

Online radiation protection training update

RPC's online radiation protection course now has over 700 subscribers. The online course, which is designed to provide around two hours of radiation protection update training, covers a range of topical issues including CQC IRMER inspections, new radiation protection legislation/guidance and diagnostic reference levels. The training is suitable for radiographers, radiologists and any other persons involved in diagnostic radiology and is accessed via the RPC website. This course is not suitable for those staff that have not had any previous radiation protection training. Feedback on the training has been very positive so far. Users

have found the course content interesting and informative, and most subscribers appreciate the concept of having to pass a series of quizzes before being issued with a certificate of completion.

RPC would be pleased to receive ideas for topics to be included when the course content is updated in two years' time.

Any person wishing to take the training, who has not already been provided with a username and password, should contact Gillian Hermanstein by email (gillian.hermanstein@stgeorges.nhs.uk). The training is provided free of charge to RPC's customers.

Happy Arrivals!



If you happen to have a visit from RPC physicists, Monu Asok or Mahyar Azimi and notice that there are bags under their eyes, there is a very good reason! Both became 'first time dads' within weeks of one another. Monu's wife, Greeshma, gave birth to baby girl Akira on 29th April and Mahyar's wife, Negar, gave birth to baby boy Armin on 8th June. I am sure that you will all join with us in congratulating them on their new 'bundles of joy.'

Medical Physics Services at St George's

As well as radiation and laser protection services, the medical physics team at St George's provide other services including medical equipment management, medical device consultancy, nuclear medicine services and ultrasound physics. If you would like further information on any of these services, please ring Kathryn on 020 8725 1051.

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RPC News

CQC advises Six-point identification checks to help prevent radiation incidents

Incidents where a patient receives an exposure 'much greater than intended' as a result of procedural error must be reported to the CQC, who regularly publish data on the number and type of notifications they receive.

In their most recent report they also highlight some of the steps taken by Trusts who have been successful in reducing their number of such incidents. A sizeable proportion of incidents can be attributed to mistakes made by the referrer, with 24.2% of all diagnostic radiology incidents dealt with by the CQC in 2013 being a result of the referrer completing the wrong patient details on the request form.

It may be thought that there is little the operator can do to guard against such incidents when traditional patient identification procedures merely aim to

confirm the individual about to be exposed is the person detailed on the referral form. However, the CQC report that one NHS Trust dramatically reduced its number of incidents by introducing a 'six-point identification check'. As well as the familiar three-point check of patient ID (name, address, date of birth), operators are also required to check clinical information, the site/side requested and the existence of previous imaging.

An expanded set of checks requiring the operator to pause, review the referral and, where appropriate, seek confirmation from the patient, can also help eliminate operator errors. Mistakes by the operator accounted for 55% of all notified incidents, with the most common of these errors being an X-ray of the wrong anatomy or laterality. At the Radiological Protection Centre, we have incorporated this advice in our latest IR(ME)R identification procedure. This now specifies methods to ensure the correct examination as well as identify the correct patient.

We recommend that the operator confirm with the patient the clinical history, body part and, if appropriate, side to be imaged and double-check the

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Welcome to the latest edition of RPC's occasional newsletter

The RPC team have collated lots of information and guidance on issues that are relevant to you and your department so you can rest easy that you are up to date on what is going on in the radiation protection world.

If you need further info on any of the articles in this newsletter please ring us – we're always here to help.

Best wishes

Kathryn St John-Mosse
Editor

St George's University Hospitals NHS Foundation Trust

THE RADIOLOGICAL
RPC
PROTECTION CENTRE
Incorporating The John Perry Laboratory

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Medical Physics Services at St George's

For further details on any of the articles in this publication or information on the services RPC provides, please ring 020 8725 1051 or e-mail Kathryn.StJohn-Mosse@stgeorges.nhs.uk

Reporting Radiation Incidents under a Duty of Candour

Since April 2013, NHS organisations have been under contract to comply with a Duty of Candour to inform patients of medical incidents resulting in moderate or severe harm (or where death occurs). This requirement results from the outcome of the Francis Report into failings at Mid-Staffordshire hospital and requires the healthcare provider to give the affected patient information about the incident within 10 days of the occurrence. It is currently unclear how radiation incidents fit in with the definition of harm given in the National Patient Safety Agency (NPSA) document Seven Steps to Patient Safety. The majority of radiation incidents result in a relatively low additional probability of induction of fatal cancer many years in the future. Very few such incidents involve immediate harm to the patient and, therefore, incidents in diagnostic radiology involving doses that are greater than intended do not meet the NPSA definition of harm in any obvious sense.

The Medical Physics team at the Christie Hospital in Manchester have attempted to address this issue and have published their thoughts in an excellent paper which appeared in the British Journal of Radiology last year. They argue that an effective dose corresponding to an additional statistical risk of fatal cancer induction of 1 in 1000 or greater would seem a reasonable threshold for informing the patient of the incident. This would equate to an additional effective dose of 20 mSv in a healthy middle-aged adult. For deterministic tissue injuries, absorbed doses to the eye and skin that lie at the thresholds for injury would be deemed appropriate. This would equate to 0.5 and 2 Gy respectively.

Incidents that are reportable to the regulators are also judged to meet the criteria for the need to inform the patient.

The Radiation Protection Advisers at RPC are in broad agreement with the approach taken by the Christie physicists. As such, we intend to advise our customers that patients are informed of radiation incidents under the Duty of Candour using the following criteria:

- Any radiation incident that is reportable to an external authority i.e. the Care Quality Commission under IR(ME)R2000 or the Health and Safety Executive under IRR1999. This would cover all

incidents where the radiation exposure is defined as "much greater than intended".

- An additional unintended effective dose to the patient of 20 mSv or more.
- A radiation incident resulting in a total skin absorbed dose equal to or greater than 2 Gy, or an eye lens absorbed dose equal to or greater than 0.5 Gy.

Incidents not meeting these criteria do not need to be notified to the patient. RPC will formalise this advice in due course following discussions with the regulators and it will subsequently appear in our RPS and IRMER handbooks. Once our advice has been formalised, our incident reports will advise whether the patient needs to be informed under the Duty of Candour. In the meantime, you are advised to follow the above criteria for informing the patient of radiation incidents if your current hospital procedures do not cover this topic with sufficient clarity.

Full details of the BJR paper on this topic are as follows:

Kotre CJ, Walker A. Duty of candour and the definition of moderate harm for radiation overexposure and exposures much greater than intended in diagnostic radiology. Br J Radiol 2014;87:20130555.

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referral form for the modality requested. Whereas the patient should be directly asked to give their identification details it is more appropriate to explain to the patient the examination you are intending to carry out and pay

attention to their response, ensuring that the X-ray you are about to perform is consistent with their expectations. Our early experience with this approach indicates a significant drop in the number of identification errors.

If you are looking to revise your IR(ME)R procedures in the light of the CQC's advice, please contact John Kyriou at RPC (john.kyriou@stgeorges.nhs.uk) who will supply you with our latest templates.

UK Government formally adopts new European Basic Safety Standards

On Tuesday 6th February 2018 something significant will happen in the world of radiation protection. It is the date by which our government must adopt in UK law the contents of the new EU Directive 'Basic Safety Standards 2013/59/Euratom', a document that redrafts the rules that govern employers with regard to radiation in the workplace and medical uses of radiation. In practice this will mean a new set of laws that will supersede not only the current IRR99 regulations (based on the previous BSS 96/29 directive) but also incorporate updated versions of the laws that are currently set out in IR(ME)R 2000 (including amendments), which may no longer exist as separate legislation. However, much of the new legislation will perpetuate the arrangements that are already in place. Changes will reflect updates in current guidance and expand upon existing principles. For example, in 2011 the International Commission on Radiological Protection (ICRP) published its Report ICRP103, in which it revised the risk factor for exposure to the lens of the eye. Consequently the new 2013 BSS will require all European Union member states to reduce the annual eye dose limit from the current 150 mSv to 20 mSv. The new BSS also incorporates the latest recommendations from the Basic Safety Standards of the International Atomic Energy Agency (IAEA). Some other notable changes include:

- optimisation of medical exposures to also consider occupational dose to staff as well as that to the patient.
- increased involvement of the medical physics expert (MPE) in diagnostic and interventional radiology
- dose limits for medico-legal exposures (to be renamed "non-medical" exposures)
- additional training requirements for all those involved in medical exposures, including referrers

The new regulations should provide additional clarification on the role of duty holders, and hopefully make their implementation less open to interpretation. As such it should make the regulatory role of the CQC more predictable.

RPC will be helping to prepare our customers for the coming changes. However, we expect that departments with established good practice will find that they are already compliant with most of the new regulations.

RPC Launches New DRL software

RPC have recently launched a new, improved version of our Diagnostic Reference Level (DRL) software. This is designed to allow the user to set and monitor local Diagnostic Reference Levels in accordance with IPEM Document 88 (Guidance on the Establishment and use of Diagnostic Reference Levels for Medical X-ray Examinations, 2004). The new software is more robust than the previous version and allows the user to view trends in patient dose over time. The user can set and monitor DRLs from three modalities; general radiography, fluoroscopy, and multi-detector CT. The method involves inputting dose-area product (DAP) or dose-length product (DLP) values from a range of examinations on average-sized patients. The software then automatically sets local DRLs and an investigation level against which the results of future dose audits are assessed. A LDRL for a given examination may be set for an X-ray department or for individual X-ray rooms. It is also possible to set LDRLs for individual operators if you wish to compare techniques between different persons.

The software runs in Microsoft Excel and is freely downloadable from RPC's website. To download the software, please visit www.sghrpc.co.uk and click on the 'RPC News' tab towards the top right corner of the page. Then click on the Excel logo and select 'Save File' to download the spread sheet to your computer. Full instructions are given on the first work sheet. Please ensure that you have macros enabled in Excel for the software to run successfully.

If you have any questions or enquiries regarding the software, please contact Mahyar Azimi at RPC (mahyar.azimi@stgeorges.nhs.uk).