STROKE SERVICES BC
Provincial Health Services Authority

Stroke Services BC
Position Statement

Date of Decision: April 19, 2026 **Anticipated Date of Review: Spring 2028**

Topic: Provincial Stroke Imaging Protocol

Summary Recommendation: All patients considered a 'Hot Stroke' should receive non-contrast CT (NCCT), CT angiogram (CTA), and multiphase CT angiogram (mCTA) as first line imaging. Patients presenting 6-24 hours from last seen normal (LSN) who may be eligible for extended-window treatment should receive NCCT, CTA, and CT Perfusion (CTP) as first line imaging.

Context for Change:

Hyperacute stroke therapy is reliant on imaging to support clinical decision making. Since this position statements first publication in 2018, significant progress has been made in ensuring all Hot Stroke patients receive NCCT, CTA, and mCTA *together* as the first line of imaging. With the expanded treatment windows in select patients, those arriving 6-24 hours from LSN, wake-up stroke, or unknown onset, who may be eligible for late-window treatments should receive NCCT, CTA and CTP as first line imaging to support clinical decision making. It is important that the full imaging package (NCCT, CTA, and mCTA or CTP) is done *together* as first line imaging to avoid significant delays to treatment.

Description:

All patients should receive imaging with a door to scan time of under 15 minutes. The literature on the window for hyperacute stroke therapies is evolving and the definition of a hot stroke may continue to evolve. As a general principle, people with any new, sudden onset, severe focal neurological deficit associated with a specific vascular area presenting within 24 hours of last seen normal, have woken up with symptoms, or have unknown onset should be immediately and thoroughly imaged to support treatment decision making.

Note: in line with the Canadian Stroke Best Practice Recommendations (2022), if there are signs of hemorrhage on NCCT, CTP is not required, and CTA should be completed based on clinical judgement.

Evidence:

The Canadian Stroke Best Practice Recommendations (update 2022 and interim update 2025) recommend that all patients with suspected acute stroke should receive brain and vascular imaging with CT or MRI. This is further categorized based on LSN time. Patients presenting within 6 hours of LSN should receive immediate NCCT and CTA arch to vertex. Patients presenting 6-24 hours from LSN, or those who have woken up with symptoms or have an unknown onset time who may be eligible for extended window treatment should receive immediate NCCT, CTA and CTP. mCTA is recommended as part of first line imaging to assess pial collateral vessels. In addition, it is recommended ASPECTS (or similar validated tool) should be used to assist in decision making for EVT.

It should be noted that vascular imaging is not only useful in determining eligibility for EVT but also plays a role in the management of TIA/minor stroke as well as hemorrhagic stroke.

Rationale/Consensus:

The axiom "Time is Brain" reflects the well-established principle that earlier treatment preserves more brain tissue and improves patient outcomes, driving the emphasis of rapid imaging. This also includes ensuring the *right* imaging is performed and done so together. BC-based experiences show that doing a NCCT first, returning to the emergency department and then subsequently deciding to do CTA/mCTA results in delays between 15 minutes and 2 hours or more. These delays have significant impact on the individual experiencing the stroke. While the increased imaging will pose some additional burden to the system, particularly in radiology, the benefit of reducing time to treatment and reducing the potential brain damage an individual suffers substantially outweighs that risk.

Considerations:

We understand that all CT scanners in BC have the technical ability to perform CTA and mCTA but that not all sites necessarily have the human resources required to offer those services at all or consistently. These sites will need to critically evaluate their role in hyperacute stroke care, the human resources they can reasonably attain in order to support stroke care, their on-call processes to reduce delay to imaging if technologists are not available on-site 24/7, and potentially the need for EHS to bypass their site if they cannot deliver the standard imaging care required for hyperacute stroke treatment.

The use of AI-enabled imaging software, specifically RapidAI, to support decision-making in acute stroke care has been implemented in several centres across British Columbia. At present, the Canadian Stroke Best Practice recommendations do not provide specific recommendations regarding the use of artificial intelligence enabled neuroimaging, however there is a growing body of evidence that CT perfusion and AI related software can assist clinicians in selecting patients who would benefit from both late window thrombolysis and thrombectomy.

As the evidence in this area evolves, SSBC leadership, in partnership with clinical leaders across the province and country, will review and update this position statement as needed.

Approved by:

- SSBC Clinical Advisory Group
- Executive Stroke Steering Committee

For questions, please contact:

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