Does the province of Quebec need new thrombectomy centres? Guiding principles based on the evidence

**BACKGROUND**

Ischemic stroke with large vessel occlusion is a major contributor to mortality and disability. Endovascular therapy (EVT or thrombectomy) is highly effective and currently available in five Quebec centres. As part of a ministerial mandate to make recommendations concerning the organization of care for stroke in Quebec, we developed principles to guide decision-making concerning the need for new EVT centres.

**METHODS**

The principles were developed on the basis of a synthesis of information from different sources:

**SCIENTIFIC DATA**
- Guidelined
- HTA reports
- Real world evidence from an analysis of medline, openaccess data and a field evaluation

**CONTEXTUAL DATA**
- Consultations with clinical experts
- Consultations with healthcare managers
- Consultations with stakeholders

**EXPERIMENTAL DATA**
- Consultations with stroke patients
- Consultations with clinical experts
- Consultations with clinical teams at EVT and non-EVT centres

**FOUNDING PRINCIPLES**

Founding principles for the recommendations:
- A global vision of Quebec’s healthcare system, in which the stroke care continuum operates;
- Equitable access to care and services;
- Efficient use of the system’s currently existing structures and resources before planning the addition of new EVT programs;
- Consideration of the patient’s perspective in the offer of services, notably with regard to preferences and life objectives.

**RESULTS**

**ACCESSIBILITY TO EVT BY HEALTH REGION IN QUEBEC**

(2017-18)

- Use of EVT increases with increasing proximity to an EVT centre but appears suboptimal in all regions of Quebec.

**KEY MESSAGES FROM THE LITERATURE**

- EVT efficacy is time-dependent: each hour of delay before EVT reduces the chance of having less disability by 5%.
- The evidence indicates that ambulance transport of up to 2 hours in duration directly to an EVT centre should be favoured.
- EVT centre volume is essential for maintaining clinical expertise: the minimum recommended volumes are 36 to 50 EVT per year.
- Timely transfer to a stroke unit after EVT treatment is important.

**GUIDING PRINCIPLES TO ASSESS NEED FOR A NEW EVT CENTRE**

- EVT access within the region
- Transport time to existing EVT centres
- Expected patient volume within 2 hours of road transport
- Impact on volume of existing EVT programs
- Availability of long-term financial and administrative support
- Availability of clinical expertise and a stroke unit
- Demonstrated quality of stroke care

**THE NEED FOR A NEW EVT CENTRE SHOULD CONSIDER THE FOLLOWING QUESTIONS**

- Is there sub-optimal EVT access within the region?
- Is the transport time to an existing EVT centre > 1 hour?
- What is the expected patient volume within 2 hours of transport of the proposed centre?
- How would the new centre impact the volume of existing EVT programs?
- Is long-term financial support for the program available?

**VOLUME OF EVT ± t-PA BY CENTRE**

(2017-18)

- Total volume of EVT ± t-PA in Quebec:
  - 375 patients
- Range in annual operator volume at EVT centres: 5–82

**PROCESSES OF CARE: QUEBEC VS USA REGISTRY VS RCTs**

**CONCLUSION**

Assessing the need for new EVT centres is complex and requires consideration of multiple principles in collaboration with inter-disciplinary experts. Increasing access through new programs should not come at the expense of diminished volume of patients at existing centres.

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**REFERENCES**


**PROCESSES OF CARE: QUEBEC VS USA REGISTRY VS RCTs**

- Quebec: Operational transfer 62%
- USA: 20% (2017-18)
- RCTs: 36%