1.0 Purpose & Goals Description

To state the policy for the use of personal dosimeters at Hamilton Health Sciences.

2.0 Policy Statements: HHS Employees

2.1 New staff classified as x-ray workers or x-ray students are to be issued with a TLD on the first day of employment. A visitor badge is to be issued, by the department, to which the new staff member is assigned. The purpose of the visitor TLD is to monitor occupational exposure until the TLDs for that x-ray worker is received.

2.2 The new staff member or student is required to sign the “X-ray Worker letter” (Appendix 2) which informs them that they are an x-ray worker and as such are subject to the dose limits set out in the Schedule 4 (Appendix 1) of the X-ray Safety Regulation 861. The employee or student is to keep the original letter and copies of the letter are to be sent to the department manager and the Quality Control Officer or in the case of a student, the Clinical Educator.

2.3 For new staff or student, an application is to be made for their TLD prior to the next quarterly reporting period.

2.4 The following areas and personnel are responsible for issuing, exchanging and checking TLDs issued to staff. The responsible person is to document that the TLDs are free from defects and deficiencies when received from the supplier and prior to returning the TLD for reading: (see appendix 4 for specific contact names)

2.4.1 General Site:
Heart Investigation Unit: Designated X-ray Technologist MRT
Operating Room: Charge Nurse
Pain Clinic: Charge Nurse
EPS Lab: Charge Nurse
Diagnostic Imaging: Clinical Instructor, Diagnostic Imaging

2.4.2 McMaster Site:
Diagnostic Imaging, Operating Room and Pathology – Quality Control
X-ray Technologist

2.4.3 Henderson Site:
Henderson Diagnostic Imaging – Clinical Instructor, Diagnostic Imaging
Henderson Operating Room – Charge Nurse
2.4.4 **Chedoke Site**  
Chedoke Diagnostic Imaging – Designated X-ray Technologist MRT ®

2.4.5 **Juravinski Cancer Clinic**  
Radiation Safety Officer

2.5 The following information is required for TLDs to be issued:

2.5.1 Surname  
First Given Name  
Second Given Name  
Social Insurance Number  
Date of Birth  
Place of Birth  
Job Classification: i.e. Nurse, physician, x-ray tech, student etc.  
Male/ female  
See Appendix 3

2.6 All staff classified as “x-ray workers” as defined by the X-ray Safety Regulation 861 must be issued a TLD to be worn under the apron at the waist level. Staff/students working in fluoroscopy areas are to be issued a second TLD to be worn outside the apron at the collar level. TLDs are to be worn at all times when working with ionizing radiation.

2.7 TLDs should be kept on-site to reduce the possibility of erroneous readings.

2.8 A central repository for TLDs is to be located in each department where staff and students are expected to leave their TLDs at the end of their working day. Staff and students are to pick up their TLDs from the same location at the start of their working day. TLDs are to be exchanged each quarter. The most responsible person as defined in section 2.4 is responsible to remove old TLDs from the central repository and replace them with the new TLDs. The following are the locations of the central repositories.

2.8.1 **General Site:**  
Heart Investigation Unit: Control Rooms  
Operating Room: OR Entrance  
Pain Clinic: Reception Area  
EPS Lab: Control Room  
Diagnostic Imaging: Locker Room

2.8.2 **McMaster Site:**  
Diagnostic Imaging- Hallway across from staff lounge (2S45)  
Operating Room – Hallway leading to OR Entrance  
Pathology – Locker

2.8.3 **Henderson Site:**  
Henderson Diagnostic Imaging – Sorting area and Emergency Control areas  
Henderson Operating Room- Entrance hall to Operating Room

2.8.4 **Chedoke Site**  
Chedoke Diagnostic Imaging-Darkroom

2.9 All X-ray workers and students **MUST** wear their TLDs when working with ionizing radiation.

2.10 HHS is to maintain a record of the occupation exposure of x-ray workers for a period of at least three years. The originals of the records are to be kept in the Diagnostic Imaging Department. The following personnel are responsible for maintaining the records.

2.10.1 **General Site:**  
Quality Control Officer

2.10.2 **Henderson Site:**  
Quality Control Officer

2.10.3 **MUMC Site:**  
Quality Control Technologist
2.10.4 **Chedoke Site**
Designated Technologist MRT ®

2.11 The Quality Control Officer is to review the reports when received. The Quality Control Officer is to make copies of the reports that are to be sent to the responsible manager with instructions to post the reports for staff to review.

2.12 The Quality Control Officer is to investigate incidents in which a TLD is damaged or a reading cannot be obtained. The Quality Control officer is to interview the x-ray worker to determine the nature of their work and any unusual occurrences during the period in which a reading could not be obtained. The Quality Control officer is to submit a written report of the details to the site safety coordinator.

2.13 Incidents of quarterly exposure in excess of the limits set out in the Schedule (see Appendix 1) or the X-ray Safety Regulation 861 are to be investigated immediately. These limits are 50 mSv for the body or trunk. A written report of the findings and the corrective action is to be submitted to site safety coordinator for reporting to the MOL and Joint Health and Safety Committee. The Quality Control Officer is responsible to report the incident to the Site Safety Coordinator.

2.14 When an accident or failure of equipment that results in the exposure of a worker in excess of the limits set out in column 3 of the schedule (Appendix 1), the Quality Control Officer (Jennifer House) is to notify the site safety coordinator for reporting to the Ministry of Labor (MOL) and the Joint Health and Safety Committee. Within 48 hours of the accident or failure a written report must be sent to the site safety coordinator for reporting to the MOL and the Joint Health and Safety Committee.

2.15 In certain circumstances the need for additional extremity or ring dosimeters may be requested. The resulting occupational exposure is to be reviewed and sent to the responsible RPO for review. At HHS the responsible personnel are:

2.15.1 **General Site**
Diagnostic Imaging: Designated Radiologist

2.15.2 **McMaster site:**
Diagnostic Imaging, Designated Radiologist (or acting Designated Radiologist)

2.15.3 **Henderson Site:**
Diagnostic Imaging, Designated Radiologist

2.15.4 **Chedoke Site:**
Diagnostic Imaging, Designated Radiologist

2.15.5 **Cardiology**
Designated Cardiologist

2.15.6 **Surgery**
Designated Surgeon

3.0 Definitions

**RPO – Radiation Protection Officer**: Physician appointed by the CEO to oversee the safe use and practice of diagnostic imaging equipment, and radiation safety devices.

**Thermoluminescent Dosimeter (TLD)**: Device worn by medical radiation workers to measure occupational radiation exposure

**TLD- Thermoluminescent dosimeter**: a radiation detector used for the monitoring of occupational exposure.

**X-ray Worker**: a worker who, as a necessary part of the worker’s employment may be exposed to x-rays and may receive a dose equivalent in excess of the annual limits set forth in Column 4 of Schedule (Appendix 1) in the Occupational Health and Safety Regulation 861.

4.0 Cross References
5.0 External References
   Occupational Health and Safety Act, R.S.O. 1990
   Safety Code 20A

6.0 Developed By
   Diagnostic Services Policy and Procedure Committee

7.0 In Consultation With
   Health Safety and Wellness
   Joint Health and Safety Committee
   Diagnostic Imaging Radiation Safety Committee
   Diagnostic Imaging Management

8.0 Approved By
   Director, Diagnostic Imaging

9.0 Posting Dates
   Initial Posting Date: 2006-02-07
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<tr>
<th>Keyword Assignment</th>
<th>TLD, Quality Control Officer, Radiation Protection Officer, RPO</th>
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Attachments:
DI - Radiation Dosimetry - Appendix 1 (DOC)
DI - Radiation Dosimetry - Appendix 2 (DOC)
DI - Radiation Dosimetry - Appendix 3 (DOC)
DI - Radiation Dosimetry - Appendix 4 (DOC)
DI - Radiation Dosimetry - Appendix 5 (DOC)
DI - Radiation Dosimetry - Appendix 6 (DOC)

End Of Document!

Posted by Delphine Bell, 09 February 2006