

Ottawa, November 23, 2009

Health Canada Standing Committee

Mister Chair

Honourable Members of the Committee,

On behalf of the Canadian Association of Nuclear Medicine (CANM), I would like to thank all of you for giving our organization the opportunity to appear in front of the Health Canada Standing Committee and to report back to the committee on the effects of the isotopes shortage on Canadians.

The CANM is the national voice of the Nuclear Medicine Physicians across Canada and the two million patients that they serve every year.

Since the first shutdown of the NRU reactor in December of 2007, the Canadian Association of Nuclear Medicine has worked relentlessly with the Ontario Association of Nuclear Medicine (OANM), the Association des médecins spécialistes en médecine nucléaire du Québec (AMSMNQ), the Canadian Association of Medical Radiation Technologists (CAMRT), the Canadian Association of Radiologist (CAR), the Canadian Association of Radiopharmacists (CARS), the Canadian Organization of Medical Physicists (COMP), Health Canada, the NRCAN expert panel and its international sisters organizations to mitigate the effect of the isotopes shortage on the well being of Canadians.

The NRU reactor has now been out of service for 7 months. The impact on Canadians and the Canadian Nuclear Medicine Community has been very significant. It will also have a lasting effect on patients' health, the practice of medicine in Canada and across the world, the Canadian and international nuclear medicine community and the Canadian nuclear technology.

Over the past 7 months, the weekly supply of technetium across Canada has varied between 0% and 100% with an average of 50% to 70% depending on the geographic locations and the suppliers. Nuclear medicine professionals, technologists, physicists, radio-pharmacists, support personnel and physicians across Canada have worked tirelessly to accommodate the needs of their patients. By working double shifts, reorganizing the examinations around the timing of the delivery of the spare technetium available, using different protocols and isotopes, spending an enormous of time over the phone contacting patients and referring physicians to reschedule studies and not providing on call services, our community was able to minimize the effects of the shortage on Canadian patients.

Through that very delicate balancing act and at the expense of a significant increase in operational costs, the cancellation of patients' tests has been limited.

This extraordinary and unsustainable effort of our community, the unreliability of technetium supply and the uncertainty of medical isotopes production in Canada has already generated serious and damaging consequences.

The enrolment of students (mainly technologists and physicians) in nuclear medicine sciences is down, the first layoff of technologists have been witnessed and nuclear scientists are contemplating to or are moving out of the country.

By its unique ability to investigate the function of cells, tissues and organs, nuclear medicine enables the detection and treatment of diseases at the molecular level before they become evident anatomically and before patients become symptomatic (figure 1). The earlier the diagnosis of a disease is made the better the chance of a cure for the disease (ref.1-4). The CANM is extremely concerned by the significant decrease (from 10% to 25% depending on regions) of patients' referrals for nuclear cardiac and oncologic tests. Without early detection and assessment, cardiac diseases and cancers inexorably progress to a point where patients' well being is severely compromised and morbidity is higher, regardless of treatment; the financial burden on the health care system and society becomes enormous.

Many of us attended the annual meeting of the European Association of Nuclear Medicine (EANM) that was held in September in Barcelona. The annual EANM meeting is one of the largest annual gathering of nuclear medicine professionals in the world. This year more than five thousand people attended the conference.

It is not an understatement to note that the credibility of Canada in its ability to build nuclear reactors and produce medical isotopes has been totally shattered. Also, our colleagues from Europe simply do not understand why Canadians do not have equal access to technetium and the newer isotopes and technology like fluoro-deoxyglucose and Positron Emission tomography across Canada. It is difficult and shameful, in 2009 to have to admit to our international colleagues that, in 2009, Canada is now delivering health care services with 20<sup>th</sup> century tools. Health Care professionals and patient alike are now really questioning the relevancy of the Canada Health Act and particularly its provision of portability and criterion of comprehensiveness.

As you probably know, many Western Europeans countries have decided to continue to rely on their nuclear reactors technology for another 25 years. France is currently building a reactor to produce medical isotopes in the South of the country and the European countries have reached an agreement to build up a replacement to the Petten reactor in Holland.

By refusing to investigate the situation of the Maple Reactors, by allocating 22 million dollars to a 50 year old reactor in Hamilton and giving away 6 (or 12) million dollars to fund projects like the production of technetium with cyclotrons in order to mitigate 5 to 10 years down the road the current shortage of technetium, we have really become the mockery of the international medical and scientific community.

The CANM can only encourage members of this committee to consult the European and American experts' reports that have been generated over past few months on these subjects.

Based on our experience and expertise in the field of nuclear medicine, the numerous national and international experts reports that have been generated over the past few years and the technologies available today, the CANM recommend to this committee and the Government to urgently consider that:

1. The decision to abandon the Maple I & II reactors to produce medical isotopes be immediately and thoroughly revisited by an international experts panel and that the conclusions of the panel be released to the public and medical organizations.
2. The Federal Government, through Health Canada, expeditiously approved the clinical use of additional Positron emitting isotopes and their radiopharmaceuticals; specifically  $^{18}\text{F}$ -Sodium Fluoride,  $^{13}\text{N}$ -Ammonia, the strontium 82 and germanium 68 generators and their rubidium 82 and gallium 68 daughters isotopes as well as, the therapeutic isotopes Yttrium 90 and Lutetium 177 and their radio-labelled pharmaceuticals based 1) on the preclinical and clinical trials performed in Europe and the United States and 2) the criteria established by the United States and the European Union Regulatory agencies for the safe clinical use of these radio-isotopes.
3. For a period of 5 years, the Federal Government work with the Provinces and Territories to support and subsidize the increase of Technetium 99m cost imposed by the manufacturers and distributors and the cost of the deployment and implementation of the Positron Emission technology and its radiopharmaceuticals across Canada.
4. The Ministries of Natural resources and Health Canada work formally and expeditiously with the relevant medical national and international organizations rather than rely on expert individuals and establish rapidly the processes to implement these recommendations.

In addition to the deployment of PET in Canada and in order to mitigate the chronic and drastic shortage of technetium, the CANM also believes that a short, middle and long term and immediately implementable solution is the use of newer gamma cameras that use solid state crystals detectors (cadmium zinc telluride-CZT detectors) and resolution recovery software. These new and clinically available technologies reduce by a factor of 2 the amount of technetium 99m needed to perform nuclear medicine procedures and the

radiation exposure to the patients and personnel. To accomplish this, a nuclear medicine equipment fund should be established to allow clinics and hospitals to replace older equipment with more modern and efficient scanners.

As stated in our letter to Minister Raitt in December of 2008, the CANM strongly believes that the current challenges still represent a unique opportunity for Canada to salvage its nuclear technology and industry, to reaffirm its leadership and prominence in the world and to update the Canadian Health Care system with 21st century nuclear medicine diagnostic and therapeutic tools that Canadians deserve.

The Canadian Association of Nuclear Medicine would like to reiterate its offer to provide its ongoing support, experience, expertise and testimony to achieve these goals.

Respectfully,

On behalf of the Canadian Association of Nuclear Medicine,

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