



Australian Government
Australian Radiation Protection
and Nuclear Safety Agency



Australian Clinical Dosimetry Service

Year in Review

2023–24



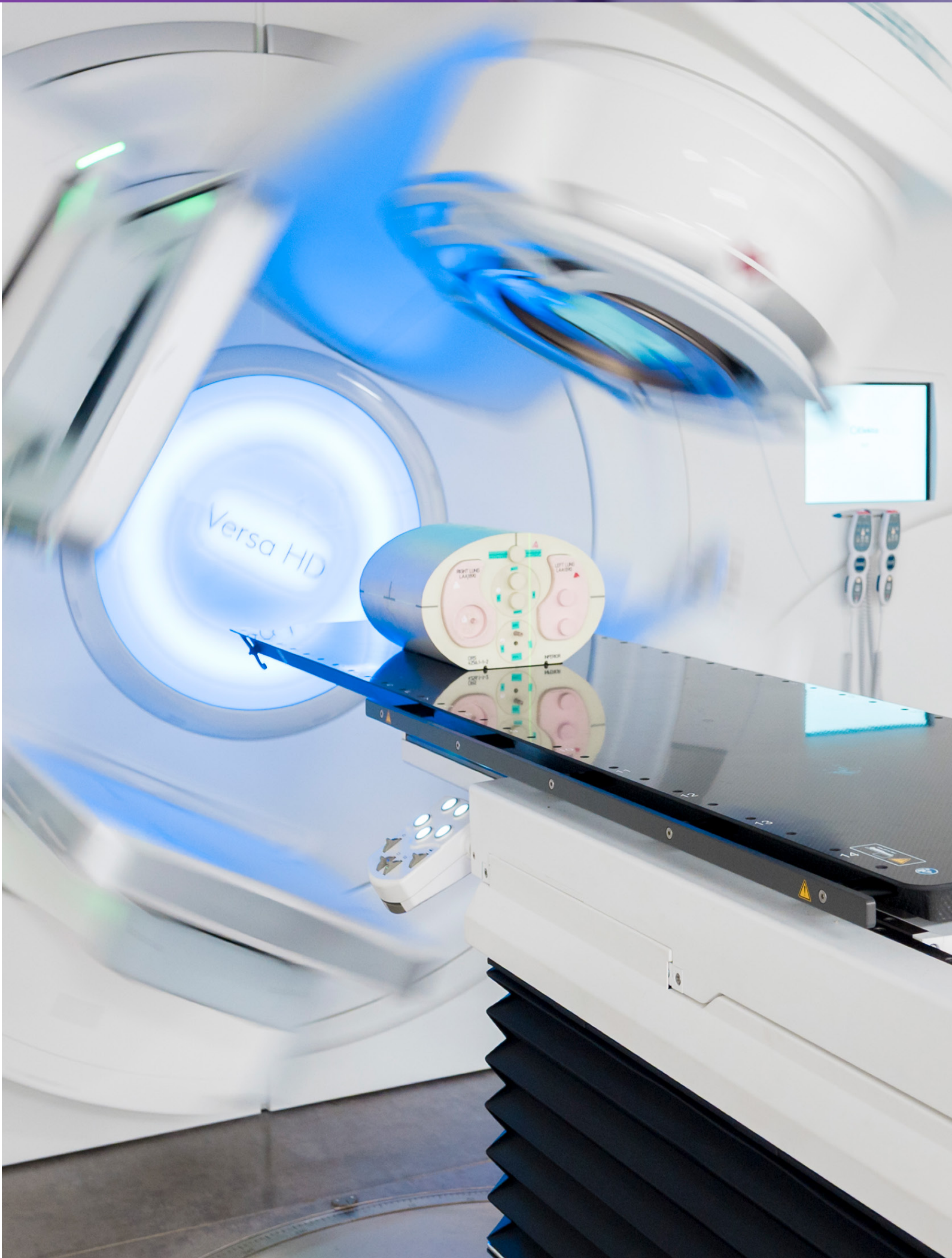
Acknowledgement of Country

From our scientists to the world's first scientists, we respectfully acknowledge Traditional Owners and First Nations communities and their rich cultures. We recognise, respect and continue to learn from Indigenous sciences, and the deep understanding and observations of land, waters and sky carried and shared by First Nations peoples over thousands of years.

ARTWORK BY
Natalie L. Simmons

Contents

Welcome	6	Audit coverage in 2023–24	18
ACDS overview	8	Audit development and research	20
Our vision	8	Motion management audit development	20
Our mission	8	Film dosimetry	22
Our specialised structure	8	Update to IAEA TRS-398 code of practice	25
Our valued staff	9		
Our highly trained external auditors	9		
Our Strategic Plan – setting the standard	10	Working with CAG to strengthen outcomes	26
Our strategic objectives	10	Out of Tolerance audit cases	26
Our governance – The Clinical Advisory Group	11	Our national datasets – providing certainty	27
Achieving peak accreditation	12		
Enhancing international research and clinical trials	13	Presentations and publications	28
		Publications	28
		Presentations	28
Trusted on the global stage	14	Professional development	30
International collaboration and affiliations	14		
Stakeholder engagement	15	Feedback	30
By the numbers in 2023–24	16		



Welcome to the Australian Clinical Dosimetry Service (ACDS) 2023–24 Year in Review

During 2023–24 the Australian Clinical Dosimetry Service (ACDS) continued to provide a comprehensive dosimetry audit service to radiotherapy facilities across Australia and New Zealand. As part of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), ACDS plays a critical role in promoting the safe and effective use of medical radiation.

This period has been one of change for the ACDS with some Australian subscribers moving to a private provider of dosimetry audits from 1 July 2023. This means that there is no longer a complete Australia-New Zealand dataset reducing the ability to track dosimetry biases in around 70 radiation oncology facilities across Australia and New Zealand. Nonetheless, this year the ACDS completed a total of 99 dosimetry audits, including 46 remote audits and 53 onsite audits, providing confidence that radiation dose is accurately delivered to patients treated in 48 Australian and 7 New Zealand facilities. Fee for service audits that cover specialist techniques and newly installed treatment machines or planning systems are offered in addition to the scheduled audits included in ACDS subscriptions. This year the ACDS performed 3 Level Ib audits for therapy kilovoltage X-rays and 3 cranial SRS audits as well as 16 Level Ib and 2 additional Level III audits on newly installed linear accelerators.

Research and development continue to be integral to the role of ACDS. ACDS was pleased to lead 2 publications in peer-reviewed journals in the year, reporting on a comparison of Gafchromic film types to assess their suitability for stereotactic radiosurgery (SRS) dosimetry, and an assessment of the performance of various audit scoring approaches for motion

management audits. The film publication reports the results of an in-house study for the Level III SRS audit development. The motion management paper was an international collaboration with the Imaging and Radiation Oncology Core (IROC) Houston QA Center. IROC provides integrated radiation oncology and diagnostic imaging quality control programs, including dosimetry audits, in support of the United States' National Cancer Institute's National Clinical Trials Network. A further 16 presentations were made at national and international meetings and seminars. More detail can be found in the publications and presentations section.

The ACDS remains committed to developing audits for specialty treatment techniques such as online adaptive radiotherapy processes on MR Linacs and motion management for lung and liver targets. We aim to begin field trials for the motion management audit in 2024–25.

Finally, I'd like to acknowledge the dedication and commitment of the ACDS auditors. This talented team brings together a variety of clinical and scientific expertise to create a strong independent and comprehensive dosimetry audit service supporting high quality cancer treatment and patient safety in radiotherapy across Australia and New Zealand.



Rhonda Brown
Director ACDS



Dr Gillian Hirth AO
CEO of ARPANSA

ACDS overview

Our vision

A world leading dosimetry auditing service for the highest level of quality and patient safety in radiation therapy.

Our mission

To guide, support and improve patient safety and radiotherapy service delivery by:

- providing a comprehensive suite of audit modalities covering all common clinical practices
- improving national dosimetry capabilities in clinical treatment delivery
- offering its services to Australian and overseas radiotherapy centres on a fee-for-service basis.

The mission of the ACDS is fully aligned with Key Activity 1 of ARPANSA and its initiative to: *‘Promote the safe and effective use of medical radiation’*

Our specialised structure

ACDS draws on ARPANSA’s extensive scientific expertise and access to advanced equipment. It is uniquely placed to deliver high-quality, research-driven dosimetry audits aligned with contemporary clinical best practice.

ACDS forms an integral part of the Medical Radiations Services Branch (MRSB) at the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) along with the Medical Imaging section and the Primary Standards Dosimetry Laboratory (PSDL), who maintain the Australian primary standard for absorbed dose. The PSDL calibrates the detectors used in ACDS audits against this primary standard, underpinning the quality of the dosimetry audit service. Together, they work to deliver on ACDS’ strategic objectives, supporting ARPANSA’s strategic direction and mission.

Research and audit development are aligned with current and emerging clinical practice. The Roger Allison Quality Radiotherapy Centre, opened in March 2019, provides essential access to a modern linear accelerator at ARPANSA premises in Yallambie. This is an essential resource for audit development and is complemented in 2024 with a second linear accelerator available for PSDL and ACDS. Audit development continues with the Level III 4D motion management audit and MR linac audit processes.

Our valued staff

ACDS, under its Director Rhonda Brown, employs a skilled team of medical physicists, radiation therapists and support staff. We thank them for their dedication to excellence: Andrew Alves, Sabeena Beveridge, Brendan Healy, Fayz Kadeer, Kate Francis, Jeremy Supple, Julie Giblett, Daniela D’Antonio, Raymond Sun (until December 2023), Alex Burton, Katherine Collins, Sarah Hegarty, Tracey Huang, Bruce Li (from May 2024).

Our highly trained external auditors

Since its inception 16 years ago, the ACDS has been leading the way in best practice and accuracy. Our audits have identified issues and resulted in significant changes to clinical practice that have reduced actual or potential clinical hazards.

The ACDS continues to recognise the value of maintaining close links with current developments in radiation oncology technology and practice. The external auditors pool is one of the ways we achieve this, as well as drawing from the vast knowledge and extensive expertise of the ACDS over time.

ACDS external auditors are experienced ACDS alumni who are currently working as radiation oncology physics or radiation therapy professionals in Australia or New Zealand and experts in radiation dosimetry currently working at the primary standards laboratories in Australia (PSDL, ARPANSA) or previously in New Zealand (NRL), who are trained in ACDS audit procedures.

These individuals perform audits each year alongside an experienced ACDS audit team member.

The external auditors are subject to the ACDS training and conflict of interest guidelines. The ACDS is mindful of possible conflicts of interest which may arise from using external auditors who are asked to audit other radiation oncology departments while they are currently working in the field. During the audit planning stage, the department is given the opportunity to object to the use of a proposed external auditor.

During 2023–24, the external audit team members were: Ivan Williams, Joerg Lehmann, Jessica Lye, Francis Gibbons, Johnny Laban, Stephanie Keehan, Max Hanlon and Maddison Shaw.

Our Strategic Plan – setting the standard

The Strategic Plan 2023–27 for the ACDS sets out the strategic objectives over 4 years and is aligned with ARPANSA's Corporate Plan, notably ARPANSA's Key Activity 1 and its initiative to 'Promote the safe and effective use of medical radiation'.

We are confident that the dedicated and highly competent ACDS staff, underpinned by ARPANSA's leading-edge equipment and professional advice from the Clinical Advisory Group, will continue to deliver high-quality services to the Australian and New Zealand health care system for the benefit of patient safety.

Our strategic objectives

- Be recognised as a global leader and associated with the highest standards of quality and safety in radiotherapy
- Be a comprehensive provider of auditing services to all Australian and New Zealand radiotherapy facilities
- Support and collaborate in high quality research and development in clinical practice and audit methodologies
- Offer competitive quality audit services that cover all clinical practices and emerging technologies
- Positively influence the use of radiation in medicine and have tangible impact benefitting patient safety

Our governance – The Clinical Advisory Group

We are overseen by the Clinical Advisory Group (CAG), a group of leading professionals representing Australia and New Zealand peak medical radiation bodies. This ensures our audit quality is at the highest of standards and ACDS' strategic direction aligns with industry needs.

The Clinical Advisory Group (CAG) comprises members across all jurisdictions and practices who have a broad base of professional clinical experience.

The CAG members are appointed by the CEO of ARPANSA and nominated by their professional bodies* to advise the ACDS on development of audit methodologies and immediate clinical interpretation of specific audit outcomes. In addition to this, they review phantom design, measurement techniques and provide advice on relevant treatment techniques for audits, and on what skills, experience, and training is required for ACDS auditing staff.

The CAG meets quarterly and out of session, if necessary, to discuss audit results that could potentially pose a risk to the safety of patients receiving radiation therapy. They report yearly to the CEO of ARPANSA.

The CAG has been an invaluable source of experience and support as they have been since the establishment of the ACDS. It provides high quality and independent governance to the ACDS, ensuring that audit development and strategic direction align with industry needs.

Clinical Advisory Group members

- Lucinda Morris – Chair: RANZCR
- Joerg Lehmann – TROG
- Adam Briggs – ACPSEM
- Louise Nardone – RANZCR
- Andrew Cousins – New Zealand (ACPSEM)
- Katrina Woodford – ASMIRT
- Rebecca Thyne – NZIMRT
- Tomas Kron – Independent technical expert

*Professional bodies consist of the Royal Australian and New Zealand College of Radiologists (RANZCR), Australasian College of Physical Scientists and Engineers in Medicine (ACPSEM), Trans-Tasman Radiation Oncology Group (TROG), Australian Society of Medical Imaging and Radiation Therapy (ASMIRT) and the New Zealand Institute of Medical Radiation Technology (NZIMRT).

Our Strategic Plan – setting the standard (cont.)

Achieving peak accreditation

The ACDS is an ISO/IEC 17025 accredited testing service which provides dosimetry audits to meet:

- Radiation Oncology Alliance Radiation Oncology Practice Standards (a peak group comprising the four key specialties in radiation oncology and representing their respective organisations RANZCR, ASMIRT, ACPSEM and CNSA)
- Radiation Oncology Health Program Grants (ROHPG) (Australia) funding conditions
- jurisdictional radiation licensing requirements.

The ACDS forms part of the ARPANSA corporate ISO/IEC 17025 National Association of Testing Authorities (NATA) accreditation. This is a competency-based standard which requires the ACDS, and the six other ARPANSA laboratories, to undertake a rigorous internal and external auditing program, focused on employee competence.

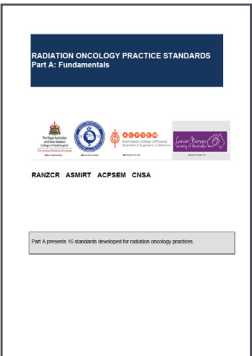
The NATA is the external certification body which performs a surveillance audit and re-assessment audit every 18 months thereafter. These re-assessment audits require the use of an external technical expert in ACDS’ field of radiotherapy dosimetry. As ACDS is the peak

body in Australia, we use equivalent experts from around the world to perform these technical assessments of ACDS staff.

Further information regarding NATA accreditation, the ACDS or the ARPANSA management system, can be obtained by contacting our quality manager via qualitymanager@arpansa.gov.au.



ACDS audit services are recognised as meeting the Radiation Oncology Alliance, Radiation Oncology Practice Standards (ROPS) criteria for independent dosimetric comparison/audit.



Enhancing international research and clinical trials

Supporting sound research in radiation therapy is one of the functions of the ACDS, through its strong relationship with the Trans-Tasman Radiation Oncology Group (TROG) and the collaboration with them to develop audits that support credentialling for clinical trials.

ACDS audits may be used towards clinical trial accreditation for TROG trials, see table below, demonstrating that they meet the quality assurance requirements necessary for robust research.

The European Organisation for Research and Treatment of Cancer (EORTC) and Quality and Excellence in Radiotherapy and Imaging for Children and Adolescents with Cancer across Europe in Clinical Trials (QUARTET) also accept ACDS beam audit and credentialling reports as part of the Radiotherapy Quality Assurance Requirements for sites participating in their radiotherapy clinical trials.

TROG Clinical Trials in recruitment or follow-up applicable to ACDS audits:

3DCRT/IMRT/VMAT	SABR	SRS
AGITG AG0407GR/TROG 08.08 TOPGEAR	TROG 17.03 LARK	TROG 17.02 OUTRUN
EORTC 1308/TROG 15.02 ROAM	PMC 17/013/TROG 17.05 AZTEC	
ANZ 1601/BIG 16-02 EXPERT	TROG 18.01 NINJA	
TROG 18.06 FIG	CTC 0245/AGITG AG0118PS/TROG 18.04 MASTERPLAN	
ANZUP 1801 DASL-HiCaP	TROG 19.06 DECREASE	
TROG 20.01 CHEST-RT	VCCC/TROG 20.03 AVATAR	
MASC 2101 i-MAT	TROG 21.07 SOCRATES	
ANZGOG1910/2020/CTC0299 ADELE	AGITG TROG 21D RESOLUTE	
		TROG 15.03 FASTTRACK II

Trusted on the global stage

ACDS is the national benchmark for radiotherapy audits in Australia and New Zealand and is recognised by international oncology clinical trials and dosimetry audit groups.

International collaboration and affiliations

Global Harmonization Group

The ACDS is an observer member of the Global Quality Assurance of Radiation Therapy Clinical Trials Harmonization Group (GHG). The group consists of clinical trial quality assurance offices and auditing bodies around the world and aims to harmonise and improve clinical trial quality assurance in radiation therapy worldwide.

IAEA Dosimetry Audit Network

As a member of IAEA's international Dosimetry Audit Network (DAN), the ACDS continues to play a constructive role in projects such as film dosimetry intercomparisons and provision of expert lecture support.

Imaging and Radiation Oncology Core (IROC)

The ACDS and IROC Houston QA Center have a memorandum of mutual recognition agreement of dosimetric audit equivalence for the ACDS Level I optically stimulated luminescence dosimeters (OSLD) audits. The agreement recognises the technical equivalence and frequency of both organisations' OSLD mail-out audits. In practice, this means that a facility may provide ACDS Level I OSLD results where there is a requirement for an IROC OSLD audit, such as in a clinical trial. This agreement is maintained by regular intercomparisons of the mail-out audit by the ACDS and IROC.

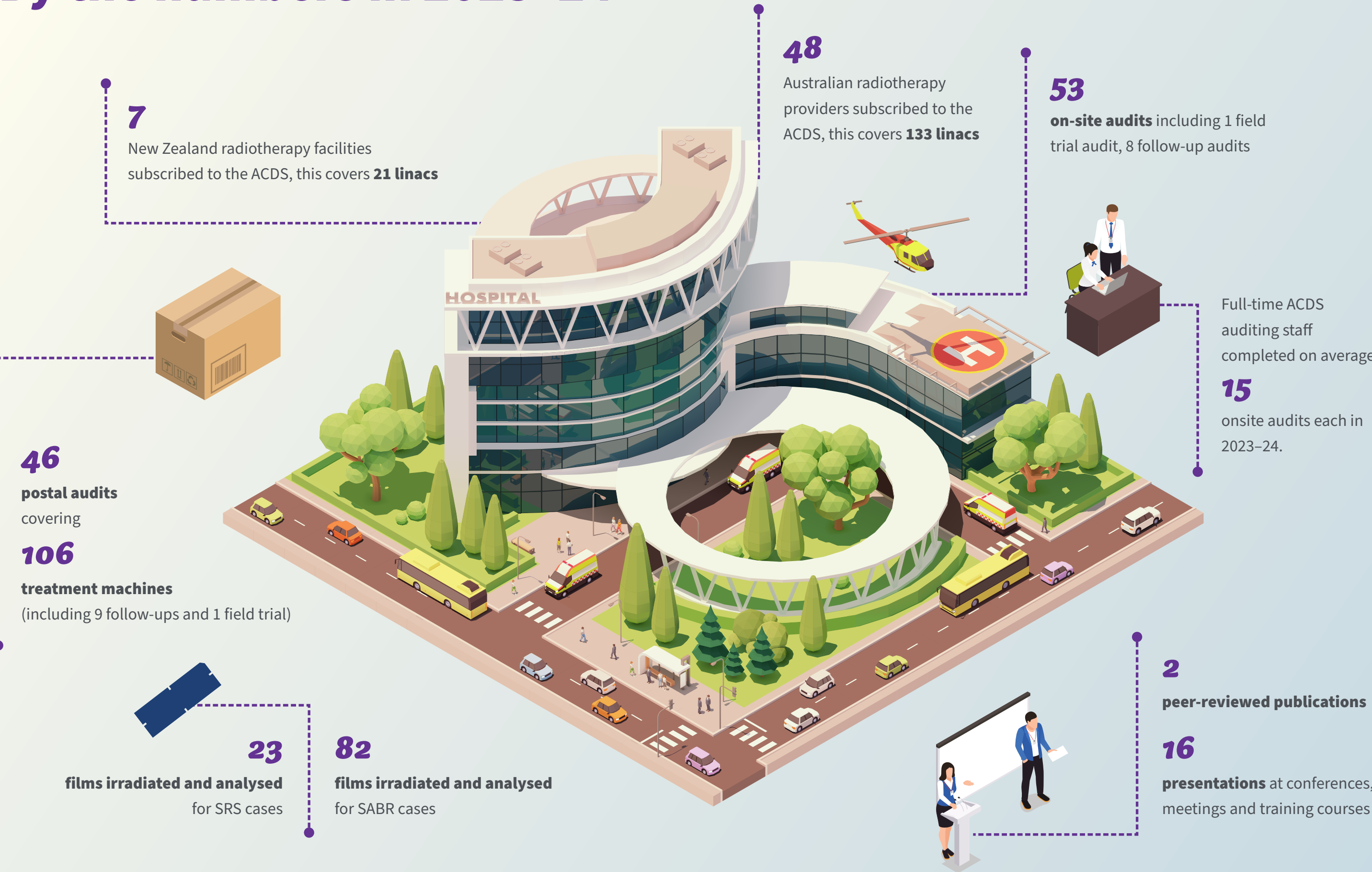
Stakeholder engagement

ACDS continues to seek feedback and advice from its Stakeholder Engagement Group (SEG). A full day meeting of SEG was held in February 2024 at St George Hospital in Sydney, bringing together representatives from state and territory radiation regulators, the Commonwealth Department of Health, peak professional bodies, TROG, as well as private and public radiotherapy facilities.

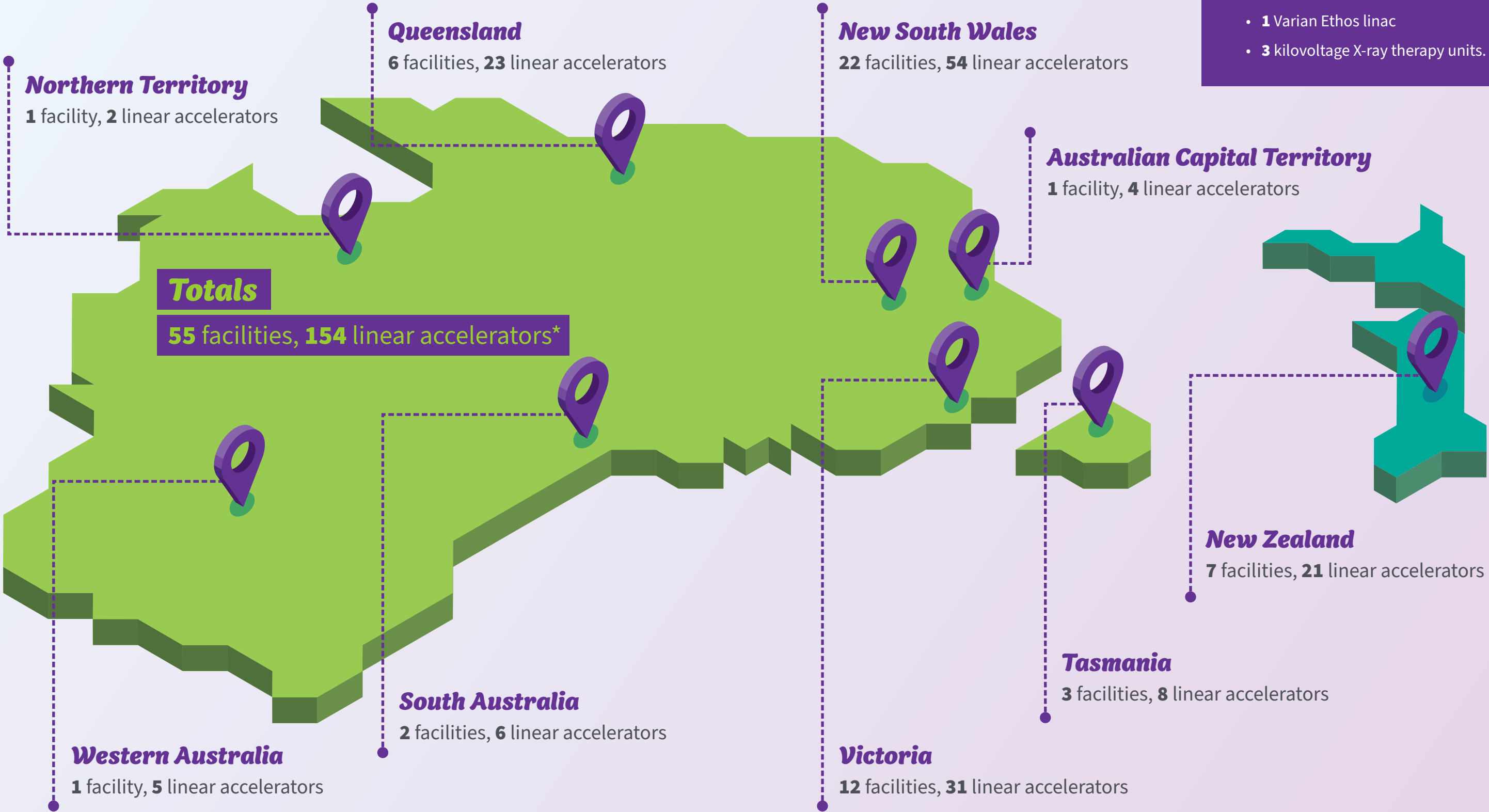
At the SEG meeting, ACDS presented its audit structure and schedule, gathered valuable feedback and explored future opportunities to strengthen audit capabilities. A tour of St George Hospital's radiotherapy department also provided the chance for SEG members to view radiotherapy equipment and learn more from hospital staff about clinical processes.



By the numbers in 2023–24



Audit coverage in 2023–24



Audit development and research

Motion management audit development

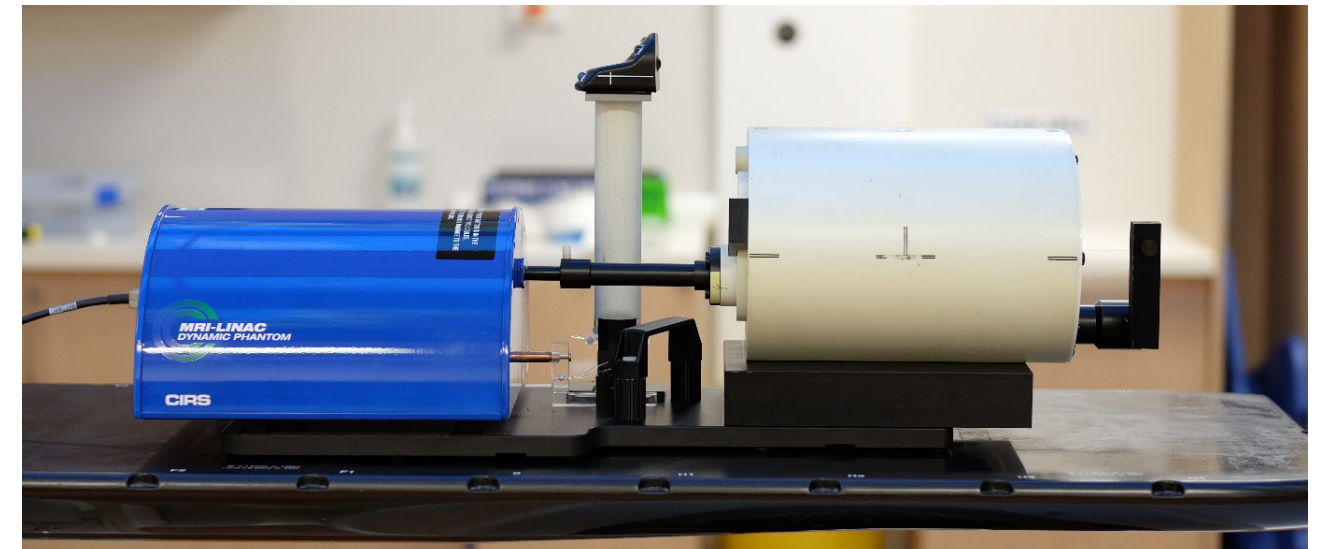
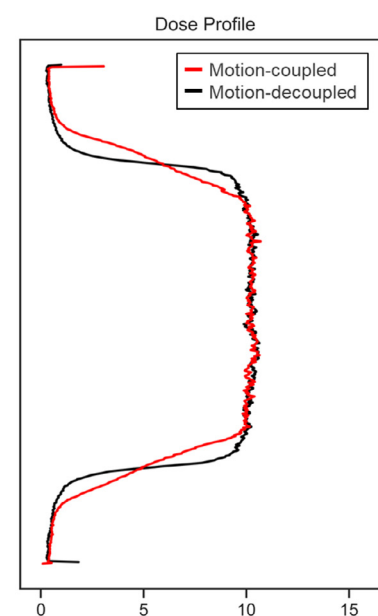
The ACDS continued its development of an end-to-end dosimetry audit for respiratory motion management through collaborative support from ACDS and Peter MacCallum Cancer Centre (PMCC) for Alex Burton to complete his PhD at RMIT.

Alex's novel concept for a new phantom dedicated for this audit was developed in collaboration with the ARPANSA engineering team and built in the ARPANSA workshop. The phantom has undergone thorough commissioning to confirm the key design goals including:

- compatibility with 4DCT and linac gating modes
- anatomically representative features for treatment planning and image guidance
- spatial reproducibility < 1mm
- dosimetric reproducibility on par with existing audits
- accurate resolution of applied motion in measurements
- ability to decouple motion from measurement result.

The final stages of testing are underway, with field trials anticipated to occur in Q4 of 2024.

The ACDS has strengthened research collaboration ties with the Imaging and Radiation Oncology Core (IROC) and the Peter MacCallum Cancer Centre (PMCC) through the publication of a joint paper in Physica Medica (<https://doi.org/10.1016/j.ejmp.2024.103363>). The results of this research will be directly applied in the ACDS dosimetry audit for motion management. The research was awarded the Harold Mitchell Travel Fellowship Postgraduate Fellowship (a Peter Mac Foundation travel award), which funded Alex to present the work at the American Association of Physicists in Medicine annual meeting held in Los Angeles, California, in July 2024, followed by travel to IROC in Houston, Texas, for discussion of further collaborations in the research space.



Above: The ACDS LIII MM phantom is a customised CIRS phantom body mounted to the CIRS motion platform, shown here being assembled by Alex Burton in preparation for measurement.

Opposite: Dose profile comparison: The superior-inferior motion of the phantom results in blurring at the field edges in the motion-coupled measurement, while the motion-decoupled measurement is unperturbed by the applied motion.

Film dosimetry

International film dosimetry intercomparison

As a member of the Dosimetry Audit Network (DAN) with the IAEA, the ACDS participated in an international film dosimetry intercomparison to establish a framework for assessing the quality of a film dosimetry process.

A framework was developed that could accurately assess film dosimetry quality from a multitude of clinics that use different equipment, processing software and techniques. Film results from 6 participating DANs were compared to separately assess the effect of different calibration methods, scanner and scan settings, and software packages.

The results of the international film intercomparison are summarised in the figure on page 23.

Data series 1–2: Each user processed film dose via a variety of methods. They used local user software, a local scanner, and a calibration supplied by the intercomparison host and a local calibration. The method of calibration did not affect the standard deviation of film doses.

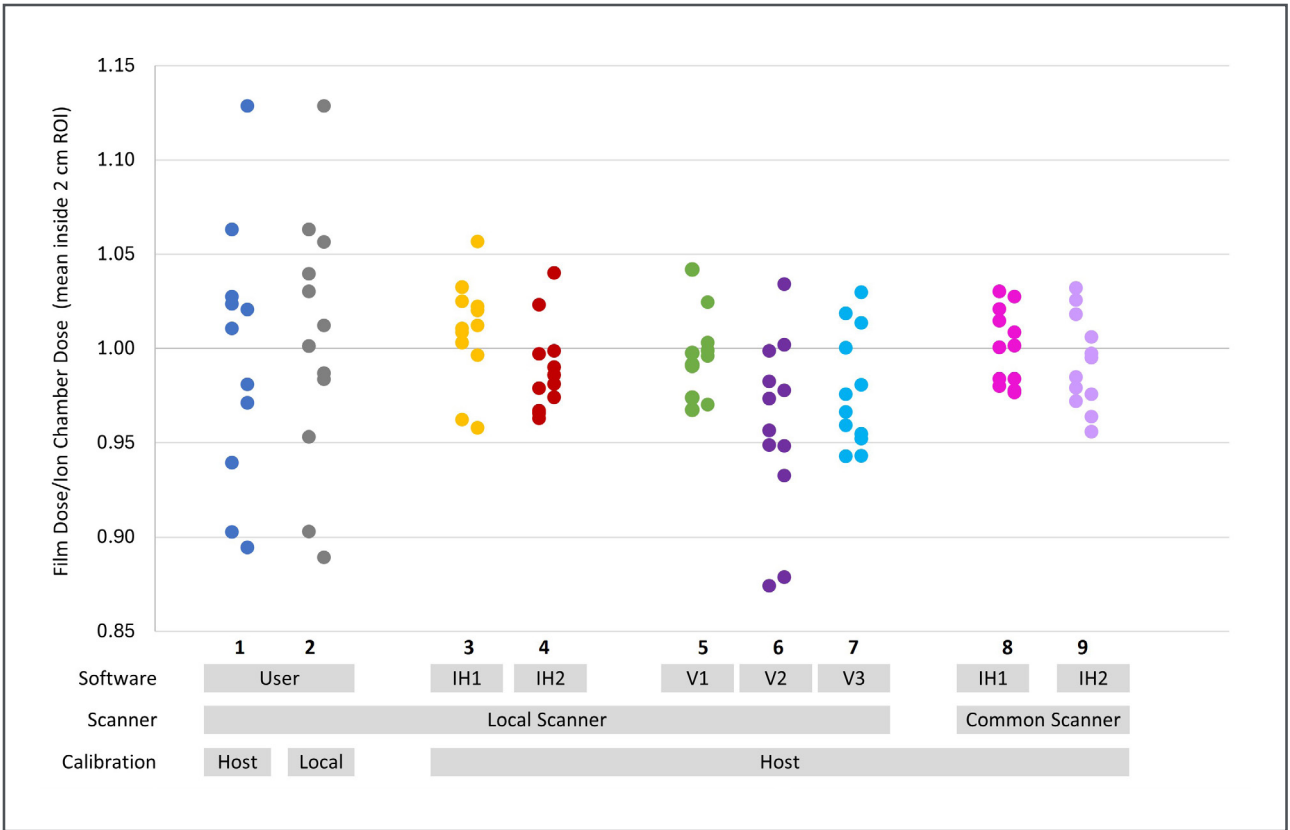
Data series 3–7: Host calibration scans were used to calibrate each participant’s scans. There were 5 different software packages investigated; 2 in-house (IH1 and IH2), and 3 vendor (V1, V2 and V3). The use of software package affected the standard deviation of film doses.

Data series 8–9: Physical films were mailed to one of the participants for scanning on a common scanner. Film dose was processed using the two in-house software packages. When all films were scanned on a common scanner the lowest standard deviation in film dose (1.9%) was returned.

Further testing and development of this framework is ongoing.

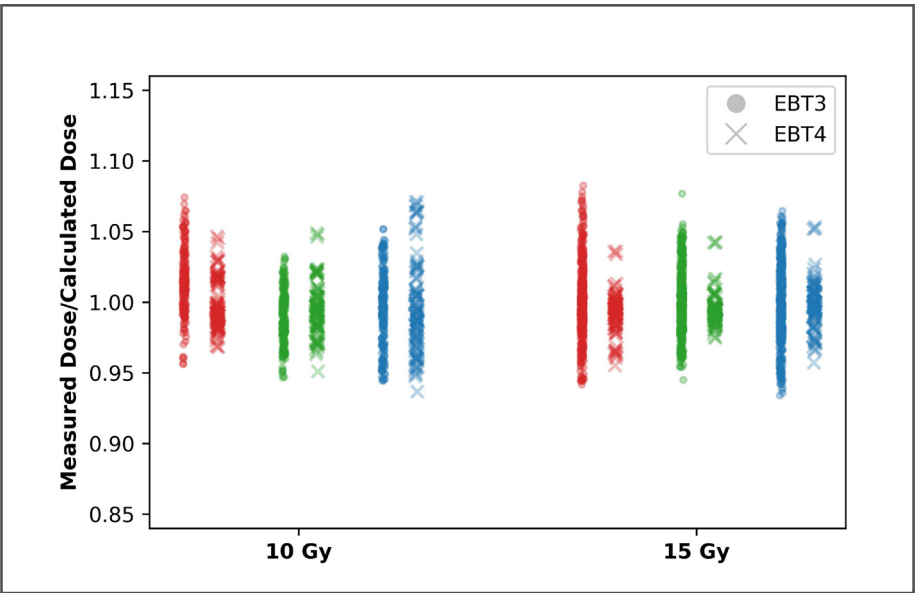
Three vendors participated in the study, where they were given the locally scanned films from the 6 DANs and asked to process these files. DAN participants who had large deviations from the known dose have improved their film dosimetry procedures by following the troubleshooting guidelines established by the group.

Some results from this study were presented by Andrew Alves (pictured) at the European Society for Radiotherapy and Oncology congress (ESTRO 2024) held in Glasgow in May 2024, where informal discussions were had with vendor representatives to consider including more quality control mechanisms within their software programs. The abstract is published in the conference proceedings in Radiotherapy and Oncology ([https://doi.org/10.1016/S0167-8140\(24\)00958-7](https://doi.org/10.1016/S0167-8140(24)00958-7)).



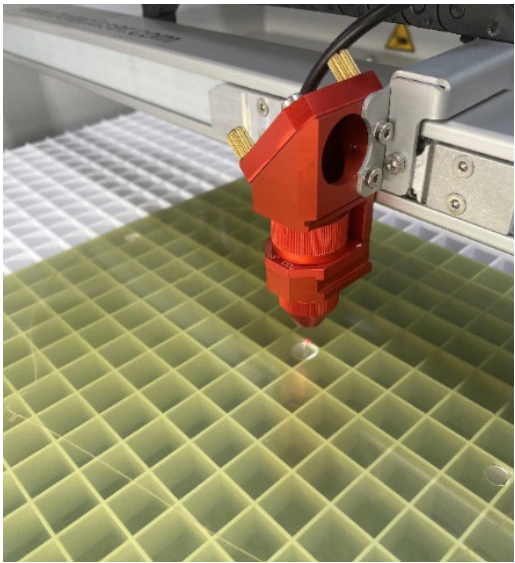
EBT4 commissioning

The ACDS commissioned Gafchromic EBT4 film for use in SABR and SRS audits. Our commissioning process found that EBT4 film exhibited less noise compared to EBT3 film, resulting in a higher signal to noise ratio. This observation aligns with published literature (Antony L Palmer et al 2023 Phys. Med. Biol. 66 175003). To determine the dosimetric uncertainty, pieces of each film type were irradiated to a known dose (measured using a Farmer chamber). The ratio of this measured dose to the dose calculated using the calibration curve was determined (see figure below). We observed a similar spread in dose difference values, indicating equivalent dosimetric uncertainty, making EBT4 film acceptable for use in our audits.



Laser cutter

In conjunction with commissioning EBT4 film, the ACDS also introduced a Trotec Speedy 300 laser cutter for in-house film cutting. Previously, custom film templates designed to fit into the SABR and SRS phantoms were cut by an external company. Bringing this process in-house allows for increased control over film handling and refinement of the templates. Additionally, cutting the film in-house reduces wastage, as film can be cut as required. The addition of the laser cutter to the ACDS film dosimetry process streamlines our workflow, ensuring greater accuracy and consistency in our results, which enables us to maintain a high standard of auditing.

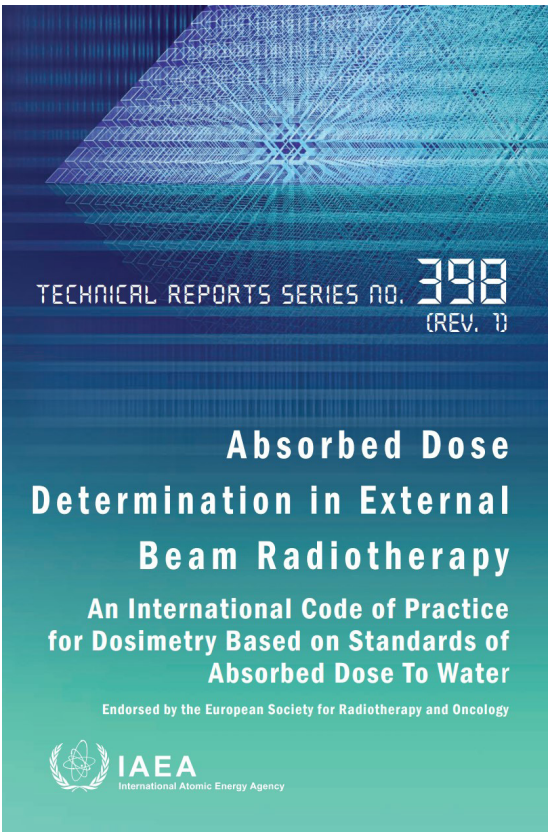


Update to IAEA TRS-398 code of practice

In February 2024, the International Atomic Energy Agency (IAEA) released a revision to its TRS-398 code of practice for external beam dosimetry, originally published in the year 2000. TRS-398 is adopted by all radiotherapy facilities throughout Australia and New Zealand for megavoltage photon and electron beam dosimetry. ARPANSA, through its ACDS and PSDL services, is adopting the TRS-398 Revision 1 from July 2024 for megavoltage photon and electron beam dosimetry. The revision to TRS-398 essentially does not change its formalism for dosimetry but includes updated supporting data and allows dosimetry of flattening filter free (FFF) beams. The major points for facilities to note are:

- There is no change to megavoltage photon beam dosimetry (flattened beams) because PSDL disseminates and ACDS uses measured k_Q values rather than TRS-398 published k_Q for Farmer type chambers.
- ACDS is adopting the TRS-398 Revision 1 formalism for FFF beams including the k_{vol} values in Revision 1 but will continue to use measured k_Q values.
- For megavoltage electron beams, there are changes in correction factors k_Q for Farmer chambers and $k_{Q,Q_{int}}$ for plane parallel chambers in TRS-398 Revision 1. For the PTW 30013 Farmer chamber used exclusively by ACDS, changes in k_Q are of the order of 1%.

- For kilovoltage X-ray beams, ACDS has always adopted the AAPM TG61 protocol rather than TRS-398 for reference dosimetry. Even though TRS-398 Revision 1 provides an updated kilovoltage X-ray dosimetry formalism, ACDS will continue to use AAPM TG 61 rather than TRS-398 Revision 1.



Working with CAG to strengthen outcomes

Sharing key findings and making recommendations for facilities provides valuable insight into ways of strengthening the quality assurance practices involved in radiotherapy planning and delivery. This in turn has a positive tangible impact on patient safety.

Out of Tolerance audit cases

Deidentified Out of Tolerance audit results are referred to the Clinical Advisory Group (CAG) as the dose difference may impact patient outcomes. In their review, the CAG will evaluate for clinical impact, advise on follow up and advise on appropriate recommendations.

In FY 2023–24, CAG reviewed 8 new Out of Tolerance cases from 6 facilities. At the end of FY

2023–24, 4 of these cases were closed and reports issued, while 4 cases were still open and under investigation. As per standard practice, a Level I OT case was designated as unconfirmed and immediately followed up with an onsite Level Ib audit which returned Pass (Optimal Level).

During FY 2023–24, CAG also reviewed 6 previous Out of Tolerance cases from 6 facilities from audits that occurred in previous financial years and were not closed at the end of the previous FY 2022-23. All these 6 cases from previous financial years were closed and reports issued during the FY 2023–24.

Of the 10 Out of Tolerance cases closed in FY 2023–24, 5 cases were resolved with repeat measurements, 3 cases were subsequently designated as non-clinical cases, and 2 cases were resolved with replanning (thus indicating an issue with a non-optimal beam model).

The breakdown of the 8 new Out of Tolerance cases:

Level I	No. OT cases	Level III	No. OT cases	Level III SRS	No. OT cases
Photons FFF	1*	IMRT	1	SRS MR Multi	1
		VMAT	4	SRS Complex Multi	1

**Level 1 OT results are designated as unconfirmed and immediately followed up with an onsite Level Ib audit*

Our national datasets – providing certainty

One of the key strengths of the ACDS is the Australia and New Zealand Dataset (ANZ Dataset) of auditing information which has been collated across Australia and New Zealand since 2009.

The dataset empowers the ACDS to:

- maintain a detailed historical record of measurement and analysis
- demonstrate trends of various manufacturers’ products, local variances and treatment methodologies
- isolate and identify complex calculation and radiation delivery issues with some equipment combinations
- report multi-centre issues which are opaque to providers
- provide certainty about the dosimetry expectations for any new treatment delivery technology
- offer expertise and precision to meet clinical standards, irrespective of the technical complexity of any new equipment.

The ANZ Dataset data is available to all ACDS subscribers to compare their linac’s performance with other radiotherapy departments. This data includes reference dosimetry, 3-dimensional conformal radiotherapy (3DCRT), intensity modulated radiotherapy (IMRT), volumetric modulated arc therapy (VMAT), flattening filter free (FFF), small photon field output factors, stereotactic ablative body radiotherapy (SABR) and stereotactic radiosurgery (SRS) treatments.

A summary of the ANZ data for each audit level is publicly available on ARPANSA’s website. Visit <https://www.arpansa.gov.au/acds-datasets>.

Presentations and publications

Publications

Smyth L, Alves A, Collins K, Beveridge S (2024) ‘Gafchromic EBT3 film provides equivalent dosimetric performance to EBT-XD film for stereotactic radiosurgery dosimetry’, Physical and Engineering Sciences in Medicine, <https://doi.org/10.1007/s13246-024-01430-z>

Burton A, Gaudreault M, Hardcastle N, Lye J, Beveridge S, Kry S, Franich R (2024) ‘Optimized scoring of end-to-end dosimetry audits for passive motion management – A simulation study using the IROC thorax phantom’, Physica Medica, 121:103363 <https://doi.org/10.1016/j.ejmp.2024.103363>

Presentations

RMIT seminar

ACDS overview and audit performance
3 June 2024, RMIT Bundoora
Supple, J and Huang T

ACPSEM seminar

IAEA TRS-398 Revision 1: Changes and recommendations
23 May 2024, Video event
Butler, D and Healy, B

ASMIRT Annual Scientific Meeting

9–12 May 2024, Darwin
What can we learn from national dosimetry data?
Francis, K

ESTRO annual scientific meeting

3–7 May 2024, Glasgow
An international intercomparison to verify quality of radiochromic film dosimetry processes
Alves, A

Global Harmonization Group meeting

2 May 2024, Glasgow
ACDS update
Brown, R

Radiation Health and Safety Advisory Council Meeting

16–17 April 2024, Melbourne
ACDS - Challenges and Successes
Morris, L

TROG Annual Scientific Meeting

12–15 March 2024, Newcastle
Participation in high quality audits is necessary for better cancer outcomes
Brown, R

Hunter Region Medical Physics Seminar

20 November 2023, Video event
ACDS - A brief history and audit program overview
Brown, R

EPSM

5–8 November 2023, Christchurch
ACDS Level 1b reference dosimetry audit outcomes: Trends in 12 years of service
Alves, A

External Validation of Film Dosimetry: A National Audit Perspective
Alves, A

ACDS $P_{stem,air}$ chamber corrections
Kadeer, F

Common mechanisms for reduced audit performance - ACDS update
Brown, R

Audits developed for MR-Linacs and online adaptive radiotherapy
Brown, R

What dose does the gross target volume receive in internal target volume-based planning?
Burton, A

The accuracy of a deviceless 4DCT tool can be assessed using a commercially available motion phantom
Burton, A

RANZCR Annual Scientific Meeting

19–21 October 2023, Brisbane
Common mechanisms for reduced Australian Clinical Dosimetry Service audit performance
Morris, L

Professional development



ACDS audits continue to be endorsed as a CPD activity by ASMIRT since 2019. Audit participation certificates are issued to radiation therapists involved in planning or treatment for Level II and Level III audits.



ACDS audits are endorsed by the ACPSEM as a CPD activity since 2022. Audit participation certificates are issued to medical physicists involved in Level I and Ib, Level II and Level III audits.

Feedback

Stakeholder feedback is essential to the cycle of ACDS audit development and review. It ensures that audits continue to meet the needs of radiation therapy departments and contribute to the safety of treatment planning and delivery. The ACDS continues to actively seek feedback on both their products and service delivery.

Our post-audit feedback surveys have been redeveloped so that information is collected relative to specific professional clinical groups. This allows us to tailor our changes in practice and ensure that we provide a service reflecting the needs of our consumers. Surveys have been constructed to be as time sensitive as possible.

All feedback is seen as an Opportunity for Improvement (OFI) and all OFIs are discussed quarterly at the ARPANSA quality meetings or sooner when necessary. As well as informal feedback and post-audit surveys, the formal review process, developed in consultation with the CAG, is accessible via the ARPANSA website.

If a formal review is required, the facility representative is encouraged to discuss any issues or concerns with the Director of the ACDS or the Chief Medical Radiation Scientist in the first instance, with the aim of a resolution via email: acds@arpansa.gov.au or phone: +61 3 9433 2220.

Alternatively, or in addition to this, there is the opportunity to either:

- request a further audit review
- dispute a review response by CAG
- provide feedback or a complaint.

Visit the feedback and review webform on our website at arpansa.gov.au/acds-feedback-and-review.



Australian Clinical Dosimetry Service

Australian Radiation Protection and Nuclear Safety Agency

619 Lower Plenty Road, Yallambie VIC 3085 AUSTRALIA

+61 3 9433 2211

acds@arpansa.gov.au

arpansa.gov.au/acds