STROKE SERVICES BC
Provincial Health Services Authority

Stroke Services BC
Position Statement

Date of Decision: June 2017 **Anticipated Date of Review:** Spring 2019

Topic: Definition of a 'hot stroke'

Summary Recommendation: In BC, a person is deemed to be having a "Hot Stroke" if BC EHS arrives to the patient within 6 hours of last seen normal or wake-up stroke. A similar definition can be applied to any site where an individual arrives if not by EHS, as well as to those experiencing stroke in-hospital.

Context for Change:

A wide variety of definitions existed across BC about what was considered a 'hot stroke'. This designation has important implications for EHS transport and hospital response to pre-notification. It also reflects the medical urgency of a stroke in progress, even if the individual doesn't travel by ambulance or experiences their stroke while already in hospital. Coming to a provincial consensus on 'hot stroke' would ensure consistent communication and understanding across the many stakeholders involved in hyperacute stroke care. With the evolving landscape of hyperacute stroke care and the introduction of endovascular therapy as standard of care, it was critical to revise this definition and make it consistent.

Description:

"Hot Stroke" is a term that is used colloquially to describe someone experiencing a stroke in progress. It is generally in the first few hours from symptom onset or recognition, but the definition was widely variable across BC. Having a consistent definition that is commonly understood helps to define and reinforce treatment urgency in stroke, influences bypass and transport decisions, and has impact on how teams react to pre-notification of a person coming to the hospital with symptoms of stroke. A 'hot stroke' definition, in combination with consistent stroke screening in the field, pre-notification to receiving hospitals, rapid access to comprehensive imaging and early access to evidence-based medical therapies for stroke can significantly improve stroke care for British Columbians.

This definition does extend beyond the 4.5 hour window in which tPA (the clot-busting drug for ischemic stroke) can be provided; this is intentional and recognizes the increasing opportunity for endovascular therapy ([EVT] mechanical clot-retrieval). EVT is currently recommended out to six hours, but recent evidence is continuing to expand that window with some patients benefiting from EVT up to 24 hours after symptom onset. As the literature around hyperacute interventions for stroke evolves, this definition of "hot stroke" will also evolve.

Evidence:

The Canadian Stroke Best Practice Recommendations (update 2015) recommend endovascular therapy (EVT) up to 6 hours from symptom onset or last seen normal. Since these recommendations were published, additional research has been released, indicating that a selected group of patients can still benefit from EVT up to 24 hours from symptom onset/last seen normal[1,2]. The next iteration of Canadian Stroke Best Practice Recommendations (due out later in 2018) is anticipated to increase the time window for EVT to 24 hours.

Rationale/Consensus:

The recent shifts in the landscape of hyperacute stroke therapy to include EVT have prompted significant review of systems that could improve access to care for this life- and disability-saving procedure. While tPA remains a viable treatment option out to 4.5 hours (earlier is better), extending the hot stroke window to six hours will ensure that as many people potentially appropriate for EVT can be identified, without unduly burdening the system. The state of evidence in this area continues to rapidly evolve and it's possible this definition of 'hot stroke' will continue to evolve as well. When in doubt, it is more important to treat new symptoms of stroke as medical emergency with potential to treat rather than focus solely on the time. This is particularly important for people with symptoms suggestive of large vessel occlusion. SSBC leadership, in partnership with clinical leaders across the province and country, will continue to monitor the evolving literature and will review the provincial stroke definition as needed.

Approved by:

- Hyperacute Focus Table
- Provincial Stroke Steering Committee

Considerations:

It is of critical importance to have a consistent interpretation of 'hot stroke', even in places where people are arriving at sites that do not provide EVT. With the ever expanding time window for selected patients, we all need to work together to ensure that all patients potentially eligible for acute intervention, even if significant distances need to be considered, are urgently transported and assessed. While this does create additional system burden and potential increase in patient volumes, the benefit to patients (decreased mortality, decrease in long-term disability) outweighs the risk of the increased burden on the system.

For questions, please contact:

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[1] Noguiera et al (2018). Thrombectomy 6 to 24 hours after stroke with a mismatch between deficit and infarct. *The New England Journal of Medicine*. 378: 11-21.
[2] Albers et al (2018). Thrombectomy for stroke at 6 to 16 hours with selection by perfusion imaging. *The New England Journal of Medicine.* 378: 708-718.