

## Methods, Progress and Interim Feasibility of the Co-TELE-SURGE Study: Preoperative and Postoperative Cognitive Trajectories in Older Patients with Deferred Surgery due to the COVID-19 Emergency

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### Background

Evidence suggests older patients experience significant changes in cognitive performance up to one year after surgery<sup>(1)</sup>. However, it is not clear whether these changes are a result of surgery or would have been expected as a continuation of a preoperative trend. COVID-19 contingency plans involved deferring elective surgeries, offering unique research opportunities<sup>(2)</sup>. This abstract's objective is to present the methods, progress and interim feasibility assessment of the Co-TELE-SURGE study, a prospective cohort study evaluating perioperative cognitive trajectories in  $\geq 100$  patients aged  $\geq 65$  waiting for elective non-cardiac surgery for  $\geq 6$  weeks during the COVID-19 pandemic.

### Method

In this multicentre, remotely conducted study, cognitive performance of participants is assessed at enrolment, monthly preoperatively ( $\geq 2$  assessments) and at 1,3,6, and 12 months postoperatively, using the Cogstate Brief Battery<sup>(3)</sup> a computer-based tool, including 4 tests based on playing cards, validated for self-administration also in older people<sup>(4)</sup>. The association of surgery with cognitive changes will be analyzed using an interrupted time-series approach<sup>(5)</sup>. Pain, mobility, and depressive symptoms are assessed at the same time points, and the associations between their trajectories and cognitive trajectories will be evaluated. Patient demographics and compliance to study procedures are here presented.

### Results

To date, the study is actively recruiting at four Canadian sites, with two additional sites awaiting ethics approval. A total of 208 participants have been identified so far through treating surgeons, out of whom 109 participants were enrolled. The mean age of enrolled participants is 73.4 years with 64% being male. They will undergo or underwent urological, orthopedic, general, spinal, bariatric, thoracic, vascular, and gynecological. 6 participants completed the study while 60 are currently active in the study. 43 patients discontinued study participation after consent, before completing the 1-year follow-up, for the following reasons: undergoing surgery earlier than expected, before baseline assessment (10); losing interest (10); technical difficulties (9); unresponsiveness (9), or personal reasons (5).

### Conclusion

Co-TELE-SURGE is a hypothesis-generating study using a novel approach to explore perioperative cognitive trajectories in older adults, and conducted fully remotely. Challenges to this approach have included difficult recruitment, unpredictability of surgery date, compliance to and technical issues with computerized cognitive assessments. Understanding such challenges will guide the design of future research on the role of surgery involving older adults and when remote assessment is preferable.

## References

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