Dublin Hospitals Group Risk Management Forum

Radiation Safety Committee

Basic Information on Radiation Safety for Non-Radiology Staff who Enter X-Ray and Nuclear Medicine Departments

Approved 3rd July 2009

INTRODUCTION

This information has been produced by the Dublin Hospitals Group Risk Management Forum's Radiation Safety Standing Committee in order to provide a consistent approach to provision of basic information on Radiation Safety for non-radiology staff that have occasion to enter the X-Ray and Nuclear medicine departments within member hospitals. It is appropriate for distribution at induction and to existing non-radiology staff who might have business in radiology such as cleaners, porters, clerical, technical services and administrators/hospital managers.

WHAT IS RADIATION?

Radiation is the emission of energy. There are two types of radiation, non-ionising and ionising radiation. Ionising radiation has more energy and a large exposure may damage cells. Sources of ionising radiation in Radiology are X-ray machines, CT and radioactive sources in Nuclear Medicine. This guidance relates to these sources of ionising radiation.

Non-ionising radiation such as visible light or microwaves may cause heating effects in the body or have no effect at all. MRI, Lasers and Ultrasound do not use ionising radiation.

Radiation has always been present on earth and is part of our natural surroundings. Some natural sources of radiation include the air we breathe, the food we eat, the concrete in building materials, and the rocks and soil. Radiation from these natural sources is known as background radiation.

On average each person in Ireland gets about 3.5millisieverts of background radiation each year. Most X-ray or Nuclear Medicine staff get less than 1millisievert extra per year from their work. People who take a return flight to New York get an additional 0.1millisieverts.

DO WE CONTROL THE USE OF RADIATION IN THE HOSPITAL?

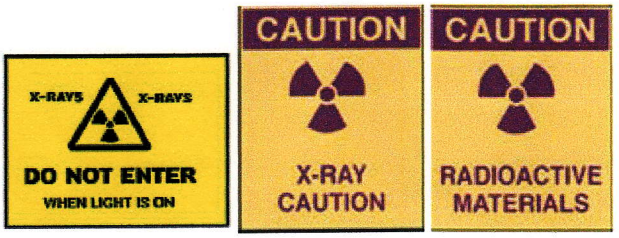
Yes. There are two laws in Ireland that control the use of medical ionising radiation in the hospital.

- ***S.I. 478 European Communities (Medical Ionising Radiation Protection) Regulations 2002.***
  This law is aimed at protection of the patient, and means that radiation should only be used if there is to be a direct benefit to the patient. A radiographer must always be present during any x-ray examination and only specially trained doctors can use x-ray equipment.
- ***SI 125 Radiological Protection Act, 1991 (Ionising Radiation) Order, 2000.***
  This law is aimed at protection of staff and members of the public. Under this law the Radiological Protection Institute of Ireland (RPII) inspects the hospital on a regular basis to make sure that all our policies and procedures comply with the law.
  - Under this law some staff members, such as radiographers or physicists who work directly with radiation must be given special radiation badges to record the level of radiation they receive.
  - Most staff in the hospital are not exposed to more radiation than if they worked outside the hospital, and so do not need these radiation badges.
  - Pregnant workers who have contact with ionising radiation during their work can seek the advice of the Radiation Protection Adviser if they have any concerns about their work while pregnant.

HOW IS RADATION SAFETY MANAGED IN THE HOSPITAL?

The hospital has a Radiation Protection Adviser (RPA), a Medical Physicist, who advises the CEO of the hospital on how to comply with the law. Each area that uses ionising radiation has a Radiation Safety Officer (RSO), who makes sure that hospital policies are followed on a daily basis. There is a Radiation Safety Committee in the hospital attended by the RPA and RSO's and chaired by a Radiologist.

Warning signs are placed on the doors of all rooms where there is the possibility of a radiation hazard.



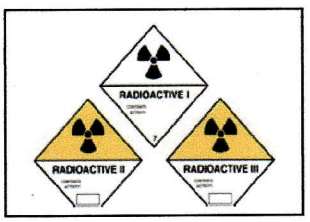
If there are warning lights near the door and the yellow light is on do not enter unless you are accompanied by a member of the x-ray department staff, or if they have told you it is safe to enter.

If the red light is on you should not enter unless you have been authorised to enter by a member of the X-ray department staff, and you are wearing a lead apron for protection. This light is lit when an x-ray is being taken, and will not be on for long. When the red light goes off the yellow light will stay on.

If both lights are off the equipment in the room is switched off and it is safe to enter the room. You should never touch any of the controls or switches of the equipment.

If there is a yellow warning sign on a door with no lights you should check with a member of the X-ray or Nuclear Medicine department staff before entering, unless you have received instruction on when it is safe for you to enter.

You may also see these signs on the doors where mobile x-rays are taken, such as in theatre. If you see these signs on a door outside the X-ray department you must not enter unless authorised by, or accompanied by, a member of the local staff.



Packages with warning signs such as these should be secured in an area of the Nuclear medicine or X-ray department. If you see these packages elsewhere contact the Nuclear Medicine Department (ext: ____) or X-ray Department (Ext___) or Security (Ext____) and report what you have seen. Do not move or handle the package unless instructed to do so by a member of the Nuclear Medicine Department or X-ray Department and keep a distance of more than 1metre away from the package.

RADIATION SAFETY WHILST WORKING IN THE RADIOLOGY (XRAY) DEPARTMENT or NUCLEAR MEDICINE DEPARTMENT

For non-radiology staff who might have business in Radiology such as cleaners, porters, clerical, technical services and administrators/hospital managers.

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THE FOLLOWING RULES SHOULD BE FOLLOWED UNDER NORMAL WORKING CONDITIONS.

1) Check in with the Radiographers or Medical Physics before commencing work unless you are part of the Department's regular team. They will advise you of the availability of and access to the area you are to work in. You will be asked to sign a copy of the form on the next page to say that you understand the instructions given to you.

2) Never enter an X-ray room unless you have been invited to do so by a member of the X-ray department staff.

3) Never enter an X-ray room when the Red Light adjacent to the door is illuminated.

4) Never enter the Nuclear Medicine area unless you have specifically been authorised to do so by a member of the X-ray department staff.

5) Members of TSD intending to work on waste pipes in Nuclear Medicine should contact the Radiation Protection Adviser, Radiation Safety Officer or Nuclear Medicine Clinical Specialist Radiographer before starting work.

6) You will not normally need to wear a radiation monitoring badge during the course of your work. A badge will only be required under special circumstances and will be issued by the Radiation Protection Adviser when necessary.

7) Security staff should be aware of the hazards of entering the Nuclear Medicine Radio-pharmacy in case of an emergency. (Apply to the Radiation Protection Adviser for further information).

8) Cleaning staff must not empty waste containers with the following Radiation Warning sign in Nuclear Medicine.

9. Cleaning staff must not clean the Nuclear Medicine Radio-pharmacy except under a special arrangement with Nuclear Medicine Staff/Radiation Protection Adviser. Clear instructions will be given on the work which may be done without hazard.

For further information please contact:

Radiation Protection Adviser: Extension:

Radiation Safety Officer (RSO): Extension:

Nuclear Medicine Clinical Specialist Radiographer: Extension:

HOSPITAL RECORD OF INFORMAITON PROVIDED

I have read and understood the instructions contained in the SOP "RADIATION SAFETY WHILST WORKING IN THE RADIOLOGY (XRAY) or NUCLEAR MEDICINE DEPARTMENT"

◊ I have been told by X-ray staff when to enter and how to work safety in the X-ray room or Nuclear Medicine room, and have understood the instructions given to me.

◊ I am aware that in the case of a query with regard to anything in the X-ray or Nuclear Medicine Department, that I need to contact the Radiation Safety Officer or Nuclear Medicine Clinical Specialist Radiographer, or Radiation Protection Adviser.

Name: (in full) _____

Signed_____

X-ray or Nuclear Medicine Staff Member_____

Date_____

If you do not understand any section please ask the RSO/Clinical Specialist / RPA for clarification