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Canada a third world when it comes to MRI

Imaging equipment obselete and poorly provided, experts say

By PIPPA WYSONG

TORONTO – Magnetic resonance imaging (MRI) technology is playing a greater role in clinical medicine and can lead to more cost-effective care, yet Canadians have such poor access to the technology that we rank at the bottom of developed countries.

In fact, "we're down there with Chile and Mexico, and countries I don't think we would choose to be compared with . . . on par with and lower than some of them," said Dr. Brian Lentle, president of the Canadian Association of Radiologists (CAR).

In some parts of Canada, patients wait for as much as a year to get scanned.

"Generally, imaging equipment across Canada is both obsolete and relatively poorly provided," Dr. Lentle said.

Yet in recent years, imaging technology has risen to the top in terms of being something that makes less invasive procedures and shorter hospital stays possible for many patients. MRI has become less a novelty, and more clinically useful, said Dr. Richard Rankin, chief of the department of radiology at the London Health Sciences Centre at the University of Western Ontario.

In the long term, investing in MRI technology would likely lead to more cost-effective medicine, Dr. Rankin said.

Unfortunately, supporting that statement is difficult because adequate cost-effectiveness studies haven't been done.

"They need to be done," he said. Still, "the cost per case would come down as more cases are done with MRI."

The number of uses for MRI, and other imaging technologies, has grown significantly over the past few years, especially with the

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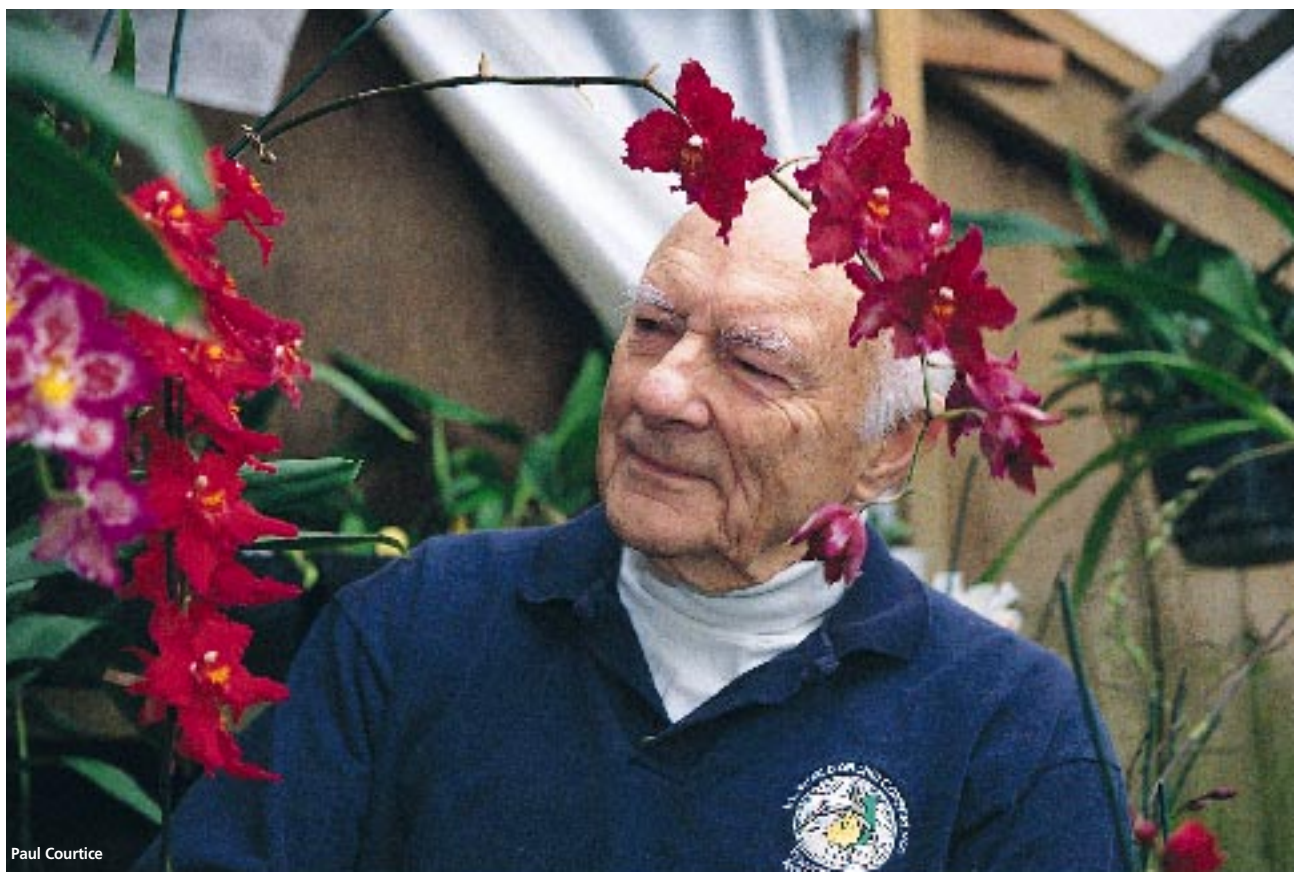
Flower power

Former hematologist/immunologist and now dedicated orchid grower Dr. Wally Thomas became hooked on hybrids and has named several of his own new genera after his family members. Soon he will chair the 16th World Orchid Conference in Vancouver. See story page 30.



Paul Courtice

INSIDE

Quebec's Inuit plagued by high lead-blood levels

Study reveals lead content more than seven times that of southern Quebecers

By MARK CARDWELL

QUEBEC CITY – A public health study to determine levels of industrial contaminants among Quebec's Inuit population has found that a whopping 7% of Inuit newborns have lead-blood levels that exceed federal intervention rate guidelines—and that hunting, not pollution, is the source of the problem.

The federally funded study, which involved researchers from both the faculty of medicine at Université Laval and the public health unit here, was primarily based on the collection and analysis of cord blood samples from more than 400 Inuit newborns between January 1993 and December 1996.

That analysis revealed 6.9% of Inuit newborns (and, of course, their mothers) had 100 μg of lead per litre of blood.

According to the American Centre for Disease Control, 100 μg/l is the critical "intervention threshold" which, when detected in an individual, requires public health actions to identify and eliminate the source of contamination.

Intervention

In Canada, federal health guidelines also use the 100 μg of lead per litre of blood as the benchmark for intervention—but only if the problem afflicts a collectivity of people, and if the collectivity's average is double the national average.

Judging by the results of a parallel, control-group study of cord blood samples taken from 1,009 newborns in 10 hospitals in "southern" Quebec—also between 1993 and 1996—both those criteria appear to be met.

Less than 1% of those "southern" newborns were found to have 100 μg or more of lead in each litre of their blood. In other words, excessive lead-blood levels were found to be seven times higher among Inuit newborn.

"There is definitely a problem, but it's not as dramatic as it appears," said Quebec City public health unit's Dr. Benoit Lévesque, the principal investigator in the study.

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Critics: 'Say no to chiro at York U'

By PAT RICH

PHILADELPHIA – A strong lobbying effort continues to oppose a planned affiliation between Toronto's York University and the Canadian Memorial Chiropractic College.

At a two-day conference on science and alternative medicine, held here by leading members of skeptics' groups, organizers urged the 200-plus delegates to write to York University president Lorna Marsden to voice their concerns.

In May, the senate of the university is scheduled to consider final approval of the affiliation. Last spring, agreement in principle was given in a vote of 57 to 13.

Opponents of the move fear York's decision will give a degree of scientific credibility to chiropractic, which they feel to be unwarranted.

One of the most vocal critics of the move is York University psychology professor Dr. James Alcock (PhD), who is also a fellow of the Committee for the Scientific Investigation of Claims of the Paranormal, which co-sponsored the conference here.

Dr. Alcock urged delegates to send letters to the university because he said these appear to have more impact than the opposition, which has been voiced to date by some scientists at York.

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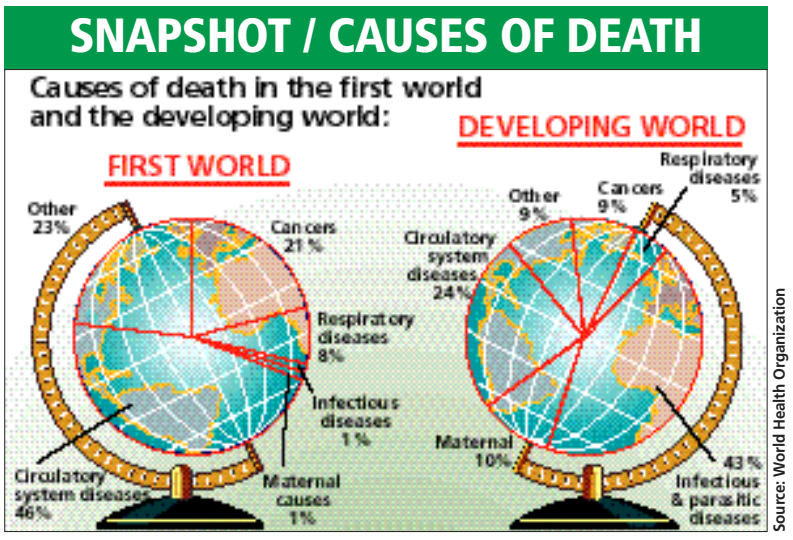
SNAPSHOT / CAUSES OF DEATH



Source: World Health Organization

Studies needed to confirm cost-effectiveness of MRI

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rise in minimally invasive medicine. For instance, MRI is being used to investigate vascular disease. Unlike angiography for such investigations, MRI is non-invasive and a much less complicated procedure to perform.

Assuming there are enough MRIs to go around, "this approach is likely to be common in five years," Dr. Rankin said.

The big shocker is that when Canada is compared to other countries in terms of the number of MRIs per capita, we rank at the bottom.

In a study to be published in the April issue of the journal of the Canadian Association of Radiologists, Canada falls below countries such as Belgium, France, the U.K., Portugal and Australia.

Dr. Rankin is the lead author of that study and was able to provide only a few details in order not to break the journal's embargo. His research found while Canada has the lowest ranking, the U.K. and Portugal are the second lowest in terms of the numbers of MRIs per capita. Both of those countries have 2.7 MRI units per one million population. Canada has half that number, at 1.7 units per million.

Sweden sits at the top, with 8.2 units per million. With a population of 8.8 million, the country has 72 MRIs.

Distribution varies

According to data provided by the Montreal-based CAR, there are only 53 MRIs in all of Canada, and the distribution varies between the provinces. Ontario has the most with 23, Quebec has 10, BC has nine (including two that are privately owned), and Alberta has six. Saskatchewan, Manitoba, Nova Scotia, New Brunswick and Newfoundland each have one.

It is hard to say just how many MRIs are enough, and how many represent an excess, Dr. Lentle said. "There is no methodology that tells us what number is ideal."

There are confounding factors, such as how much an individual machine is used, and whether use of other technologies is being replaced.

Until recently, in British Columbia the number of scans covered by the government was limited to 18,000 each year.

In response to problems of long waiting times, which were up to a year, and the increasing profile of MRIs as a diagnostic device, the B.C. Ministry of Health launched a study to investigate the need for MRI technology.

The investigation, by Toronto-based consultants HayGroup, was released in January. As a result of the findings, by February the number of MRI scans performed per year was increased by an additional 10,000, said ministry of health consultant Dr. Neil Fatin.

So far, no new machines have been purchased, but the hours of operation for existing machines have been extended, which may meet the additional scan target.

The number and type of new MRI machines which may be purchased in the future is not yet known, Dr. Fatin said.

As the technology evolves, so do its applications. As well as allowing for less invasive procedures, MRIs may eliminate the need for other imaging technologies for some indications. For instance, MRI is taking the place of arthoscopy for diagnosis of knee problems.

This type of thing has to be taken into account before the cost-effectiveness of MRI can be determined, Dr. Fatin said.

To help sort this all out, the B.C. Ministry of Health is establishing a registry to track MRI use, he said.

But according to Dr. Lentle, access problems aren't limited to just MRI. "Canada isn't spending money on high technology in general in the health-care system, but we're not saving any money either," he said.

Hospitals would likely find they could operate much more efficiently if they installed and used modern information technologies, he said.

"It's very hard to run an efficient department in hospitals because you don't have the same infrastructure you would have if you were running a business. Businesses have invested in modern information systems and modern technology as a way to save money," he said.

WAITING TIMES FOR MRI EXAMINATIONS IN BRITISH COLUMBIA

Waiting Time	% Distribution of Patient Visits by Waiting Time
Within 2 weeks	28.1%
2 to 4 weeks	8.8%
1 to 2 months	14.2%
2 to 3 months	9.4%
3 to 4 months	12.3%
More than 4 months	28.1%

Source: HayGroup

Infants' high blood-lead levels linked to pellets used by Inuit hunters

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"All of the Inuit children with high lead rates were at or were just over the 100 μg mark. And although no action plan has been developed, steps are being taken to address the situation."

The appropriate actions became clear as a result of the second aim of the study—to identify the source of contamination.

Researchers eliminated many of the traditional sources of lead contamination, such as industrial activity, lead-based paint and air analysis, because those pollutants are almost non-existent in Nunavik, a vast, tundra area that covers the northern third of Quebec, and which is home to the province's 12,000 Inuit. Instead, they compared the radioisotopes of the lead found in the newborns with the lead found in other potential sources of contamination, particularly the fish, game and waterfowl that are widely consumed by the Inuit.

Unexpectedly, those comparisons revealed the primary source of pollution was lead pellets from the four most popular brands of shotgun shells used by Inuit hunters to shoot waterfowl and ptarmigan.

"We have solid proof that most of the contamination is coming from the pellets and pellet fragments that hunters forget or are unable to get out of the carcasses of the ducks and geese they shoot," said Dr. Lévesque.

To solve the problem, the researchers are now helping a Nunavik nutrition committee with a communication plan to inform the Inuit population of both the danger of lead contamination and the need to properly clean carcasses.

Lead contamination in humans is believed to cause neurological and behavioral problems, particularly learning and memory disabilities. Dr. Lévesque said, in addition to better cleaning of carcasses, a new federal law banning lead shot all across Canada—only steel shot will be allowed as of this fall—will also help.

> *"Our study shows, for the first time, that the ban on lead shot—a move that was taken in order to protect the environment—also turns out to be a good move for human health."*
>
> **Dr. Benoit Lévesque**

"What I find interesting is that our study shows, for the first time, that the ban on lead shot—a move that was taken in order to protect the environment—also turns out to be a good move for human health," he said.

In addition to working with Nunavik health officials, the study researchers hope to continue monitoring the blood-lead situation of Inuit newborns in the near- and long-term. The research on lead is part of a larger ongoing study into the rate of contamination of Inuits by PCBs, which began the the mid-1980s. Inuit and Montagnais daily intake of PCBs were double allowable limits, mainly from mother's milk and marine sources.

"With the blessing and co-operation of the Inuit people, we will go back in a few years and do a follow-up study to see how things are going," Dr. Lévesque said. "And I am very confident things will have very much improved by then."

The research team, which includes Dr. Lévesque, Dr. Eric Dewailly, Dr. Jean-Francois Duchesne, Dr. Susie Bernier, Dr. Marc Rhainds, Dr. Patrick Levallois and Dr. Jean-François Proulx, hopes to soon see the complete results of their study published in a leading American medical journal.

Chiropractic opponents urged to send letters

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In an interview, Dr. Alcock said the lack of local media coverage of the issue has been frustrating but he feels those opposing the move are making progress.

The form letter opponents want sent states: "York would become the first major university in the world to affiliate voluntarily with a chiropractic college.

"We believe such affiliation is likely to adversely affect science education both at York and elsewhere, to undermine York's reputation within the scientific community and to weaken further the public understanding of science . . ."

These arguments are not new. Both the Canadian Memorial Chiropractic College and other supporters of the move to affiliate with York have already rebutted them in the debate leading up to the initial affiliation vote. They point out that chiropractic institutions in other countries are affiliated with major learning institutions and also note the charge that chiropractic is unscientific is outdated and untrue.

However, Dr. Alcock said Canadian chiropractic organizations continue to advocate questionable practices, such as the need for lifelong visits to chiropractors starting shortly after birth.

For additional information see pages 18, 19, 22