

SCHEDULE 3

Adequate Training

1. Practitioners and operators must have successfully completed training, including theoretical knowledge and practical experience, in—

- (a) such of the subjects detailed in Table 1 as are relevant to their functions as practitioner or operator; and
- (b) such of the subjects detailed in Table 2 as are relevant to their specific area of practice.

Table 1

**Radiation production, radiation protection and
statutory obligations relating to ionising radiations**

<i>Fundamental Physics of Radiation</i>	
Properties of Radiation	Excitation and ionisation Attenuation of ionising radiation Scattering and absorption
Radiation Hazards and Dosimetry	Biological effects of radiation – stochastic and deterministic Risks and benefits of radiation Absorbed dose, equivalent dose, effective dose, other dose indicators and their units
<i>Management and Radiation Protection of the individual being exposed</i>	
Special Attention Areas	Pregnancy and potential pregnancy Asymptomatic individuals Breastfeeding Infants and children Medical and biomedical research Health screening Non-medical imaging Carers and comforters High dose techniques
Justification	Justification of the individual exposure Use of existing appropriate radiological information Alternative techniques
Radiation Protection	Diagnostic reference levels Dose constraints Dose optimisation

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<i>Fundamental Physics of Radiation</i>	
	Dose reduction devices and techniques
	Dose recording and dose audit
	General radiation protection
	Quality assurance and quality control including routine inspection and testing of equipment
	Risk communication
	Use of radiation protection devices
Statutory Requirements and Non-Statutory Regulations	
	Regulations
	Non-statutory guidance
	Local procedures and protocols
	Individual responsibilities relating to exposures
	Responsibility for radiation safety
	Clinical audit

Table 2

Diagnostic radiology, radiotherapy and nuclear medicine

<i>All Modalities</i>	
General	Fundamentals of radiological anatomy
	Factors affecting radiation dose
	Dosimetry
	Fundamentals of clinical evaluation
	Identification of the individual being exposed
Diagnostic radiology	
General	Principles of radiological techniques
	Production of X-rays
	Equipment selection and use
Specialised Techniques	Computed Tomography: advanced applications
	Interventional procedures
	Cone Beam Computed Tomography
	Hybrid imaging
Fundamentals of Image Acquisition etc.	Optimisation of image quality and radiation dose
	Image formats, acquisition, processing, display and storage

<i>All Modalities</i>	
Contrast Media	Use and preparation Contraindications Use of contrast injection systems
Radiotherapy	
General	Production of ionising radiation Treatment of malignant disease Treatment of benign disease Principles of external beam radiotherapy Principles of brachytherapy
Specialised Techniques	Intra-operative radiotherapy Stereotactic radiotherapy and radiosurgery Stereotactic ablative radiotherapy Proton therapy MR Linac therapy
Radiobiological Aspects for Radiotherapy	Fractionation Dose rate Radiosensitisation Target volumes
Practical Aspects for Radiotherapy	Localisation equipment selection Therapy equipment selection Verification techniques including on-treatment imaging Treatment planning systems
Radiation Protection Specific to Radiotherapy	Side effects – early and late Toxicity Assessment of efficacy
Nuclear Medicine	
General	Atomic structure and radioactivity Radioactive decay Principles of molecular imaging and non-imaging exposures Principles of molecular radiotherapy
Molecular Radiotherapy	Dose rate Fractionation

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All Modalities

	Radiobiology aspects
	Radiosensitisation
Specialised Techniques	Quantative imaging – advanced applications
	Hybrid imaging – advanced applications
	Selective Internal Radiation Therapy
Principles of Radiation Detection, Instrumentation and Equipment	Types of detection systems
	Optimisation of image quality and radiation dose
	Image acquisition, artefacts, processing, display and storage
Radiopharmaceuticals	Calibration
	Working practices in the radiopharmacy
	Preparation of individual doses
Radiation Protection Specific to Nuclear Medicine	Conception, pregnancy and breastfeeding
	Arrangements for radioactive individuals