Dr Rania Ywakim and Dr Nathalie Gabra
Otolaryngology-Head and Neck Surgery
Lakeshore Hospital

February 23rd, 2025

Lakeshore Hospital Foundation
Montreal, Quebec

Dear Lakeshore Hospital foundation committee:

We are writing to request funding for the acquisition of an image guidance system system to enhance the safety and efficacy of endoscopic sinus surgeries at the Lakeshore General Hospital. This advanced technology is essential for improving patient outcomes, reducing surgical complications, and decreasing the necessity for revision surgeries, thereby leading to significant cost savings.

Background

Endoscopic sinus surgery is a delicate procedure that involves operating in close proximity to critical anatomical structures such as the optic nerve, carotid artery, and skull base. The complexity of this surgery is heightened in cases of distorted sinus anatomy, extensive sino-nasal polyposis, or when dealing with benign and malignant sino-nasal neoplasms. In such scenarios, the margin for error is minimal, and the consequences of inadvertent damage can be severe.

The American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS) endorses the intraoperative use of computer-aided surgery, commonly known as neuronavigation, in appropriately selected cases to assist surgeons in clarifying complex anatomy during sinus and skull base surgery. The AAO-HNS identifies several indications where an image guidance system is particularly beneficial, including:

- Revision sinus surgery
- Distorted sinus anatomy due to developmental anomalies, previous surgeries, or trauma
- Extensive sino-nasal polyposis
- Pathology involving the frontal, posterior ethmoid, or sphenoid sinuses
- Disease adjacent to critical structures such as the skull base, orbit, optic nerve, or carotid artery
- Cerebrospinal fluid rhinorrhea or conditions with skull base defects
- Benign and malignant sino-nasal tumors

Benefits of an Image Guidance System

Implementing an image guidance system in our operating rooms will provide real-time, three-dimensional guidance during surgery, enabling precise localization of anatomical landmarks and pathological tissues. This precision is crucial for:

- Enhancing surgical accuracy, thereby minimizing the risk of damaging vital structures
- Reducing intraoperative and postoperative complications
- Shorter surgical times
- Decreasing the likelihood of incomplete resections, which often lead to persistent disease and necessitate revision surgeries
- Improved Training and Education: An Image Guidance System can be a valuable tool for training new surgeons and for ongoing professional development, ensuring our hospital remains at the forefront of medical innovation.

By reducing the rate of complications and the need for additional surgeries, the adoption of an image guidance system technology will not only improve patient safety and satisfaction but also result in substantial cost savings for our healthcare system. Fewer complications and revision procedures translate to reduced hospital stays, lower utilization of medical resources, and decreased overall healthcare expenditures.

Cost
-Approximate cost of the system $150, 000-$180, 000
- Annual service contract $15,000
- Cost per case $200

Conclusion
In summary, the acquisition of an image guidance system is a strategic investment that aligns with our commitment to providing the highest standard of care. It will enhance surgical precision, improve patient outcomes, and contribute to the financial sustainability of our healthcare services. We respectfully request your support in securing the necessary funding for this critical technology.

Thank you for considering this proposal. We are available to discuss this request further at your convenience.

Sincerely,

Dr Rania Ywakim
Dr Nathalie Gabra