LAWSON
HEALTH RESEARCH INSTITUTE

Public Information and Disclosure Protocol

Cyclotron & PET Radiochemistry Facility located at St. Joseph's Health Care London

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PUBLIC INFORMATION DISCLOSURE PROTOCOL

Information Disclosure – Routine

The facility may disclose information to the public related to the operations of the facility, including:

- Facility milestones and achievements (i.e. research successes).
- Funding announcements related to the facility.
- Information regarding the routine operations of the facility as it applies to the health and safety of the environment and the public.

This information may be disclosed through a variety of channels, including:

- Corporate reports.
- Media releases (on an as-required basis) sent to local media (newspaper, radio, TV).
- Public events, such as public forums and news conferences.
- Social media operated by Lawson Health Research Institute and St. Joseph's Health Care London.
- Hospital publications (including electronic newsletters).
- Direct letter to neighbours.
- Public forums and/or virtual town halls (live web cast).
- Personal response to a query by a designated spokesperson or subject matter expert.
- Tours of the facility may be provided.

Information Disclosure – Non-routine

Lawson Health Research Institute, coordinating crisis communications with St. Joseph's Hospital, will disclose information to the public related to a non-routine event, issue or crisis that may pose risk to the safety of staff or the public. Such disclosure must be authorized by the Scientific Director of the Lawson Health Research Institute and the Director of the Cyclotron facility.

Non-routine events, issues or crisis to be disclosed may include:

- Equipment or structure failure that poses a potential safety risk to hospital staff and/or the public.
- Fire, serious industrial accident or other disaster resulting in significant damage or disruption to facility.
- Serious injury or death of an employee, researcher or member of the public resulting from an accident.
- Recall or other critical event related to a radiopharmaceutical produced by the facility, as governed by Health Canada.

Table 1.0 List of the various types of information to be disclosed.

Type of Information/Issue	Audience	Tactic/Medium	Spokesperson	Response Time Frame
CNSC Annual Compliance Report summary	Internal (Primary) audiences	Offered upon request to Spokesperson	Facility Director Radiation Safety Officer	Available upon request

Research updates (e.g. new partnership, research publication)	All audiences	Media may include: Advisory/Release Press conference Tours Media interview Article in Hospital newsletter Social media Lawson Imaging website	Facility Director	As necessary
Operational developments or events with offsite effects (e.g. labour disputes, expansions, facility changes)	Industry/suppliers (if affected) Lawson staff (if applicable) Lawson/Hospital leadership London public (if applicable)	May include: Letter/email/Town Hall meeting Lawson Imaging website Social media	Scientific Director, Lawson Facility Director	Within 1 week of development
Notification of planned and unplanned significant interruption	Audience depends on emergency but may include: Physical Plant Security, Health and Safety Environmental Services Staff, patients and visitors Senior Leadership	PSA Website Emails Note: For emergencies, Lawson would follow the St. Joseph's Communications Crisis Communication plan	Facility Director	Within 48 hours of event

	London emergency services Neighbours Customers			
Impact of natural events such as weather, floods, power outage	All audiences	Website posting PSA (if necessary)		Within 48 hours of event
Incidents such as Environmental monitoring/releases	All audiences	Website posting PSA (if necessary)		Within 48 hours of event
Any other incident that may have, or is perceived to have, an impact on the safety of the staff, public or environment	All audiences	Website posting PSA (if necessary)		Within 48 hours of event
Proactive outreach and dissemination of key messages	All audiences (Target different audiences on a rotating basis)	Open Forum presentation	Facility Director	Yearly basis Plus: as per special request

CONTACT INFORMATION

For questions regarding the public information and disclosure program, contact:

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Frequently Asked Questions

What is a Cyclotron?

A cyclotron is a type of compact particle accelerator used to produce quantities of radioactive isotopes called positron emitters. Stable, non-radioactive isotopes are put into a cyclotron which accelerates charged particles to high energy in a magnetic field. The stable isotopes then react with a beam to form radioactive isotopes, which are taken from the cyclotron, transformed into positron-emitting radiopharmaceuticals within the radiochemistry laboratory and delivered to the nuclear medicine department where they are used for imaging procedures. Cyclotrons are a clean nuclear technology and create very little radioactive waste as a result of their operation.

What are the products of the cyclotron used for?

The positron-emitting radiopharmaceuticals are used for imaging procedures on patients called positron emission tomography or PET. PET is the most advanced medical diagnostic imaging technology available today for:

(i) Early and accurate detection of cancer,
(ii) Detecting certain diseases of the heart and brain.

Is a cyclotron safe?

The Canadian Nuclear Safety Commission (CNSC) oversees the license application process. A total of three licenses were required prior to commencement of use:

- License to construct,
- License to operate (including commissioning),
- License to service.

Regular monitoring, annual reports and five-year license renewals are a necessity to ensure compliance with CNSC regulations. All exposure levels to guests of St. Joseph's Health Care London (St. Joseph's) and to staff working inside and outside the facility are well below the CNSC allowable limits.

The radioactive isotopes generally produced in the cyclotron facility are short-lived, with half-lives ranging from 2 to 110 minutes. This means that within 24 hours they are no longer radioactive.

What is the difference between a cyclotron and nuclear reactor?

A nuclear reactor, such as the National Research Universal reactor in Chalk River, ON, uses uranium to generate fission products and neutrons, resulting in the creation of long-lived radioisotopes. These radioisotopes are utilized in nuclear medicine procedures and, due to their long half-lives, can be transported long distances to St. Joseph's from facilities such as the reactor in Chalk River.

When compared to radioisotope production in a nuclear reactor, a medical cyclotron produces minimal radioactive waste during the production of positron-emitting radiopharmaceuticals. The Lawson cyclotron at St. Joseph's Hospital is a very safe means of producing radioisotopes for both clinical and research purposes.

How are Radiation Exposure Levels Measured?

Radiation exposure is calculated in units called Sieverts. Exposure rates stated as millisieverts (mSv) are one-thousandths of a Sievert. Personal dosimeters and area monitors (facility, outside and exhaust), along with CNSC enforcement, ensure exposure to radiation is kept to a minimum and well below the allowable limit.

Did you know?

Canadians are subjected to radiation exposure every day from the environment we live in and the food we eat. For example:

- A coast-to-coast round trip in Canada by airplane exposes you to 0.05 mSv of radiation, the same as the CNSC annual limit for a member of the public.
- Canada has an average background radiation dose of 2.0 mSv/yr.
- Bananas are a natural source of radiation.
- Watching TV = 0.01 mSv.
- 1 dental X-ray = 0.20 mSv.
- 1 chest X-ray = 0.30 mSv.
- 1 CT scan = 4.0 mSv.
- 1 PET scan = 5.0 mSv.

There are currently cyclotrons in more than a dozen medical facilities across Canada. The Lawson cyclotron at St. Joseph's Hospital allows our imaging researchers to be at the forefront of hybrid imaging and facilitate discovery of new radiopharmaceuticals; thus, improving our understanding, prevention and treatment of disease.

For more information, please contact:

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