An Introduction to Post-Acute Stroke QBP Recommendations on Transient Ischemic Attack/Minor (Non-Disabling) Stroke

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OSN Best Practice Champion

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Pre-presentation Instructions

• Please keep microphone on mute unless you are asking a question

• The presentation and Executive Summary is available at www.ontariostrokenetwork.ca

• There will be a question and answer period at the end of the presentation

• Please email additional questions to info@ontariostrokenetwork.ca
Speaker:

- Dr. Leanne Casaubon, OSN Best Practice Champion and Chair of Best Practice Secondary Prevention and Acute Care Subcommittee and member of HQO Phase Two Expert Panel

Objectives:

1. To provide a brief overview of Quality Based Procedures
2. To provide an overview of recommended practices for QBPs for Transient Ischemic Attack (TIA) or Minor (Non-Disabling) Stroke
3. To provide an overview of the OSN Ambulatory Care Triage Algorithm for Patients with Suspected or Confirmed TIA or Stroke
4. To provide an opportunity for discussion & questions
Acknowledgement

• Health Quality Ontario’s Clinical Handbook for Stroke: Acute and Post-Acute was developed by Health Quality Ontario on behalf of the Ministry of Health and Long Term Care with the Stroke Episode of Care Provincial Phase 2 Expert Advisory Panel
• The content of this presentation follows content of the Quality Based Procedures for Stroke: Acute and Post Acute Clinical Handbook
• South West Ontario Stroke Network for their contribution to this presentation
<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Physiatrist</td>
<td>University Health Network</td>
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<td>Christina O’Callaghan</td>
<td>ED</td>
<td>Ontario Stroke Network</td>
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<td>University Health Network-Toronto Western</td>
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<td>Family Physician</td>
<td>Ontario Medical Association</td>
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<td>Stroke Prevention Clinic, Niagara Health System</td>
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<td>Kingston</td>
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<td>Community Stroke Rehab Team</td>
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<td>Sarah McEwen</td>
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<td>Stefan Pagliuso</td>
<td>Regional Stroke Rehabilitation, Community &amp; LTC Coordinator</td>
<td>Central South Stroke Network</td>
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<td>Jim Lumsden</td>
<td>Regional Program Director</td>
<td>Champlain Regional Stroke Program</td>
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<tr>
<td>Paula Gilmore</td>
<td>Regional Program Director</td>
<td>South West Ontario Stroke Network</td>
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<tr>
<td>Joan Southam</td>
<td>Home Health Senior Manager/Project Specialist</td>
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<td>Matthew Meyer</td>
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<tr>
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<td>Program Head Human Services</td>
<td>University of Guelph-Humber</td>
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<tr>
<td>Holly Sloan</td>
<td>Speech Language Pathologist</td>
<td>Trillium Health Partners</td>
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<tr>
<td>Rebecca Fleck</td>
<td>Regional Education Coordinator</td>
<td>Central South Stroke Network</td>
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About the OSN

• The OSN provides provincial leadership and planning for the Ontario’s 11 Regional Stroke Networks (Ontario Stroke System) by:
  
  o *establishing province-wide goals, strategies & programs to implement BP’s across the care continuum*
  
  o *leading or facilitating provincial initiatives & aligning regional/LHIN plans*
  
  o *evaluating performance, benchmarking & reporting on provincial, LHIN & Regional Stroke Network progress*
  
  o *managing the KT program*
Regional Stroke Networks

• Ontario’s 11 RSNs support the 14 LHINs
• Each stroke network is a collaborative partnership of health care organizations and providers that:
  o *span the care continuum from prevention to community re-engagement*
  o *develop and implement strategies to achieve equitable access and improved outcomes for stroke survivors and their families through the integration of stroke best practices across the care continuum*
  o *will support the LHIN implementation of QBPs*
Quality Based Procedures
Payment, policy and planning support quality and efficient use of resources

Care is organized around the person to support their health

Quality of care is supported by the best evidence and standards of care

Quality and its continuous improvement is a critical goal across the health care system

Payment, policy and planning support quality and efficient use of resources

The path forward: The Excellent Care for All Strategy is anchored by principles reflecting high quality as the primary driver to system solutions...

Value = Quality/Cost

Health System Funding Reform

Health Quality Branch, MOHLTC
The successful transition from the current, ‘provider-centered’ funding model towards a ‘patient-centered model’ will be catalyzed by a number of key enablers and field supports.

**Current**

- Based on a lump sum, outdated historical funding
- Fragmented system planning
- Funding not linked to outcomes
- Does not recognize efficiency, standardization and adoption of best practices
- Maintains sector specific silos

**Future**

- Transparent, evidence-based to better reflect population needs
- Supports system service capacity planning
- Supports quality improvement
- Encourages provider adoption of best practice through linking funding to activity and patient outcomes
- Ontarians will get the right care, at the right place and at the right time

**Provider - Centric**

**Patient - Centered**

- Strong Clinical Engagement
- Current Agency Infrastructure
- System Capacity Building for Change and Improvement
- Knowledge to Action Toolkits
- Meaningful Performance Evaluation Feedback

Health Quality Branch, MOHLTC
Key Principles for the Clinical Handbook

• The scope of the handbook includes both hospital care and post-acute, community care

• Recommended practices reflect best patient care possible, regardless of cost or barriers to access

• Recommended practices, supporting evidence, and policy applications will be reviewed and updated at regular intervals

• The integrated handbook does not involve detailed unit costing or pricing
Key Steps of the Process for Clinical Handbook Development

1. Define patient cohorts and grouping approach
   - Disaggregate broad patient population (e.g. stroke) into hospital-based patient groupings with similar clinical and utilization characteristics
   - Recommend factors to consider for acuity / severity adjustment (e.g. age, comorbidities, social factors)

2. Develop a pathway model for the episode of care
   - What is the index event commencing the episode?
   - What are the key phases, branches and decision points within the patient episode of care?
   - What proportion of patients proceed down each branch of the pathway?

3. Recommend evidence-based practice throughout the episode
   - What are the effective practices that should take place within each component of the episode?
   - What is the strength of the evidence supporting each of these practices?
   - How often should these practices should be delivered?
# Organization of the Handbook

## TIA /Minor (Non disabling) Stroke

<table>
<thead>
<tr>
<th>Module 1: Early Assessment</th>
<th>Module 2: Early Treatment</th>
<th>Module 3: Admission to Acute Care</th>
<th>Module 4: Admission to Inpatient (IP) Rehabilitation</th>
<th>Module 5: Secondary Prevention</th>
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**ACUTE EPISODE OF CARE (p.41-52)**

## Stroke

<table>
<thead>
<tr>
<th>Module 1: Early Assessment</th>
<th>Module 2: Early Treatment of AIS &amp; ICH</th>
<th>Module 3: Admission to Acute Care</th>
<th>Module 4: Acute IP Treatment</th>
<th>Module 5: Prevention of secondary complications</th>
</tr>
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<tbody>
<tr>
<td>Module 4: Admission to IP Rehab</td>
<td>Module 5: Secondary Prevention</td>
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**ACUTE EPISODE OF CARE (p.86-99)**

## POST ACUTE EPISODE OF CARE (p.54-82)

<table>
<thead>
<tr>
<th>Module 5: Secondary Prevention</th>
<th>Module 6: Pre discharge/DC Planning</th>
<th>Module 7: Early Supported Discharge</th>
<th>Module 8: Community Assessment</th>
<th>Module 9: Community Treatment</th>
<th>Module 10: Cross-Continuum Processes</th>
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## POST ACUTE EPISODE OF CARE (p.101-131)

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<th>Module 5: Secondary Prevention</th>
<th>Module 6: Pre discharge/Discharge Planning</th>
<th>Module 7: Early Supported Discharge</th>
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Flow Chart for the Stroke Patient Cohort Across Care Settings

Emergency Department
- Transient ischemic attack (TIA) or nondisabling stroke
  - TIA: Stable, lower risk
  - TIA: Unstable, higher risk
    - TIA: Stable, higher risk*

Stroke
- Minor (nondisabling) stroke*
  - Ischemic
  - Hemorrhagic
  - Unable to determine

Acute Inpatient
- TIA: Stable, lower risk

Inpatient Rehabilitation
- AlphaFIM® ≥ 81
  - Inpatient Rehabilitation
    - RPG 1100
    - RPG 1110
    - RPG 1120
    - RPG 1130
    - RPG 1140
    - RPG 1150
    - RPG 1160†

Outpatient / Ambulatory
- Provincial stroke prevention clinic or outpatient clinic with stroke prevention services

Rapid assessment TIA or minor stroke unit or TIA clinic

Legend
- Included in current QBP model
- Not included in current QBP model; data available
- Not included in current QBP model; data not yet available

* Stable, higher risk TIAS and some patients with minor stroke can be more cost-effectively managed in ambulatory settings, whenever available and clinically appropriate
† RPG 1160 patients can be more cost-effectively managed in outpatient rehabilitation, whenever available and clinically appropriate
QBP & Stroke Clinical Handbook - ED, Acute Key Messages - TIA and Stroke
Key Messages - ED and Acute - TIA and Stroke

• Early assessment and treatment
• Neuro imaging including vascular imaging
• Referral for secondary prevention (rapid-assessment unit/clinic or SPC)
• Access to thrombolysis for acute ischemic stroke (AIS)
• Use of Telestroke
• Admission to stroke unit:
  o Specialized, geographically defined
  o Interprofessional stroke team
• Completion of AlphaFIM® Day 3
• LOS 5 days (AIS); 7 days (ICH)
Acute Care Patient Group
Modules 1, 2 & 5
The Impact of Prevention ...

It has been estimated that full implementation of currently available preventive strategies could reduce stroke incidence by as much as 50–80%.

Murray et al. 2003; Wald and Law 2003
Risk of Recurrent Stroke

• People with symptoms of a transient ischemic attack (TIA) are at higher risk for subsequent stroke
  ➢ 11.5% will have a stroke within 90 days
  ➢ Of these patients 50% will have a stroke within 48 hours
    (Johnston et al. 2000 & Gladstone et al. 2004)

• 20% - 40% of strokes are preceded by a TIA or non-disabling stroke
  (Rothwell et al. Lancet Neurol 2006; 5: 323-33)
## Cumulative Risk of Stroke

<table>
<thead>
<tr>
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<th>Post-TIA (%)</th>
<th>Post-Stroke (%)</th>
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<tbody>
<tr>
<td>30 days</td>
<td>4 – 8</td>
<td>3 – 10</td>
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<tr>
<td>1 year</td>
<td>12 – 13</td>
<td>5 – 14</td>
</tr>
<tr>
<td>5 years</td>
<td>24 – 29</td>
<td>25 – 40</td>
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Key Messages

• TIA is a threatened stroke and prompt intervention is key.
• TIA is an emergency and those experiencing symptoms should dial 9-1-1.
• The majority of TIA patients and some with minor stroke do not require admission to hospital and should be referred to an urgent TIA/minor stroke unit/TIA clinic/stroke prevention clinic or comparable ambulatory care setting.
Overview of Modules 1, 2 & 5
What’s New: Modules 1-3: Acute

• Brain Imaging interpreted immediately by a health care professional with expertise in reading CT and/or MRI

• Patients should have access to a specialized interprofessional team 7 days a week
Module 1 - Early Assessment

• Rapid assessment
• Neurological examination
• CT and/or MRI
• ECG
• Blood work
• NPO and dysphagia screening
  • Referral to SLP or appropriately trained specialist
Module 1

• Vascular Imaging
  • For patients presenting within 48 hours of symptom onset or with fluctuating motor or speech symptoms
  • Immediate vascular imaging of neck arteries unless the patient is clearly not a candidate for carotid artery revascularization
  • For patients presenting beyond 48 hours should undergo vascular imaging of the brain and arteries as soon as possible
Module 2-Early Treatment

- Glucose management
- Body temperature
- Triage to appropriate setting
- Antiplatelet agent following brain imaging to rule out intracranial hemorrhage
  - ASA 160 mg loading dose followed by enteric coated ASA (81-325 mg) daily (most pts should be on a maintenance dose of 81 mg/day)
  - Clopidogrel 300 mg loading dose followed by 75 mg/day
  - Extended release dipyridamole 200 mg/ASA 25 mg BID (load with ASA 160 mg first)
- Prevention assessment and therapies (Module 5)
TIA and Minor Stroke Recommendations
OHTAC TIA/Minor Stroke Recommendations

• Patients presenting with a transient ischaemic attack (TIA) with high-risk features\(^1\) or a minor stroke\(^2\), undergo a brain CT scan and initiation of antiplatelet therapy (provided this is not contraindicated) as soon as possible and no later than 24 hours after symptom onset, followed by other stroke prevention treatments tailored to each patient

• With respect to location of care:
  o Such immediate care be provided at a *specialized TIA/minor stroke clinic*\(^3\)
  o Where delays to accessing a specialized TIA/minor stroke clinic pose risks to patient health, evaluation (as outlined above) occur at an appropriately resourced ED, and further consideration be given to inpatient evaluation and management for stroke prevention. **OHTAC further recommends establishment of accreditation standards for TIA/minor stroke care** to ensure equitable access to appropriate, high-quality care irrespective of the location of initial presentation.
  o Where *medical attention has been sought after 48 hours from symptom onset*, patients be *referred for evaluation at a specialized TIA/minor stroke clinic or alternatively an outpatient clinic with stroke prevention services*\(^4\) within 24 hours of initial presentation
OHTAC Stroke Recommendations

• Patients presenting with a TIA without high-risk features\(^1\), undergo a brain CT scan and initiation of antiplatelet therapy (provided this is not contraindicated) as soon as possible and no later than 24 hours after initial presentation, followed by referral to an outpatient clinic with stroke prevention services\(^4\) for comprehensive evaluation and management within 1 month of symptom onset.

*Based on HQO EBA on Is Transient Ischemic Attack a Medical Emergency? (very low to moderate quality of evidence) and consistent with Australia (levels C and GPP evidence)*
<table>
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<tr>
<th>Patient Group</th>
<th>Patient Characteristics/ Triage Criteria</th>
<th>Recommended Care Pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Possible TIA: stable</td>
<td>Stable/lower-risk patients presenting to hospital with possible TIA and <strong>without higher-risk features</strong> consistent with the hemispheric ischemic event</td>
<td>Brain CT scan and initiation of antiplatelet therapy (provided this is not contraindicated) as soon as possible and no later than 24 hours after initial presentation, followed by referral to an outpatient clinic with stroke-prevention services for comprehensive evaluation and management within 1 month of symptom onset</td>
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**Higher-risk features** include the following:
- sudden hemiparesis
- speech difficulties
- monocular vision loss
- patients presenting within a short time of symptom onset (especially within 48 h)
- patients with known high-risk conditions associated with stroke, including atrial fibrillation (especially if inadequately anticoagulated) or known carotid artery atherosclerosis with > 50% stenosis on the side consistent with the hemispheric event
- patients with very mild persistent symptoms or no residual symptoms but a small asymptomatic infarct on imaging
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</table>
| 2. Possible TIA or minor (non-disabling) stroke: stable/higher risk | Patients presenting to hospital with 1 or more of the higher-risk features described in group 1 | *If urgent access is available to specialized ambulatory TIA/minor (non-disabling) stroke services, refer patient there*  
*If urgent access is not available, consider acute inpatient admission* |
| 3. Possible TIA or minor (non-disabling) stroke: unstable/higher risk | Unstable/high-risk patients presenting to hospital with the higher-risk features described in group 1 and with > 1 possible TIA in the previous 2 weeks and/or more significant stroke symptoms (including but not limited to weakness causing possible swallowing difficulty or symptoms causing difficulty with walking safely) | *Admit to acute inpatient care FOLLOWED BY*  
Discharge home with community-based supports and stroke-prevention clinic services, where appropriate |
Module 5 - Secondary Prevention
Module 5-Secondary Prevention

Are you at risk?
Get a FREE Diabetes Screening.*

Sponsored by Bayer HealthCare

Supplies are limited! Come in today.
No appointment necessary, fasting 8-12 hours
before visit recommended.

Learn more >>

Stroke and Sleep Apnea
Evaluation of Outcomes of QBP Implementation
Strategy for Patient Oriented Research (SPOR) Project

- Overarching goal is to translate research results into improved health outcomes for Canadians
- Excellent alignment between SPOR goal and Ontario’s focus on evidence-based person-centred health care as per ECFAA and Ontario’s Action Plan for Health Care
- OSN SPOR Project Objectives:
  - Ensure patient/family perspective incorporated into QBP implementation and the iterative evaluation
  - Inform development and implementation of QBPs for stroke in Ontario
  - Perform an iterative evaluation of stroke and where feasible other QBP implementation strategies
  - Develop a framework for ongoing evaluation of QBPs
OSN Ambulatory Care Triage Algorithm for Patients with Suspected or Confirmed Transient Ischemic Attack (TIA) or Stroke
Rationale

• One in 20 patients returns to the ED within 48 hours with a stroke and one in 10 patients is readmitted in 90 days

• One in four patients has an adverse event within 90 days (including stroke, MI and death) and half of these events occurs within four days of the initial event

• OSN Stroke Evaluation Report: Spotlight on Secondary Prevention and Care 2013
  • <20% of highest risk categories of TIA are seen in a timely manner
Rationale

• Support role of SPCs:
  • Provide coordinated services for all high risk patients to allow access to prevention programs
  • Developing and implementing referral and triage processes that incorporate best practices to facilitate transition of care management
  • Establish processes to coordinate timely access to consults, specialty diagnostics and surgery
  • Provide access to interdisciplinary team members for risk factor and lifestyle management
  • Establish process for timely access to carotid revascularization
Process

• Aligned with Canadian Best Practice Recommendations
• Reviewed and endorsed by the OSN Best Practice Secondary Prevention and Acute Care Subcommittee
• Reviewed and endorsed by the Ontario Stroke Regional Medical Directors
**REFERRAL RECEIVED**

- Are the TIA/stroke symptoms consistent with a previously unknown new stroke on brain imaging or are they recurrent or fluctuating (i.e., waxing and waning)?
  - OR
- Are the TIA/stroke symptoms consistent with the side of a known untreated moderate-to-severe (greater than 50%) carotid artery stenosis?
  - OR
- Are the TIA/stroke symptoms in a patient with known or newly documented atrial fibrillation that is either not anticoagulated, sub-therapeutic, or suspected to be sub-therapeutic/inadequately anticoagulated?

**Note:** also refer to the Canadian Stroke Best Practice Recommendations: Taking Action in Stroke Prevention — a Quick Response Guide (see www.strokebestpractices.ca)

**Referral sources:** Emergency Departments, community/hospital physicians’ offices, Neurovascular/Stroke Units or other inpatient nursing units

Hemibody symptoms: motor weakness may be in one body segment (face, arm, or leg) but sensory loss (numbness) must involve at least two contiguous segments (face/arm or arm/leg) on one side of the body to be considered HIGHEST RISK

If CT brain, carotid imaging and ECG completed in ED and negative for new stroke, over 50% carotid stenosis, and atrial fibrillation; and antplatelet therapy addressed

Lower-risk symptoms: patchy, non-specific tingling or numbness, bilateral or non-localizing symptoms, isolated dizziness, progression of symptoms over time

**Are the symptoms:**
- *hemibody motor weakness or sensory loss (numbness)*
- speech difficulty (slurred or expressive/word-finding difficulty)
- clear monocular or hemifield vision loss (either temporary or persistent)

**Are the symptoms:**
- bilateral vision loss or double vision
- sudden unilateral incoordination or sudden imbalance
- other focal neurological symptoms suspicious for TIA/stroke

**Symptom onset within 48 hr from referral date**

**Symptom onset greater than 48 hr from referral date**

**HIGH RISK** — evaluation required within less than 24 hr from referral date

**INCREASED RISK** — evaluation within 24-72 hr from referral date

**INTERMEDIATE RISK** — evaluation within less than 1 mo from referral date

**LOW RISK** — evaluation within 3 mo from referral date (though ideally within 1 month)

**Is there a rapid-access TIA/minor (non-disabling) stroke unit/clinic, SPC or acute internal medicine clinic able to evaluate the patient within required time frame?**

**Evaluation to include:** same-day clinical assessment, brain and vascular imaging (if not already done prior to 1st visit), cardiac monitoring (at minimum ECG +/- Holter monitor), prevention medication prescriptions, education

**Patients should have brain imaging prior to the SPC visit and antplatelet therapy started if no contraindications**

- Does the patient have known modifiable risk factors (e.g., HTN, ↑ lipids, DM, smoking)?
- If so, the patient should ideally be seen within 2 weeks from referral date

Version Date: Dec. 1, 2014
Created by: Dr. L. K. Cassaubon, L. Kellaway, and S. Jaspers
Next Steps

• Working with CIHI to explore opportunities to support ongoing data collection within SPCs, rapid-assessment TIA and minor stroke units/clinics, and other community clinics that provide stroke prevention services

• Confirming process for evaluation of uptake and utilization of algorithm within clinics
Implementation Considerations
Key Implementation Considerations

1. Recognition of TIA/stroke symptoms by EMS and inclusion in regional medical redirect protocols has been identified and need to develop ongoing education opportunities to address gap both regionally and provincially.

2. Currently there is no mechanism to collect data, assess performance and compliance with QBP for patients seen at TIA/SPCs.

3. Identify opportunities to further develop SPCs and new rapid-assessment TIA and minor stroke units/clinics throughout Ontario so that all Ontarians can access this care.
QBP Resources

• Two rapid reviews as part of the evidence in the acute episode of care

• Go to http://www.hqontario.ca/evidence/publications-and-ohtac-recommendations/rapid-reviews
Next steps

• OSN has created an Executive Summary of the Handbook available on the OSN website
• Support dissemination and KT; OSN providing educational webinar/videoconference (archived):
  • June 5 (OP & Community Rehab) and June 24 (TIA/Stroke)
• Collaborate with MoHLTC, HQO, CIHI and others to improve data quality and availability
• Advance stroke QBP implementation through OSN Strategy for Patient-Oriented Research (SPOR) project
Q&A/Discussion

• What approach would you recommend for further communication and engagement?

• Any success stories you would like to share?
TIME FOR QUESTIONS
• Please email info@ontariostrokenetwork.ca with your position title and LHIN/Stroke Region
• Please forward additional questions regarding the presentation to info@ontariostrokenetwork.ca