

continued from page 1

fluoroscopy mode. Another simple way to reduce exposure is to take up a position as far as possible from where radiation enters the patient. He also favours using a real-time personal dosimeter to help check exposure after each procedure. This can help radiologists optimise their equipment and physical position for future procedures.

Jaschke would like radiation safety to become as much of a ritual as going through air safety checks prior to a flight. "If you are an airline pilot, when you go into the cockpit, you run through certain steps each time, and that's what we want to train our radiologists to do

before they enter the angiography suite and start the procedure," he said.

However, in some cases, it is impossible to avoid a high radiation dose, such as in procedures involving catheterisation where the radiologist has to remain close to the patient. In this case, it is important to choose the right personal protective equipment, according to Dr. Marco Brambilla, chair of the Department of Medical Physics, University Hospital of Novara, Italy.

"There are aprons, gloves, glasses, hats or masks, but not all of them provide the same degree of protection, so the purpose of my talk is to explain to radiologists which equipment they should own and the



Ready for action: the interventional radiology suite at Heraklion University Hospital in Crete, Greece. (Provided by Prof. John Damilakis)

degree of protection this affords," he explained.

Protective gloves, for example, only give limited radiation protec-

tion because they must be thin enough to maintain the sensitivity of the fingers. They give a false sense of security, making radiol-

ogists keener to put their hands close to the x-ray beam and increasing the dose to their hands and patients, he said. Other companies supply shielded hats, which fail to provide effective protection of the brain due to radiation coming up from below.

Maintaining a balance between protection and comfort is also important, Brambilla explained. Some companies, for example, sell heavy shielded equipment that is uncomfortable to wear for hours at a time. Both he and Jaschke recommend ceiling-mounted radiation protection, which doesn't put pressure on the body, but Brambilla warns that some radiologists or cardiologists are not trained in its use.

BY VIVIENNE RAPER



European-wide implementation of clinical audits starts to gather momentum

Two surveys about the implementation of clinical audits across Europe will be the highlight of today's presentation by Dr. Adrian Brady, chairman of the ESR Quality, Safety and Standards Committee. The results of the new research, which closed in December 2018, will underline that many countries have yet to introduce important European legislation.

"In a lot of countries, the idea of audit being part of our lives as radiologists is alien," said Brady, a consultant radiologist at Mercy University Hospital, Cork, Ireland. "But, as well as needing to do it legislatively, it's a good idea for your department to evaluate whether it's meeting a reasonable standard."

Article 58a of the European Council Basic Safety & Standards (BSS) Directive (2013/59/Euratom), which lays down basic safety standards for protection against the dangers arising from exposure to ionising radiation, requires that radiology departments perform clinical audits. The emphasis is on each national government to put the directive into practice, and clinical audits became compulsory on February 6, 2018.

According to Brady, clinical audit isn't a new thing in Europe, but the implementation has traditionally varied between countries. "The U.K. and Ireland are a poster child for audit," he said. "It's a standard part of working life."

In his talk, he will present results from a survey of EuroSafe Imaging Star departments to show how many of them have implemented the new requirements. A further survey of national societies aims to discover how many European Union member states have implemented nationwide structures to support clinical audits.

Brady noted that 36 out of 47 national societies and 68 out of 103 EuroSafe Imaging Star departments had given feedback in response to the surveys. "This is a really excellent response rate," he said.

He will also explain how radiology departments can undertake clinical audit. There's no specificity in the directive about what departments need to be auditing, and it's up to the individual department, he added. One department might run an audit on waiting times, while another could look at radiation protection issues.

To assist radiology departments, the ESR has released a

Clinical Audit Tool booklet, Esperanto, containing 17 templates and other details to guide radiologists through audit in various situations. The first edition was originally published in 2017, but a second edition containing 13 additional templates has been developed.

The 17 original templates, along with the six new ones, cover activities that must be measured under the directive. Most of this information relates to radiation exposure. Another seven templates cover audit topics relating to service provision and clinical practice. These are not required to comply with legislation.

In today's session, Dr. Jan Schillebeeckx, a consultant and former chief medical officer at Qaelum, a spinoff from the Leuven Catholic University in Belgium, will discuss the company's software tools for clinical audits. He explains that the idea for his talk came from his own experience of auditing 44 hospitals throughout Europe and the Middle East.

"We came to one common finding: there's a lot of information available in hospitals and radiology departments, but the people on the ground don't know where it is," he said.

Thanks to a government grant, Qaelum began in 2013 to develop software to help with clinical auditing processes. The company began by collecting a large database of multiple published documents, including good practice guidance, and then categorised and labelled the information.

Qaelum also created a large set of questions that could be used to run an audit. This was initially based on the Quality Assurance Audit for Diagnostic Radiology Improvement and Learning (QUAADRIL),

the International Atomic Energy Authority's official auditing scheme.

"We've run an algorithm to define the key content identifiers for each audit question, and then matched those questions with the information most likely to address them," explained Dr. Tom Van Herpe, senior researcher at Qaelum.

According to Nelly Ilcheva, head of quality assurance and regulatory assurance at Qaelum, the software has other benefits in addition to audit. The system can work on a range of audit frameworks and easily convert between them. By monitoring compliance, the system can help to detect, classify and – in the

future – prevent major and minor errors, Schillebeeckx continued.

"Whatever audit scheme we take, we see similar errors recurring in radiology, some where there could be no harm to the patient, but we've also seen 10–15 major recurring errors in every radiology department we've audited in the past, and this worried us," he said.

The company is working with pilot hospitals to clinically validate the software, Ilcheva explained. The team has already validated the data management part of the software, and will begin testing the compliance and audit functions in due course.

PIER Session (Professional Issues and Economics in Radiology)

Friday, March 1, 10:30–12:00, Room N
PIER @ ECR Session

(Jointly organised with the ESR Audit and Standards Subcommittee)

PI 2 Clinical audit: how to deal with the legal and professional requirements

Moderators: D.C. Howlett; Eastbourne/UK
G. McGinty; New York, NY/US

- » Chairperson's introduction
D.C. Howlett; Eastbourne/UK
- » ESR's concept and tools for clinical audit
K. Drinkwater; London/UK
- » Overview on adoption of BSS throughout Europe
A. Brady; Cork/IE
- » Peer review as key for quality improvement: the US experience
G. McGinty; New York, NY/US
- » Can newer IT-developments including artificial intelligence (AI) help to improve quality in radiology?
J. Schillebeeckx; Knokke/BE
- » Panel discussion: Why should radiologists care about clinical audit and peer review?

This session is part of the EuroSafe Imaging campaign.



In the CT department of a Belgian hospital, radiographers, nurses, and technicians undergo audit training. Shown on the left are Evgenia Boldyreva, radiology technologist and head of training at Qaelum, Dr. Jan Schillebeeckx, and Dr. Tom Van Herpe. (Provided by Dr. Jan Schillebeeckx)