

Coordinated implementation and evaluation of promising stroke therapy

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BACKGROUND

One important objective at the *Institut d'excellence en santé et en services sociaux* (INESSS) is to guide the implementation of promising new technologies into Québec's healthcare system. A comprehensive evaluation framework was recently developed that takes into account the dynamic and iterative nature of the life cycle of such technologies. This framework is presently being used to inform the decision-making process concerning the use of thrombectomy for treating ischemic stroke.



DECISION-MAKING NEED

What structural and organizational factors will optimize use of thrombectomy for the treatment of ischemic stroke in Québec?

SCIENTIFIC DATA

Systematic literature review:

- ▶ International guidelines
- ▶ Systematic reviews
- ▶ Primary studies
- ▶ Registries
- ▶ Grey literature

JAMA | Original Investigation
Time to Treatment With Endovascular Thrombectomy and Outcomes From Ischemic Stroke: A Meta-analysis

JAMA. 2016;316(12):1279-1288. doi:10.1001/jama.2016.13647

CONTEXTUAL (REAL WORLD) DATA

Field evaluation of 4 Québec stroke networks:

- ▶ Volume
- ▶ Patient characteristics
- ▶ Trajectory of care
- ▶ Processes of care
- ▶ Clinical outcomes

INESSS Portrait of care for Québec and each individual stroke care network

Total in Québec n = 610	A n = 287	B n = 92	C n = 229	D n = 202
Age	72	72	72	72
NIHSS	16	16	16	16
Mode of arrival	69.8%	40.8%	69.8%	40.8%
Median Sx onset to tertiary door	65 min	60 min	65 min	60 min

SCIENTIFIC DATA

DATA SYNTHESIS

CONTEXTUAL DATA

EXPERIENTIAL DATA

EXPERIENTIAL DATA

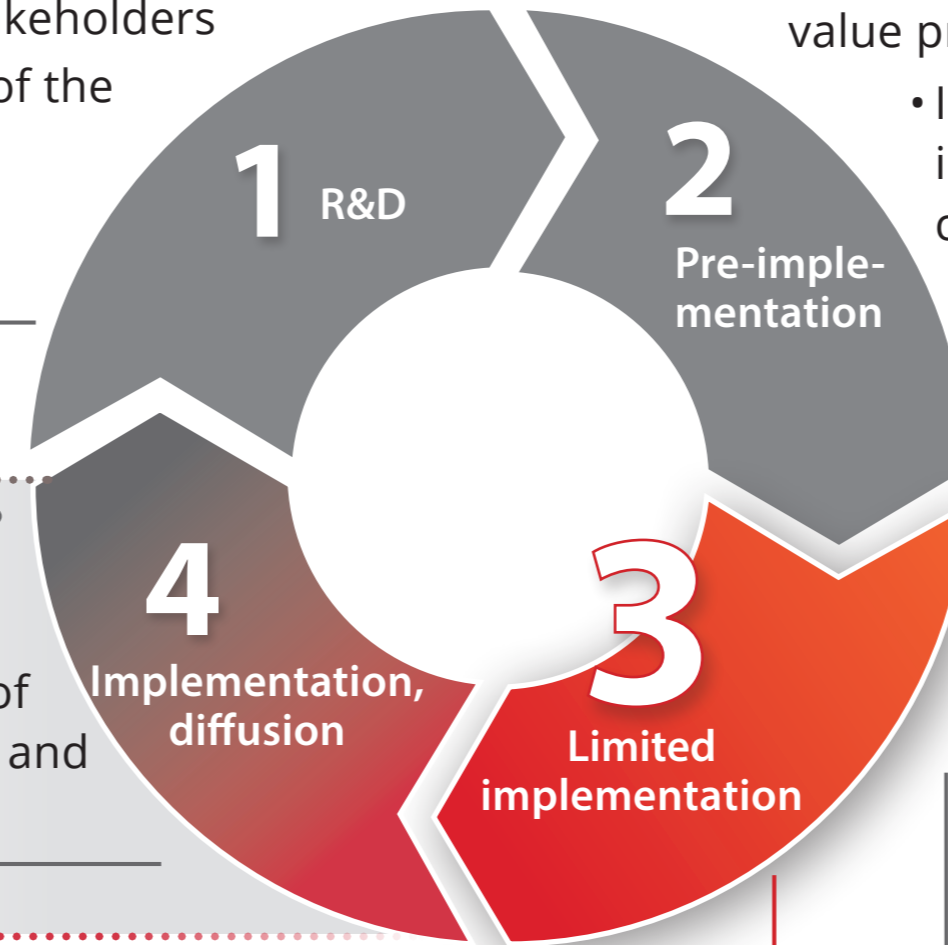
Consultation with:

- ▶ Clinical teams
- ▶ Interdisciplinary clinical committee
- ▶ Patient committee
- ▶ Professional association committee
- ▶ Ministerial clinical advisory committee

EVALUATION PROCESS FOR NEW INNOVATIVE TECHNOLOGIES AT INESSS

Promising technology for treatment of an unmet need

- Early dialogue between relevant stakeholders
- Evaluation of the promise
- Evaluation criteria



- Evaluation of the value proposal
- Identification of implementation challenges anticipated

The NEW ENGLAND JOURNAL of MEDICINE
5 RCTs
2015

Ontario Health Quality Ontario
Mechanical Thrombectomy in Patients With Acute Ischemic Stroke: A Health Technology Assessment

- Real world evidence
- Evaluation of real benefit and optimal use

- Can we replicate results in the real world?
- What are the implementation challenges?

RCT meta-analysis vs Real-world Québec*

Patient characteristics	RCTs N=634	Québec N=397
Age ≥80 years	16.9%	27.3%
Prestroke mRS ≤2	98.1%	88.5%
Mean NIHSS (stroke severity)	16.8	16.3
Mode of arrival:		
Direct admission	69.8%	40.8%
Interhospital transfer	30.2%	59.2%
Median Sx onset to tertiary door:		
Direct admission	65 min (44-116)	60 (45-84)
Interhospital transfer	207 min (160-256)	231 (190-293)

*Saver et al. (2016) vs preliminary analyses for Québec

CONCLUSION

This comprehensive, long-term evaluation process of thrombectomy is a concrete example of how the use of an innovative, disruptive technology can be optimized within a learning healthcare system. An approach that includes feedback of real world results to existing programs facilitates continued evidence generation and decision-making to guide broader and equitable implementation of this new technology.

References

Saver JL et al. 2016. Time to Treatment With Endovascular Thrombectomy and Outcomes From Ischemic Stroke: A Meta-analysis. JAMA. 2016 Sep 27; 316(12): 1279-1288. doi: 10.1001/jama.2016.13647.

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