

**RADIATION PROTECTION PROCEDURES  
NUMBER : 6**

**DOSE REDUCTION POLICY**

**Introduction**

The Ionising Radiations Regulations 1999 require that

- Every employer shall ensure that any equipment or apparatus under their control which is used in connection with a medical exposure is of such design or construction and is so installed and maintained as to be capable of restricting so far as is reasonably practicable the exposure to ionising radiation of any person who is undergoing \ medical exposure to the extent that this is compatible with the clinical purpose or research objectives in view.<sup>1</sup>

The Ionising Radiation (Medical Exposure) Regulations 2000 require that

- No person shall clinically or physically direct a medical exposure except in accordance with accepted diagnostic or therapeutic practice [In relation to all medical exposures to which these Regulations apply except radiotherapeutic procedures, the practitioner and the operator, to the extent of their respective involvement in a medical exposure, shall ensure that doses arising from the exposure are kept as low as reasonably practicable consistent with the intended purpose.]<sup>2</sup>
- In relation to all medical exposures for radiotherapeutic purposes the practitioner shall ensure that exposures of target volumes are individually planned, taking into account that doses of non-target volumes and tissues shall be as low as reasonably practicable and consistent with the intended radiotherapeutic purpose of the exposure.<sup>3</sup>
- Persons physically directing a medical exposure shall select procedures such as to ensure a dose of ionising radiation to the patient as low as reasonably practicable in order to achieve the required diagnostic or therapeutic dose. Without prejudice to paragraphs (1) and (2), the operator shall select equipment and methods to ensure that for each medical exposure the dose of ionising radiation to the individual undergoing the exposure is as low as reasonably practicable and consistent with the intended diagnostic or therapeutic purpose and in doing so shall pay special attention to –

(a) quality assurance;

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<sup>1</sup> IRR99, Reg. 32(1)

<sup>2</sup> IR(ME)R, Reg 7(1)

<sup>3</sup> IR(ME)R, Reg 7(2)

(b) assessment of patient dose or administered activity; and

(c) adherence to diagnostic reference levels for radiodiagnostic examinations falling within regulation 3(a), (b), (c) and (e) as set out in the employer's procedures.<sup>4</sup>

### **Equipment Acquisition**

The advice of the Radiation Protection Adviser must be sought for proposals on new equipment purchase or where substantial change in working practice is envisaged, so that the implications on patient dose can be properly considered.

### **Quality Control**

- All new radiation equipment and work areas shall be tested by the Radiation Physics Department to ensure correct and safe operation for patients, staff, and members of the public.
- All radiation generating equipment is tested at least annually by the Radiation Physics Department to ensure that it continues to function safely and correctly.
- Individual departments shall have a Dose Reduction strategy developed in conjunction with the Radiation Protection Adviser, to ensure that good practice is maintained. (For example, diagnostic radiology departments should monitor and publish image reject rates). Delete--- and monitor film processor performance.)

### **Training**

Regular update/training sessions shall be provided for staff working with ionising radiations.

### **Staff Doses**

- All doses should be kept as low as reasonably achievable.
- The Dose Monitoring Policy is designed to help identify which staff receive the largest doses so that steps can be taken to reduce these doses where possible.

### **Patient Doses**

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<sup>4</sup> IR(ME)R, Reg 7(3)

- All exposures must be clinically justified, and the use of non-ionising techniques should be considered
  - The required diagnostic information, or required therapeutic effect should be achieved using as low a dose as reasonably achievable.
  - Diagnostic doses should never be so high as to cause deterministic effects.
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