



BACKGROUNDER

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## Transforming Brain Surgery through State-of-the-Art Robotics

### The Importance of Advanced Brain Surgery

The human brain is very complex, with a system that is quite delicate. Even with the protection offered by bone, strong tissues and fluids, the brain is susceptible to illness.

Neurosurgical procedures are extremely important for monitoring and treating epilepsy and eliminating or reducing seizures; providing deep brain stimulation to reduce tremors in people with movement disorders; performing biopsies for patients with suspected brain tumours, infections or disorders; and surgically removing deadly brain tumours.

These procedures are absolutely critical to patient care – both in terms of saving lives and in vastly improving a patient's quality of life, health and well-being.

Renishaw's Neuromate™ surgical robot enhances the safety and efficiency of brain surgery while improving patient outcomes through enhanced surgical accuracy.



### The Many Benefits of the Neurosurgical Robot

The benefits of the Neuromate robot include:

- **Decreasing patient wait times through improved efficiency, with the ability to complete two epilepsy surgeries in the time it currently takes to do one.** This means a potential increase of 25 per cent – which translates to 10 more patients per year receiving life-changing surgery.
- **Improved patient experience.** LHSC's Epilepsy Program team members will no longer need to apply a stereotactic frame prior to surgery (with patient awake) and won't need to perform awake intubation anymore – which greatly improves the patient experience.
- **Increasing surgical accuracy and patient safety through the robot's precision.** Because the Neuromate robot features advanced technology designed specifically for neurosurgery

(including medical image analysis software and neurosurgical planning software), surgeons are able to perform extremely complex brain procedures with enhanced precision and targeting.

The Neuromate robot makes brain surgery safer than ever before for patients and families in Southwestern Ontario, so patients can have their neurosurgical procedure without fear and look forward to a full recovery. Plus they will have a faster return to good health, work or school, and the people and activities they love.

- **Engaging in leading-edge research using the most advanced technology.** The acquisition of the Neuromate robot will allow Dr. Steven and his neurosurgery colleagues to conduct a study comparing the accuracy of the robot to the current system. This study could lead to evidence that robotic placement is safer and more accurate – which would then lead to more widespread use of the technology to benefit an even greater number of patients across the country.
- **Attracting and retaining the best and brightest trainees who are interested in working with a neurosurgical robot.** Use of the Neuromate robot is becoming the standard of care at leading epilepsy centres around the world. As the first robot of its kind in Ontario, the Neuromate robot will help LHSC nurture its team of highly skilled neurosurgeons and attract talented trainees from around the world to London. This next generation of leaders will facilitate innovative, life-saving care for patients and families in Southwestern Ontario.

