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Transforming Stroke Care: A Model for Transitions, Partnerships and Integration

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Goals of Presentation

- **PROCESS** improvement approach that motivated, engaged and transformed patient care
- Take away: Although focused on stroke, has broad applicability for transforming and improving patient care for any diagnostic group

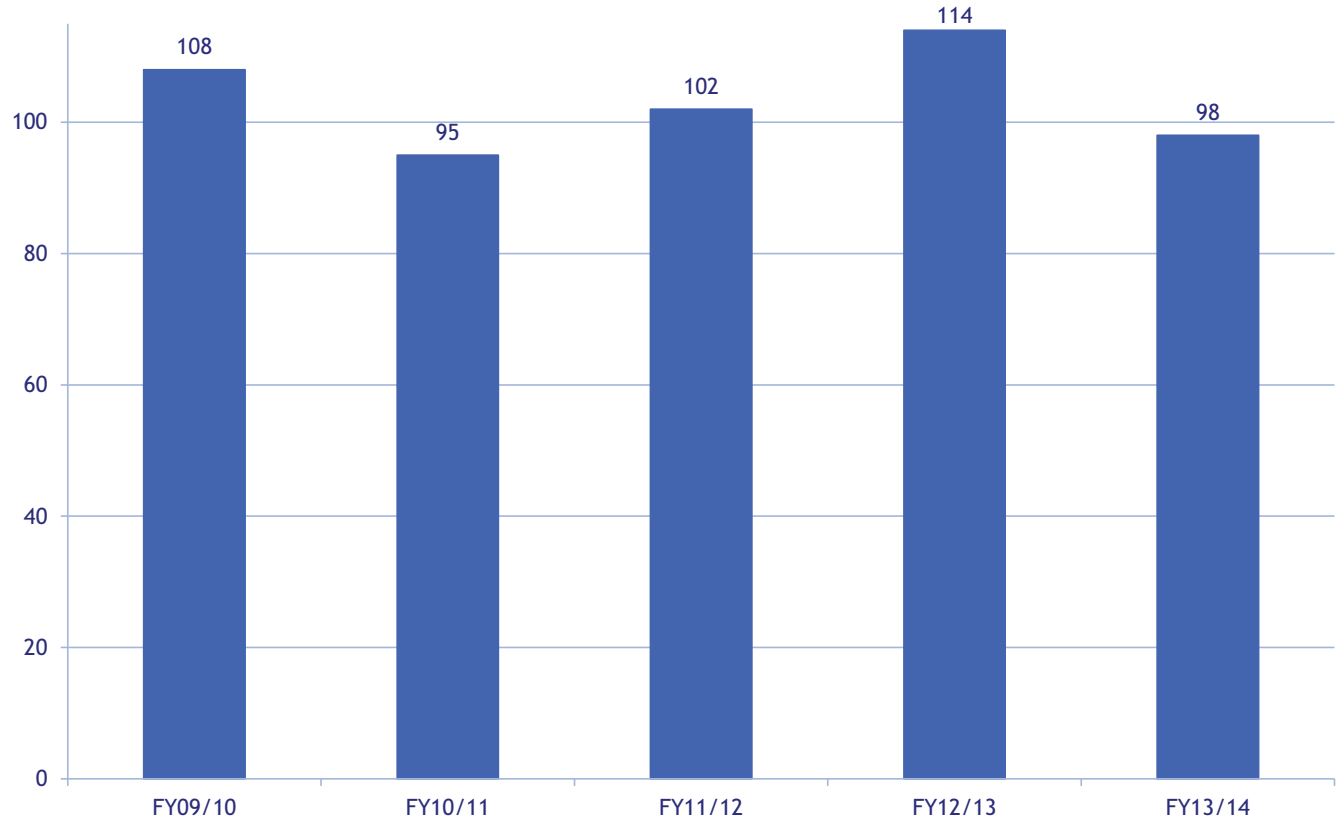
Motivating Factors

- In the 2012/2013 fiscal year, the Ministry of Health and Long Term Care selected Stroke care as one of the Quality Based Procedures (QBP)
- MSH is a non-stroke unit hospital, which has seen an average yearly rise of more than five percent in stroke cases

But how were we performing with regards to stroke care?

MSH baseline performance
Care in the ED
In-Patient Care

MSH Volume Increase



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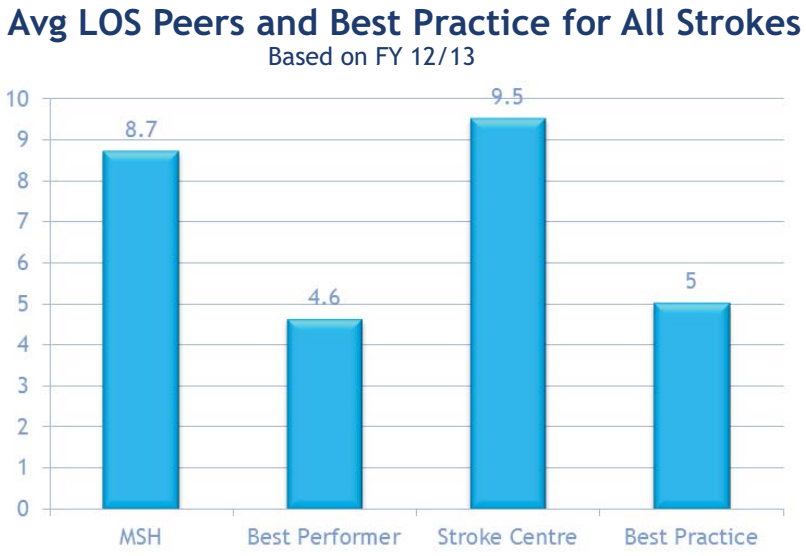
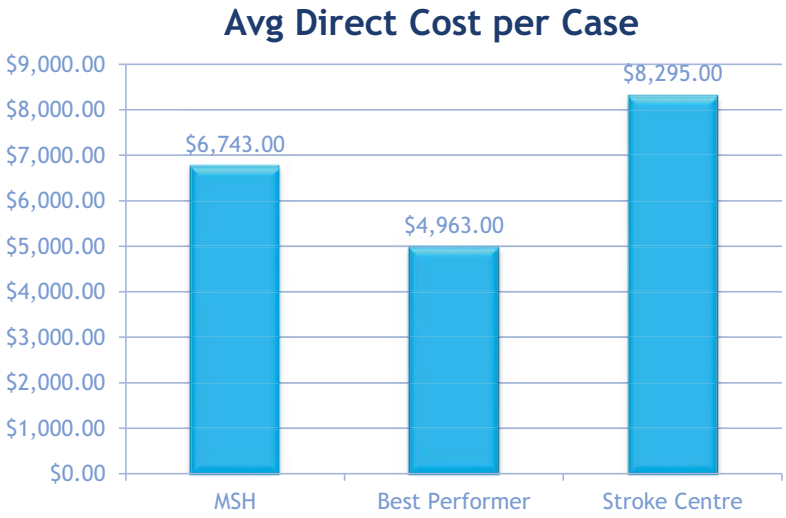
Population is based on QBP qualifications.

MSH Baseline Performance





Based on FY 10/11 data: Latest peer data set available.
Best Performer (Stratford) defined by Direct Cost per Case

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Care in the ED

- Patients presenting within 3 hours of onset of stroke like symptoms
- Stroke Assessment and Work-Up
- Disposition Decision
  - Notify Stroke Team (come from stroke centre)
  - Candidate for tPA and/or transfer to stroke centre

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In-Patient Care

- Admitted to General Internal Medicine
- Work-Up with neurology consult
- PT/OT/SLP
- Disposition:
  - Out-Patient Rehab
  - In-Patient Rehab
  - Long Term Care

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Impetus for Transforming Stroke Care

- Gap analysis:
  - Reviewed the 2012 Canadian Stroke Best Practice Guidelines and the current practices for stroke care at MSH
  - Selected relevant components of the BPG which were applicable and practical with our available resources
  - Best Practice
    - Procedures should enable admission 7 days/week
    - LOS for ischemic stroke patients 5 days, hemorrhagic stroke patients 7 days
    - AlphaFIM scoring

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Impetus for Transforming Stroke Care

- Best Practice
  - Cohort patients in one location with dedicated Allied Health resources
  - Establish Standards for Stroke Care
    - » Early assessments/Diagnostics/interventions
    - » Early D/C planning
    - » Patient/family education

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Enabling Factors

- Executive sponsorship
- MBA student intern
- Organizational Context
  - EMS-ED stroke working group
  - Availability of resources
  - Interdepartmental and Interprofessional Engagement

Process Improvement Event

Population: Patients with stroke, 65+, not eligible for anti-thrombolytic therapy

Method:

- Value Stream of patient care management

  ED → IP → Discharge

  - Inter-departmental and inter-professional collaboration

Purpose:

- Identify current performance and opportunities for improvement
- Implement Best practice guidelines
- Improve patient experience and outcomes
- Reduce LOS → Reduce cost per case

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Findings

		Non Value-Add Wait Time for Patient
Opportunities to apply Best Practices	• **No specific geographic location for stroke pts** • **AlphaFIM completed Day 5 vs Day 3** • AlphaFIM as indicator for pt transition • **No standardized Swallowing Assessment**	24 hrs
Variability in Care Pathway	• Types of DI (MRI, Echo, Doppler) • Consults Ordered (Allied Health) • Extended Wait Times for DI and Consults • Resource availability: week vs weekend	48 hrs
Rehab Application Process/Transition	• Increased wait time to complete referral by RN, Allied Health, Physician	36 hrs
Communication of Transition/Discharge Planning	• No standard pt education tools, communication on next steps and recovery	Value-add opportunity for patient

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Stroke QBP High-Level Recommendations

Short Term (Q2 2013) → Long Term (Q4 2014)

Opportunities to Apply Best Practices	Variability in Care Pathway	Rehab Application Process/Transition	Education	Communication and Discharge Planning
1.Cohort pts to ACE Unit, GIM✓ 2.AlphaFIM Day 3 benchmark for transition planning 3.Swallowing Assessment Tool TOR BSST® within 24 hrs✓	ED and IP Pre-Printed Order Sets to standardize DI and Allied Health Orders ✓	E-Stroke Referral Form to be completed by Nurse Team Lead	✓Stroke Education Nurse Team Lead: Ownership and follow through of best practices (TOR BSST, AlphaFIM) Educate Care Team on transition planning	Communication Plan for pts and families Stroke education and discharge conversation

Improved patient experience and outcomes

Cost savings of approx. $2,868 per case $327,000 Overall (n=114)

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Improvement Initiatives

- Decision to cohort Stroke patients on the ACE unit
- Created pre-printed Admission order sets for Ischemic & hemorrhagic Strokes
- Stroke Care Pathways
- Neurologic Assessment/CNS tool
- Staff Education – Inter-professional facilitation
- Patient Education Packages

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Education Content

- Anatomy & Physiology
- Diagnostic Tests & Treatments
- Stroke Pathways & Tools
- Neurological Assessment/CNS Tool
- Aphasia, Dysphagia & Swallowing
- Nutrition considerations
- Functional Assessment/Form
- Preventing Complications (UTI, Falls, Skin)
- Discharge Planning

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TOR-BSST Swallowing Assessment

- Toronto Bedside Swallowing Screening Tool
- Validated tool
  - Allows for early detection of dysphagia, resulting in fewer pulmonary complications, earlier treatments, reduced LOS and overall health care costs
  - Administered by trained nursing staff
  - Has become an expectation on the ACE unit by the SLP staff

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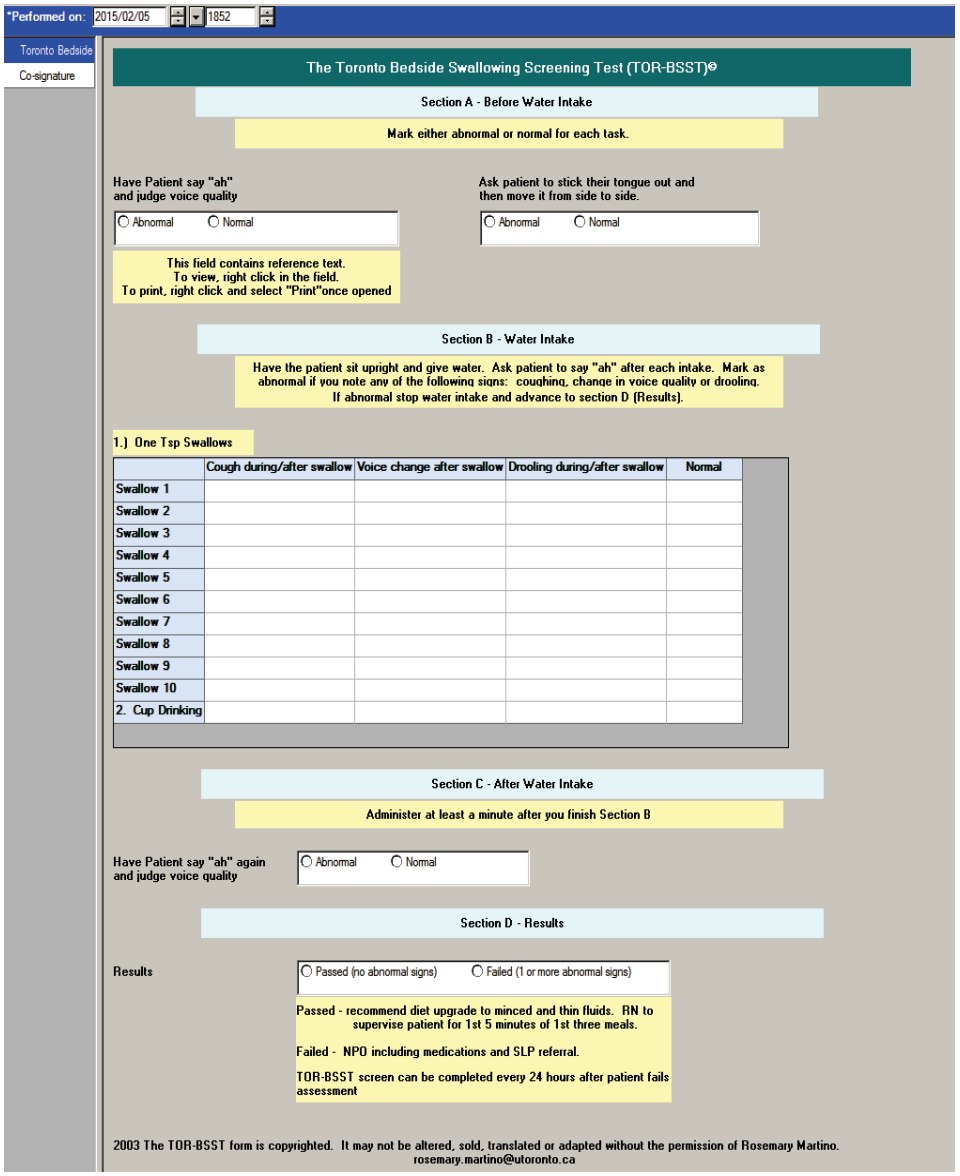
TOR-BSST ® Screen Image



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ED Walk-In Code Stroke Protocol

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Bright Minds. Big Hearts. The Best Medicine.

Emergency Department: Walk-in Code STROKE Assessment and/or Transfer Record

Place patient label here

Most responsible RN (i.e. Triage or Resus) to complete this form in full and send with patient along with copy of the patient chart.

DATE	TIME	RN INITIALS
☐ **Time of arrival in ED**		
☐ **Time of stroke onset/last seen normal** (Patient may qualify if: unilateral arm/leg weakness or drift or slurred speech or inappropriate words or mute and is within 3.5 hrs of symptom onset or when "last seen in usual state of health")		
☐ **Time first seen by ED physician** (notify ED MD ASAP of patient)		
☐ **Time Code STROKE confirmed by physician** (MD pages TWH Stroke Team/Neurologist on call as courtesy @ 416-790-0277)		
☐ **Ward Clerk/ED RN to call EMS at (416) 489-2111, do not use EMS line:** Indicate "Emergency Transfer Code Stroke Patient" either "Code Stroke Stable" or "Code Stroke Unstable (*vented, inotropes or post cardiac arrest*)" **Ref #_____ NO PTAC needed**		
☐ **ED Walk-in Code STROKE Record copied & left in patient's MSH chart**		
☐ **Time patient left MSH ED for Toronto Western Hospital**		
☐ **Large bore IV line:** ↑16G ↑18G ↑20G ↑22G (circle) ↑☐ L ↑☐ R		
Blood work: Phone and fax Charge RN at Regional Stroke Centre, **Toronto Western Hospital ED**, with blood results if not available at time of transfer. **Phone: 416-603-5190, Fax: 416-603-5288**		
☐ INR		
☐ CBC		
☐ Glucose		
☐ Creatinine		
☐ Electrolytes		
☐ **Allergies:** ↑No ↑Yes (circle, if yes list below)		

RAPID TRANSFER TO REGIONAL STROKE PROGRAM
Additional Comments:

Date	Print RN Name	RN Signature and Designation	Initials
Date	Print MD Name	MD Signature and Designation	

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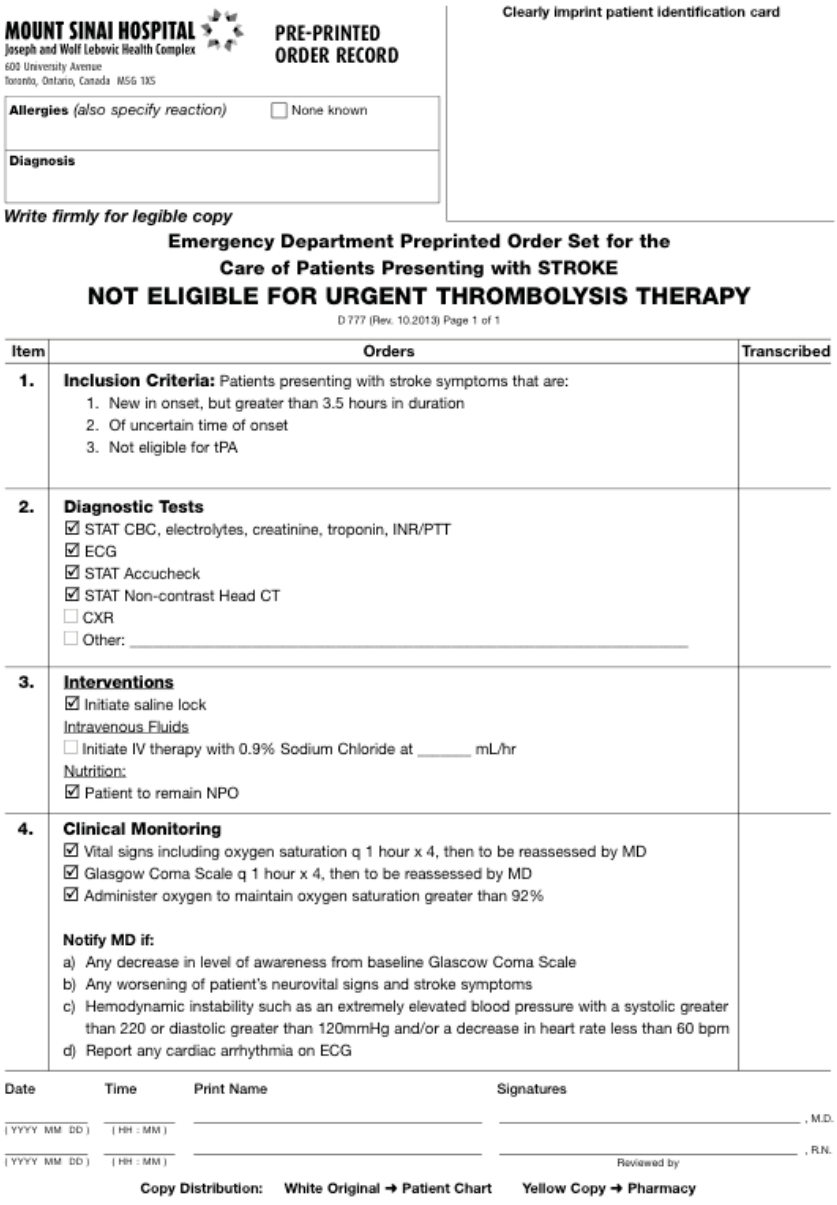
GTA REHAB Network

Toronto West Stroke Network | Ontario Stroke System — Fewer strokes. Better outcomes.

North & East GTA Stroke Network — collaboration • education • innovation

South East Toronto Stroke Network — Fewer strokes. Better outcomes.

ED Stroke PPOS



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600 University Avenue
Toronto, Ontario, Canada M5G 1X5

PRE-PRINTED ORDER RECORD

Clearly imprint patient identification card

Allergies *(also specify reaction)* ☐ None known

Diagnosis

Write firmly for legible copy

Emergency Department Preprinted Order Set for the Care of Patients Presenting with STROKE

NOT ELIGIBLE FOR URGENT THROMBOLYSIS THERAPY

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Item	Orders	Transcribed
1.	**Inclusion Criteria:** Patients presenting with stroke symptoms that are: 1. New in onset, but greater than 3.5 hours in duration 2. Of uncertain time of onset 3. Not eligible for tPA	
2.	**Diagnostic Tests** ☑ STAT CBC, electrolytes, creatinine, troponin, INR/PTT ☑ ECG ☑ STAT Accucheck ☑ STAT Non-contrast Head CT ☐ CXR ☐ Other: _____	
3.	**Interventions** ☑ Initiate saline lock Intravenous Fluids ☐ Initiate IV therapy with 0.9% Sodium Chloride at _____ mL/hr Nutrition: ☑ Patient to remain NPO	
4.	**Clinical Monitoring** ☑ Vital signs including oxygen saturation q 1 hour x 4, then to be reassessed by MD ☑ Glasgow Coma Scale q 1 hour x 4, then to be reassessed by MD ☑ Administer oxygen to maintain oxygen saturation greater than 92% **Notify MD if:** a) Any decrease in level of awareness from baseline Glascow Coma Scale b) Any worsening of patient's neurovital signs and stroke symptoms c) Hemodynamic instability such as an extremely elevated blood pressure with a systolic greater than 220 or diastolic greater than 120mmHg and/or a decrease in heart rate less than 60 bpm d) Report any cardiac arrhythmia on ECG	

Date	Time	Print Name	Signatures
(YYYY MM DD)	(HH : MM)		, M.D.
(YYYY MM DD)	(HH : MM)		, R.N. Reviewed by

Copy Distribution: **White Original → Patient Chart** **Yellow Copy → Pharmacy**

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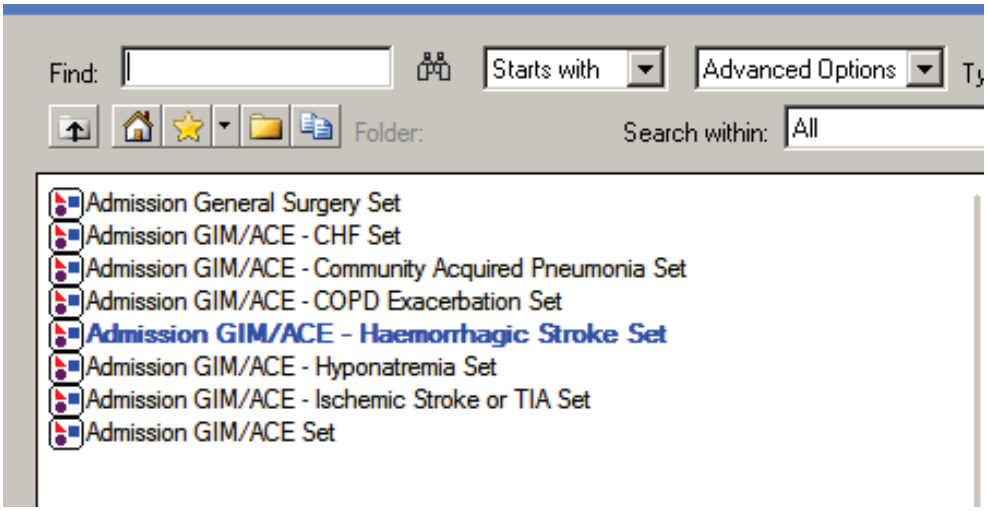

GIM/ACE Admission Order Set

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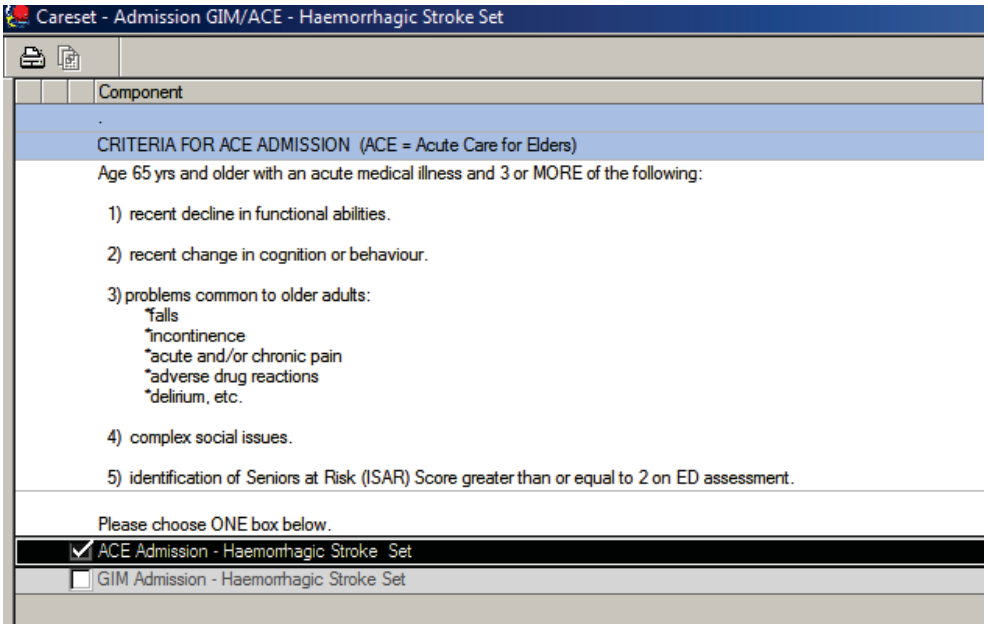

Example of the Hemorrhagic Stroke Set

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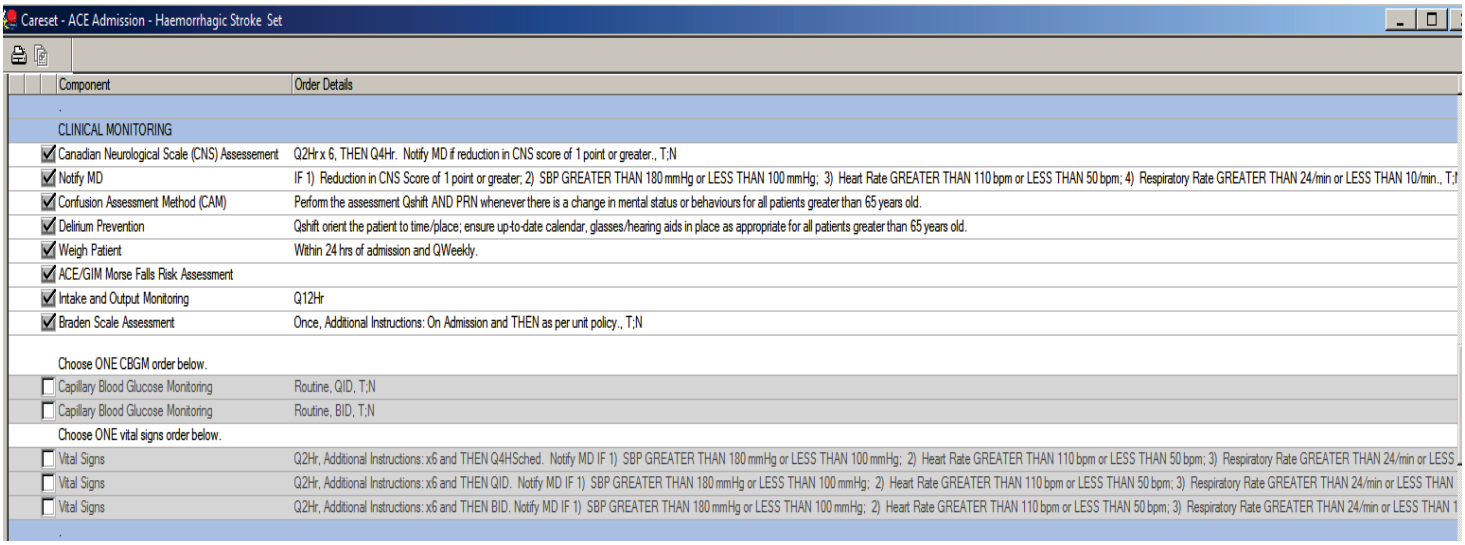

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Lessons Learned

- There is tremendous benefit in understanding and articulating the “what’s in it for me” message for individuals, departments & organization – Use of Performance Data
- Understand how to identify and capitalize on the existing strengths of individuals, disciplines & departments
- Be sure to get the right people involved at the outset

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Lessons Learned

- Use data to demonstrate the need to move away from working in silos
  - No one discipline can achieve practice excellence on their own, we rely on each other, as well as with our community partners

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Resource List

- Anne Cayley. *Stroke Nurse Practitioner*, UHN.
- Shelley Sharp. *Director, Regional Stroke Program/Toronto West Stroke Network* at UHN
- Nicola Tahair. *E-Stroke and Rehab Coordinator*, Toronto Stroke Networks
- Canadian Stroke Strategy: *Canadian Best Practice Recommendations For Stroke Care, 2010, 2012, www.strokebestpractices.ca*
- E-Stroke Network https://www.onstrokenetworkto.com
- Fred Koeman. *PI Strategic Plan 2013*
- Ontario Stroke Network, *Taking Stroke Best Practices to the Next Level*
- Health Quality Ontario & MOHLTC, *Quality Based Procedures: Clinical Handbook for Stroke, Stroke Guideline Implementation*, Toronto Central LHIN, MSK/Stroke Implementation Group
- Gittell, J.H. (2011). *The Southwest Airlines Way: Using the Power of Relationships to Achieve High Performance*. Brandeis University.
- Gittell, J.H. (2000). *Impact of Relational Coordination on Quality of Care, Postoperative pain and functioning, and Length of Stay: A nine-hospital study of surgical patients.* 38(8) 777-885.
- Martino, R. et al. (2009). The Toronto Bedside Swallowing Screening Test (TOR-BSST): Development and validation of a dysphagia screening tool for patients with stroke. *Stroke, 40*, 555-561.
- Sudbury Regional Hospital, TOR-BSST Screening Tool
- Stroke Process Mapping Session May 28, 2013 PowerPoint Presentation, Performance Reporting
- Toronto Central LHIN MSK/Stroke Implementation Group. (July 2013). Communique 2: Stroke Guideline Implementation. Retrieved from GTA Rehab Network http://www.gtarehabnetwork.ca/uploads/Image/final_TC_LHIN_Stroke_guideline_implementation-Revised_July18pdf_1_.pdf

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QUESTIONS?

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