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Radiologists, physicians push for PET scans

Antiquated regulations and the refusal of some provinces to fund positron emission tomography (PET) scans means patients are denied a diagnostic tool that is standard in most industrialized countries, say Canada's leading radiologists and nuclear medicine physicians.

The Canadian Association of Radiologists (CAR) and the Canadian Society of Nuclear Medicine are speaking out about Canada's lag in using PET scanners, which they believe compromises patient care.

use; the others operate under research protocols for clinical trial participants.

There are 2 major barriers to wider use of PET scanners. First, only BC, Alberta and Quebec reimburse for the cost of the PET scanning. In other provinces, such as Ontario, physicians often have to send patients to the US for PET scans, at a cost of about \$4600 per patient — a cost Ontario sometimes reimburses. Meanwhile, Urbain's facility was forced to shut down its PET scanner because of a lack of money from the nuclear medicine department. It would cost about \$2000 per patient if Urbain could use his facility's machine. "It's ludicrous," Urbain says.

The second barrier is the lack of availability of fluorodeoxyglucose (FDG), the radioactive tracer used to highlight molecular activity on the imaging scans. Health Canada has not approved the drug because, it says, no manufacturer has applied.

It's a classic Catch-22, says Dr. Karen Gulenchyn, chief of the department of nuclear medicine at Hamilton Health Sciences. Canada's lack of PET scanners means US manufacturers of FDG don't believe there's a market to warrant a drug submission here, but one reason for the paucity of PET scanners is the difficulty in securing FDG.

Hospitals such as the Hamilton facility, which can produce FDG, now have to submit a clinical trial application and apply to become manufacturers. That's the only way they can legally produce FDG to use when scanning patients in approved trials.

Gulenchyn and her staff recently spent 6 months preparing and filing a 17-volume clinical trial application for Health Canada so they can use FDG in their PET scanner. The process cost about \$500 000.

"The regulations were never intended or promulgated to deal with this particular type of a drug," Gulenchyn says. "These are very low-risk compounds." FDG is approved in the US, UK, France, Germany and other European countries.

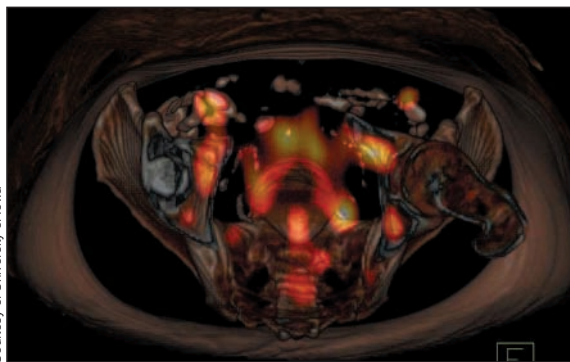
In 2000, Canada ranked last among 28 OECD countries in the number of PET scanners.

Gulenchyn sits on Ontario's PET steering committee, which is monitoring the development of the technology. Ontario contends that it does not yet have proof that using PET scanners as a diagnostic tool gets results superior to those produced by a CT scan.

The requirement for new clinical trials is a duplication of efforts, says Normand Laberge, CEO of CAR. "It is a proven tool for cancer cases. A lot of studies have shown that it saves money for the health care system."

Urbain says there have been 5000 studies on PET scanners in the past 20 years. In his native Belgium, PET scans are reimbursed for 3 indications: myocardial viability, recurrence of colorectal carcinoma and the diagnosis of epilepsy. Turkey, China and Hong Kong also reimburse for scans. In the US, Medicare reimburses PET scans for the diagnosis and staging of Alzheimer's disease, as well as for use in oncology and cardiology.

PET scans can stage cancer



Courtesy of University of Iowa

A PET scan to investigate prostate cancer

"I'm not proud to be in the diagnostic imaging field [in Canada]," says Dr. Jean-Luc Urbain, chair of nuclear medicine at St. Joseph's Health Centre in London, Ont. "I'm ashamed ... not to be able to provide ... the diagnostic imaging tool — the service — that [patients] not only deserve, but also pay for when they pay their taxes."

There are 12 PET scanners in Canada, including 2 at private clinics in Quebec and British Columbia. Of the remaining 10, only 3 are available for clinical

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and are extremely useful to assess the efficacy of chemotherapy and radiation, Urbain says. With a PET scan, doctors can see a tumour's response within 2–3 weeks. Cardiothoracic surgeons can use PET scans to assess myocardial viability.

As Canada continues to debate the use of this technology, PET scanners have been surpassed by the next generation of technology: combined PET/CT scanners. Canada's cautious approach

means there is a “lag-time, when patients are receiving lower-quality health care than they should, which opens the door to privatization,” says Laberge.

Canada is also falling behind in training its radiologists and nuclear medicine physicians and technicians, say Urbain and Laberge.

“I can barely train my residents and fellows, because we don't do enough cases and we don't do enough cases because

we don't get reimbursement for it,” Urbain says.

Meanwhile, Gulenchyn is left waiting for her CT application to crawl through the approvals process at Health Canada. “One therapeutic radiologic was just approved after having been in the pipeline for 1000 days — 3 years,” she says gloomily. — *Laura Eggertson, CMAJ*

TECHNOLOGICAL ADVANCES

Quebec doubling PET capacity

If Quebecers didn't know what positron emission tomography (PET) was before *Les Invasions Barbares* became an Oscar-winning hit, they do now. In the film — which mocks the overcrowded, underfunded state of Quebec's hospitals — a man with cancer is sent to New York for a PET scan.

When the film was released in 2003, the only PET scanner available in Quebec for clinical purposes was at the Centre hospitalier universitaire de Sherbrooke — widely regarded as the leading institution for nuclear medicine research in Canada. That is where Saku Koivu, team captain of the Montréal Canadiens, went in early 2002 to determine if the aggressive round of chemotherapy waged against his abdominal cancer had worked. So impressed was Koivu with the technology that pronounced him cured, that he set up a foundation to finance a \$2.5-million integrated PET/CT scanner for the McGill University Health Centre.

Initially allocated a budget from the provincial health ministry for 1500 patients per year, nuclear medicine specialists at the MUHC complained last year that their sophisticated machine sat idle while cancer patients waited for scans.

“To be fair, the government determined its initial budget based on older technologies,”

says the MUHC's chief of medical imaging, Dr. Robert Lisbona. He expects that operating budget to double this year, to provide PET scans to 3000 patients.

With 3 PET scanners doing clinical work (the third is at Centre hospitalier de l'Université de Montréal's Hôtel-Dieu) “Quebec is probably the best province in Canada right now,” says Dr. François Bénard, the head of Sherbrooke's nuclear imaging centre. “But only because the situation is so dismal across the country. In the US and Europe, PET scanners are widely available.”

Across Quebec, 21 000 patients could benefit from PET scans each year, Bénard estimates. Although the scanners are expensive to run — radioactive tracers (FDG) alone can cost \$600 per injection — Bénard concurs with other nuclear medicine specialists that the potential cost savings are enormous.

The arguments appear to have convinced Quebec's health minister. Philippe Couillard is poised to announce an investment in PET technology in all regions of the province.

For Bénard, the announcement can't come too soon. “We've had people coming from the Gaspésie — a 14-hour drive to Sherbrooke,” he says.

The government has been consulting with the Quebec As-



Courtesy of Brookhaven National Laboratory

Quebec now has 3 PET scanners and is slated to get about 17 more.

sociation of Nuclear Medicine Specialists to make sure there are sufficient specialists to deploy across Quebec, along with the new equipment.

The challenge will not be finding the specialists, but hiring enough nuclear medicine technologists to run the machines, says Association president Dr. François Lamoureux. At Montréal's Ahuntsic College — the only school in Quebec to offer the nuclear medicine technology program — coordinator Chantal Asselin says every one of this year's 25 graduates already has a job waiting. “We won't meet the demand,” she says.

“It takes 3 years to train a technologist,” Bénard points out. “The time to act is now, to avoid a worse shortage.” — *Loreen Pindera, Montréal*

Loreen Pindera is a journalist with CBC Radio in Montréal.