



Backgrounder: Stroke Unit Care Improves Outcomes

Rationale:

Stroke units facilitate quality, cost-effective and efficient care as well as improve patient and system outcomes. Patients who receive stroke unit care are more likely to survive, return home, and regain independence as compared to those who receive less organized conventional care.¹

Stroke unit care:¹

- reduces death and disability in all stroke patients by as much as 30%
- results in shorter hospital length of stay (LOS)
- is cost effective
- reduces the likelihood of requiring long term care

Best practice recommends that all patients admitted to hospital with stroke or TIA should be cared for on a stroke unit.

A **stroke unit** is defined as a specialized, geographically defined hospital unit dedicated to the management of stroke patients and staffed by an interprofessional stroke team with a specialized interest in stroke care.^{1,2}

Admission to a stroke unit facilitates quality stroke care demonstrated by early prevention, recognition and management of post-stroke complications (e.g., pneumonia, urinary tract infections, venous thromboembolism, pain, progressing stroke, falls and pressure sores);³ monitoring and early treatment of hypoxia, blood glucose abnormalities, fever and dehydration; early assessment of neurological impairment; early and comprehensive diagnostic testing; early screening and management of dysphagia; early mobilization; early identification of rehabilitation needs and functional goals; early discharge planning and patient and caregiver education/training.¹

The team should consist of healthcare professionals including physicians, nurses, occupational therapists, physiotherapists, speech-language pathologists, social workers, and clinical nutritionists (dietitians).² Members should also include: pharmacists, discharge planners or case managers, (neuro) psychologists, palliative care specialists, recreation and vocational therapists, spiritual care providers, peer supporters and stroke recovery group liaisons.²

Early access to a stroke unit is an effective, proactive approach that saves lives and improves outcomes.

Members of the interprofessional team collaborate, communicate and work together along collegial lines to improve stroke care. Stroke unit care should include daily or biweekly patient care rounds with the interprofessional stroke team to conduct case reviews, discuss patient management issues, family concerns or needs, and discharge planning.² Staff members should have access to regular professional development related to stroke care and prevention.¹

Challenges:

Not all patients have equal access to stroke unit care. In 2010-2011, only 38.3% of stroke or TIA patients were treated on an acute stroke unit at any time during their inpatient stay.⁴ The Ontario Stroke Network's goal is to double the rate of stroke unit utilization by 2016⁵ and work is ongoing towards achieving the provincial benchmark of 87.5%. A collaborative, organized, regional approach among hospitals to cluster patients with stroke at designated sites is needed to achieve these targets. A critical mass of ischemic stroke patients is an important consideration. According to the Quality-Based Procedures (QBP): Clinical Handbook for Stroke⁶ released in January 2013 by the Ministry of Health and Long Term Care (MOHLTC) "to optimize outcomes and efficiencies, stroke volumes should be at least 165 ischemic stroke patients per year per organization."⁶ Higher stroke volumes have been found to be associated with lower stroke mortality,^{6,7,8} as well as higher quality of early stroke care and reduced hospital bed-day use.⁹ Based on best practices, the majority of a patient's LOS should be on a stroke unit. Therefore, the QBP Clinical Handbook for Stroke recommends that the percentage of stroke/TIA patients treated on a stroke unit for at least 80% of their length of stay (LOS) be monitored as a performance indicator.⁶

Opportunity for change:

The MOHLTC states that QBPs are an integral part of Ontario's Health System Funding Reform (HSFR) and a key component of Patient-Based Funding. Ontario's HSFR has been identified as an important mechanism to strengthen the link between the delivery of high quality care and fiscal sustainability. An important recommendation in the QBPs: Clinical Handbook for Stroke⁶ specifically states "patients should be admitted to a specialized, geographically defined hospital unit dedicated to the management of stroke patients".⁶

Increasing stroke unit utilization will require a collaborative, coordinated and organized regional approach

For more information, please contact the:

Ontario Stroke Network at www.ontariostrokenetwork.ca or info@ontariostrokenetwork.ca

¹ Casaubon, L. K., Suddes, M., on behalf of the Acute Stroke Care Writing Group. (2013). *Chapter 4: Acute inpatient stroke care*. In Lindsay M. P., Gubitza, G., Bayley, M., and Phillips, S. (Editors) on behalf of the Canadian Stroke Best Practices and Standards Advisory Committee. *Canadian best practice recommendations for stroke care*. Ottawa, ON: Heart and Stroke Foundation of Canada, and the Canadian Stroke Network.

² In Lindsay, M. P., Suddes, M., Gubitza, G., Bayley, M., and Phillips, S. (Editors) on behalf of the Canadian Stroke Best Practices and Standards Advisory Committee. (2013). *Taking action towards optimal stroke care*. Ottawa, ON: Heart and Stroke Foundation of Canada and the Canadian Stroke Network.

³ Indredavik, B., Rohweder, G., Naalsund, E., & Lydersen, S. (2007). Medical complications in a comprehensive stroke unit and an early supported discharge service. *Stroke*, 39(2), 414-420.

⁴ Hall, R., Khan, F., O'Callaghan, C., Kapral, M. K., Hodwitz, K., Fang, J., Bayley, M. (2012) *Ontario stroke evaluation report: Prescribing system solutions to improve stroke outcomes: Ontario Stroke Report Card, 2010/11*. Toronto, ON: Institute for Clinical Evaluative Sciences.

⁵ Hall, R., Khan, F., O'Callaghan, C., Kapral, M. K., Hodwitz, K., Kapila, S., Li, S., Zhou, L., & Bayley, M. (2013). *Ontario stroke evaluation report: Spotlight on secondary stroke prevention and care*. Toronto, ON: Institute for Clinical Evaluative Sciences.

⁶ Health Quality Ontario. (2013). *Quality-based procedures: Clinical handbook for stroke*. Toronto, ON: MOHLTC.

⁷ Saposnik, G., Baibergenova, A., O'Donnell, M., Hill, M. D., Kapral, M. K., & Hachinski, V. (2007). Hospital volume and stroke outcome. *Neurology*, 69, 1142-1151.

⁸ Hall R, Fang J, Hodwitz K, Bayley M. (2012). Does the Volume of Stroke/TIA Admissions Relate to Clinical Outcomes in the Ontario Stroke System? *Stroke*, 43, A3954.

⁹ Svendsen, M. L., Ehlers, L. H., Ingeman, A., & Johnsen, S. P. (2012). Higher stroke unit volume associated with improved quality of early stroke care and reduced LOS. *Stroke*, 43, 3041-3045.