

# Successful implementation of endovascular therapy (EVT) for acute ischemic stroke without on-site neurointerventionalists: Lessons learned in building EVT capacity

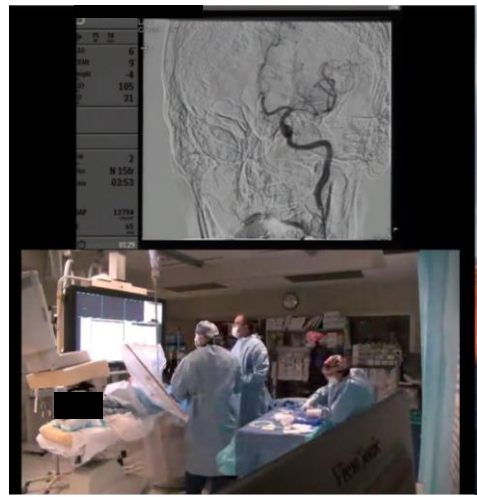
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**Background:** Endovascular therapy (EVT) has become the standard of care for selected ischemic stroke patients but access remains limited due to lack of neurointerventionalists. We explored the feasibility of starting an EVT program for acute ischemic stroke in a tertiary academic centre without on-site neurointerventional radiologists.

## Methods:

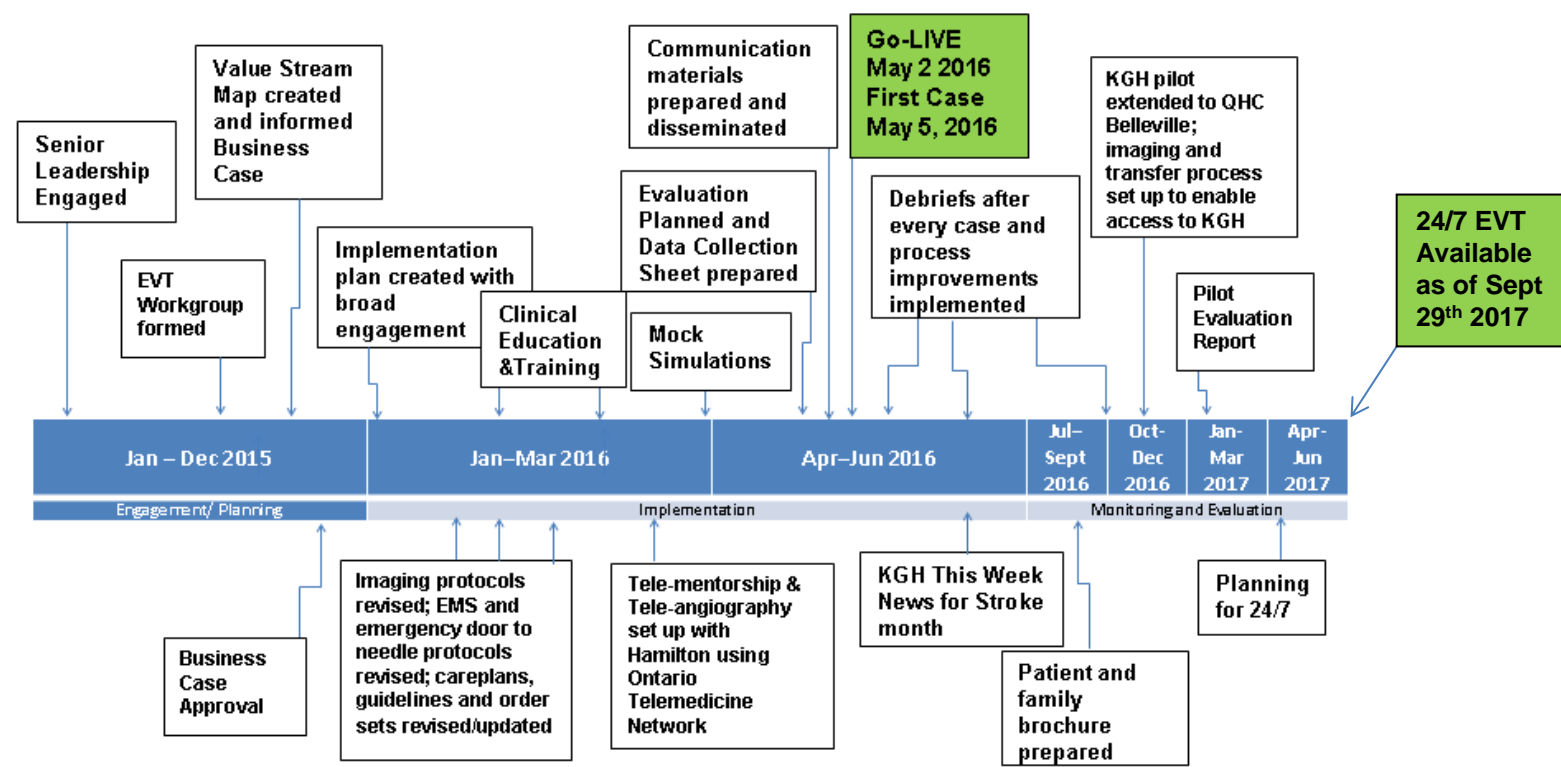
- A weekday EVT pilot study was started on May 2, 2016
- Following a 16 month pilot phase (Monday to Friday 8am to 4pm), EVT was implemented on a 24/7 basis starting Sept 29, 2017; Data were collected for cases up to June 1, 2018
- 3 general interventional radiologists with combined experience of 354 supra-aortic procedures over past 10 years performed EVT



- Initially, real-time mentorship was available from an academic centre-based neurointerventionalist using telefluoroscopy

- Stroke team was pre-notified for Code Stroke and present during EVT
- 3 month mRS, mortality, and process outcomes were evaluated

## Project Implementation

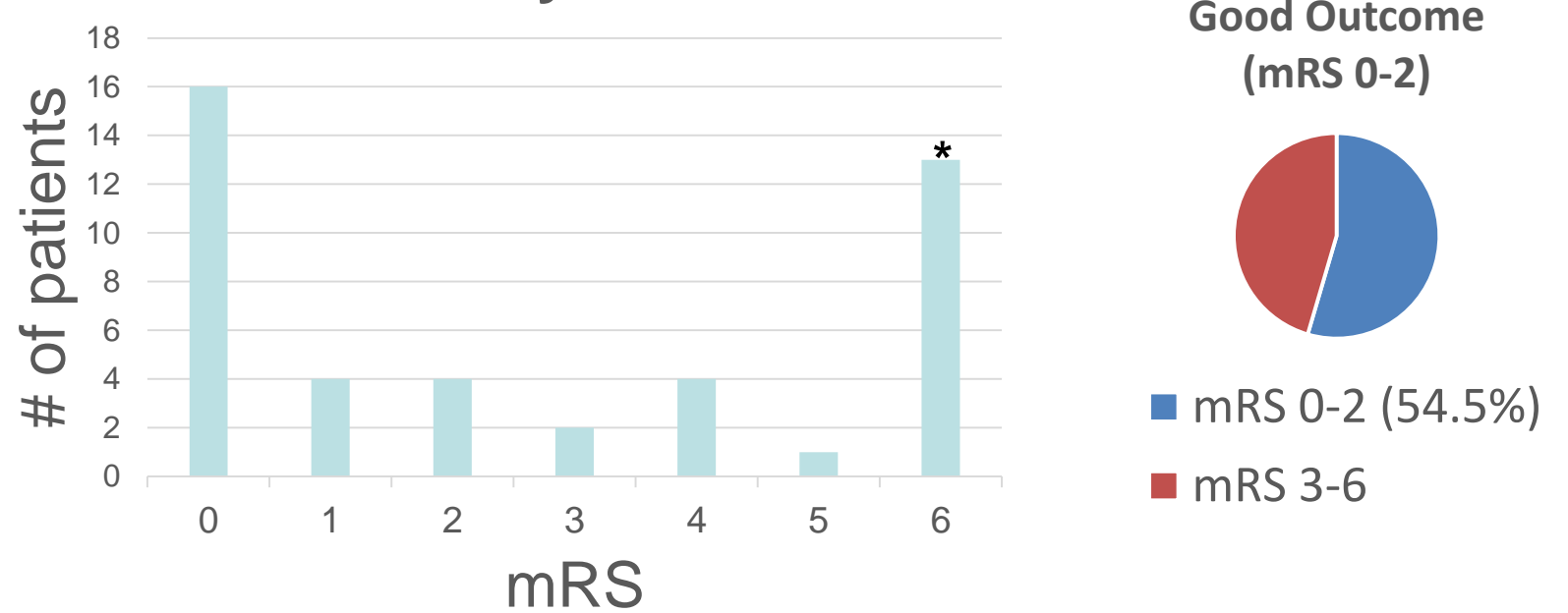


## Results:

Baseline Characteristics	
Number of patients	44
Median age (IQR)	74 (65, 92)
Female, n (%)	25 (57)
Median baseline mRS (IQR)	0 (0, 4)
Median baseline NIHSS (IQR)	18 (15, 28)
Received tPA, n (%)	24 (55)

Median Process Times	
Door to CT, min (IQR)	11 (8, 104)
CT to Puncture, min (IQR)	29 (23, 126)
Puncture to Reperfusion, min (IQR)	25 (18, 92)

## 90 day mRS



\* Of 13 cases with mRS = 6, 4 had failed EVT (no reperfusion obtained) and 7 had baseline mRS ≥ 3. Since these data were collected, mortality has decreased to 21%.

Good reperfusion (TICI score ≥ 2b) was obtained in 81% of cases.

## Lessons Learned:

- Telefluoroscopy is useful
- Revised ED processes decrease times:
  - Stay on EMS stretcher to CT
  - tPA administration in CT suite
- Interprofessional debriefs foster collaboration
- Monitoring & accurate data are essential to drive quality improvement
- Appropriate patient selection, with particular attention to baseline mRS, is critical

**Conclusions:** EVT was feasible when performed by a skilled stroke team including three experienced general interventionalists in a tertiary academic centre. Strict inclusion criteria and a strong collaboration with stroke neurologists were essential.