



UK Health  
Security  
Agency



4 July 2023

# Joint position statement on medical imaging exposure and radiation safety for patients

The UK Health Security Agency (UKHSA) and the British Institute of Radiology (BIR) support the view that the decision to perform a medical imaging exposure should be based on clinical need rather than the dose from previous exposures.

## Background

In May 2021, the International Atomic Energy Agency (IAEA) published a joint [position statement](#) with a range of international organisations and professional bodies and call for action to strengthen radiation protection of patients undergoing recurrent radiological imaging procedures.

The IAEA highlighted the potential for automatic exposure monitoring systems to monitor cumulative dose at an individual patient level. The joint position statement proposed actions to address concerns over high cumulative doses from recurrent medical imaging including, identification of clinical conditions that require recurrent imaging and developing strategies in terms of the type of imaging and frequency. It also recommended the need for customised imaging protocols for these patients and use of the latest technology to help reduce patient dose. Further actions include strengthening radiation protection education and training of healthcare professionals and strengthening communication.

Notably, the joint position statement recommended that dose monitoring systems should be used to monitor the exposure history of individual patients using type of radiological procedure, estimated effective dose or patient-specific organ dose estimates. The joint position statement recommended where possible, clinical and radiation dose information from the patient's previous imaging procedures needs to be made available to help strengthen the decision-making process when justifying a series of radiological procedures for a patient.

## AAPM response

In response to the joint position statement, the American Association of Physicists in Medicine (AAPM), the American College of Radiology (ACR), and the Health Physics

Society (HPS) published a [policy](#) on the use of dose metric tracking for medical exposures. The AAPM consider that the decision to perform a medical imaging exam should be based on clinical grounds, including the information available from prior imaging results, and not on the dose from prior imaging-related radiation exposures.

The AAPM advise that justification of the potential patient benefit and optimisation of medical imaging exposures are the most appropriate actions to take to protect patients from unnecessary medical exposures.

The AAPM recommends against using dose values, including effective dose, from a patient's prior imaging exams for the purposes of medical decision making, as the use of cumulative effective dose may have a negative impact on patient care.

The UK Health Security Agency (UKHSA) and the British Institute of Radiology (BIR) recognise the benefits of exposure monitoring systems in the optimisation process, while noting that there is no IEC standard governing the estimation of effective dose. UKHSA and BIR support the views outlined by the AAPM that the decision to perform a medical imaging exposure should be based on clinical need rather than the dose from previous exposures. In exceptional cases, when planning multiple high dose interventional (or CT perfusion) procedures exposing the same area, over a short time period, and where deterministic effects are expected, previous dose information should also be considered in the justification and optimisation process.

To protect patients from unnecessary medical exposures, appropriate justification of medical imaging exposures is essential.

Optimisation of medical imaging exposures is one of the fundamental principles of the Ionising Radiation (Medical Exposure) Regulations and is required to keep doses from medical exposures as low as reasonably practicable, consistent with the intended purpose.

## About The British Institute of Radiology

The British Institute of Radiology is an international membership organisation for everyone working in imaging, radiation oncology and the underlying sciences.

Our aims are to:

- support the work of our members and their colleagues to achieve professional excellence.
- provide continuing professional development for our multidisciplinary community
- publish cutting-edge research for our authors and readers across the world
- influence and connect with the wider professional sector.

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## About the UK Health Security Agency

The [UK Health Security Agency](https://www.ukhsa.gov.uk) is an executive agency, sponsored by the [Department of Health and Social Care](https://www.gov.uk/government/organisations/department-of-health-and-social-care).

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