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From two months to 20 minutes: new technology reduces time to diagnosis

(LONDON, Ontario) – London Health Sciences Centre (LHSC) is the first hospital in Canada to offer otology patients fast and accurate results through medical imaging technology that decreases the time to diagnosis from up to two months to approximately 20 minutes.

The MiniCat (cone-beam CT unit) works similarly to a traditional CT scanner, however, it targets specific areas of the head and neck, which is useful for otology patients needing their inner ears imaged for diagnosis. Patients can make use of this machine on the same day as their initial appointments, which eliminates the need for a CT scan.

"We are excited to be the first hospital in Canada to use the MiniCAT for our otology patient population at LHSC," said Dr. Lorne Parnes, surgeon, Otolaryngology department. "In addition to the shorter wait times, this technology delivers drastically less radiation exposure than a traditional CT scan (our former standard) and provides better resolution images, allowing for more precise and timely diagnosis. The benefits for our patient population are numerous."

As the regional otology surgery referral center, many patients travel to London from outside the region, which at times is a great personal expense for both diagnosis and clinical assessment. This scanner allows patients to have the imaging and clinical assessment all in one visit, saving both time and money.

The cone-beam CT unit was purchased using donor funds through the London Health Sciences Foundation. This generous gift has a personal connection, as it was made by a former patient of LHSC's otology program.

"I know first-hand the wait times to have a CT done, and that wait feels unbearable," said London Health Sciences Foundation donor, Tom Allison. "My only hope for the gift was to make a difference for future patients needing treatment." The machine has been in use since April of this year, and the department is already seeing a noticeable impact for patients. As well, the machine brings with it future research study opportunities that may further advance care delivery in this field.

"We're incredibly grateful for donors like Tom Allison, for investing in innovative health care technology that we know will improve patient outcomes," said Dr. Sumit Agrawal, surgeonscientist with LHSC's Otolaryngology department. "The MiniCAT allows us to obtain accurate images of electrodes in cochlear implant recipients and by analyzing these electrodes, our group can use patient–specific anatomy to 'tune' the implants, which potentially allows for better sound quality, speech understanding, and music appreciation."

Quick Facts

- LHSC is the first hospital in Canada to have the MiniCAT (cone-beam CT unit)
- Previously, a CT scanner would be used for diagnosis
- The scanner has been in use since April 2022
- On average, the time to diagnose a patient was approximately two months. This new scanner has allowed patients the opportunity for same-day imaging and diagnosis, reducing their wait to as little as 20 minutes.
- The MiniCAT scanner provides less radiation exposure, and overall better image resolution
- This scanner can be operated by a much larger pool of medical imaging technologists, alleviating human resources challenges

About London Health Sciences Centre

With roots going back a century and a half, London Health Sciences Centre (LHSC), is an award-winning, research-intensive acute tertiary and quaternary teaching hospital, one of only 14 such hospitals in Ontario. LHSC is also home to Children's Hospital, one of just four acute tertiary care paediatric hospitals in the province. Our unique place in the health system positions us well to inform and advise on provincial, national and international health policy. We are the cornerstone of care for many specialized programs and services in Western Ontario. And, as a major provider of emergency care and through our community hospital mission, we also care for the more than 400,000 people who call London home as well as many in surrounding communities. With Ontario's health system continuing its transformation, LHSC has an opportunity to inform it and to place itself at the locus of the regionalized health system by virtue of its size, specialized capabilities, research and education capacity and its current regional footprint. LHSC's formal relationship and strong bond with Western University provides a mechanism for collaboration to enable the delivery of high quality care through a process of continuous learning and research. At its core, the affiliation is a reciprocal relationship that leverages the learning, teaching and care environments of both Western University and LHSC.

London Health Sciences Centre is a 15,000 person strong team of physicians, staff and volunteers – collaborators, innovators and pioneers, meeting the care needs of those we serve and charting a course for the future.

More information about LHSC can be found at www.lhsc.on.ca.

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