Integrated Stroke Care in Waterloo-Wellington

Transitions in Stroke Care
Stroke Network of Southeastern Ontario
September 18, 2019
Our Success

• Stroke Care in Waterloo Wellington
  • 2017/2018

All data referenced was abstracted through:
• Discharge Abstract Data (DAD), accessed through Intellihealth Ontario
• National Ambulatory Care Reporting System (NACRS), Accessed through Intellihealth Ontario
• Home Care Database (HCD), Accessed through Intellihealth Ontario
## Ontario Stroke Report Card, 2017/2018

### Waterloo Wellington Local Health Integration Network

<table>
<thead>
<tr>
<th>Indicator No.</th>
<th>Care Continuum Category</th>
<th>Indicator</th>
<th>LHIN FY 2017/18 (2016/17)</th>
<th>Variance Within LHIN (Min-Max)</th>
<th>Provincial Benchmark</th>
<th>High Performers</th>
<th>Sub-region/Facility</th>
<th>LHIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ▲</td>
<td>Public awareness and patient education</td>
<td>Proportion of stroke/TIA patients who arrived at the ED by ambulance.</td>
<td>59.9% (60.3%)</td>
<td>59.0 - 63.5%</td>
<td>65.9%</td>
<td>Western Champlain sub-region</td>
<td>1,1</td>
<td>11</td>
</tr>
<tr>
<td>2 ▲</td>
<td>Prevention of stroke</td>
<td>Annual age- and sex-adjusted inpatient admission rate for stroke/TIA (per 1,000 population)</td>
<td>1.6 (1.5)</td>
<td>1.4 - 1.7</td>
<td>1.1</td>
<td>Oakville sub-region</td>
<td>7</td>
<td>3, 8</td>
</tr>
<tr>
<td>3 ▲</td>
<td>Prevention of stroke</td>
<td>Risk-adjusted stroke/TIA mortality rate at 30 days (per 100 patients)</td>
<td>13.4 (12.5)</td>
<td>11.8 - 20.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4 ▲</td>
<td>Prevention of stroke</td>
<td>Proportion of ischemic stroke/TIA patients aged 65 and older with atrial fibrillation who filled a prescription for anticoagulant therapy within 90 days of discharge from acute care.</td>
<td>72.7% (68.1%)</td>
<td>58.7 - 79.0%</td>
<td>85.6%</td>
<td>East Mississauga sub-region</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>5 ◼</td>
<td>Prevention of stroke</td>
<td>Proportion of ischemic stroke inpatients who received carotid imaging.</td>
<td>88.1% (86.4%)</td>
<td>42.9 - 91.4%</td>
<td>93.0%</td>
<td>Thunder Bay Regional Health Sciences Centre</td>
<td>14</td>
<td>3</td>
</tr>
<tr>
<td>6 ▲</td>
<td>Acute stroke management</td>
<td>Median time to needle among patients who received acute thrombolytic therapy (pTime) (Minutes). Target: 30 minutes</td>
<td>54.0 (52.0)</td>
<td>47.0 - 61.5</td>
<td>33.0</td>
<td>Kingston Health Sciences Centre - Kingston General Site</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>7 ▲</td>
<td>Acute stroke management</td>
<td>Proportion of ischemic stroke patients who received acute thrombolytic therapy (pTPA). Target: &gt;12%</td>
<td>11.2% (11.6%)</td>
<td>7.4 - 16.4%</td>
<td>17.7%</td>
<td>London Middelsex sub-region</td>
<td>11</td>
<td>4</td>
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<tr>
<td>8 ▲</td>
<td>Acute stroke management</td>
<td>Proportion of stroke/TIA patients treated on a stroke unit at any time during their inpatient stay. Target: &gt;75%</td>
<td>80.6% (83.0%)</td>
<td>69.5 - 87.2%</td>
<td>81.8%</td>
<td>Quinte sub-region</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>9 ▲</td>
<td>Prevention of stroke</td>
<td>Proportion of ischemic stroke/TIA patients discharged from the ED and referred to secondary prevention services.</td>
<td>69.6% (64.1%)</td>
<td>0.0 - 88.3%</td>
<td>95.1%</td>
<td>Hamilton Health Sciences Corp - Juravinski</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>10^</td>
<td>Acute stroke management</td>
<td>Proportion of ALC days to total length of stay in acute care.</td>
<td>12.6 (14.2)</td>
<td>0.0 - 60.8%</td>
<td>8.2%</td>
<td>Bluewater Health, Sarnia</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>11 ▲</td>
<td>Acute stroke management</td>
<td>Proportion of acute stroke (excluding TIA) patients discharged from acute care and admitted to inpatient rehabilitation. Target: &gt;30%</td>
<td>28.6% (34.9%)</td>
<td>23.6 - 30.4%</td>
<td>47.8%</td>
<td>Lambton sub-region</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>12^</td>
<td>Stroke rehabilitation</td>
<td>Proportion of acute stroke (excluding TIA) patients with mild disability (AlphaFIM &gt; 80) discharged home.</td>
<td>86.6% (84.2%)</td>
<td>84.2 - 91.5%</td>
<td>*</td>
<td>*</td>
<td>Quinte Health Care - Belleville General Site</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>Stroke rehabilitation</td>
<td>Median number of days between stroke (excluding TIA) onset and admission to inpatient rehabilitation.</td>
<td>8.0 (7.0)</td>
<td>7.0 - 9.0</td>
<td>5.0</td>
<td>West Park Healthcare Centre</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Stroke rehabilitation</td>
<td>Median number of minutes per day of direct therapy received by inpatient stroke rehabilitation patients. Target: &gt;180 minutes/day</td>
<td>83.6 (90.2)</td>
<td>65.4 - 101.0</td>
<td>107.6</td>
<td>West Park Healthcare Centre</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Stroke rehabilitation</td>
<td>Proportion of inpatient stroke rehabilitation patients achieving RPG active length of stay target.</td>
<td>80.5% (83.9%)</td>
<td>77.8 - 90.0%</td>
<td>86.6%</td>
<td>Providence Healthcare</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Stroke rehabilitation</td>
<td>Median FIM efficacy for moderate stroke in inpatient rehabilitation.</td>
<td>1.7 (1.7)</td>
<td>1.2 - 2.0</td>
<td>1.6</td>
<td>Providence Healthcare</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>17</td>
<td>Stroke rehabilitation</td>
<td>Mean number of home and community care rehab visits provided to stroke patients on discharge from inpatient acute care or inpatient rehabilitation in 2016/17.</td>
<td>14.7 (15.7)</td>
<td>-</td>
<td>13.1</td>
<td>South East Home and Community Care</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>18</td>
<td>Stroke rehabilitation</td>
<td>Proportion of patients admitted to inpatient rehabilitation with severe stroke (RPG 1100 or 1110).</td>
<td>49.1% (58.6%)</td>
<td>42.0 - 52.6%</td>
<td>56.2%</td>
<td>Grand River Hospital Corp-Freeport Site</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Reintegration</td>
<td>Proportion of stroke/TIA patients discharged from acute care to LTC/CCC (excluding patients originating from LTC/CCC).</td>
<td>2.6% (2.6%)</td>
<td>1.5 - 6.3%</td>
<td>1.9%</td>
<td>Guelph-Puslinch sub-region</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>20^</td>
<td>Reintegration</td>
<td>Age- and sex-adjusted readmission rate at 30 days for patients with stroke/TIA for all diagnoses (per 100 patients). Target: 10.0</td>
<td>8.1 (9.6)</td>
<td>0.0 - 11.2</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

*Benchmark has not been specified for this indicator.

- Hospital Service Accountability Agreement indicator, 2015/16
- Data not available
- 5% contributes to QBP performance
Our Path to an Integrated Stroke System

2011/2012

Reports:
1. “Improving Access to Quality Stroke Care in Waterloo-Wellington”
2. “Transitioning to a System of Rehabilitative Care in Waterloo-Wellington”

Aug, 2013
LHIN Integration Order

Aug 1st, 2014
Integration of Stroke Services Across the Continuum

• Hospital Re-organization
• CCAC To Deliver Best Practice Stroke Care

• Identified Significant Gaps:
  • Access
  • Patient Outcomes
  • System Efficiencies

• Waterloo Wellington Stroke Steering Committee
• Stroke Implementation Task Force
• Coordinated Bed Access Steering Committee
# Current Integrated Stroke System Committee Structure

<table>
<thead>
<tr>
<th>Waterloo Wellington Rehabilitative Care Council</th>
<th>Waterloo Wellington Stroke Implementation Task Force</th>
<th>Waterloo Wellington Stroke Community Partners Advisory Committee</th>
<th>Home &amp; Community Care Therapy Working Group</th>
<th>CS Regional Stroke Monitoring &amp; Evaluation Committee</th>
</tr>
</thead>
</table>
| - Executive leadership for WW rehabilitative care system | - Representation from hospital, H&CC, and community  
- Monitor stroke volumes and transitions  
- Quality improvement | - Representation from community partners  
- Information sharing  
- Quality improvement | - Representation from LHIN and SPOs  
- Stroke specific working group (time limited) reports to this group | - Waterloo Wellington Community Stroke Program report card |
TIME IS BRAIN

1.9MM brain cells die each minute the blood supply is cut off to the brain
Hyper Acute & Acute Management

• Hyper acute stroke treatment consolidated at 2 sites – Grand River Hospital (GRH) and Guelph General Hospital (GGH)

• All EMS Directed to nearest site:
  • Waterloo Region to GRH
  • Guelph and Wellington to GGH

• tPA Access at both sites. Use of Telestroke.

• Access to Endovascular Thrombectomy services at HHSC post evaluation in ED
Almost every WW resident now lives within 60 minutes of a tPA centre
Acute Stroke Unit Care

% Admitted to Stroke Unit
Mortality
Benchmark
The Waterloo Wellington Stroke Prevention Clinic is located at Grand River Hospital. It provides rapid access to assessments, appropriate testing and stroke specialists for high risk patients that have experienced a recent minor stroke or TIA.

A physician referral is required, with most coming from the ED or family physicians that require support from stroke experts.

The clinic also provides lifestyle and risk factor counseling as well as educational training from RN’s.
**Stroke Navigator Role**

1. **Collaborate with teams to determine eligibility for programs and service and facilitate early completion rehab applications (when necessary).**
2. **Facilitate transition from ER and other acute hospitals to manage bed flow for the acute stroke unit at GRH.**
3. **Act as a resource to patients, families and staff and engage in collaboration across the continuum to optimize customer care.**
4. **Work with teams to assist in triaging patients to the most appropriate stroke recovery program.**
5. **Track discharge disposition for patients by monitoring service utilization and assist with program sizing.**
6. **Manage complete flow of stroke patients & perform daily review of all patients in both acute and rehab.**
7. **Work collaboratively with Home & Community Care, acute care and rehab sites to assist in bed planning.**
8. **Track number of strokes in the system by site on a daily basis.**
9. **Deliver acute interventions and assessments and provide consultation during discharge planning.**
10. **Track discharge disposition for patients by monitoring service utilization and assist with program sizing.**

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*Image of a diagram showing the roles and responsibilities of a Stroke Navigator.*
The banding model is a framework that assists in triaging patients to the most appropriate level of care.
Inpatient Rehab

• With the LHIN Integration Order, stroke rehab units were created at GRH – Freeport Campus, SJHC-Guelph and Cambridge Memorial Hospital.
  o Volume to support best practice
  o Care closest to home
• Access facilitated by the WW Stroke Banding Model and Coordinated Bed Access
  o Preferred stroke access based on rehab ready date
  o First available bed
• Teams are creative in the delivery to rehab to meet 3 hour therapy intensity.
• FIM scores measured across the rehab journey.
• RPG is used to establish patient length of stay.
WW Inpatient Stroke Rehab FIM Efficiency

![Graph showing WW Inpatient Stroke Rehab FIM Efficiency over the years from 2012/2013 to 2017/2018. The graph compares FIM Efficiency and the benchmark. The FIM Efficiency line starts at a lower value in 2012/2013, rises gradually to reach a peak in 2015/2016, and then stabilizes. The benchmark line remains constant at a higher level throughout the years.]
Inpatient Stroke Rehab RPG Length of Stay
Severe Strokes Admitted to Inpatient Rehab
Proportion (%) of ALC Days in Acute Care
Proportion (%) of Stroke Inpatients Discharged from Acute Care to LTC/CCC
Waterloo-Wellington Community Stroke Program

Developed from Canadian Stroke Best Practice Guidelines

12 Week Program

Access at Time of Discharge from Hospital: Acute or Inpatient Rehabilitation

Supported Transition from Hospital to Home
Waterloo-Wellington Community Stroke Program

Includes therapy, education, and support to achieve rehabilitation goals.

Stroke Team includes: Care Coordinator, Occupational Therapist, Physiotherapist, Speech Language Pathologist, Social Worker, Dietitian & Rehabilitation Assistants

Supported transition to community based programs to continue recovery
# Stroke Best Practices

## Multi-disciplinary team with knowledge and expertise in stroke care
- Saint Elizabeth & Care Partners Stroke Teams
- Designated Stroke Care Coordinators
- RRN

## Rehab intensity: 45 min-3 hours, 3-5x/week; 8-12 weeks
- 12 week program
- Use of OTA, PTA, CDA
- Visit volume and sharing

## Timely access
- First visit within 48 hours of discharge home
- Access for all residents of Waterloo Wellington

## Supported transition from hospital team to community team
- Transition of care meeting/ notes
- Link to primary care

## Integrated, patient-centered functional goals and treatment
- Three week case conference
- Team rounds and planning
- Integrated report and communication with Care Coordinator

## Community reintegration
- 10 week communication to plan next phase of rehabilitation
- Patient transition communication tool
- Community based stroke rehab programs
Mean Number of Home & Community Care Rehab Visits

![Line chart showing the mean number of home and community care rehabilitation visits over years 2012/2013 to 2017/2018. The chart includes a benchmark line representing a constant average of visits.](chart_image)
Community Stroke Report Card

- Report card established in partnership with Central South Regional Stroke Network and HNHB LHIN
- Standard indicators upon which HNHB and WW report
- Data is shared quarterly at the RSMEC

Referrals to Stroke Pathway*
*Data reflects new referrals to the stroke pathway in the reporting quarter

Total referrals to stroke pathway

<table>
<thead>
<tr>
<th>Hospital</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambridge Memorial</td>
<td></td>
</tr>
<tr>
<td>Guelph General</td>
<td></td>
</tr>
<tr>
<td>Freeport</td>
<td></td>
</tr>
<tr>
<td>Grand River</td>
<td></td>
</tr>
<tr>
<td>St. Joseph’s</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

Service Utilization**
** Data based on patients who completed stroke pathway in the reporting quarter

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td># patients who completed stroke pathway in quarter</td>
<td></td>
</tr>
<tr>
<td>LOS days</td>
<td></td>
</tr>
<tr>
<td>Average length of stay on pathway (days)</td>
<td></td>
</tr>
<tr>
<td>Median length of stay on pathway (days)</td>
<td></td>
</tr>
<tr>
<td>Average # of days to first therapy visit (Target: Within 2 days)</td>
<td></td>
</tr>
<tr>
<td>Median # of days to first therapy visit</td>
<td></td>
</tr>
<tr>
<td>Average # of days to first Care Coordinator visit</td>
<td></td>
</tr>
<tr>
<td>Median # of days to first Care Coordinator visit</td>
<td></td>
</tr>
<tr>
<td>Total therapy visits provided</td>
<td></td>
</tr>
<tr>
<td>Average # therapy visits per patient who completed pathway</td>
<td></td>
</tr>
<tr>
<td># patients who received PT</td>
<td></td>
</tr>
<tr>
<td># PT visits provided</td>
<td></td>
</tr>
<tr>
<td>Proportion of patients who received Physiotherapy (PT)</td>
<td></td>
</tr>
<tr>
<td>Average # PT visits (of those who received PT)</td>
<td></td>
</tr>
<tr>
<td>Average # PT visits (all patients who completed pathway)</td>
<td></td>
</tr>
<tr>
<td># patients who received OT</td>
<td></td>
</tr>
<tr>
<td># OT visits provided</td>
<td></td>
</tr>
<tr>
<td>Proportion of patients who received Occupational Therapy (OT)</td>
<td></td>
</tr>
<tr>
<td>Average # OT visits (of those who received OT)</td>
<td></td>
</tr>
<tr>
<td>Average # OT visits (all patients who completed pathway)</td>
<td></td>
</tr>
<tr>
<td># patients who received SLP</td>
<td></td>
</tr>
<tr>
<td># SLP visits provided</td>
<td></td>
</tr>
<tr>
<td>Proportion of patients who received Speech Language Therapy (SP)</td>
<td></td>
</tr>
<tr>
<td>Average # SLP visits (of those who received SLP)</td>
<td></td>
</tr>
<tr>
<td>Average # SLP visits (all patients who completed pathway)</td>
<td></td>
</tr>
</tbody>
</table>

** Data based on patients who completed stroke pathway in the reporting quarter
Outpatient Rehabilitation

- Rehab is a philosophy of care, not a physical place and a patient's journey extends well beyond the walls of a hospital.
- Wait times reduced from 6 weeks to 1 week
- Stroke care pathway mirrors best practice recommendations.
- Clinics located at GRH-Freeport and SJHC Guelph
Community Rehabilitation & Integration

• Formal and informal partnerships with providers to build community capacity.

• Current community based programs:
  • Waterloo Wellington Regional Aphasia Program
  • YMCA programs – Neuro Fit, Fitness for Function
  • SMART/Gentle Exercise Programs
  • Low Vision Supports
  • March of Dimes – Stroke Recovery Canada, Linking Survivors with Survivors
  • Stroke Recovery Chapters
  • University of Waterloo: Optometry Clinic and Centre for Community, Clinical and applied Research Excellence
Strong Stroke Recovery Chapters

Waterloo Wellington has four strong and active Stroke Recovery Chapters
  • Kitchener/Waterloo
  • Cambridge
  • Guelph
  • Wellington

These Chapters support the “Linking Survivors with Survivors” program at acute and rehab sites, with over 1058 hospital visits from the 2017/2018 volunteers!

Waterloo Wellington Regional Aphasia Program (WWRAP)

• Community based aphasia services was a significant gap.
• WWRAP launched in 2013.
• The program offers therapeutic conversation groups and family support groups.
• The WWRAP team includes SLP, CDA and Social Worker.
• WWRAP is funded by the LHIN, with SJHC being the HSP.
• The program has partnered with existing adult day program sites to offer groups across Waterloo Wellington.
• 14 groups operated weekly.
### Lessons Learned

<table>
<thead>
<tr>
<th>Regionally integrated programs can work!</th>
<th>Break down silos to care for the patient all across their journey</th>
<th>Standardizing care across hospitals reduces variation in outcomes across WW</th>
<th>Base decision making on the evidence!</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dream big – but don’t wait until its perfect to start</strong></td>
<td><strong>Data, data, data!</strong></td>
<td><strong>Streamlined &amp; supported transitions = better for the patient and system</strong></td>
<td><strong>Dedicated focus on improvement – measure, monitor and share!</strong></td>
</tr>
</tbody>
</table>
Thank You!

Contact Information:
Tammy Tebbutt – tammy.Tebbutt@grhosp.on.ca
Maria Fage - maria.fage@lhins.on.ca