

Rehabilitation Intensity in Ontario: What do we know so far?

Elizabeth Linkewich^{1,2,3}, Ryan Metcalfe⁴, Ruth Hall^{5,6}, Sylvia Quant^{1,2,3}

Background

Stroke Quality-Based Procedures recommend a minimum of three hours of one-on-one, face-to-face therapy per patient day in inpatient rehabilitation.¹ To measure the amount of rehabilitation intensity (RI)*, rehabilitation time has been collected in the National Rehabilitation Reporting System (NRS) for inpatient stroke patients in Ontario since April 2015.

Through collaborative efforts from CorHealth Ontario (formally known as the Ontario Stroke Network), the Canadian Institute for Health Information (CIHI) and the Ontario Ministry of Health and Long-Term Care (MoHLTC), the first year focused on improving data quality, while the second year focused on optimizing facility-level resource allocation to improve RI provision. Clinician feedback suggests that stroke-focused (SF) teams² provide better coordination of therapies to enhance RI.

Purpose: To report data quality, the provision of RI, and the impact of SF teams on RI within the past two years.

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.

The above definition was developed through literature review, expert consensus, and stakeholder engagement, and was approved by the Ontario Stroke Network Stroke Reference Group.

Methods

Ontario stroke (RCG=1) discharges taking place in 2015-16 and 2016-17 and submitted to the NRS by May 2017 were analyzed using descriptive statistics. Discharges with invalid values (e.g., 99999), total rehabilitation time equal to zero minutes across all provider types, active rehab length of stay (ALOS) of zero days, and/or daily RI > six hours/day were excluded.

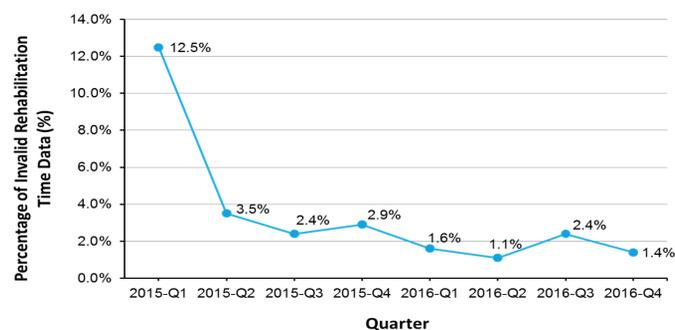
Inpatient rehabilitation programs and integrated stroke units were categorized as either SF or Mixed teams for comparison purposes. SF teams involve rehabilitation professionals who focus on providing stroke care for patients who are co-located on a stroke unit.² Mixed teams were any teams that were not SF.

Results

1) Rehabilitation Time Data Quality

- Within the past two fiscal years (2015-16 and 2016-17), ~97% (N=10427) of NRS discharge cases had valid rehabilitation time data.
- Proportion of discharge cases with invalid data has decreased over time (see Figure 1). However, much variation exists across Local Health Integration Networks (LHINs), ranging from 0.0% to 17.3% (data not shown).

FIGURE 1: Percentage of Invalid Rehabilitation Time Data (%)

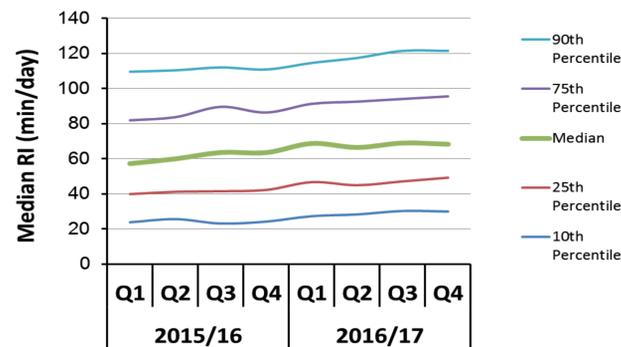


Results cont'd

2) Provision of Rehabilitation Intensity

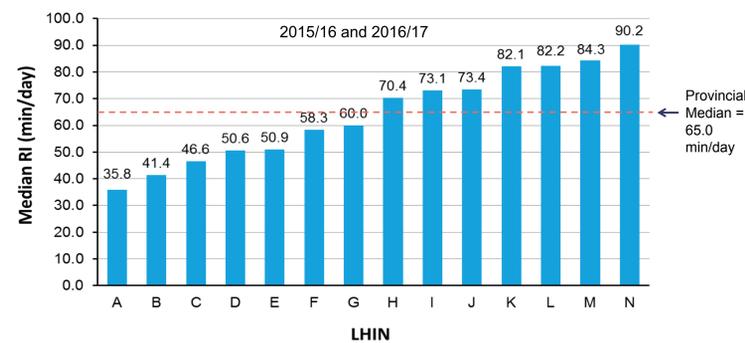
- Median RI improved slightly from last year with 61.5 min/day for 2015/16 and 68.2 min/day for 2016/17. There was an overall increase of 11.0 min/day from Q1 2015/16 (57.3 min/day) to Q4 2016/17 (68.3 min/day) (see Figure 2).

FIGURE 2: Median RI per Quarter for 2015-16 and 2016-17



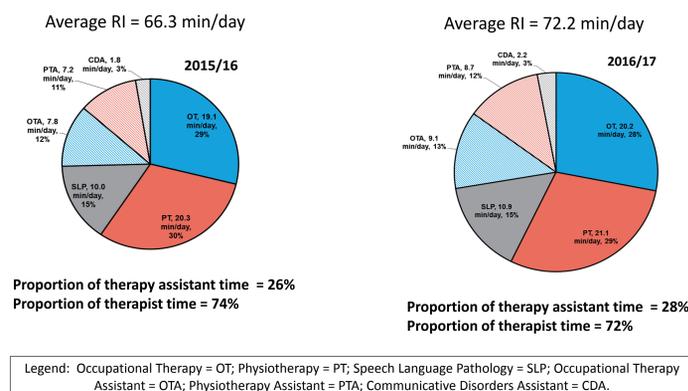
- Despite an increase in the median RI over time, there is wide variation in the minutes of therapy provided across LHINs, from 35.8 min/day to 90.2 min/day (see Figure 3).

FIGURE 3: Variation in Median RI Across LHINs



- When examining the amount of RI minutes provided by each professional group, the distribution of average RI minutes was similar between the two years (see Figure 4).
- Proportion of therapist time (OT, PT, and SLP) to therapy assistant time (OTA, PTA, and CDA) was also similar between the two years. Therapy assistant time was less than 1/3 of the total RI for all six professional groups. There was also a slight increase in therapy assistant time in the second year (see Figure 4).

FIGURE 4: Distribution of Average RI by Professional Group

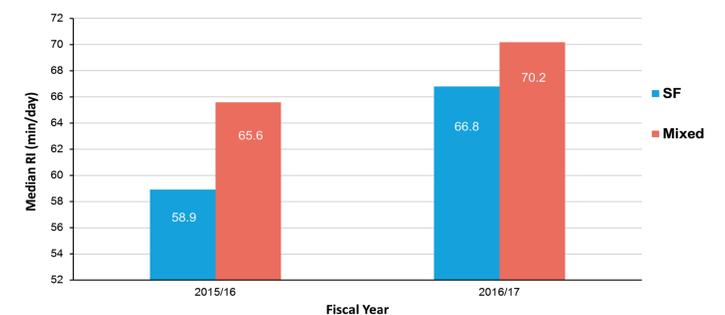


Results cont'd

3) Difference in RI between Stroke-Focused and Mixed Rehabilitation Teams

- Although RI minutes increased for both SF and Mixed teams since last year, median RI was lower for SF teams than Mixed teams (see Figure 5).

FIGURE 5: Median RI for SF and Mixed Teams



- There were no notable differences in age, FIM® Instrument scores, length of stay measures or RPG groups between SF and Mixed teams.

Conclusion

Within the past two years, minutes of face-to-face goal directed therapy (RI) has increased in Ontario. Provincial improvements in data quality and RI provision have been the result of collaborative efforts between CorHealth Ontario, CIHI, the LHINs, and rehabilitation hospitals and integrated stroke units across Ontario.

Median RI in SF teams was less than mixed teams, which is incongruent with clinician feedback on the benefits of SF teams in improving the coordination of therapies to enhance RI.

Further efforts are needed to strive towards the stroke best practice of 180 minutes of daily face-to-face therapy. Further study is needed to better understand the impact of organizational factors on RI to enable more targeted approaches to enhance RI.

References

1. Health Quality Ontario; Ministry of Health and Long-Term Care. Quality-based procedures: clinical handbook for stroke (acute and postacute). Toronto: Health Quality Ontario; 2015 December. 148 p. Available from: <http://www.hqontario.ca/Portals/0/Documents/evidence/clinical-handbooks/community-stroke-20151802-en.pdf>.
2. Hall RE, French E, Khan F, Zhou L, Linkewich B, Willems D, Huffman S, Sooley D, Pagliuso S, O'Callaghan C, Levi J, Bayley M. Ontario Stroke Evaluation Report 2016: A Focus on Stroke Rehabilitation. Toronto, ON: Institute for Clinical Evaluative Sciences; 2016. Available from: <https://www.ices.on.ca/flip-publication/Ontario-Stroke-Evaluation-Report-2016/index.html>.

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