



Application report

Ensuring safe and efficient radiotherapy with RadCalc



Designing better care

Improving cancer care with independent software QA

Background

GenesisCare is a proudly Australian run cancer care provider, specialising in radiation oncology with a growing footprint in medical oncology, therapeutics and personalised medicine.

Each year in Australia GenesisCare treats approximately 30,000 patients at 50 locations in metro and regional New South Wales, Victoria,

Queensland, South Australia, and Western Australia.

With a diverse range of treatment platforms, including Varian, Elekta LINACs, Gamma Knife®, and Unity MR-LINAC, ensuring uniform safety and efficiency across all locations is paramount.

Implementing RadCalc as the software-based quality assurance (QA) platform supports GenesisCare's commitment to achieving the best possible clinical outcomes.

→ For more information on GenesisCare Australia, see <https://www.genescare.com/au>

The System

GenesisCare utilises a centralised server running RadCalc QA software to perform secondary verification of all treatment plans across more than 40 radiation oncology centres. A software-only approach allows GenesisCare to efficiently check 100–130 new radiotherapy plans daily, reducing the need for time-consuming phantom measurements.

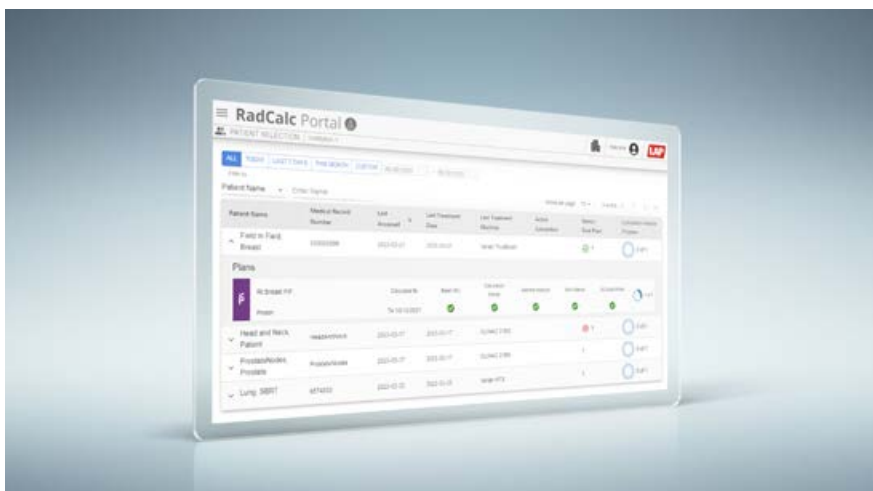
The RadCalc platform used across the country provides advanced 3D

algorithms for plan verification, including EPID-based pre-treatment QA, in-vivo dosimetry, and automated calculations using treatment log files supporting equipment from various manufacturers and enabling seamless integration into the existing workflow.

In the future, GenesisCare plans to implement RadCalc's log file analysis feature, which allows additional monitoring and verification of LINACs' performance.



**Find out more
about RadCalc**



With a sleek, modern browser-based interface, the RadCalc platform is designed to streamline daily patient QA tasks, significantly boosting efficiency.



The RadCalc QA features are fully integrated into the radiotherapy processes, supporting efficient automation of complex tasks.

Accurate and reliable

Clinical application of RadCalc

At GenesisCare, RadCalc secures independent secondary verification for different treatment types, including intensity-modulated radiation therapy (IMRT), volumetric modulated arc therapy (VMAT), superficial electron therapy, and high-dose-rate brachytherapy.

With RadCalc, all GenesisCare centres use the same work instructions,

ensuring consistency and high standards of care across the country.

RadCalc's plan comparison tool verifies that outputs from the treatment planning system align with what is imported into the electronic medical records system (MOSAIQ®). This automated check has saved significant time and helped to increase safety, catching errors that manual checks may miss.



RadCalc gives the team confidence that every treatment plan is accurately verified, allowing them to focus on delivering high-quality patient care with complete peace of mind.

Safety and Efficiency

RadCalc's 3D independent recalculation tools has helped to transform GenesisCare's QA process. Previously, the system relied on 2D comparisons between single points, but RadCalc now reconstructs the dose on the patient's entire CT data set, flagging any

discrepancies early in the process. This shift from manual measurement to software-based QA has also freed up treatment machines, improving overall efficiency and allowing radiation therapists to focus more on patient care.



"Implementing RadCalc has been a game changer for GenesisCare, helping ensure that every patient receives the highest standard of care without delays or added pressure on clinical staff."

Leon Dunn

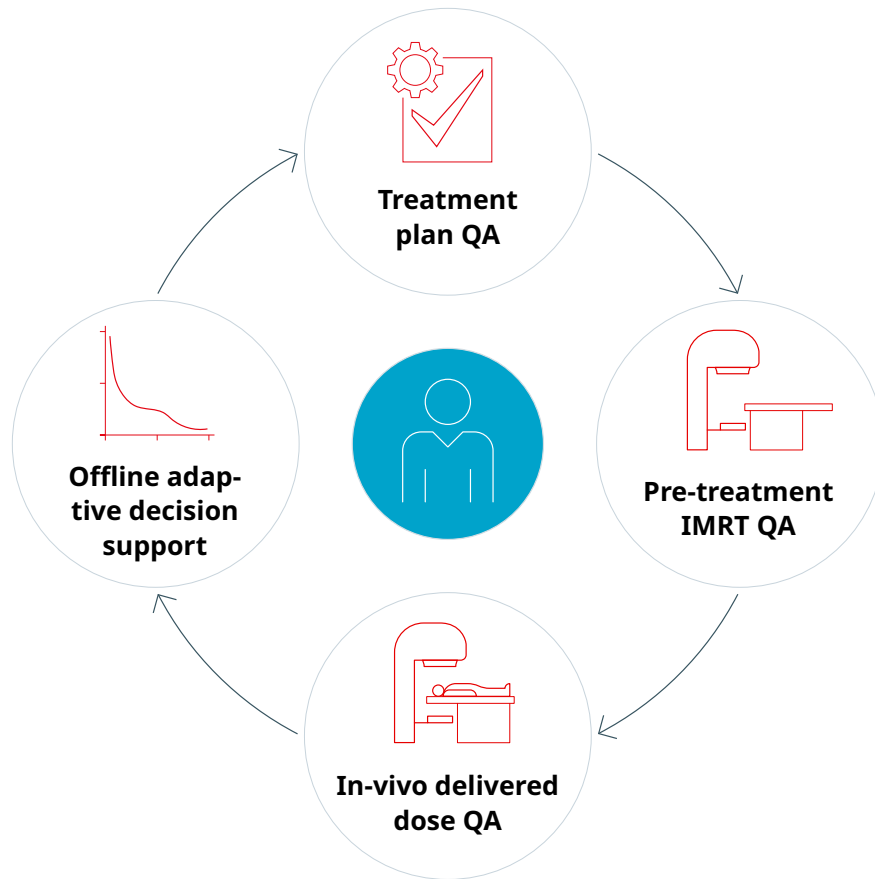
Chief Medical Physicist at GenesisCare Victoria



"It's a very quick check that has saved us a lot of time and also increased the safety aspect."

Peter Mc Loone

Head of Medical Physics at GenesisCare Australia



Benefits at a glance

Treatment plan QA

- Increasing complexity of radiotherapy plans requires critical accuracy for safe deliveries
- RadCalc's globally utilised 3D Monte Carlo, incorporating BEAMnrc and Collapsed Cone algorithms, instills confidence and sanity among clinicians

Pre-treatment IMRT QA

- RadCalc offers 3D true composite EPID absolute dosimetry and instills confidence among clinicians
- Truly independent solution for direct comparison to the intended plan
- Designed for an automated and seamless workflow

In-vivo delivered dose QA

- RadCalc's absolute dosimetry and unique true 3D composite nature eliminate baseline collection and second calculations
- Continuous monitoring of treatment delivery data allows for fractional machine QA
- Enables comparison with pre-treatment QA and integration into in-vivo EPID dosimetry workflow

Offline adaptive decision support

- Enhances independent dosimetric validation calculations for speed, ease, and accuracy
- Dosimetric calculations provide a truly patient-focused QA routine that is seamlessly integrated into adaptive radiation therapy workflows

About us

LAP is one of the world's leading suppliers of systems that increase quality and efficiency through laser projection, laser measurement, and other processes. Every year, LAP supplies 15,000 units to customers in industries as diverse as radiation therapy, steel production, and composite processing. LAP employs 300 people at locations in Europe, America and Asia.



In order to achieve this vision, we look for associates and business partners who share our passion to serve others through their hard work and dedication to excellence in all they do every day. We do our best to create a work environment that encourages our associates to listen to their customers, both inside and outside our company and to deliver results with integrity.

LifeLine Software, Inc., the developer of RadCalc, is part of the LAP Group. We are driven to improve the lives of those who fight cancer. We help to assure that they are receiving quality treatments. Our goal is to create the highest quality software products. We strive to achieve this goal by our commitment and dedication to continuous improvement of all we do in responding to the needs of our customers for the benefit of the patients and families they serve.



RadCalc is our commitment to responding to the needs of Radiation Oncology health care providers by contributing to the enhancement of the quality of their work, and to the quality of life of their patients. RadCalc was developed by our board-certified physicist to make independent Dosimetric calculation verification accurate, quick, and easy.

Request a demo

We are ready to build your RadCalc QA package customised to your specific needs. Please contact our sales teams worldwide.

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