EN

Application report

Independent QA for VMAT and SABR treatment plans with RadCalc EPID

NHS Highland

Simply Precise

Safety first

Independent QA of complex VMAT and SABR treatment plans

Background

Raigmore Hospital in Inverness, Scotland has been providing vital healthcare services to the local community and the wider Highland region since 1941. As a trusted teaching hospital, Raigmore collaborates with esteemed universities to educate and train healthcare professionals. Under the management of NHS Highland, the hospital ensures patient safety.

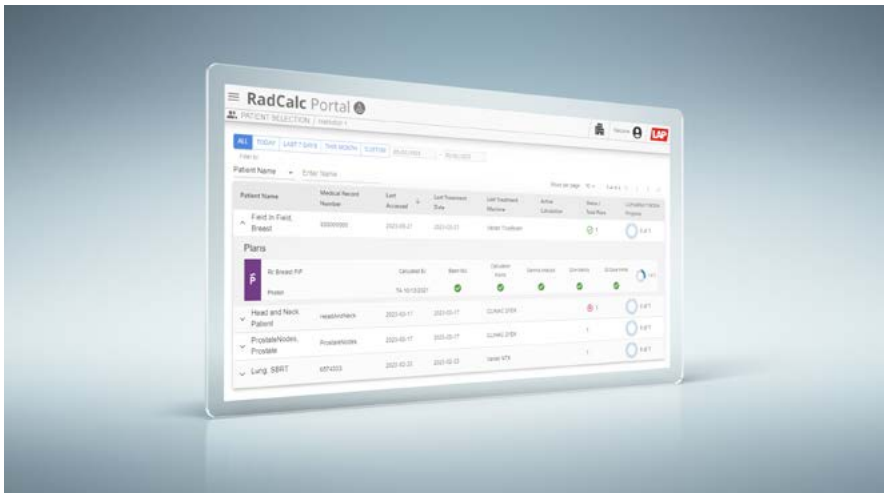
To enhance their strategy in cancer treatment, the radiotherapy physics team, led by Steven Colligan, has implemented RadCalc EPID Transit Dosimetry as their end-to-end patient-specific QA solution.

→ *For more information on NHS Raigmore Hospital see www.nhshighland.scot.nhs.uk*

The System

Raigmore Hospital's radiotherapy department employs a comprehensive system comprising a Siemens Healthineers SOMATOM® CT-Scanner, two Varian TrueBEAM® linear accelerators, and the RayStation treatment planning system. The department utilizes RadCalc EPID for transit dosimetry. RadCalc EPID harnesses the Electronic Portal Imaging Device (EPID) to capture dose delivery images and reconstructs the dose based on the in-air fluence map projected onto the patient, without the need for a source model.

Find out more about RadCalc



RadCalc's EPID module utilizes the collected integrated measurements for all static and dynamic beam segments to reconstruct 3D dose on the patient's real anatomy using RadCalc's Collapsed Cone algorithm. Actual dose delivered is compared with both the intended dose from the TPS and RadCalc's 3D dose reconstruction for a thorough pretreatment QA.

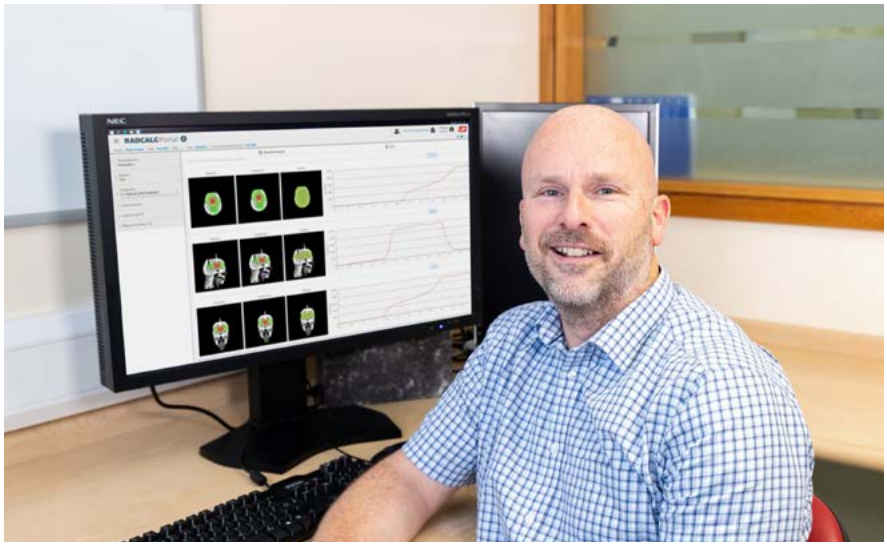
Steve Colligan

Steve Colligan is head of radiotherapy physics at Raigmore Hospital in Inverness, Scotland. He holds an honours degree in electrical and electronic engineering of the University of Edinburgh and pursued an MSc in medical physics at the University of Aberdeen. Before being appointed to his current role, he worked in clinical scientist roles at both Walsgrave Hospital in Coventry and Raigmore Hospital in Inverness.

Accurate and reliable

Clinical application of RadCalc

At Raigmore Hospital, RadCalc EPID is vital for pre-treatment and in-vivo dosimetry. RadCalc reconstructs the dose delivered on the patient's original planning CT for pre-treatment dosimetry and compares it to the intended dose from the treatment planning system. This comprehensive analysis detects potential errors such as data transfer corruption, deliverability issues, and discrepancies between the original plan and RadCalc's 3D dose calculations.

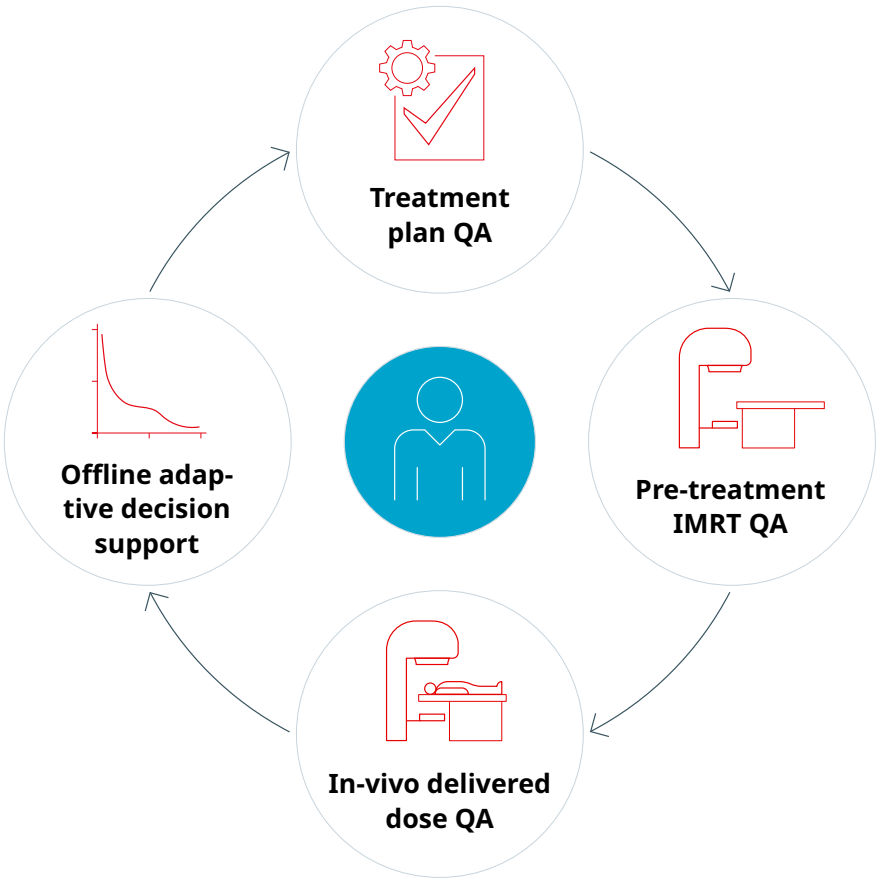


“We trust RadCalc EPID for our daily transit dosimetry QA. Simply deploy the panel, and results are calculated automatically.”

Steve Colligan

Chief medical physicist,
Raigmore Hospital Inverness Scotland

Raigmore Hospital's implementation of RadCalc EPID for transit dosimetry showcases its remarkable benefits for modern radiotherapy QA. By offering a simple, integrated solution and ensuring thorough pre-treatment and in-vivo dosimetry, RadCalc EPID enhances patient safety and enables accurate evaluation of treatment delivery. With its robust features, Raigmore Hospital demonstrates its trust in RadCalc EPID as an indispensable tool for daily dosimetry QA.



Benefits at a glance

Treatment plan QA

- Increasing complexity of radiotherapy plans requires critical accuracy for safe deliveries
- RadCalc's globally utilized 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 treatment log file 3D dose volume reconstruction
- 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.

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.

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.

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 customized to your specific needs. Please contact our sales teams worldwide.

P +1 866 592 1343
E info@lap-laser.com

Contact us!

P +1 866 592 1343
E info@lap-laser.com
LAP Laser
laplaser

LAP GmbH Laser Applikationen
Zeppelinstr. 23
21337 Lüneburg
Germany

LAP GmbH Laser Applikationen, Germany / LAP Measurement Technology GmbH, Germany / LAP FRANCE SAS, France LAP Laser Applications Asia Pacific Pte. Ltd., Singapore / LAP Laser Applications China Co. Ltd., China / LAP of America Laser Applications, L.L.C., USA / LifeLine Software, Inc., USA / Our worldwide partners: Argentina / Australia / Brazil / Bulgaria / Canada / Chile / Colombia / Croatia Czech Republic / Dominican Republic / Egypt / Finland / Greece / Hungary / India / Indonesia / Italy / Japan / Jordan / Kuwait / Latvia / Lebanon Lithuania / Malaysia / Mali / Malta / Mexico / Netherlands / Norway / Oman / Philippines / Poland / Portugal / Qatar / Romania / Saudi Arabia Slovakia / Slovenia / South Africa / South Korea / Spain / Sweden / Switzerland / Taiwan, China / Thailand / Turkey / United Arab Emirates United Kingdom / Venezuela / Vietnam / Zambia

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