

## Employers Procedure 10

### Ramsay IR(ME)R Employers Procedure

**Employers Procedure Number:** IR-001 / Employers Procedure 10

**Employers Procedure Title:** Provision of Information on Radiation Benefits and Risks to Patients Schedule 2(i)

## 1. Governing Policy

- IR-001 Employer Procedures Employers Statement

## 2. The Procedure

### 2.1. Introduction

- 2.1.1. This Employers procedure outlines the duties of the Employer under IR(ME)R Schedule 2(i). Information should be provided wherever practicable, and prior to an exposure taking place, to the individual to be exposed (or their representative) relating to the benefits and risks associated with the radiation dose arising from the exposure.
- 2.1.2. Schedule 3 outlines the requirement for IR(ME)R Practitioners and Operators to have adequate training on the benefits and risks of radiation and risk communication. For further details on the responsibilities and training requirements for IR(ME)R Duty holders, (Referrer, Practitioners and Operators, refer to Employer Procedures 3 Schedule 2 (b)
- 2.1.3. Where relevant, the practitioner and/or operator should make it clear that the benefits of the examination outweigh any radiation risks (which are normally considered low), along with the implications of not having the examination.
- 2.1.4. The Operator will ensure that the patient understands the procedure and has an appropriate level of understanding of the benefit and risk prior to exposure.

### 2.2. Information to Patients

- 2.2.1. Patients will be provided with adequate information prior to the examination that explains the benefits and risks of the exposure to radiation. This will be provided in the following formats (shown in the Table 1.) dependent on the level of risk as one or more of the following options.

Table 1.

### 2.3. Providing Information to patients

Examination	Information provided to patient
Plain film x-ray	<ul style="list-style-type: none"> <li>• Verbal discussion</li> <li>• Poster in waiting area (checked at internal annual audit)</li> <li>• Patient information leaflet. Either sent out with the patient appointment letter or made available within clinical areas. Supplies within clinical areas should be monitored by the Radiology Manager as part of routine daily checks.</li> </ul>
Fluoroscopy	<ul style="list-style-type: none"> <li>• Verbal discussion with written consent</li> <li>• Patient information booklet (if high dose)</li> </ul>
Theatre/mobile image intensifier	<ul style="list-style-type: none"> <li>• Verbal discussion with written consent</li> </ul>
CT/MRI	<ul style="list-style-type: none"> <li>• Verbal discussion</li> <li>• Patient information leaflet</li> </ul>
Cardiac angiography/ Interventional	<ul style="list-style-type: none"> <li>• Verbal discussion with written consent</li> <li>• Patient information leaflet.</li> </ul>

2.3.1. Ramsay Healthcare has produced a **Radiation risk benefit patient information leaflet** which must be displayed in the diagnostic imaging areas for patients to read.

2.3.2. The patient information leaflet should be sent with patient appointment letters for all examinations considered to be “high-dose”. For further details on high dose examinations and dose optimisation, refer to Employers Procedure 6 – Dose Optimisation/ Assessment of Patient dose Schedule 2(e).

2.3.3. Radiology Managers should display the following posters in the Radiology department in order to aid compliance with this IR(ME)R requirement

- [BIR - Radiation Dose and Risk poster](#)
- [RCR - Patient information posters on the benefits and risks of imaging](#)

2.3.4. If a patient specifically requests information on the radiation dose and risk from the procedure, the operator should attempt to provide information on the dose in terms of the time that would be required to receive the same exposure from sources of natural background radiation (based on the assumption of 2.7 mSv average natural background radiation per annum)

2.3.5. The approximate risk of fatal cancer resulting from the exposure should be given according to the risk bands given in Table 2.

Table 2. Risk Bands for Diagnostic Imaging Procedure

Risk Band	Risk Range	Type of X-ray examination
Negligible	< 1 in a million	Radiography of chest, limbs, teeth
Minimal	1 in a million to 1 in 100 000	Radiography of head, neck, joints
Very Low	1 in 100 000 to 1 in 10 000	Radiography of spine, abdomen, pelvis
Low	1 in 10 000 to 1 in 1000	CT, angiography, contrast studies of the alimentary, biliary and urinary tracts and interventional radiography

2.3.6. The operator may also summarise the risks from the procedure using wording based on the following (based on guidance from the Department of Health)

2.3.7. *"We believe the risks of the procedure are small and this examination will help us to address your suspected clinical condition through diagnosis and treatment, where appropriate"* Public Health England (PHE, 2014) and Health Protection Agency (HPA, 2011)

2.3.8. Further benefit and risk information by Public Health England (2019) is reproduced in the Table 3. below. This may be used by the operator or displayed to provide further information to the patient, as deemed necessary

2.3.9. Further advice from the Medical Physics Expert may be sought as necessary

**Table 3. X-Ray Examinations**

1 UK average = 2.9mSv per year: regional averages range from 1.5 - 7.5 mSv per year

2 Approximate lifetime risk for patients 16 to 69 years old: for paediatric patients multiply risks by about 2 for geriatric patients divide risks by about 5

Diagnostic procedure	Typical effective doses (mSv)	Equivalent period of natural background radiation <sup>1</sup>	Lifetime additional risk of fatal cancer per examination <sup>2</sup>
Limbs and joints (except hip)	< 0.01	< 1.5 days	1 in a few million
Teeth (single bitewing)	< 0.01	< 1.5 days	1 in a few million
Teeth (panoramic)	0.01	1.5 days	1 in 2 million
Chest (single PA film)	0.02	3 days	1 in a million
Skull	0.07	11 days	1 in 300,000
Cervical spine (neck)	0.08	2 weeks	1 in 200,000
Hip	0.3	7 weeks	1 in 67,000
Thoracic spine	0.7	4 months	1 in 30,000
Pelvis	0.7	4 months	1 in 30,000
Abdomen	0.7	4 months	1 in 30,000
Lumbar spine	1.3	7 months	1 in 15,000
Barium swallow	1.5	8 months	1 in 13,000
IVU (kidneys and bladder)	2.5	14 months	1 in 8000
Barium meal	3	16 months	1 in 6700
Barium follow	3	16 months	1 in 6700
Barium enema	7	3.2 years	1 in 3000
CT head	2	1 year	1 in 10,000
CT chest	8	3.6 years	1 in 2500
CT abdomen/pelvis	10	4.5 years	1 in 2000

## 2.4. Information on radiation risks for Theatres and Interventional procedures

2.4.1. The patient information booklet should be used by surgeons as part of the patient consent process where X-ray imaging in theatres or Interventional radiology procedures are required. The 'X-Ray / Interventional radiology procedures (Radiation Risk & Benefits leaflet CL-4126-000-R provided)' box on the patient consent forms for Investigation or Treatment, must be ticked by the Radiologist or Surgeon as part of the patient consent process.

## 2.5. Information on radiation risks for carers and comforters

2.5.1. Carers and comforters should be informed that their total radiation exposure is expected to be equivalent to less than six weeks' natural background radiation exposure and in many cases far less. They may also be informed that the risk from such an exposure is usually considered minimal. Refer to Employers Procedure 13 Schedule 2(n) Dose constraints and guidance Carers & Comforters

## 3. Approval

<b>Individual Approval</b>			
If you are happy to approve this document, please sign and date it and forward to the chair of the committee/group where it will receive final approval.			
<b>Name</b>	Abiola Adebayo	<b>Date</b>	28/07/2021
<b>Signature</b>			
<b>Committee Approval</b>			
If the committee is happy to approve this document, please sign and date it and forward electronic copies to the Integrated Governance Assistant who has responsibility for disseminating and implementing the document and for maintaining the organisation's database of approved policies and procedural documents.			
<b>Name</b>	Viv Heckford	<b>Date</b>	25.08.21
<b>Signature</b>			

## 4. References

- Public Health England (2019). Guidance National Diagnostic Reference Levels (NDRLs) from 19 August 2019 Available at:  
<https://www.gov.uk/government/publications/diagnostic-radiology-national-diagnostic-reference-levels-ndrls/ndrl#national-drls-for-general-radiography-and-fluoroscopy>
- Public Health England (PHE) (2014) Exposure to ionising radiation from medical imaging: safety advice. Available at:  
<https://www.gov.uk/government/publications/ionising-radiation-from-medical-imaging->

[examinations-safety-advice/exposure-to-ionising-radiation-from-medical-imaging-safety-advice](#)

- Health protection agency (HPA) (2011) Radiation risk for medical X-ray examinations as a function of the age and the sex of the patient. Available at, [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/340147/HPA-CRCE-028\\_for\\_website.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/340147/HPA-CRCE-028_for_website.pdf)