

IR(ME)R annual report 2021 to 2022

Introduction

The Ionising Radiation (Medical Exposure) Regulations 2017 are known as IR(ME)R. They provide a regulatory framework to protect people against the dangers from being exposed to ionising radiation in a healthcare setting. The regulations state that each individual exposure should be justified and optimised to make it as effective as possible, and to ensure that the benefit for the patient outweighs the risk.

We enforce the regulations in England through on-site inspections and by reviewing statutory notifications from healthcare services about significant accidental or unintended exposures to patients. In this report, we provide an update on what we found from notifications received in the period 1 April 2021 to 31 March 2022, and from our inspection and enforcement activity over this period.

We also highlight some key concerns around compliance with the regulations and provide examples of actions from IR(ME)R employers to improve the quality and safety of care, so that other employers, healthcare professionals and academic bodies can learn from them.

Key points

Notifications received in 2021/22

From 1 April 2021 to 31 March 2022, we received 611 statutory notifications of significant accidental and unintended exposures (SAUE notifications) across all modalities. This compares with 499 received in 2020/21, an increase of 22%.

- 366 (60%) were from diagnostic imaging departments
- 63 (10%) were from nuclear medicine departments
- 182 (30%) were from radiotherapy departments.

Diagnostic imaging notifications

The most common type of error is still where a patient received an examination meant for another patient (27% of all diagnostic imaging notifications), although this has decreased from 36% in 2020/21. We received 75 notifications where the wrong patient had been referred for diagnostic imaging examinations.

In a change from last year, operator errors accounted for the highest origin of incidents reported to us (40%), rather than referrer errors. We received 24 notifications where the operator failed to correctly identify a patient.

The highest proportion of notifications from diagnostic imaging (63%) was from CT (computed tomography).

Nuclear medicine notifications

Errors were most often reported from PET-CT and PET-MR. Operator errors are still the major source of notifications. Mistakes in the preparation or administration of radiopharmaceuticals was the most common of these.

We also continue to see a large number of notifications relating to the performance of equipment.

Radiotherapy notifications

There has been a marked increase in the number of notifications in radiotherapy from the previous year. This was almost entirely in planning and verification imaging, which increased from 69 to 110 notifications. This was due to an increase in the use of short course fractionation regimes, for example five fraction breast treatments.

Inspections

In 2021/22, we inspected:

- 14 diagnostic imaging departments
- 6 nuclear medicine services
- 13 radiotherapy departments.

Key trends and concerns

- As in previous years, a key source of errors continued to be when the wrong patient received an examination that was meant for another patient. Inadequate checks about the patient's identity by both the referring clinician and the operator were common causes of errors.
- There was a need to ensure that procedures, protocols and guidance for staff are up-to-date and effective, and to improve processes when investigating incidents.
- Many of our regulatory recommendations involved the need to improve the quality and availability of training records for staff.
- Some recommendations involved making the best use of the valuable input from medical physics experts. We also made recommendations to employers to improve how they monitor the risks posed by the shortage of medical physics experts.

Themed inspection programmes

Neurointerventional imaging

This inspection programme was developed specifically for the neurointerventional services of the 24 specialist NHS centres. Common themes included:

- Risks from ageing equipment – equipment over 10 years old is no longer state-of-the-art and it is important to replace it to benefit from latest new software and dose saving technologies, which offer significantly lower doses and enable exposures to be optimised effectively.
- Employer's procedures – some were too generic as they covered several services within a trust and did not always reflect the specific practice carried out in the department.
- Referral guidelines – these were not always being implemented or made available to referrers, and need to include radiation doses for referrers.
- Patient doses – all services we visited had adopted dose levels for a range of examinations, and most had set diagnostic reference levels (DRLs) for interventional radiology procedures.

Mobile CT services

We have trialled a programme of inspections on mobile CT services. During the COVID-19 pandemic there was an increase in the number of mobile CT units in the independent sector. Notifications highlighted risks to patients unique to this type of service.

- Complying with written procedures – some parts of the patient pathway were shared with other employers, which meant the provider needed to rely on others to ensure duty holders were appropriately entitled and trained.
- Standardising protocols – the rotation of staff between different host sites sometimes meant radiographers needed to use a variety of examination protocols for different types of examinations. This meant that several patients needed to be re-scanned using the correct protocol. But contractual agreements offer limited ability for a mobile CT service to standardise protocols between host sites.

- Co-operation between host sites – reviewing and managing incidents was disjointed, resulting in delays in concluding investigations and findings not shared between employers. This also led to duplicated statutory notifications and delays in submitting reports of notifications.
- Limited clinical audits – the mobile nature of the service meant there were few clinical audits embedded within the governance programme, with another employer carrying out much of the clinical evaluation and justification.

Chiropractic services

Our inspections of services run by chiropractors registered with the General Chiropractic Council (GCC) aimed to increase our understanding of compliance standards within chiropractic using radiography. Although subject to professional regulation from the General Chiropractic Council, chiropractors are exempt from registering with CQC under the Health and Social Care Act 2008. However, IR(ME)R still applies.

Early feedback from the first 3 inspections showed poor compliance with and understanding of IR(ME)R requirements:

- Medical physics experts – we believe it is crucial for chiropractors to work closely with their medical physics experts and to adopt diagnostic reference levels.
- Employer's procedures – these were generally incomplete and not maintained or regularly reviewed.
- Referral guidelines – these were either unavailable or there were several different sets.
- Quality assuring equipment – arrangements varied from not happening at all to a visual inspection only, or a medical physics expert QA testing equipment once every 3 years.
- Training records – there were no records of practical or equipment training for chiropractors who took X-rays.

We are keen to continue our pilot chiropractic inspection programme as we remain concerned about poor compliance and understanding of IR(ME)R requirements among this profession.

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