



National Diagnostic Reference Level Service (NDRLS)

2019 Newsletter

Welcome to the **ARPANSA NDRLS newsletter for 2019**

This edition includes your annual reminder to submit your MDCT data before the end of year shutdown and an important announcement regarding the introduction of image guided interventional procedure DRLs.

MDCT news

2019 data collection close off

There will be a brief service interruption on the morning of **6 January 2020** while we conduct the 2019 close off. Open surveys with less than ten patients will be locked and no FRL report will be generated. Surveys with 10 or more patients will be closed and an FRL report will be generated as per usual.

We close from **25 December – 4 January (inclusive)**, during which time the NDRLS hotline and email service will be unattended and we will not be able to reset your passwords.

Submitted data

Our service continues to grow with 72 additional facilities having registered to participate so far this year, taking the total number of facilities to 715.

So far this year around 2650 surveys have been submitted, which is about the same as the number submitted at the same point last year. Using last year as a guide, we expect another 1000 surveys to be submitted before the end of year close.

We thank you all for participating. The more sites actively involved, the more representative the derived national DRLs and thus the better suited they are to support optimal care for patients.

A new publication

An article describing the process of developing the 2018 MDCT DRLs has been accepted for publication by the [Journal of Medical Radiation Sciences](#). The open access article is expected to be published in a forthcoming special edition of the journal concerning optimisation.

Other news

Forthcoming national DRL for diagnostic coronary angiography

Since 2014, we've collected data on radiation dose for a number of procedures in angiography and interventional radiology under the general modality classification of image-guided and interventional procedures (IGIP). In 2019 a liaison panel was formed to review the data and consider recommendations for national DRLs. The liaison panel reviewed the 2014 to 2018 IGIP survey data and recommended national DRLs for coronary angiography. There was insufficient data to recommend DRLs for other procedures.

Pending endorsement by relevant professional and industry bodies, the adult coronary angiography national DRLs will come into effect in January 2020. Once the DRLs are published on our website, facilities that regularly perform adult coronary angiography must have a program to conduct dose audits for comparison against the new DRLs in order to comply with the requirements of the *Code for Radiation Protection in Medical Exposure* (RPS C-5, and its predecessor RPS 14).

It is anticipated that the Diagnostic Imaging Accreditation Scheme (DIAS) will apply a 12-month phase-in period. For accreditation purposes, this will mean that facilities that regularly perform coronary angiography will not be required to submit audit records relating to the new DRLs until 1 January 2021. It is anticipated that from this date, accreditors assessing an application for DIAS accreditation (including re-accreditation) will require evidence that policies for undertaking a DRL comparison have been updated to include the new adult coronary angiography DRLs and that audits conducted after January 2020 have been compared against the new adult coronary angiography DRLs, in addition to any other procedures performed at the practice for which DRLs have been established.

State and territory radiation regulatory authorities have been briefed on the changes through the Radiation Health Committee. Radiation regulatory authorities have also agreed to the phase-in period.

Proposed Australian adult (15+ years) diagnostic reference levels for diagnostic coronary angiography

Category	Description	KAP (Gy.cm ²)	K _a (Gy)
Coronary angiogram	The passage of a catheter into the aortic root or other great vessels for angiography of the native coronary arteries (with or without a left ventriculogram). Inclusion Criteria: Patients with 'normal' coronaries; no or physiologically insignificant diameter stenosis (<50% narrowing)	30	0.5

*KAP – kerma-area product (also called dose-area product)
Ka – cumulative air kerma at the patient entrance reference point*

Nuclear medicine DRL technical report

In September, a [technical report \(TR 180\) detailing the development of the current nuclear medicine DRLs](#) was published on our website.

We are beginning planning for a new survey of nuclear medicine procedures that we hope to undertake in the second half of 2020. Stay tuned for further updates.

Imaging dose meter calibration

Our dose meter calibration service has now been available for a year. The service covers the full range of the IAEA RQR, RQA and RQT standard X-ray beams, meaning that we can calibrate the responses of dose meters over the range of diagnostic beam energies. If you would like any of your dose meters calibrated contact us at ndrld@arpansa.gov.au.

Use of patient gonadal and foetal shielding

In April 2019, the American Association of Physicists in Medicine (AAPM) released a position paper recommending that the routine use of patient gonadal and foetal shielding in diagnostic imaging should be discontinued. The Australasian College of Physical Scientists and Engineers in Medicine recently endorsed the AAPM's position.

The AAPM have prepared an [FAQ relating to the issue](#).

Occupational Radiation Exposure education module



Do you or your facility have:

- staff who are **genuinely or irrationally concerned** about occupational radiation exposure?
- staff who are a little **blasé** about radiation?
- staff with little or **no knowledge or understanding** of radiation?
- staff with some **misconceptions** around radiation?
- staff who are **time poor**?

- senior staff with considerable professional expertise who have some **gaps in their knowledge** of radiation safety?
- radiation experts who have so much **spare time** that all they do is wait around eagerly to train staff on radiation safety?
- radiation experts whose ability to **tailor their messages** to non-technical staff is limited?

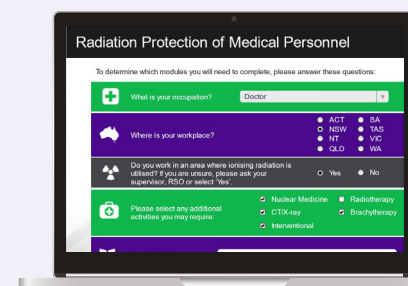
- radiation safety induction and training material that is **up to date and contains verified content**?
- radiation safety training material that **underpins international best practice** and promotes national uniformity?
- training material that is **tailorable by occupation** and based on the likely level of involvement with radiation?

- interactive training material based on **adult learning principles**?
- staff who arrive or transfer between roles at **inconvenient times**, e.g. in between group training sessions?
- pregnant** or likely to become pregnant staff?



ARPANSA's Occupational Radiation Exposure (ORE) training material for medical facilities may help.

Comprising **individually tailorable content** in a modular structure, ARPANSA's ORE training **optimises time for trainers and staff** and is available in multiple formats – **online**, as a **SCORM compliant import** into a learning management system and in a format suitable for **overhead presentation** to groups.



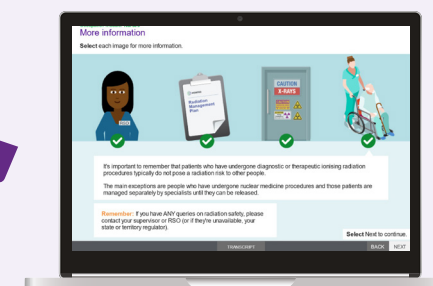
Tailorable

For example, if you're an administrator with no involvement with radiation, the training will be brief. If you're a nurse working in nuclear medicine, the material will be more comprehensive.



Engaging and interactive

ORE is based on contemporary adult learning principles promoting engagement and interaction.



Raising awareness

ORE can't answer all questions and doesn't profess to train staff in their fields. Rather it provides a baseline level of occupational radiation safety awareness with options for further information.

The final version will be available from our website from January 2020, however **the draft is available now.**

For further information contact **Alan Mason** on 0414 747 447 or **alan.mason@arpansa.gov.au**.

IAEA DRL workshop

We, in conjunction with the International Atomic Energy Agency (IAEA), hosted an international/regional workshop on diagnostic reference levels (DRLs) from 25–29 November 2019. Twelve delegates from countries including Indonesia, Kuwait, Malaysia, Philippines, Thailand, and the United Arab Emirates attended the workshop to gain knowledge regarding DRLs and share experiences about their countries programs.

Various professions were represented, including radiation regulators, medical physicists and clinical specialists. The head of the radiation protection of the patient (RPOP) section of the IAEA, and local medical physicists and clinicians also participated. In addition to hearing guest presenters from universities and medical facilities, participants visited a large tertiary hospital as part of the weeklong workshop.

During the course of the workshop, participants discussed the fundamental philosophy of DRLs and practical implementation across all the major imaging modalities, drawing on the recommendations in [ICRP publication 135](#). Medical physicists and clinical staff from the Alfred Hospital provided insights into how they review practice following comparison of their local dose levels with the national DRLs and how this cycle of measurement and review has led to practice changes, with the subsequent lowering of radiation doses to patients.

Representatives from the visiting counties gave presentations on the establishment and maintenance of DRL programs in their respective countries. A great deal was shared both formally and informally that will assist attending countries in their radiation protection of the patient programs.

Our staff also gave an outline of Australia's radiation protection of the patient (RPOP) training package along with the soon to be released occupational radiation exposure (ORE) platform. It is anticipated that this workshop will be a catalyst for future cooperation and discussions between the attending counties and others in the region regarding diagnostic reference levels in medical imaging.



Contact us

If you have any queries, we would love to hear from you:

 arpansa.gov.au/ndrls

 ndrld@arpansa.gov.au

 1800 033 972