



Executive Summary



→ Nuclear Medicine

Introduction

The Nuclear Medicine Department at North Bay Regional Health Centre (NBRHC) is a critical component of Diagnostic Imaging, employing radioactive tracers for disease diagnosis and the monitoring of treatment. With a focus on early detection, the department plays a pivotal role in managing diverse medical conditions.

Current Challenges

NBRHC's Nuclear Medicine Department faces challenges stemming from aging equipment, heightened demand for SPECT/CT scans, and outdated technology. The existing SPECT/CT machine, nearing the end of its operational life, poses a concern with diminishing image quality, and replacement parts will be unavailable after December 2024. Additionally, the current department configuration does not align with the community's needs, leading to a significant demand disparity for SPECT/CT scans.

The rapid evolution of nuclear medicine technology, incorporating artificial intelligence (AI), underscores the need for an upgrade to enhance diagnostic capabilities and image quality.

The Solution

To address these challenges, we will transition from one SPECT/CT and two SPECTs to two technologically advanced SPECT/CTs that will help us meet growing demand, facilitate the adoption of theranostics and leverage the independent use of SPECT and CT components.

The Project

The estimated cost for the full upgrade is \$4.3 million, covering the required renovations and the acquisition of two new SPECT/CT machines. Two timeline scenarios are proposed, with the second incorporating a pause to spread expenses over three fiscal years. The addition of a second SPECT/CT machine sets the stage for the implementation of theranostics—a transformative strategy that merges therapy and diagnosis. This approach holds promise in various medical conditions such as prostate cancer, breast cancer, and thyroid disorders.

Our hospital is committed to providing high-quality, patient-centric care, and theranostics aligns with this goal by offering more personalized and precise medical solutions for patients in our community.



“Image quality with the current machine is diminishing, while our referral base is increasing. It’s an unsustainable model having only one SPECT/CT machine serving our community.”

Dr. Bola Sogbein, Radiologist

The Impact

Our patients will benefit from enhanced diagnostic accuracy, reduced wait times, decreased need for repeat visits, reduced radiation exposure, minimalized healthcare disparities for rural communities and reduced travel costs. This upgrade may also attract healthcare professionals through advanced medical technology.

SPECT/CT advancements, incorporating theranostics, can make a significant difference in our area communities. These advancements have the potential to transform healthcare in rural areas, making care more patient-centered, cost-effective, and accessible, while improving health outcomes.

Conclusion

Support for this project will propel the hospital into a new era of nuclear medicine, improving access to care and ensuring the ability to keep pace with technological advancements. This upgrade addresses current challenges and prepares NBRHC for the future of nuclear medicine. It drastically increases NBRHC’s ability to provide enhanced, patient-centric care, close to home.