Paramedic Quality Improvement Initiatives in Waterloo Region

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From Scene to Suite 2021: Sirens of the LAMS, June 10th, 2021

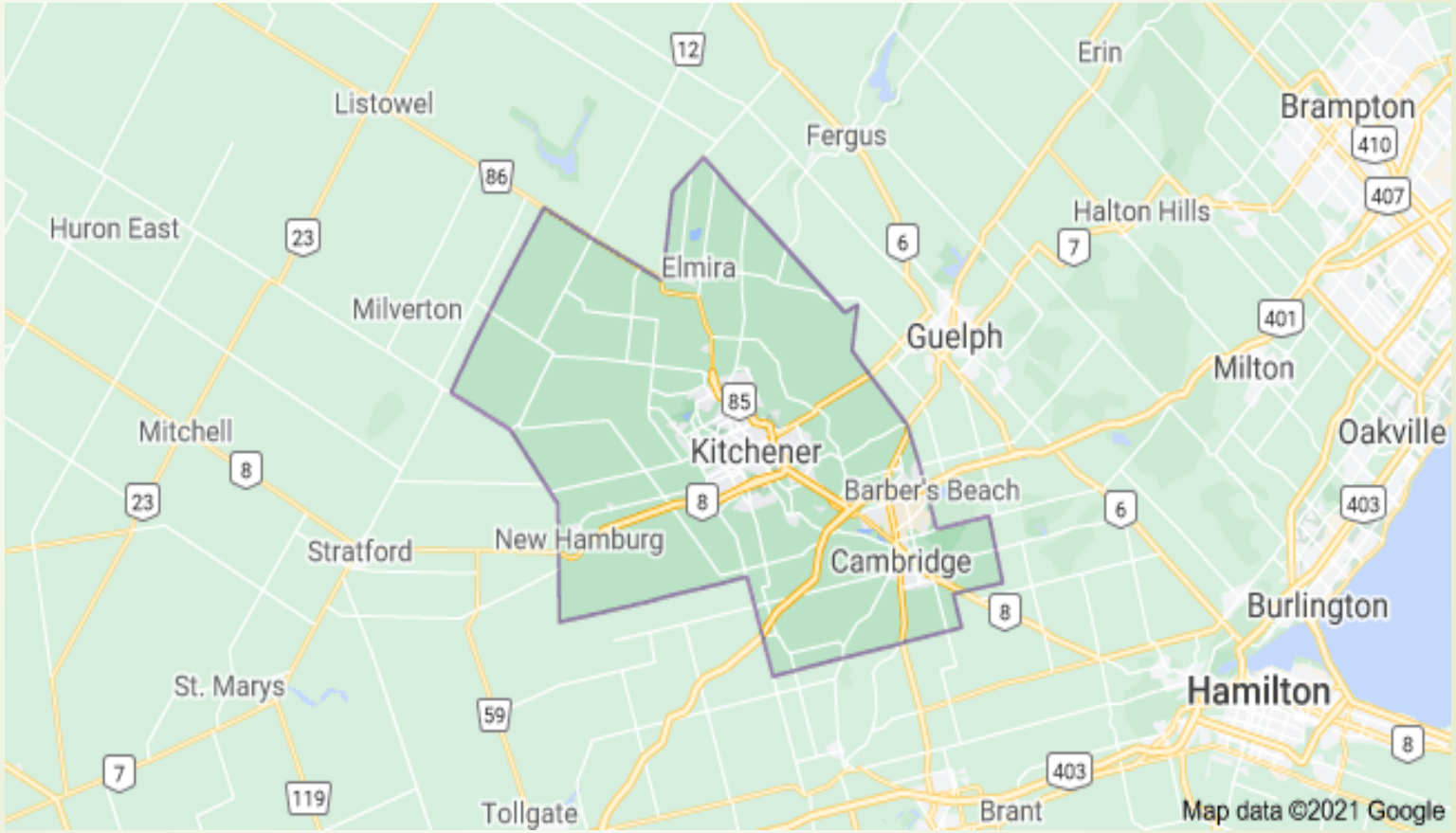
Looking Back

- 2011- Acute Stroke Protocol for Paramedics
- 2014 – ED Notification and offload

To CT bed

- 2017 –FAST signs added to ambulances

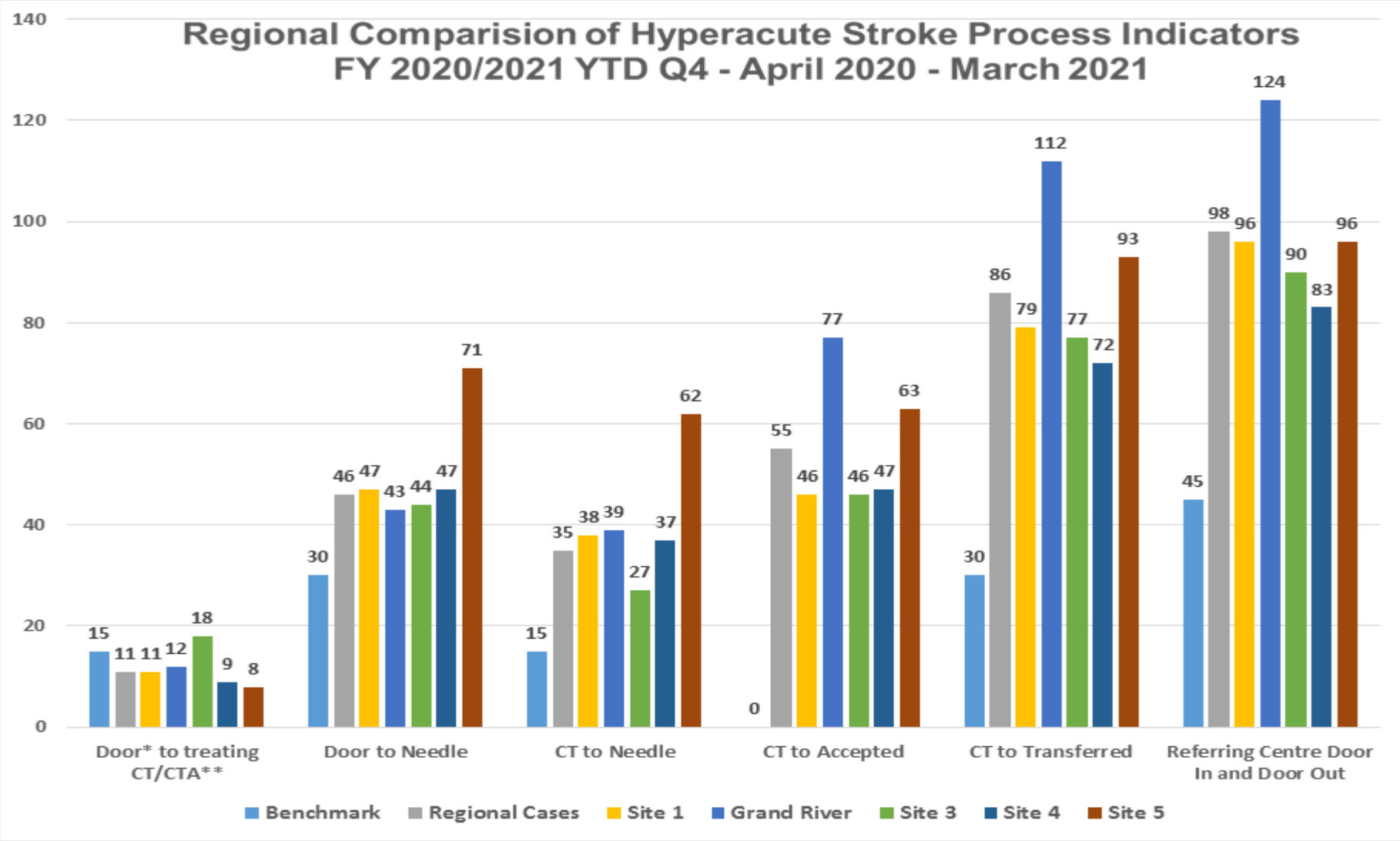
Waterloo Region Catchment Area



Stroke Model Waterloo Region

- Grand River Hospital is the District Stroke Centre for Waterloo Region
  - 3 Hospitals in Waterloo Region:
    - Grand River Hospital, DSC
    - St. Mary's General Hospital
    - Cambridge Memorial Hospital
- Hyperacute Stroke Team of Internists and Neurologists
- Hybrid Telestroke Site:
  - Stroke Physician determines need for tPA
  - Telestroke utilized for complex patient's and for EVT consideration
- Refer to Hamilton Health Sciences for Endovascular Treatment

Regional Door In and Door Out Data

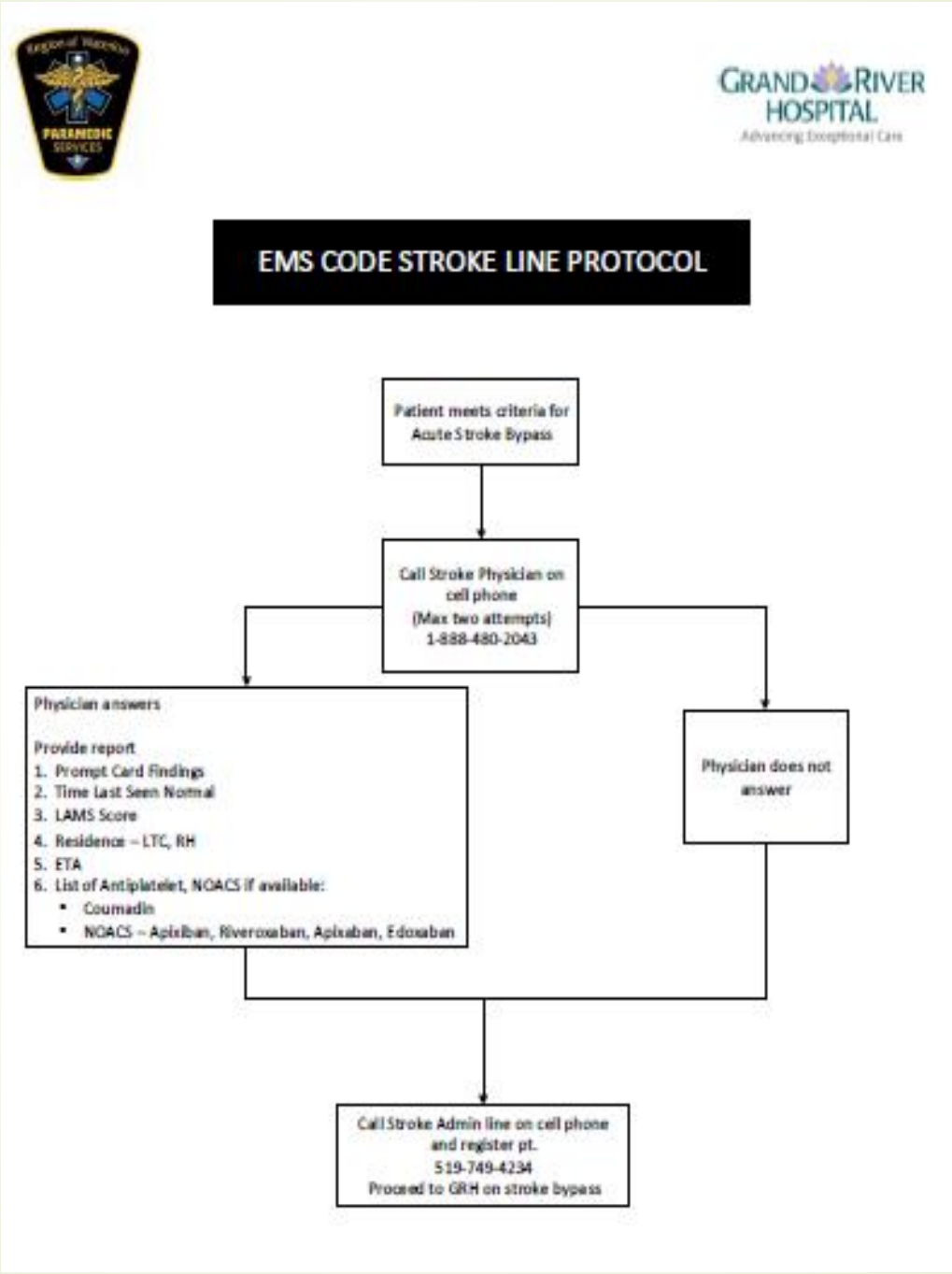


Door to Needle Benchmark

- Provincial Door to Needle Benchmark for tPA is 30 minutes
- GRH Door to Needle 43 minutes for FY 2020/2021 April 2020-March 2021
- A number of quality improvement opportunities to decrease door to needle time:
  - **Decrease arrival time for Stroke Physician**
  - Deliver tPA in CT suite
  - Decrease time for interpretation and reporting of CT/CTA results

Paramedic Pre-Notification of Patients Meeting Acute Stroke Protocol Criteria

- March 10th, 2021 implemented Pre-Notification by Paramedics to the Stroke Physician on-call
- This is in addition to pre-notification to the ED for Acute Stroke Protocol patients
- This coincides with the January 11th, 2021 implementation of LAMS assessment as part of the BLS Standards for paramedics


PARAMEDIC SERVICES
GRAND RIVER HOSPITAL
Advancing Exceptional Care
EMS CODE STROKE LINE PROTOCOL
Patient meets criteria for Acute Stroke Bypass
Call Stroke Physician on cell phone (Max two attempts) 1-888-480-2043
Physician answers
Provide report
1. Prompt Card Findings
2. Time Last Seen Normal
3. LAMS Score
4. Residence – LTC, RH
5. ETA
6. List of Antiplatelet, NOACS if available:
• Coumadin
• NOACS – Apixiban, Riveroxaban, Apixaban, Edoxaban
Physician does not answer
Call Stroke Admin line on cell phone and register pt. 519-749-4234 Proceed to GRH on stroke bypass

The Numbers so Far

- March 10th-May 10th – 33 patients transported on Acute Stroke Bypass to GRH
- In that time frame, Stroke Physician Pre –Alert occurred 11 times

On average, the stroke physician is being alerted to patient condition 17 minutes before that patient arrives at the hospital.

Feedback from Paramedics

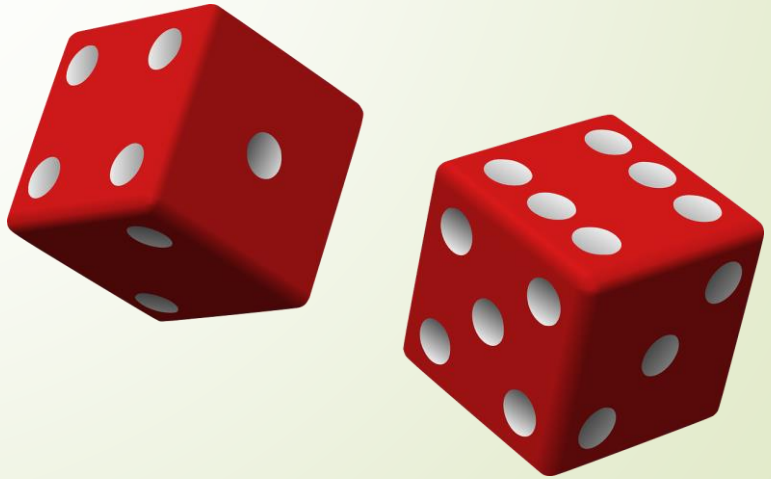
- Two phone calls (one to ED and one to physician) can be difficult
  - Between all the added PPE, patient extrication and patient care that needs to occur, it can be difficult to make the call
- Transport times are definitely a factor
  - The process works well for patients coming from longer distances
  - For short transport times, the call does not get made
- Communication with Physicians has gone well

Feedback from Stroke Physicians on EMS Pre-Alert Process

- Process has been received very well by the Stroke Physicians on call
- Very helpful to receive targeted information from EMS
- Appreciate the discussion with EMS
- Strengthens the partnership with EMS
- Direct line to the Stroke Physician vs contact by pager is well received
- Rely on ED physician assessment for patients that are low risk for acute stroke protocol

What are the Odds?

- There was day in which two calls went out almost simultaneously for strokes.
- Both crews called but only one was able to get through.



Where Do We Go From Here?

- We only have a small amount of data to work with but trends suggest that the Physician Pre-Alert is likely to be more beneficial for those that screen LAMS positive.
- Less emphasis on calling when transport times are short (< 7minutes)

Door In and Door Out Benchmark for EVT

- Provincial benchmark for Door In and Door Out (DIDO) for EVT cases is 45 minutes
- GRH DIDO 124 minutes for FY 2020/2021 (April 2020-March 2021)
- Number of factors contributing to this as **lack of parallel processes**:
  - Delay in getting CT/CTA scans read and reported
  - Delay in activing Telestroke
  - **EMS arrival once notified of EVT Transport (approximately 15-20 minutes delay)**

QI Pilot CACC Pre-Notification for Highly Probable EVT Transfers in Waterloo Region

- Partnered with EMS and CACC to pilot a pre-notification to CACC for highly probable EVT transfers
- Internal Process at GRH:
  - Criticall accessed for Telestroke Consult by physician or clerk
  - Pre-Notification ordered entered in Cerner by physician at that time. This will activate a timed order to pre-notify CACC 30 minutes after order entered
  - Patient accepted for EVT Transfer
  - Patient not accepted for EVT Transfer – physician to call ED clerk to cancel EVT Transport

Lessons Learned

- Criticall normally organizes EVT Life or Limb Transfers
- ED clerks were not involved in organizing transportation
- Clarified with Criticall that we can inform them that we will organize our own transportation
- Would be helpful to have ED clerks involved in QI initiative planning right up front to better understand process and anticipate barriers
- Physician education and reinforcement to enter pre-notification orders in Cerner
  - Physician to inform Criticall that we will organize our own transportation

Next Steps

- Reimplementation of CACC Pre-Notification Process for highly probable EVT Transfers at GRH
  - Reinforce education and review of process with ED clerks
  - Reinforce education and review of process with Stroke Physicians
- Work underway on implementation of CACC Pre-Notification across Central South Region
- CritiCall very interested in results from Central South
  - Interested to review results and determine if this is an initiative that could be implemented provincially

Thank You!

Any questions?