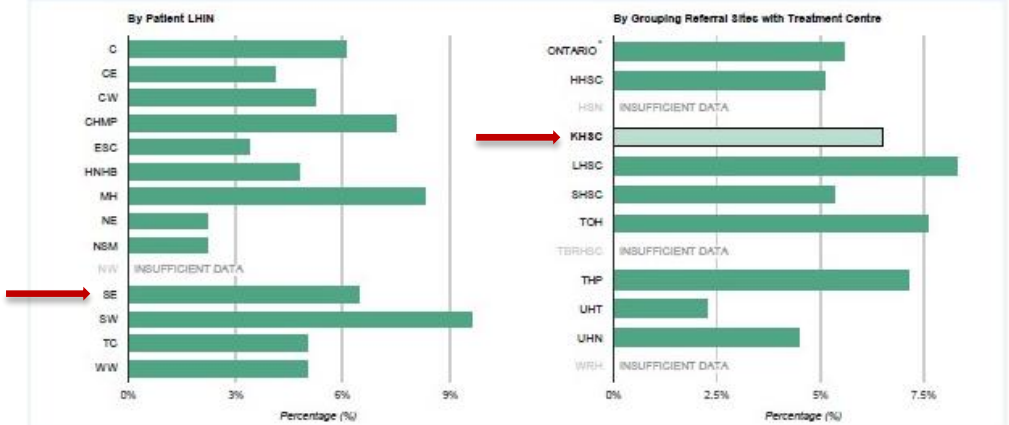
Kingston Health Sciences Centre

Centre des sciences de la santé de Kingston

CorHealth Ontario EVT Report
March 2020-21 – Q1, Q2

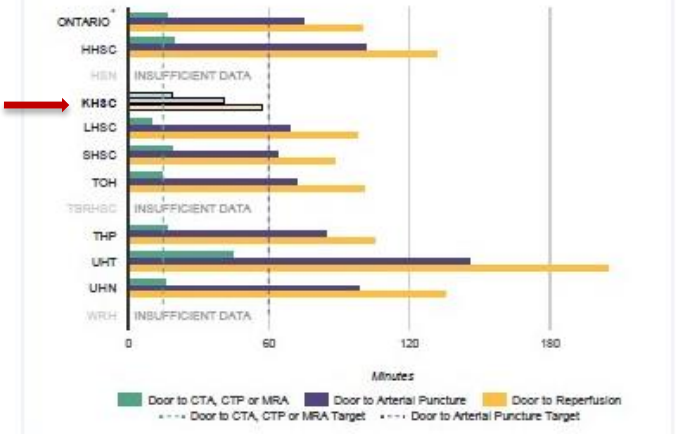
ACCESS

Proportion of ischemic stroke patients who receive an EVT procedure



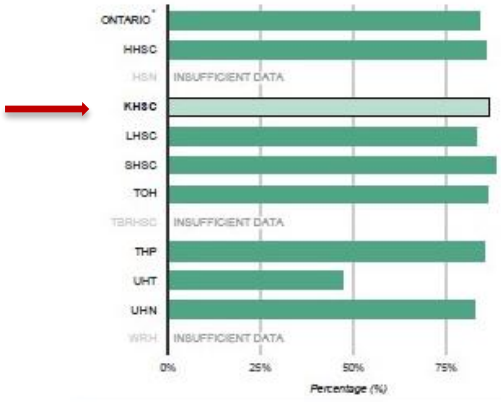
PROCESS TIMES

Median time from ED arrival (at EVT site) to qualifying CTA, CTP or MRA, Arterial Puncture, and Reperfusion

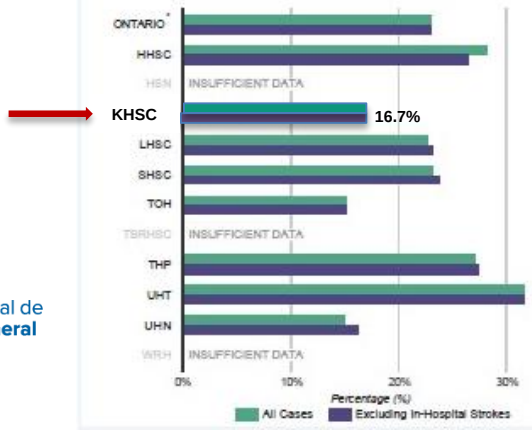


OUTCOMES

Proportion of EVT patients successfully reperfused



30-day all-cause mortality rates for patients who received EVT



pital Général de
gston General
spital

Kingston Health Sciences Centre
Centre des sciences de la santé de Kingston

Paramedic Prompt Card

Revised BLS 3.3 launch Jan 2021

LAMS Large Vessel Occlusion Screening Tool

now in Use by Paramedic Services

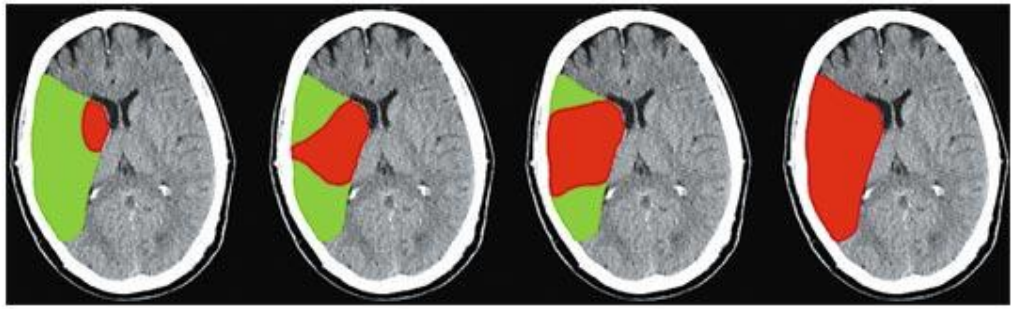
ED Walk-in Protocols

revised in 2019-20

“ACT-FAST” screening tools in use in EDs up to 24-hours post stroke onset

strokenetwork
SOUTHEASTERN ONTARIO

Reminder: Extended time window



- DAWN and DEFUSE-3 trials supported extended treatment window for EVT beyond 6 hours in select cases
- Hyperacute Best Practice Guidelines summer 2018 included expanded time window for EVT
- Eligibility based on quantifiable measure of mismatch between ischemic core and penumbra
- "*RAPID*" advanced CT perfusion software installed KHSC Jan 2019 and QHC Dec 2019 allowing evidence-based approach to patient selection for EVT after 6 hours
- Cases now selected for EVT up to 24 hours
- ACT-FAST triage process now in place in all South East EDs to identify and select patients in extended time window

BLS 3.3 Stroke Paramedic Prompt Card Jan 2021:

"Perform secondary LVO Screen and inform CACC to aid in determination of most appropriate centre"

NO CHANGE to bypass protocol in our region but please let hospital EDs know if screen LVO positive

Emergency Health Regulatory and Accountability Branch

Paramedic Prompt Card for Acute Stroke Bypass Protocol

This prompt card provides a quick reference of the *Acute Stroke Protocol* contained in the *Basic Life Support Patient Care Standards* (BLS PCS). Please refer to the BLS PCS for the full protocol.

Indications under the Acute Stroke Protocol

Redirect or transport to the closest or most appropriate Designated Stroke Centre* will be considered for patients who meet **ALL** of the following:

1. Present with a new onset of at least one of the following symptoms suggestive of the onset of an acute stroke:
    a. Unilateral arm/leg weakness or drift.
    b. Slurred speech or inappropriate words or mute.
    c. Unilateral facial droop.
2. Can be transported to arrive at a Designated Stroke Centre within 6 hours of a clearly determined time of symptom onset or the time the patient was last seen in a usual state of health.
3. Perform a secondary screen for a Large Vessel Occlusion (LVO) stroke using the Los Angeles Motor Scale (LAMS) and inform the CACC/ACS to aid in the determination of the most appropriate destination.

*A Designated Stroke Center is a Regional Stroke Centre, District Stroke Centre or a Telestroke Centre regardless of EVT capability.

Contraindications under the Acute Stroke Protocol

ANY of the following exclude a patient from being transported under the Acute Stroke Protocol:

1. CTAS Level 1 and/or uncorrected airway, breathing or circulatory problem.
2. Symptoms of the stroke resolved prior to paramedic arrival or assessment**.
3. Blood sugar <3 mmol/L***.
4. Seizure at onset of symptoms or observed by paramedics.
5. Glasgow Coma Scale <10.
6. Terminally ill or palliative care patient.
7. Duration of out of hospital transport will exceed two hours.

**Patients whose symptoms improve significantly or resolve during transport will continue to be transported to a Designated Stroke Centre.

*** If symptoms persist after correction of blood glucose level, the patient is not contraindicated.

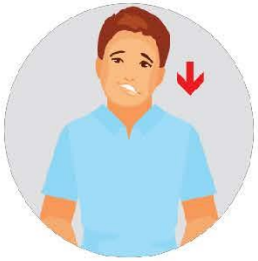
CACC/ACS will authorize the transport once notified of the patient's need for redirect or transport under the Acute Stroke Protocol.

Ontario

LAMS SCORECARD

Would this patient benefit from StrokeEVT?

strokenetwork SOUTHEASTERN ONTARIO



STEP 1
FACIAL DROOP

Ask the person to smile. Is there any weakness or facial droop?

0 Absent
1 Facial droop present

_____

+

STEP 2
ARM DRIFT

Bring the person's arm(s) up to a 90° angle and ask them to hold that position for 10 seconds. Is there any drift or drop of an arm?

0 Absent
1 Drifts Down
2 Falls Rapidly

_____

+

STEP 3
GRIP STRENGTH

Ask the person to grip your hands. Does one hand have less power than the other?

0 Normal
1 Weak Grip
2 No Grip

_____

=

LVO positive If score is ≥4

STEP 4
ADD SCORE

Total possible score is 5

_____

If LAMS score is positive (4 or greater), patient may be eligible for EVT

January 13, 2021; Adapted from Northwestern Ontario Regional Stroke Network

- **Los Angeles Motor Scale (LAMS)** is a brief 3-item stroke severity assessment measure designed for pre-hospital use.
- It identifies possible **large vessel occlusion (LVO) stroke** & potential eligibility for endovascular thrombectomy (EVT).
- ***A score of 4 or greater is considered positive.***
- Patients scoring 4 or 5 may benefit from EVT to reduce or eliminate disability.

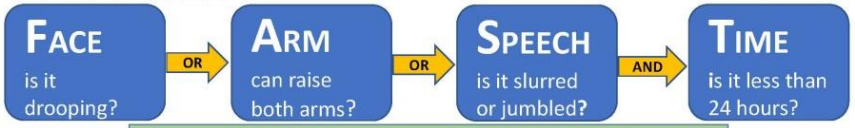
Key Messages for Southeastern Ontario

1. **There is NO change across Southeastern Ontario in terms of stroke bypass/re-direct**. The process is the **usual Acute Stroke Protocol process** for paramedics. Patients who fit prompt card criteria will go to closest Stroke Centre if within 6 hr time window. Outside 6-hr time window, they go to local hospital ED who will assess & decide on transfer to KGH for EVT. **EDs are using ACT FAST as their LVO screen**/triage tool & can transfer directly to KGH on stroke protocol if ACT FAST positive **in 6 to 24 hour time window.**
2. Paramedics **provide CACC with actual LAMS score**.
3. Paramedics **let local hospital ED know they have a patient that is LVO positive when patching in about Acute Stroke Protocol**. This gives ED a **"heads up"** to help EDs make faster decisions about Acute Stroke Protocol including transfers.

TRIAGE TOOLs for Acute Stroke < 24 hours

STROKE NETWORK *of* Southeastern Ontario

FAST Stroke Screen:



- ✓ One or more symptoms from Face, Arm, Speech **AND**
- ✓ LAST SEEN NORMAL <24 hours

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 45^0 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

If **RIGHT** ARM is weak

"CHAT" (Severe language deficit)
POSITIVE TEST: Mute, speaking incomprehensible, or unable to follow simple commands

If **LEFT** ARM is weak

"TAP" (gaze & shoulder tap)
Stand on patient's weak side
POSITIVE TEST : Consistent eye gaze away from weak side
Otherwise
Tap shoulder & call name
POSITIVE TEST : Does not quickly turn head & eyes to you

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

2019-04-29

Additional Tips:

If patient is uncooperative or cannot follow commands & you clearly witness minimal or no movements in one arm and normal or spontaneous movements in the other arm, THEN proceed to next ACT-FAST Step

If both arms are similarly weak, or testing is clearly affected by shoulder problems or pain, notify ED physician

- Try to use clues to guess time last seen well – did someone talk to or call patient?
- For suspected Wake-Up symptoms, did patient get up overnight? Were they normal when first getting up?
- Negative eligibility if time of onset is > 24 hours

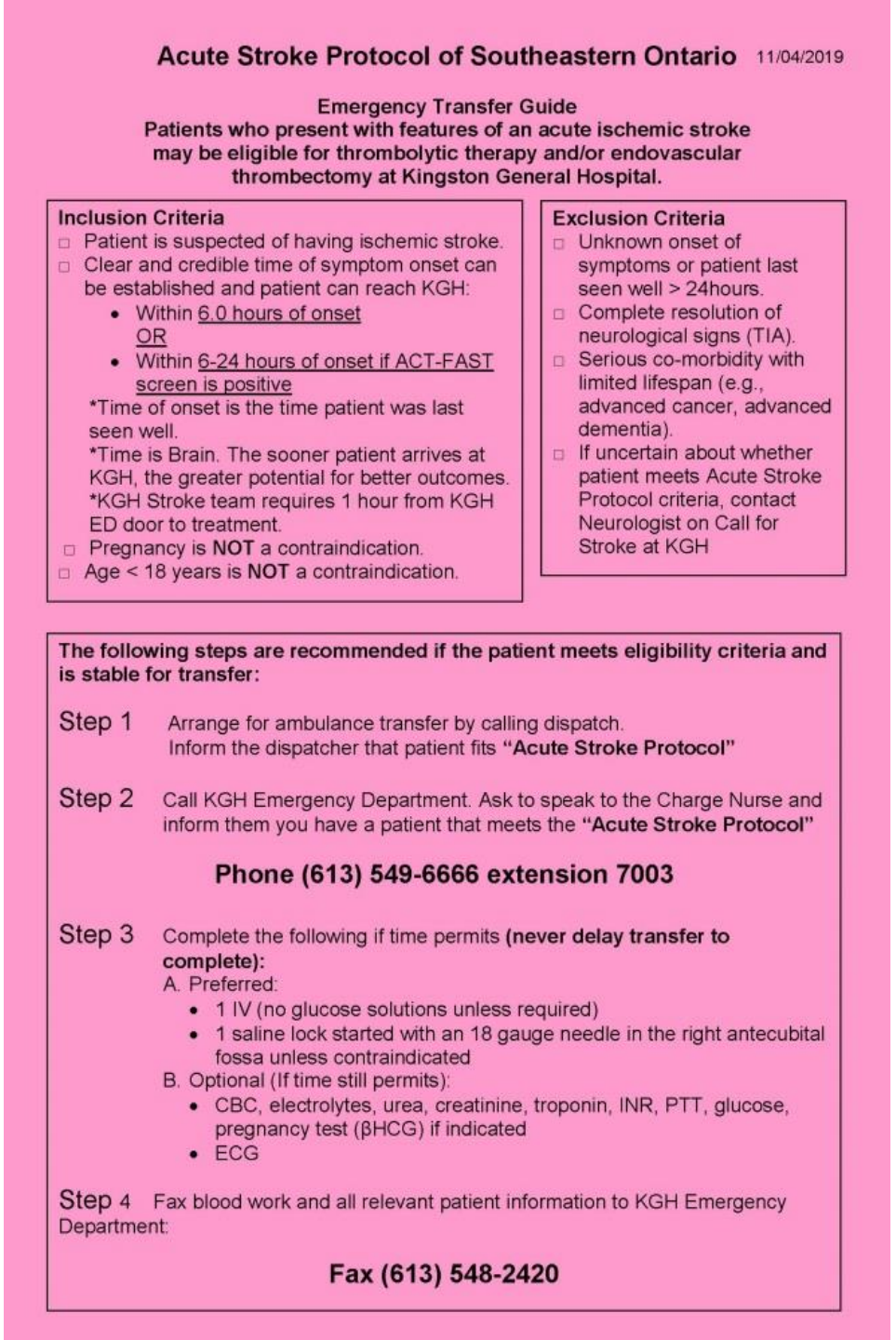
- If there is uncertainty as to time of symptom onset or whether a patient meets the ACT-FAST or Acute Stroke Protocol criteria, the ED physician can contact the neurologist on call for stroke for consultation

Reminder: Sample USED by ED STAFF in Brockville, Perth & Smiths Falls, Napanee and HDH

Adapted from "Ambulance Clinical Triage for Acute Stroke Treatment" Zhao et al. Stroke 2018; 49: 945-951

Walk-in ASP transfer protocol:

- L&ACGH
- Brockville
- PSFDH
- HDH site



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

QHC-Trenton Memorial , Prince Edward County Memorial & North Hastings Hospitals- TRIAGE TOOLs for Acute Stroke < 24 hours

FACE is it drooping? → OR → **ARM** can raise both arms? → OR → **SPEECH** is it slurred or jumbled? → AND → **TIME** is it less than 24 hours?

- ✓ One or more symptoms from Face, Arm, Speech **AND**
- ✓ LAST SEEN NORMAL <24 hours

IF ≤ 6 hours, activate usual QHC Code Stroke to Belleville General
IF 6 -24 hours, Complete **ACT-FAST**

ACT-FAST Stroke Screen:

"ARM" (one-sided arm weakness)

Position both arms at 45^0 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

If **RIGHT** ARM is weak

"CHAT" (Severe language deficit)
POSITIVE TEST: Mute, speaking incomprehensible, or unable to follow simple commands

If **LEFT** ARM is weak

"TAP" (gaze & shoulder tap)
Stand on patient's weak side
POSITIVE TEST : Consistent eye gaze away from weak side
Otherwise
Tap shoulder & call name
POSITIVE TEST : Does not quickly turn head & eyes to you

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–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

Activate Acute Stroke Protocol to KGH ED. Call Ambulance Dispatch & KGH ED Charge RN (613) 549-6666 extension 7003. Inform them patient meets Acute Stroke Protocol & is ACT-FAST Positive between 6-24 hours 2019-10-17

Sample Poster USED by ED STAFF in Bancroft, Picton and Trenton

Additional Tips for **6-24 hour** Time Window:

- Try to use clues to guess time last seen well – did someone talk to or call patient?
- For suspected Wake-Up symptoms, did patient get up overnight? Were they normal when first getting up?
- Negative eligibility if time of onset is > 24 hours

If patient is uncooperative or cannot follow commands & you clearly witness minimal or no movements in one arm and normal or spontaneous movements in the other arm, THEN proceed to next ACT-FAST Step

If both arms are similarly weak, or testing is clearly affected by shoulder problems or pain, the ED physician can contact the neurologist on call for stroke for consultation

If there is uncertainty as to time of symptom onset or whether a patient meets the ACT-FAST or Acute Stroke Protocol criteria, the ED physician can contact the neurologist on call for stroke for consultation

Additional Steps for **6-24 hour** Time Window:

If ACT-FAST Positive: Complete the following if time permits in ED (never delay transfer to complete):

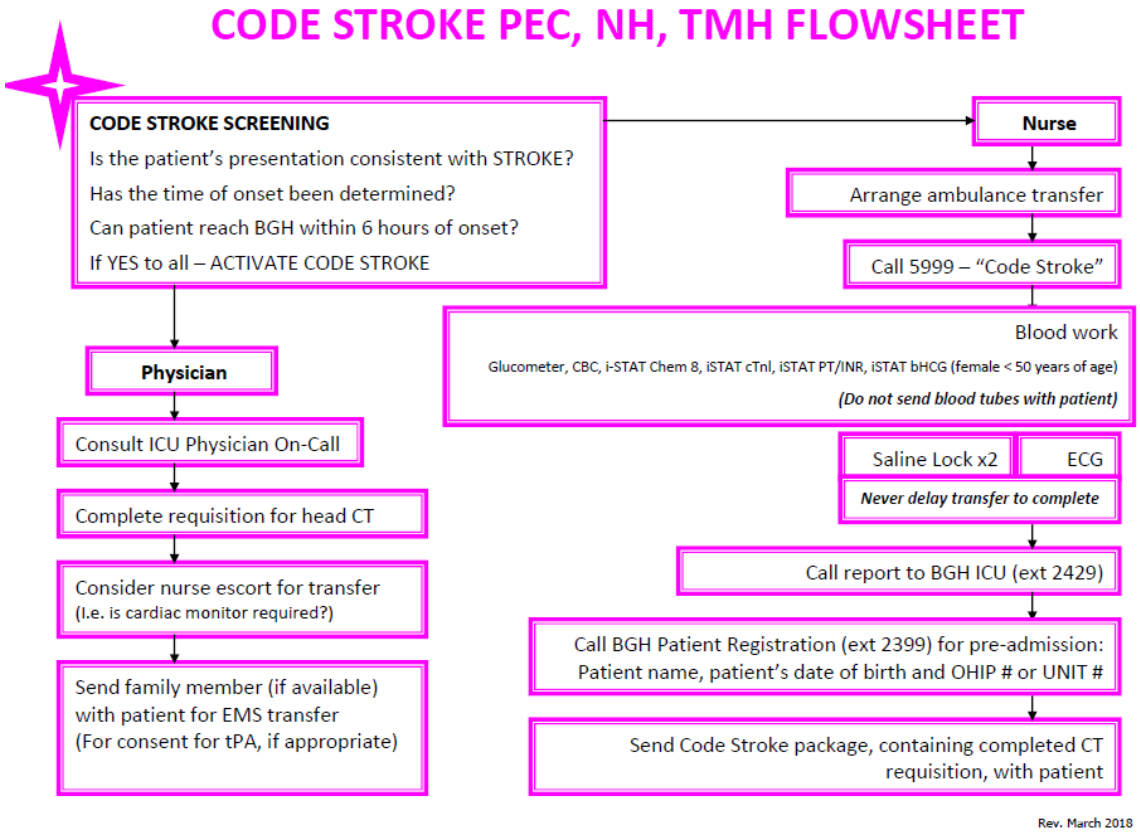
A. Preferred:
   - 1 IV (no glucose solutions unless required)
   - 1 saline lock started with an 18 gauge needle in the right antecubital fossa unless contraindicated

B. Optional (If time still permits):
   - CBC, electrolytes, urea, creatinine, troponin, INR, PTT, glucose, pregnancy test (βHCG) if indicated
   - ECG

Fax blood work and all relevant patient information to KGH Emergency Department: 613-548-2420

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

Walk-in protocol
Quinte – Bancroft, Trenton, Picton



Stroke Units: Impact on Outcome

Source: Regional Stroke Network Dashboard

KHSC, QHC and BrGH Hospital Stroke Evaluation

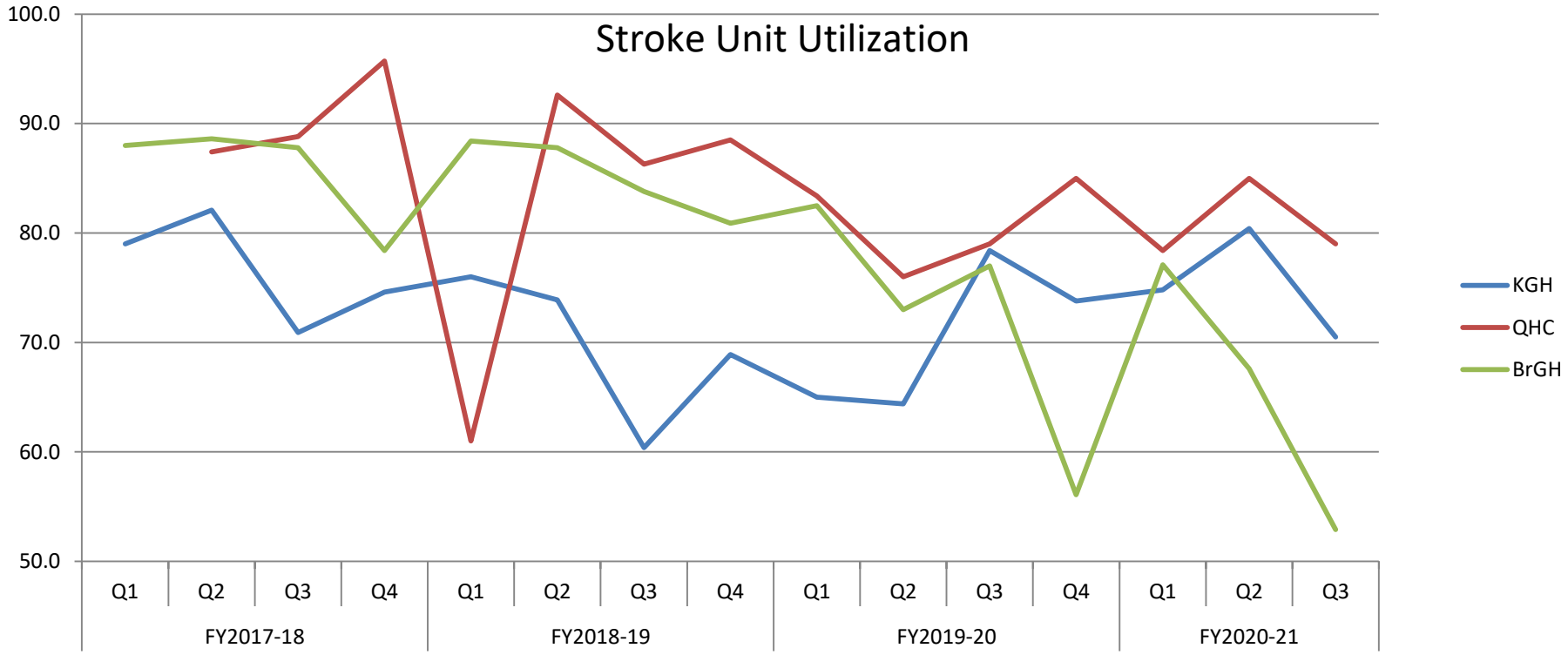
Data to FY 20-21

- CIHI administrative data
- CIHI 340 – stroke data

strokenetwork
SOUTHEASTERN ONTARIO

% Accessing Acute Stroke Unit Care

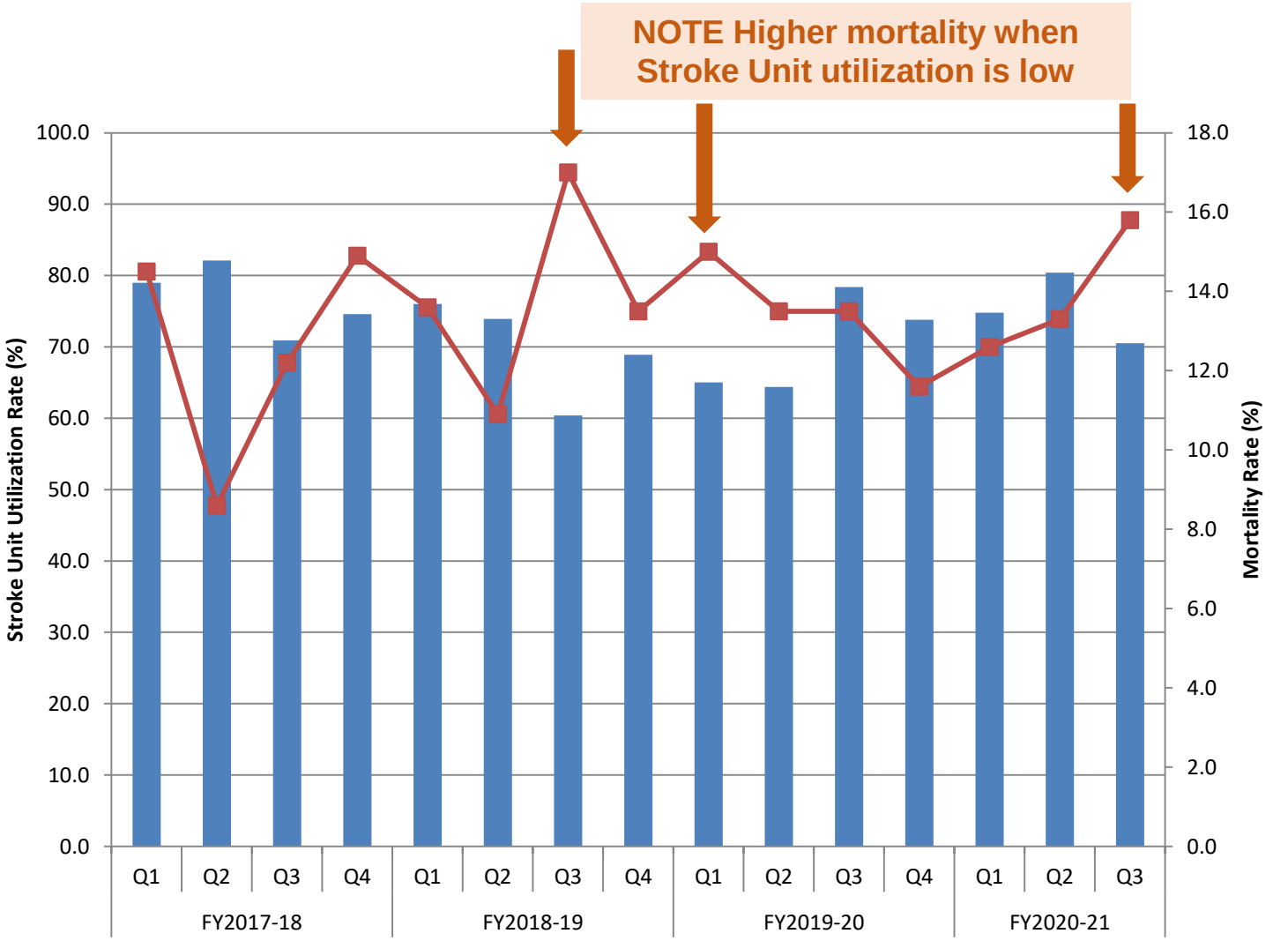
Data Source: Hospital CIHI 340 Stroke Data - FY2017-18 to 2020-21



- **Over past 3 years, hospitals have struggled to sustain a target of 75-80% stroke unit utilization.**
- **Mortality rates increase when stroke patients do not access stroke unit care.**
- **See next 2 slides showing stroke unit utilization against mortality rates.**

KHSC: % Stroke Unit Utilization vs Mortality

Data Source: Hospital CIHI 340 Stroke Data - FY 2017-18 to 20-21

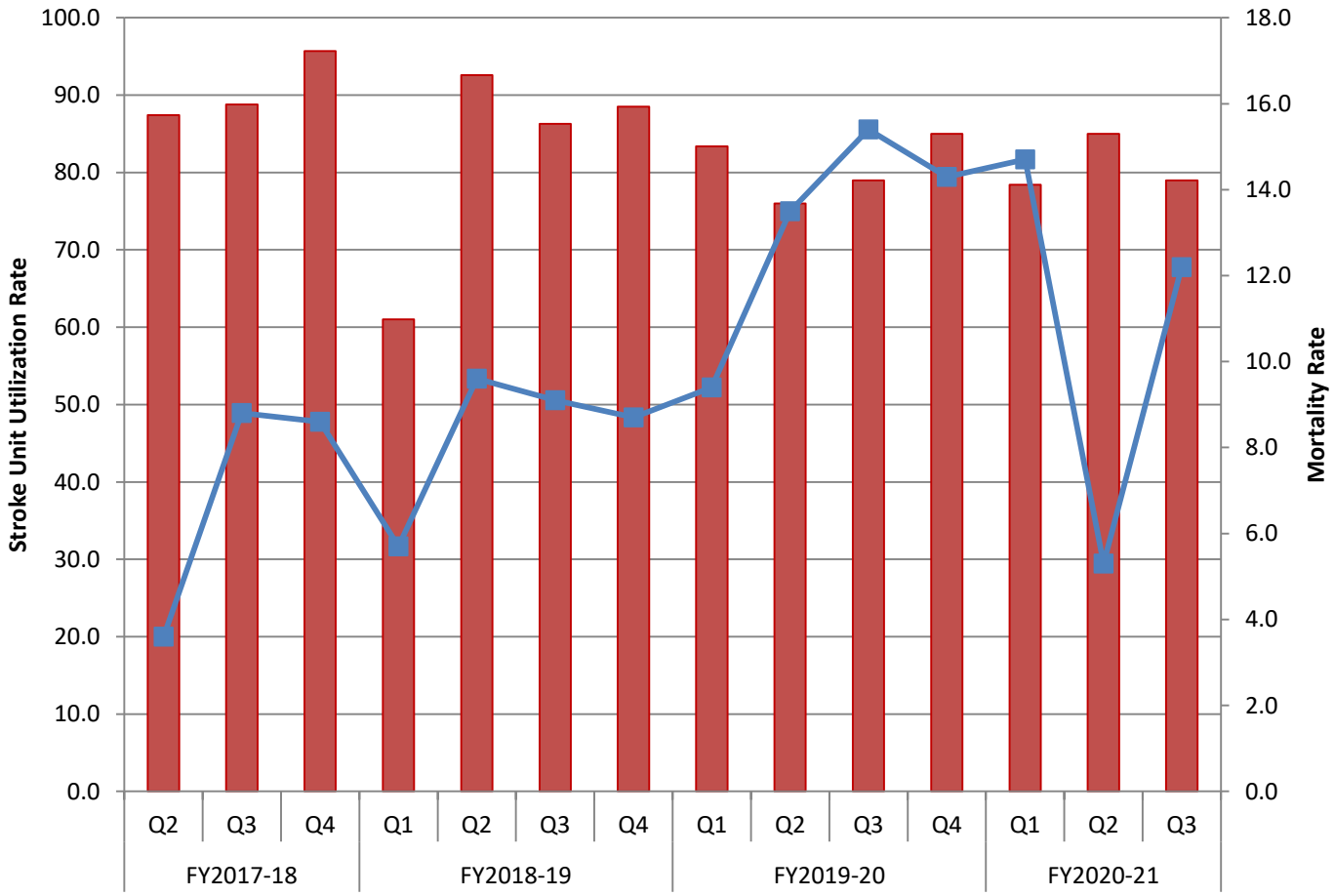


KHSC - High annual inpatient volume stabilized at about 650 in 2019-20 and 2020-21 (growth from 553 in 2018-19)

Of CONCERN: Ongoing QI work needed to sustain stroke unit utilization to prevent associated drop in mortality

QHC: % Stroke Unit Utilization vs Mortality

Data Source: Hospital CIHI 340 Stroke Data - FY 2017-18 to 20-21 (Q1,Q2)



QHC Belleville Annual stroke inpatient volume stable at 422-424 in 2018-19 and 2019-20

Inpatient Volume of 326 in first 3 quarters of 2020-21

Other updates – NEW!!!

- Acute Research Trials ongoing at KHSC:
  - AcT trial of **TNK vs tPA** – RCT for all eligible for thrombolysis
  - TEMPO trial - RCT investigating thrombolysis in **mild** stroke
  - Several other secondary prevention trials also ongoing
- KHSC has received designation for endovascular **coiling** of cerebral aneurysms
  - Ruptured coiling for those with subarachnoid haemorrhage has been underway; program growth over last 2 years
  - Work now underway to begin elective coiling as well
  - Patients will no longer need to be transferred to Toronto or Ottawa for this treatment

strokenetwork
SOUTHEASTERN ONTARIO

Final reminders!!

- Feedback and questions welcome- contacts:

Regional Stroke Director, Cally Martin

cally.martin@kingstonhsc.ca

Regional Stroke Best Practice Coordinator, Colleen Murphy

colleen.murphy@kingstonhsc.ca

Quinte Health Care Stroke Resource Nurse, Melissa Roblin

MRoblin@QHC.on.ca

- Dispatch must be contacted for walk-in transfers on stroke protocol
- Importance of early pre-notification including whether a patient score is LVO positive
- Importance of access to stroke unit care
- Encourage public awareness of FAST, especially during COVID-19

STAY WELL!!

strokenetwork
SOUTHEASTERN ONTARIO

THANK YOU!

www.strokenetworkseo.ca

strokenetwork
SOUTHEASTERN ONTARIO