Australian Government

Australian Radiation Protection and Nuclear Safety Agency

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WELCOME TO THE ARPANSA

NDRLS NEWSLETTER 2022

MDCT news

This year we've had an additional 32 facilities register with the service and we appear to be on track to match or surpass our 2020 record for the total number of surveys submitted.

As always, thank you to those who participate in the MDCT DRL survey. Community participation is crucial for the success of the National DRL program. Understandably, we agree with a facility department head who said:

"ARPANSA's DRL service provides good, useful information, it makes our life easier, satisfies mandatory legislative requirements and it's free. Why wouldn't you use it?"

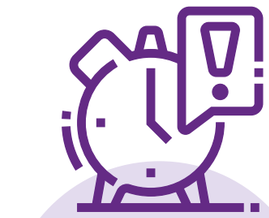
To find out more about DRLs and the National Diagnostic Reference Level Service (NDRLS), visit our website at www.arpansa.gov.au/ndrls.

3829

SURVEY SUBMISSIONS IN 2021

32

NEW FACILITIES SIGNED IN 2022



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2022 SURVEY CLOSES 9 JANUARY 2023

2022/23 shutdown and data collection close off

ARPANSA will be closed from 23 December – 3 January (inclusive). During this time the NDRLS hotline and email service will be unattended, and we will not be able to reset your passwords.

There will be **a brief service interruption** on the morning of **Monday 9 January 2023** while we conduct the **2022 close off**. Open surveys with less than 10 patients will be locked and no DRL report will be generated. Surveys with 10 or more patients will be closed and a DRL report will be generated.

NDRL updates

An update of the current national DRLs (NDRLs) for MDCT will be considered during 2023 due to the general trend towards lower doses. The current NDRLs are becoming less representative of common practice, with the main driver being technological changes, including the prevalence of iterative reconstruction and other dose saving measures. Figure 1 compares the values of the NDRLs against the 75th percentiles of the facility reference levels (FRLs) in 2021. The gaps between the NDRLs and the 75th percentiles illustrate the rationale for updating the NDRLs to reflect decreasing CT dose levels.

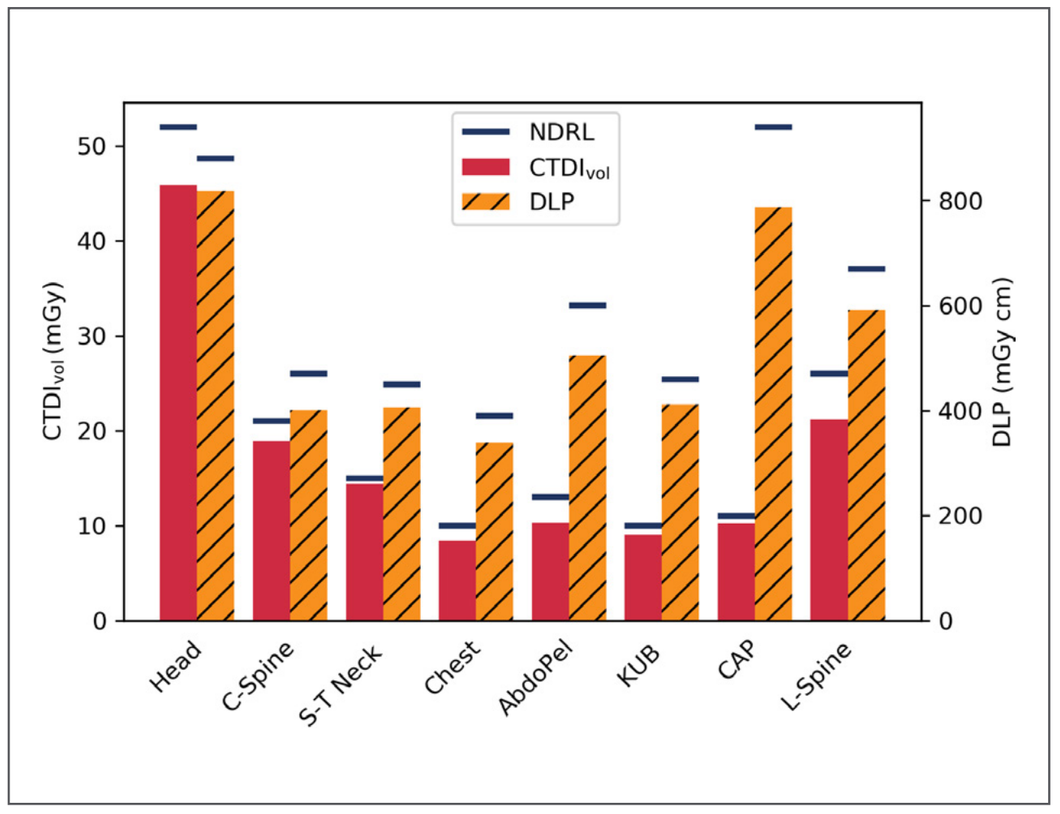
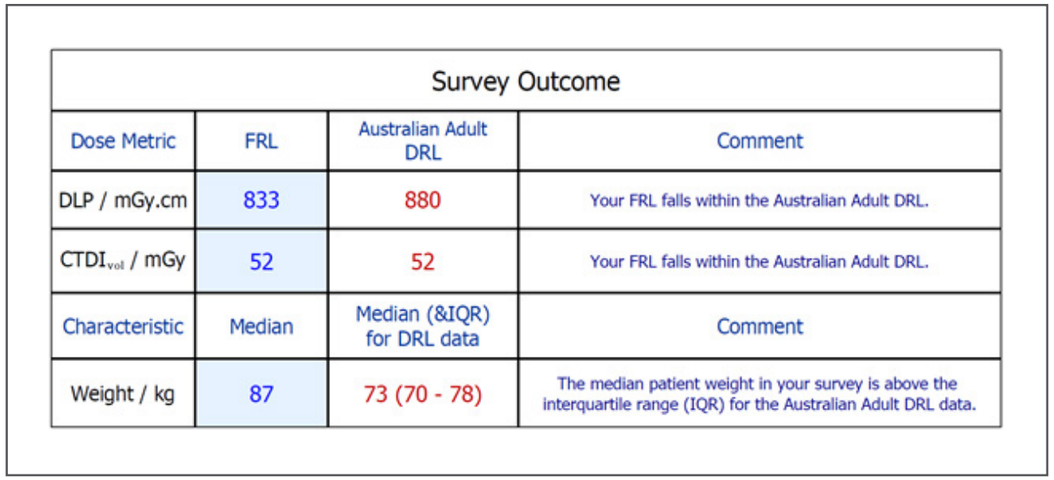


Figure 1: Third quartiles of FRLs for MDCT in 2021 and comparison to the national DRLs.

Updates to the MDCT portal

There have been a few behind-the-scenes updates to the MDCT portal which will allow our admin team to alter data and re-issue reports more easily. If you have incorrectly saved data to one of your surveys, please let us know and we will endeavour to fix things up for you.

A row has been added to the summary table on the first page of the survey report to indicate how the weight of your patient sample compares to the patient cohort used to generate the NDRLs (see Figure 2). A comparatively heavy or light patient cohort may explain your relatively high or low FRL.



Survey Outcome

Dose Metric	FRL	Australian Adult DRL	Comment
DLP / mGy.cm	833	880	Your FRL falls within the Australian Adult DRL.
$CTDI_{vol}$ / mGy	52	52	Your FRL falls within the Australian Adult DRL.
Characteristic	Median	Median (&IQR) for DRL data	Comment
Weight / kg	87	73 (70 - 78)	The median patient weight in your survey is above the interquartile range (IQR) for the Australian Adult DRL data.

Figure 2: example of an updated survey report that includes a comment on the patient weight of the submitted survey.

For 2023, we are aiming to automate the password reset process. In the interim, should you forget your password, please contact our administration team to get your password reset. Please be aware that our team cannot reset passwords for generic user accounts (those starting with NG), as these are administered via a facility's contact or radiologist accounts.

Nuclear medicine news

2021–2022 nuclear medicine survey

An NDRLS nuclear medicine survey concluded in March of this year. Well over one hundred respondents provided valuable data on prescribed doses, administered activities and CT doses delivered. Thank you to all who participated.

The data submitted has been reviewed and potential DRLs are being discussed by a panel of representatives from various professional bodies and other stakeholders.

While no decisions have yet been finalised, ARPANSA envisages that the number of DRLs will be substantially reduced for general nuclear medicine procedures. These will cover the most common procedures, with data for other procedures published separately on ARPANSA's website for reference. For positron emission tomography (PET), additional DRLs are likely to be introduced for PSMA scans (both Ga-68 and F-18 based) and for Ga-68 neuroendocrine tumour imaging.

New DRLs will be published in 2023 – keep an eye out!

There is currently no ongoing data collection being organised by ARPANSA for nuclear medicine or PET procedures. However, a template is available from our website for you to use to conduct DRL comparisons. Visit the nuclear medicine NDRLS page to download.

Image-guided and interventional procedures (IGIP) news

In 2021, 92 surveys were completed from 61 rooms at 32 sites. This was a doubling of the 46 surveys received in 2020. Thanks to all who responded to our call for more data. Third quartiles of the FRL distributions are shown in Table 1 for procedures where at least 5 surveys were submitted. The data for diagnostic coronary angiography is consistent with the present NDRL. More data is needed to set NDRLs for other procedures.

Table 1: Third quartiles of FRL distributions for IGIP in 2021

Procedure	Surveys	DAP ($Gy.cm^2$)	$K_{a,r}$ (Gy)
Diagnostic coronary angiography	40	25.3	0.38
Single lesion PCI	13	44.8	0.77
Pelvic embolisation	5	168	0.81
Barium swallow	5	14.4	0.088
Line insertion	6	1.6	0.006

PCI = percutaneous coronary intervention
DAP = dose area product
$K_{a,r}$ = cumulative air kerma at the reference point

IGIP close-off for 2022 and mailout of 2023 templates

IGIP survey spreadsheets for 2022 will continue to be accepted and processed through to **31 January 2023**. New IGIP survey spreadsheets for 2023 will be sent to all existing IGIP survey registrants on **1 February 2023**. Don't forget to use the 'Unit Settings' box on the Data Entry page of the template.

Radiation Protection of the Patient (RPOP)

ARPANSA is reviewing its RPOP online educational material, including the patient handout. If you know of a referrer that could do with a refresher on basic radiation safety issues, please pass the link on, or if you have some views as to how it could be improved, contact Alan Mason at alan.mason@arpansa.gov.au.

Occupational Radiation Exposure (ORE)

ARPANSA's ORE online modules provide easy customised occupational exposure material for most medical professionals as well as relevant radiation safety material. The online content is also available in formats that can be downloaded for internal use within facilities. If you have any queries, contact Alan Mason at alan.mason@arpansa.gov.au.

Some final questions...

ARPANSA would like your feedback regarding additions and improvements to our current educational and training material for medical imaging facilities and staff. The topics listed below have been identified as areas where additional information may be beneficial:

- **Justification** - what information is required from the referrer? What's the official process of justification? How do the state-based regulators implement or monitor the requirements?
- **DRLs** - what are DRLs, why do they exist, how are they calculated and how should they be used?
- **Medical radiation incidents** – what constitutes an incident, when do they need to be reported and to whom?
- **The role of the RSO in medical imaging** – when do you need to contact them and what can they do for you?

Your thoughts on the above, or any other topics that you think would be handy to cover in ARPANSA's educational material, or even an ORE module, would be much appreciated. Please contact Alan on alan.mason@arpansa.gov.au or 0414 747 447 for a chat.

From all here at Medical Imaging, we wish you a good end to 2022 and an even better New Year.