

# The role of the radiography workforce in CT imaging

## Introduction

Computed Tomography (CT) is used by diagnostic radiographers to diagnose injury and disease and by therapeutic radiographers to plan cancer treatment.

Originally developed in the early 1970s to provide images of the brain in cross-sectional 'slices', CT's importance in detecting and monitoring disease throughout the body has developed. Advances in technology have led to faster scans and enhanced image quality.

CT is used for:

- The rapid diagnosis of life-threatening injuries, strokes, blockages in arteries, or internal bleeding
- The primary diagnosis of many cancers and how advanced they are. Follow up scans are used to assess how the disease is progressing
- Assessment of the coronary arteries and the condition of the heart in patients with suspected heart disease
- Imaging of major blood vessels of the brain, body and limbs to assess and plan treatments
- Guidance for interventions such as biopsies, spinal and musculoskeletal injections
- Planning of orthopaedic surgery
- Investigation of injury in suspected physical abuse
- Planning of radiotherapy treatment for cancer

CT is particularly good for acquiring images of soft tissue organs such as the brain, lungs, liver, bowel and fat. It is also useful in detecting injuries and abnormalities that are small or widespread and can accurately identify the size, number, location and extent of tumours and blood clots.

## Knowledge and skills

Radiographers are registered healthcare professionals and must act in accordance with the standards of conduct, performance and ethics set by the Health and Care Professions Council (HCPC).

There is also a professional expectation that they will meet the requirements of the Society and College of Radiographers' (SCoR) Code of Professional Conduct.

Individuals also must develop and work within their personal scope of practice.

Radiographers are accountable under national legislation including the Ionising Radiation (Medical Exposure) Regulations 2000 (known as IR(ME)R), the Health and Safety at Work Act 1974, as well as local policies and procedures set by their employer.

The National Occupational Standards for CT Scanning represent the basic skills for all radiographers working in CT. The radiographer must have expertise that builds on their education and training to work safely and effectively. In addition, they will do further training and education to Master (MSc) and Doctorate (PhD) levels to extend their scope of practice to advanced and consultant practitioner standards.

The radiography workforce delivers diagnostic imaging and radiotherapy services in a range of health and social care settings across the UK. Radiographers are pivotal to delivering fast and reliable diagnoses of disease, as well as curative and palliative treatment and care for patients with cancer. A large majority of patients will be referred for imaging during their treatment and radiographers are key to the delivery of successful clinical outcomes.

The Society and College of Radiographers (SCoR) is a professional body and trade union. With more than 90% of the radiography workforce in membership, it represents the entire profession. It shapes the healthcare agenda and leads opinion on a wide range of professional issues, setting standards and developing policies that are adopted and acclaimed by governments and health professionals worldwide.

The SCoR pioneers new ways of working and ensures that its members work in a safe and fair environment. Its activities are designed to ensure that patients receive the best possible care.

### The SCoR believes that:

- Every patient must have the right diagnostic examination, at the right time, undertaken by the most appropriate person, using the right equipment to the best possible standard and with timely results to inform the outcome.
- Every cancer patient must be able to be in control of decisions about their care and have access to the most effective treatment, delivered at the right time and by the most appropriate person.

“The radiographer has a duty to produce high quality CT images safely. They will apply their anatomical, physiological and radiographic knowledge to ensure the scan is appropriate, justified and meets the needs of the patient.”

As a condition of their registration to practice, radiographers are required to undertake continuing professional development - ongoing training to ensure their skills and knowledge remain up-to-date.

The radiographer has a duty to produce high quality CT images safely. They will apply their anatomical, physiological and radiographic knowledge to ensure the scan is appropriate, justified and meets the needs of the patient.

They must also ensure that the patient is safe and comfortable and treated with respect, compassion and dignity.

## Radiation protection

CT is a high radiation dose technique by comparison to conventional x-ray. To safeguard the patient and others, the CT radiographer must have a thorough understanding of radiation protection and their duties under statutory regulations, particularly for children and young adults.

## Patient-centred care

The CT radiographer is involved in each step of the patient pathway, including receiving the referral and justifying or authorising the examination, carrying out the exposure, issuing the results and recommending further investigations or follow up care.

As well as the condition under investigation, patients may have other specific needs such as mobility or learning difficulties. They may have visual or hearing impairment, language problems, brain injury, dementia, or social or psychological problems.

Patients will have variable understanding and expectations of the procedure and can come from diverse cultural backgrounds.

The radiographer must have the ability to work flexibly and provide individually personalised and compassionate care. They must be mindful of different emotions and behaviours expressed due to uncertainty, fear and anxiety relating to the scan and the results.

A CT scan takes longer to perform than an x-ray. A successful, skilled CT radiographer will earn the confidence of the patient. The radiographer needs effective communication skills.

An effective CT radiography team has a common ethos and shared objectives. Radiographers should be instrumental in leading change, be able to adapt to evolving needs in the healthcare environment, and be proactive in identifying issues and raising concerns when necessary.

The CT radiographer must ensure each examination is performed for the right patient, in the right place and at the right time. They must possess the confidence to challenge decisions they do not consider are in the best interest of the patient.

## More information

The Health and Care Professions Council Standards of Conduct, Performance and Ethics <http://www.hcpc-uk.org/publications/standards/index.asp?id=38>

Society and College of Radiographers' (SCoR) Code of Professional Conduct  
<http://www.sor.org/learning/document-library/code-professional-conduct>

These two videos provide more details of the procedures a radiographer will take a patient through before a CT examination and the scan itself.

[https://www.youtube.com/watch?v=tS4a6l4-Yjo&ab\\_channel=CancerResearchUK](https://www.youtube.com/watch?v=tS4a6l4-Yjo&ab_channel=CancerResearchUK)

[https://www.youtube.com/watch?v=sknmQmn615c&ab\\_channel=NewcastleHospitals](https://www.youtube.com/watch?v=sknmQmn615c&ab_channel=NewcastleHospitals)