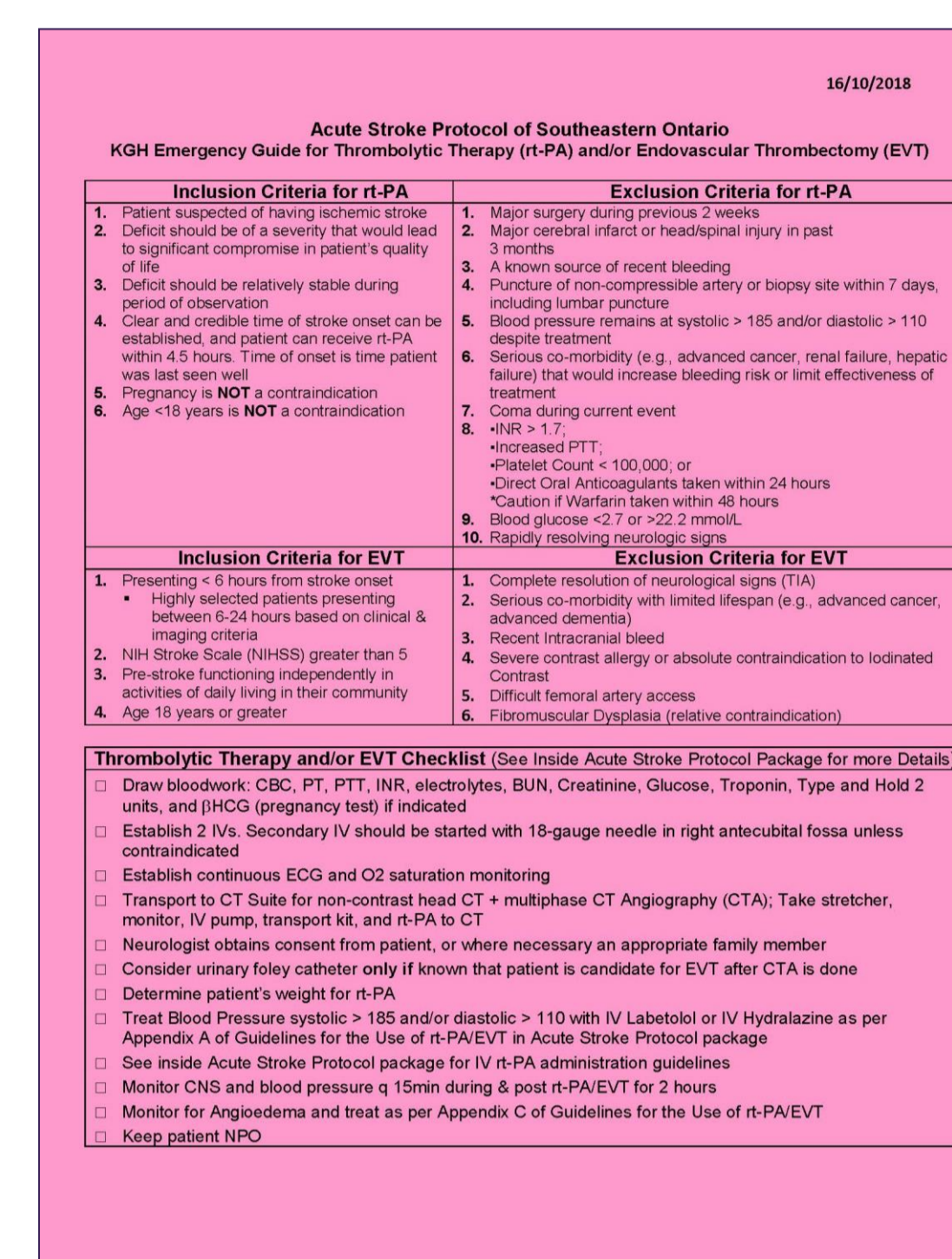
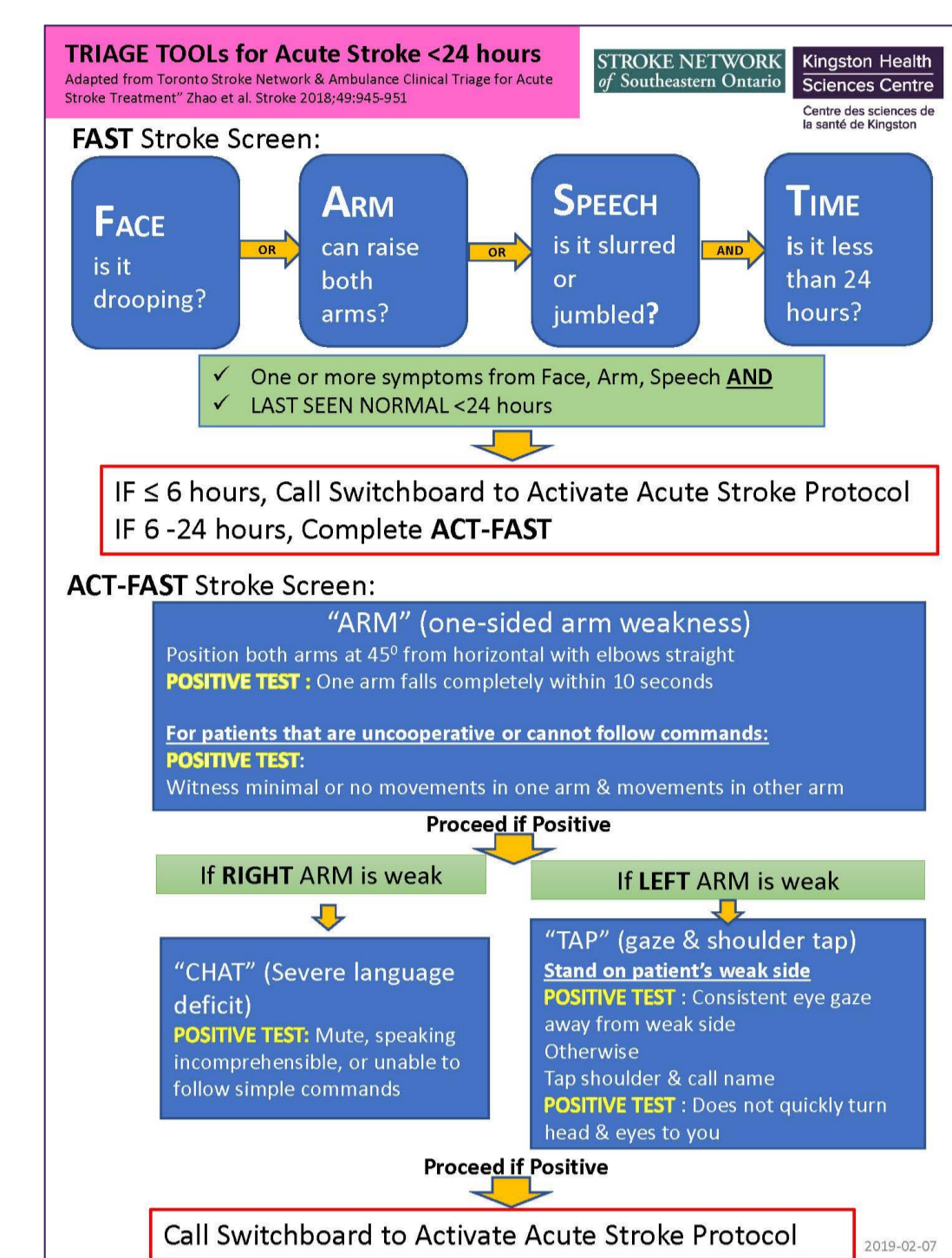


Martin, Cally^{1,2} Barber, David¹ Donaldson, Jacqueline¹ Dube, Anne¹ Gourdier, Sharon¹ Griffin, Monica¹ Jin, Al^{1,2} McDonough, Laura¹ Murphy, Colleen^{1,2}
1. Kingston Health Sciences Centre; 2. Stroke Network of Southeastern Ontario

Background

Highly selected patients who present beyond 6 hours of stroke symptom onset may benefit from Endovascular Thrombectomy (EVT). Tertiary Care Hospital-Kingston Health Sciences Centre (KHSC) Emergency Department (ED) collaborated with Stroke Network of Southeastern Ontario to implement the ACT-FAST, a large vessel occlusion screen to triage patients arriving in KHSC ED between 6 & 24 hours of symptom onset. If patients have “positive ACT-FAST” screen, ED nurses directly activate ASP. ASP team then assesses EVT eligibility using advanced RAPID CT Perfusion software.

KHSC Posters: Figure 1



Access to Hyperacute Treatments

	Mar 18	Mar 19	Apr 18	Apr 19	May 18	May 19	June 18	June 19	July 18	July 19	Aug 18	Aug 19
<6 hrs	12/23	28/45	13/24	20/29	21/29	32/45	17/26	27/41	22/36	27/38	24/35	33/40
6-24 hrs	5/23	11/45	11/24	7/29	7/29	9/45	6/26	8/41	10/36	11/38	8/35	7/40
>24 hrs	6/23	6/45	0/24	2/29	1/29	4/45	3/26	6/41	4/36	0/38	3/35	0/40
ASP Activated	39 (3 Internal)	59 (8 Internal)	29 (3 Internal)	51 (4 Internal)	32 (1 Internal)	58 (5 Internal)	33 (4 Internal)	62 (9 Internal)	41 (3 Internal)	52 (5 Internal)	33 (4 Internal)	43 (2 Internal)
EVT	2	2	2	7	0	7	1	7	2	1	3	2
tPA	3	13	4	14	9	14	9	12	7	13	14	13
Admitted Stroke Volumes	42	63	46	62	44	64	42	51	55	55	50	58

Table 1: Data based on CIHI DAD (discharged data) except EVT volumes-based on procedure date
* 3 Time Windows = difference between known symptom onset time & ED arrival times during chart abstraction
* Internal=In-hospital acute stroke protocol activation

Methods

- Small team with front-line representation collaborated on approach to implement ACT-FAST in ED
- ED physicians received communication about the updated ASP
- 1:1 education about the ACT-FAST algorithm was provided with 90 KHSC ED nurses using a flexible approach for a busy ED
- ACT-FAST poster & related process were revised based on feedback. Updated ASP pink poster and ACT-FAST poster were posted at triage and in ED areas (see Figure 1)
- Unstructured interviews were conducted with ED nurses & stroke neurologists to gather feedback post implementation
- Volume of patients presenting within 6 hours and between 6-24 hours, ASP activations in ED, and EVT rates pre & post implementation in March 2019 were analyzed

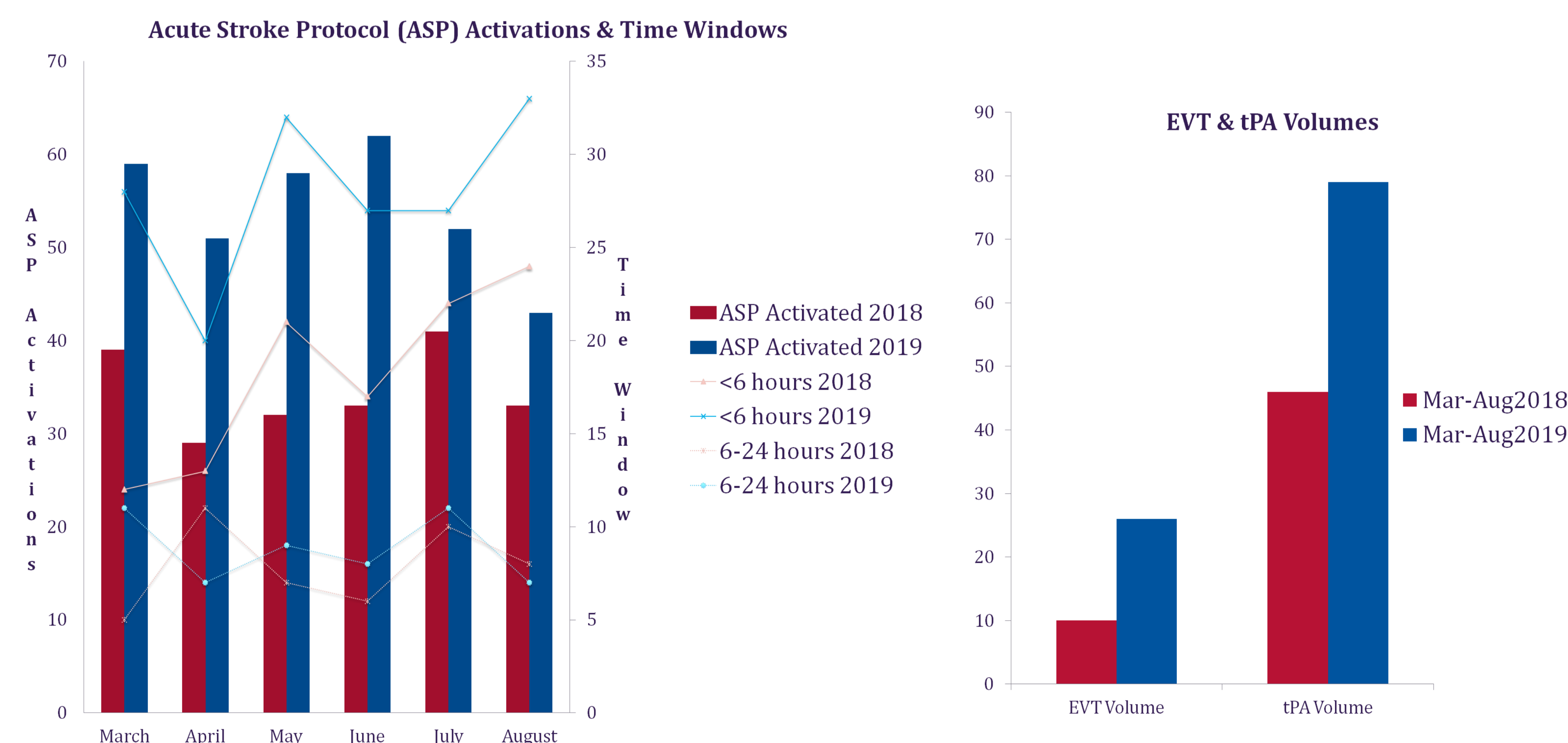


Figure 2

Results

Access to Treatment Results (See Table 1 and Figure 2)

- # patients presenting < 6 hour time window ↑
- # ASP Activations ↑
- # patients presenting 6-24 hour time window ↔
- Proportion receiving hyperacute EVT treatment ↑

Qualitative Feedback on Use of ACT-FAST and New Process

ED Nurses Comments

- Positive experience using ACT-FAST as part of ASP
- ACT-FAST is simple to use
- ACT-FAST posters were helpful
- Pleased with ability to activate ASP
- Less delay for walk-in activations

Physicians Comments

- Going Well
- Most ASPs being called appropriately
- Called more often for uncertainty re left-sided weakness

Challenges

- Uncertainty about:
 - Symptom onset time. E.g., if signs resolve then return again-what is the onset time?
 - When patient does not meet FAST or ACT-FAST criteria but still suspecting a stroke
 - Assessing left-sided weakness for neglect/gaze deviation
- Difficult to assess in Triage if previous stroke or confused
- Concerned about increasing volume in ED
- Requested that paramedics receive communication

Actions

- Refresh of education with a focus on left-sided weakness; more feedback gathered
- Reinforced collaboration with ED physicians when there is uncertainty
- Acknowledged increasing stroke volumes & reassured outcomes being monitored
- Triggers for ASP & FAST/ACT-FAST use uploaded into ED Info System (EDIS) to improve evaluation
- Paramedic Services were engaged

Conclusions

ASP was successfully updated with adoption of ACT-FAST for stroke triage 6 to 24 hours in KHSC ED. A standardized Emergency Triage Protocol for stroke patients improved access to EVT as evidenced by relative increase in ASP activations and EVT volumes.

SPREAD

The learnings were incorporated in spread to all community hospital EDs in Southeastern Ontario (SEO) (see Figure 3). Community hospital ED and Paramedic Service providers collaborated with Stroke Network SEO in successful regional implementation.

Community Hospital Posters: Figure 3

