A Resource Guide to Support the Measurement of Rehabilitation Intensity in In-Patient Stroke Rehabilitation

Background

The Ontario Stroke Network's (OSN) Stroke Evaluation and Quality Committee has identified Rehabilitation Intensity as a key indicator for evaluating system efficiency and effectiveness and has included this indicator on their Stroke Report Card. More recently, Health Quality Ontario and the Ministry of Health and Long-Term Care (MOHLTC) have included Rehabilitation Intensity in the Quality-Based Procedures: Clinical Handbook for Stroke (specifically in inpatient rehabilitation) with the recommendation that receipt of an individualized treatment plan, that includes at least three hours of direct task-specific therapy per day for at least six days a week, be considered as an indicator of appropriate rehabilitation stroke care.[1] However, to date, most rehabilitation organizations within Ontario have not been able to report whether the recommended intensity of therapy has been delivered.

After discussions and ongoing work with the MOHLTC and Canadian Institute for Health Information (CIHI), it has been confirmed that effective April 1st, 2015 Rehabilitation Intensity will become a mandatory metric within the National Rehabilitation Reporting System (NRS) for stroke patients in designated rehabilitation beds in Ontario.

Based on evidence from the literature and stakeholder input, Rehabilitation Intensity is defined as:

*The amount of time the patient spends in individual, goal-directed rehabilitation therapy, focused on physical, functional, cognitive, perceptual and social goals to maximize the patient's recovery, over a seven day/week period. It is time that a **patient** is engaged in active face-to-face treatment, which is monitored or guided by a therapist.*[2]

Rehabilitation Intensity entails:

- An individualized treatment plan involving a minimum 3 hours of direct task-specific therapy per patient per day by the core therapies[1,3,4], for at least six days per week[1,3]
- Does not include groups
- Maximum of 33 percent of therapy time with therapy assistants
- Documentation of time from the patient perspective with co-treatment time split between the treating therapists

Rehabilitation Intensity data will be captured via workload measurement data, but will require additions to how workload measurement data is currently collected. Rehabilitation Intensity involves capturing the time the **patient spends in one-on-one, direct task-specific therapy**, rather

than conventional workload measurement systems that capture **therapist time spent in delivering therapy, which could include non-face-to-face therapy time and other patient related activities**.

Collecting and Reporting Considerations

Collection of patient therapy time should be recorded according to the Rehabilitation Intensity definition[2] and include the total number of minutes the patient spends in face to face therapy by professional group (Occupational Therapy (OT), Physiotherapy (PT), Speech-Language Pathology (S-LP), Occupational Therapy Assistant (OTA), Physiotherapy Assistant (PTA), Communicative Disorders Assistant (CDA)). The minutes of patient time in therapy is collected daily and will be reported to CIHI via the NRS as the total number of minutes by patient for each professional grouping (as mentioned above) over the patient's length of stay.

To support a shift towards capturing therapy time from the patient perspective, the collection of Rehabilitation Intensity data involves the addition of new data fields within the organization's existing workload measurement screen that are separate from the data fields required by Management Information Systems (MIS). From our work to date, we recommend that these additional data fields be labelled differently from therapist recorded time (e.g., labelled as 'patient-direct minutes') to differentiate recorded Rehabilitation Intensity time from recorded therapist's time required by MIS. Further, clinician involvement in development and implementation of these changes will be needed to ensure data quality.

Implementing a System of Measurement

Based on a provincial environmental scan completed in the summer of 2014, there are a number of programs/methods being used to capture workload measurement. These range from newly implemented software systems to manual data collection and locally developed databases. Across the province, the most commonly used workload measurement systems include eH3, Emerald, GRASP, InfoMed, and Meditech. Most rehabilitation facilities (75% of sites) were able to collect workload measurement by patient. However, only 26% of rehabilitation facilities were currently collecting workload measurement by diagnosis. Despite possible variances in collection mechanisms, interfaces, and systems, there has been recent shift towards collecting common metrics for Rehabilitation Intensity. To support this shift, it is important to ensure that current

workload measurement systems are adapted to enable collection by patient therapy time, with diagnosis, and facilitate the transfer of Rehabilitation Intensity data to the NRS database.

Getting Ready to Report on Rehabilitation Intensity

Depending on the current state of each individual workload measurement system (WMS), there will be specific steps required to support readiness for submission of Rehabilitation Intensity data to the NRS database. The process map (page 4) and table (pages 5-9) include steps/factors to consider that support organizational readiness for Rehabilitation Intensity data collection.

Content within the process map and table were generated based on interviews conducted with key stakeholders within the province. To align the process map with the table, the numbering in the process map corresponds with the numbering in the table.

Collection of Rehabilitation Intensity data for patients with a diagnosis of stroke will be mandatory in Ontario as of next fiscal year. Since preparation time will be required to set up Rehabilitation Intensity data collection, we encourage hospitals to initiate this process and implementation of data collection **as soon as possible and prior to April 1st, 2015**.

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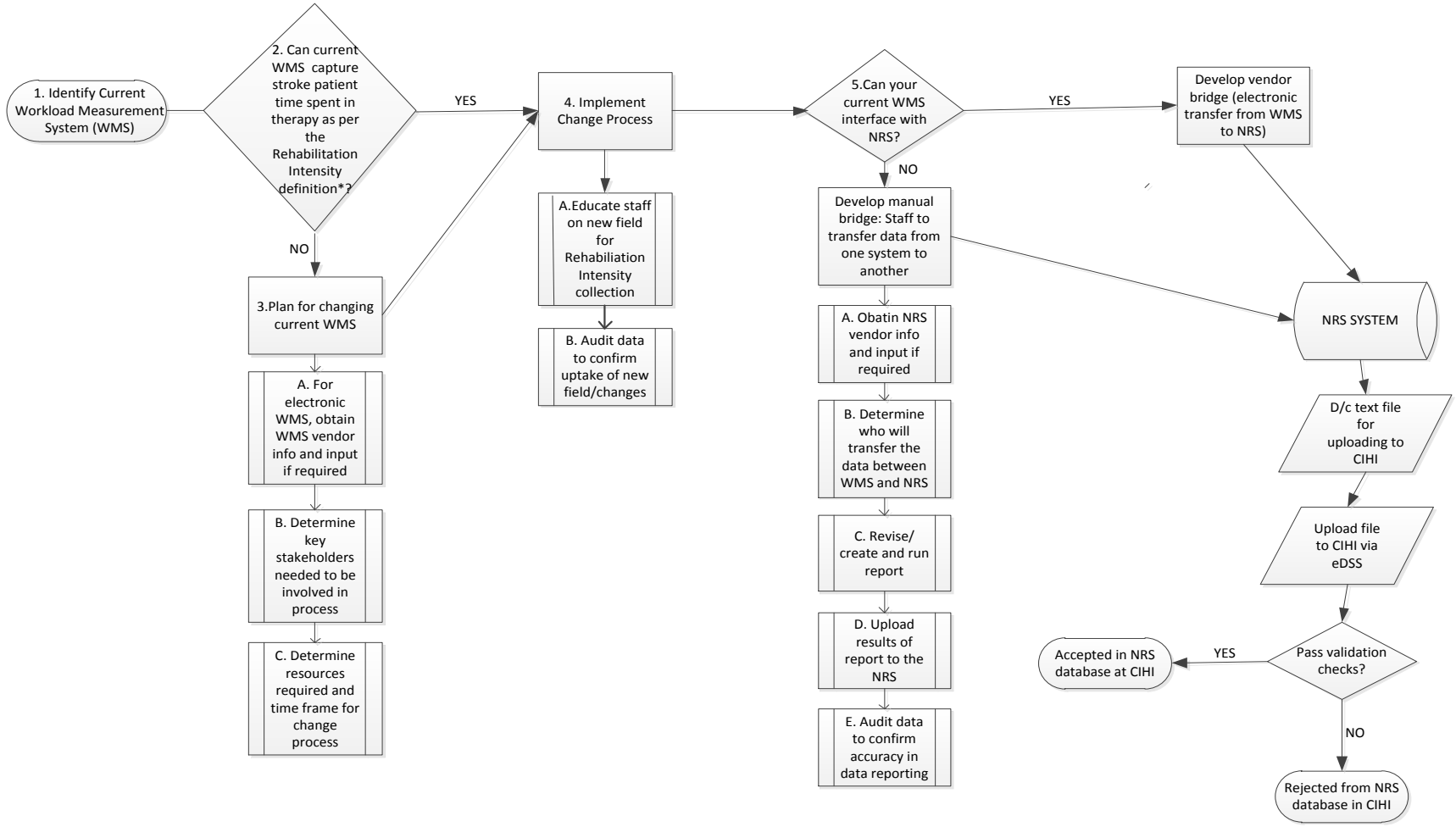

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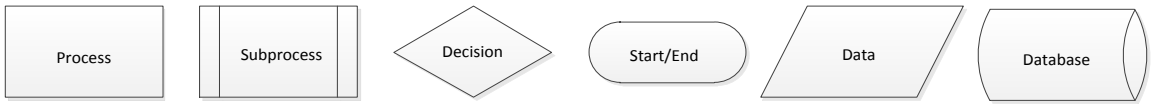

WMS: Workload Measurement System (paper or electronic)
NRS: National Rehabilitation Reporting System
CIHI: Canadian Institute for Health Information
eDSS: electronic Data Submission Services
*: see definition of Rehabilitation Intensity at the bottom of page 1 of the document

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Questions to Consider

The OSN Rehabilitation Intensity Working Group conducted interviews with key stakeholders in the early fall of 2014 to determine process steps that organizations have taken or will need to take to capture Rehabilitation Intensity data. These sample questions and responses are intended to be used as a guide when determining factors to consider during the development and implementation of this change process. In linking the questions below with the process map above, numbers for each section correspond to the numbers in the process map.

Questions to Consider	Comments from Stakeholder Organizations
1) What workload measurement system (WMS) do you currently have?	WMS tools vary across the province. Based on the Ontario Stroke Network (OSN) survey, the most commonly used workload measurement systems include eH3, Emerald, GRASP, InfoMed, and Meditech.
2) Can the current WMSs capture stroke patient time spent in therapy?	No, additional data fields will need to be created to support stroke Rehabilitation Intensity data collection. Additional field titles should reflect the definition in a meaningful way to front line staff; consider key words like patient time in face to face therapy, direct task specific therapy, etc. Clinical staff should be involved in the development and implementation of the data elements in WMS to support improved uptake and data quality.

Continued on the next page.

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Questions to Consider	Comments from Stakeholder Organizations
3) In order for your WMS to capture patient time spent in therapy, what changes were made or will be made to your existing WMS?	Most sites will have to collect additional data to what they are currently collecting for Management Information Systems (MIS) reporting. As MIS collects the therapist's time spent in all activities related to patient care, Rehabilitation Intensity data capture will involve the collection of the patient's time spent in face to face, one-on-one therapy. Accordingly, this will involve modifying the workload measurement screen to accommodate for both Rehabilitation Intensity and MIS data collection. For NRS reporting, some organizations will be generating 2 or more reports for stroke patients: one report will capture the Rehabilitation Intensity time for stroke patients and the other reports will capture therapist time for MIS requirements and other local reports.
3A) Do/did you have to contact your WMS vendor to adapt your WMS to support Rehabilitation Intensity collection?	Most sites are able to modify their own WMS screens and will not need to contact their WMS vendor.
3B) Who were or will be your key stakeholders for this change process at your facility?	For most sites, key stakeholders have included or will include: - Front line therapy staff including therapy assistants - Professional Practice Leaders - Unit Managers or Service Managers - Clinical Workload Coordinator or Manager of Clinical Informatics - NRS Coordinator - Information Technology (IT) - Decision Support - Various department managers, depending on changes required and budgets - WMS Vendor as needed - NRS Vendor as needed

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Questions to Consider	Comments from Stakeholder Organizations
3C) What resources were or will be required in order for this change process to occur? How long do/did you expect this change process to take?	This change process may require: Manager input as well as managerial support for allocating staff time to support this change process. Staff expertise and time (from therapy services, decision support, clinical informatics, information technology, finance, etc) will be needed to: - Adapt WMS fields using input from front line staff, managers and other key stakeholders; - Establish clear definitions for each field based on the provincial guidelines; update all training manuals and associated materials; - Train staff regarding the Rehabilitation Intensity definition and what it entails; - Train staff regarding revisions to the WMS; - Revise/create and run the reports; - Validate the information in the reports (quality assurance); - Transfer relevant data from these reports into the NRS and submit the NRS report to CIHI; and - Audit the change process and provide feedback to managers, clinicians, etc. Ongoing resource considerations: - Front line staff to capture and input new information required for each of the 6 professional areas (PT,OT, S-LP, PTA, OTA, CDA) - Report generation for Rehabilitation Intensity data for discharged stroke patients according to NRS definitions Inputting Rehabilitation Intensity data into the NRS discharge assessment Sites reported time frames from 3 months to 1 year to adapt current workload measurement systems and fully implement collection of patient time spent in therapy. Although technical change is not necessarily difficult, change management, education, and the reporting and validation of data will require effort and leadership.

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Questions to Consider	Comments from Stakeholder Organizations
4A) How do/did you envision education sessions being rolled out to support this change in data capture?	Some sites used short staff "huddles" for quick review of changes to workload measurement screens and guidelines, and others included ½ day staff education sessions, which involved gathering input from staff regarding the change process. Once the final screens and overall process was established, education to staff about WMS changes was felt to be quite straightforward. Most of the time will likely be spent with staff on the Rehabilitation Intensity definition and what it entails. Sites found that having site specific examples of their therapy model and how the provincial definition and examples apply would be helpful when training staff on the new field.
4B) Who is or will be responsible for internal auditing processes? When providing feedback to decision support staff, IT and clinicians, what will this process look like?	This will vary across sites but typically involves a NRS coordinator and/or a designated workload lead. Once the Unit or Service Manager receives the report, he/she will discuss the data with front line staff, decision support and/or information technology. Feedback will be shared with front line staff during regular team meetings; this will include dialogue on any process improvements.
5A) Do/did you have to contact your NRS vendor?	Although CIHI will modify the NRS software to support stroke Rehabilitation Intensity collection, hospitals will still need to complete standard NRS system testing prior to April 1st, 2015. Hospitals will also be required to create a report to abstract the stroke Rehabilitation Intensity data and input the data manually into the NRS software. If there are any questions related to the transfer and submission of Rehabilitation Intensity data into the NRS software, the team might contact the NRS vendor on an as needed basis.

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Questions to Consider	Comments from Stakeholder Organizations
5B, 5C and 5D) How will WMS data get entered or uploaded into NRS? By whom?	WMS data will be manually transferred to NRS by a designated team member from the unit, NRS Coordinator or coder. Data transfer will involve consulting with the NRS vendor, creating the report to support Rehabilitation Intensity data capture, running the report and entering the data into NRS. A designated staff member will submit the NRS text file to the CIHI web portal at specified timelines.
5E) Who is or will be responsible for internal auditing processes? When providing feedback to decision support staff, IT and clinicians, what will this process look like?	This will vary across sites but typically involves a NRS coordinator and/or a designated workload lead. Once the Unit or Service Manager receives the report, he/she will discuss the data with front line staff, decision support and/or information technology. Feedback will be shared with front line staff during regular team meetings; this will include dialogue on any process improvements.

Factors to Consider for Sustainability

- Inclusion of staff, manager(s) and senior leadership in the design and implementation of the Rehabilitation Intensity data elements within workload measurement.
- Use of data quality checks or audits to ensure: 1) accuracy in the data being collected by front line staff; 2) consistency in collection amongst front line staff; and 3) confirmation that each step of the change process is not impacting or skewing the data (i.e., not leading to translation errors or error in written code/formula).
- Provision of feedback/data to front line staff to ensure data accuracy and consistency of data collection.
- Utilization of OSN or regional stroke network resources.

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Frequently Asked Questions

1. **Are there other resources available to support the implementation of Rehabilitation Intensity data collection at our hospital?**
   In addition to this guide, the Ontario Stroke Network (OSN) Rehabilitation Intensity Working Group has developed a Communiqué and a Frequently Asked Questions resource for clinicians. Additionally, the OSN will work with CIHI to develop guidelines and other potential resources for organizations within Ontario to support implementation for April 1st, 2015. For copies of OSN resources, please contact your local Regional Rehabilitation Coordinator. For a geographical map of your Ontario Stroke System region and the contact information of your Regional Rehabilitation Coordinator, please refer to Appendices A and B.

2. **Who should I contact if I have questions regarding the Rehabilitation Intensity provincial definition and what it entails?**
   For any questions related to the OSN definition of Rehabilitation Intensity and what it entails, please contact your Regional Rehabilitation Coordinator. For a geographical map of your Ontario Stroke System region and the contact information of your Regional Rehabilitation Coordinator, please refer to Appendices A and B.

3. **Who should I contact if I have questions related to NRS data submission?**
   For questions related to NRS data submission, please contact your hospital's decision support team. Further information will be provided by CIHI as part of their regular change cycle.

4. **Who should I contact if I have questions related to MIS?**
   For questions related to MIS, please contact your hospital's clinical workload coordinator or workload lead. This role may sit within the finance department depending on the organization.

5. **How will I know when the NRS field is available for Rehabilitation Intensity data submission?**
   CIHI will inform organizations through their regular change cycle once the NRS data fields are available. In the meantime, hospitals are encouraged to initiate Rehabilitation Intensity data collection as soon as possible and prior to April 1st, 2015.

6. **When collecting Rehabilitation Intensity data for inpatient rehabilitation services, should organizations be collecting Rehabilitation Intensity data for outpatient services?**
   Although there is no current dataset for outpatient data, organizations could consider collecting stroke Rehabilitation Intensity data for outpatient services. By including this data in your WMS, this will enable your organization to collect outpatient data for local quality improvement purposes, as well as support potential future outpatient monitoring requirements.

7. **Will Rehabilitation Intensity data collection become mandatory for other diagnoses?**
   By April 1st 2015, Rehabilitation Intensity data collection will only be mandatory for stroke patients in designated rehabilitation beds within Ontario.

8. **If any additional programming is required for my WMS software, who will cover this cost?**
   Cost associated with modifications to WMS software are the responsibility of your hospital.

9. **What is a NRS vendor?**
   NRS Licensed vendors provide software used by hospitals that are in compliance with NRS data collection. They provide the user interface for NRS data submission. Company names and product names that hospitals use may vary. Details of current NRS approved vendors can be found at the following link: http://www.cihi.ca/CIHI-ext-portal/internet/en/document/standards+and+data+submission/vendor+licensing/services_nrs_vendortest

This resource guide was developed by the OSN Rehabilitation Intensity Working Group on December 12th, 2014. Members of this group include: Beth Linkewich (Chair), Jenn Fearn, Ruth Hall, Shelley Huffman, Amy Maebrae-Waller, Judy Murray, Sylvia Quant, Donelda Sooley, Janine Theben, Jennifer White, and Deb Willems.

References

1. Quality-Based Procedures: Clinical Handbook for Stroke, Health Quality Ontario & Ministry of Health and Long-Term Care, 2013.
2. The Rehabilitation Intensity definition was developed through literature review, expert consensus, and stakeholder engagement, and was approved by the Ontario Stroke Network Stroke Reference Group.
3. Ontario Stroke Network Stroke Reference Group, 2012.
4. Meyer, M., O'Callaghan, C., Kelloway, L., Hall, R., Teasell, R., Meyer, S., Allen, L., Leci, E. (2012).The Impact of Moving to Stroke Rehabilitation Best Practices in Ontario. Final Report.

List of Appendices:

Appendix A: A Geographical map of Ontario Stroke System (OSS) regions

Appendix B: Contact information of each regional rehabilitation coordinator

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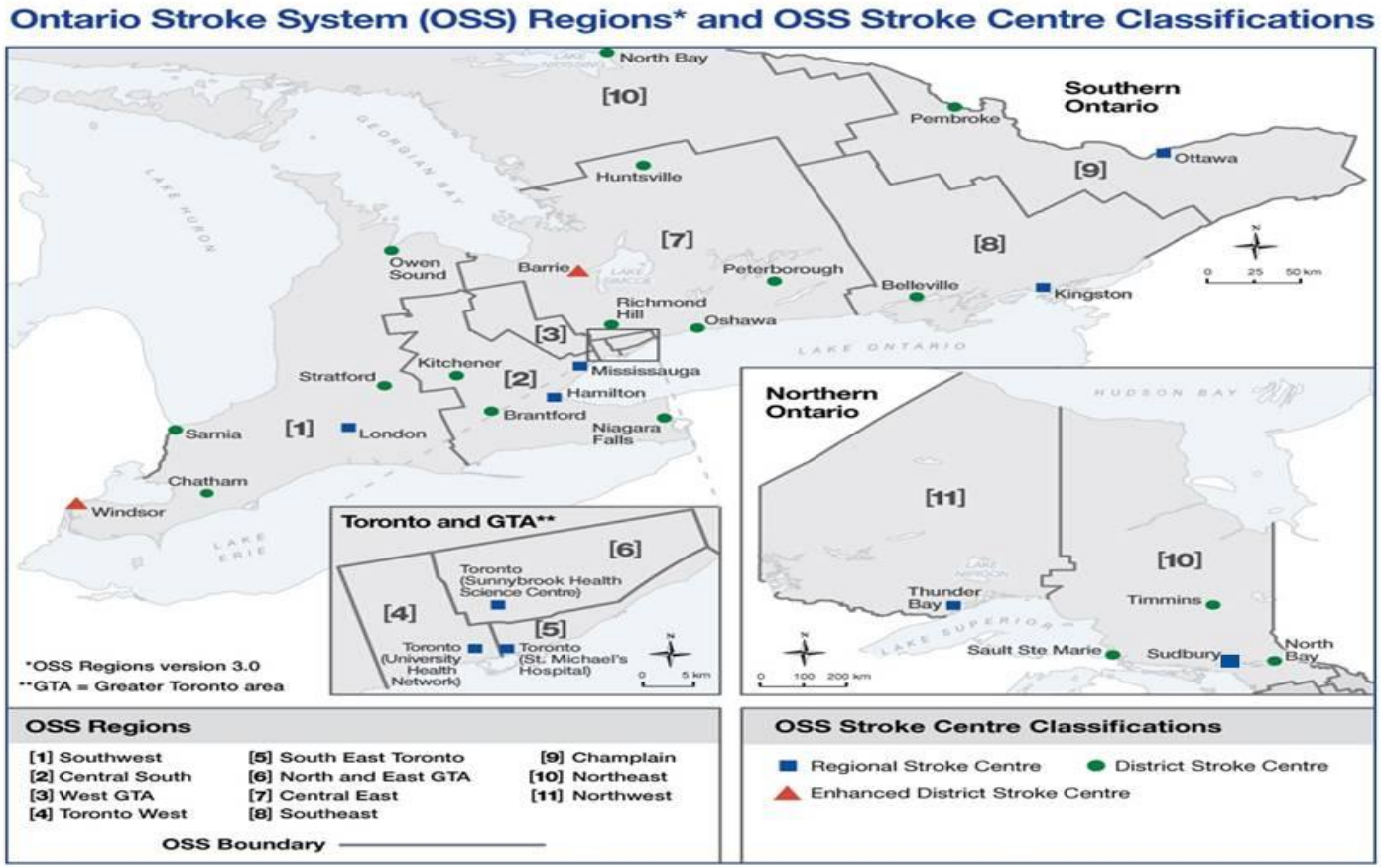
Appendix A: A Geographical map of Ontario Stroke System (OSS) regions.



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Appendix B: Contact information of each Regional Rehabilitation Coordinator.

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