



# TATTOO AND MARK-FREE

## Case Study

### University Hospitals of Derby and Burton

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This case study was created by Vision RT to capture the experiences of University Hospital Derby and Burton (UHDB) in the United Kingdom, as they worked to improve their radiation therapy offer through the implementation of SGRT and tattoo and mark-free treatments. Their success in making this transition offers valuable lessons for other clinics, showing it is safe and achievable to realize the benefit of tattoo and mark-free treatments from day-one of implementation.

#### Equipment from Vision RT

- simrt™** 1 x SimRT™
- alignrt®** 2 x AlignRT® Advance, with Postural Video™
- safeid™** SafeID™ & Kiosk

#### Background

In June 2021, UHDB were looking for a Surface Guided Radiation Therapy (SGRT) solution to replace their RPM system, which they were using for Deep Inspiration Breath-hold (DIBH) treatments. After a lengthy evaluation of available options, they decided AlignRT from Vision RT would be the best fit. Soon, they set an ambitious goal for their new system: to offer tattoo and mark-free treatments from the first day of its use. They made this decision with their patients' needs in mind: "we didn't want to be that site that still tattooed patients, as a 'comfort blanket' but didn't use [those tattoos]. We didn't think this was fair or ethical for the patient."

#### Objectives

From 'go-live,' the goal was to go tattoo and mark-free for all types of breast treatments; standard tangents, breast and SCF, mammary chains and DIBH.

#### Consultative Meetings May 2021

Vision RT offers a three-phase training approach, but pre-training consultative meetings are held with the Clinical Applications Specialist (CAS) prior to the official start of training. This enables a fully collaborative approach to implementation. There were several pre-training meetings between Vision RT and UHDB to discuss how to meet their needs and expectations. The CAS looked at how to get the best out of Vision RT's training and which elements were most important to them at the point of go-live.

UHDB's CAS faced several challenges. The first was the 'fear factor.' Some staff members, having never been part of a center offering tattoo-free treatments, were sceptical it could be done within existing workflows. Others were reticent to alter long-existing workflows. The objective of going tattoo-free could only be met if the entire team could be shown that Vision RT's systems offered a safe and effective way of working – and one that didn't replace existing routines with more complexity.

#### Phase 1. Early June 2021

Armed with the knowledge from these consultative meetings, the CAS provided the site with a list of actions to complete prior to the Phase 1 training. One task required them to scan an anatomically correct full-skeleton phantom (fondly named Colin) and create multiple treatment plans.

Immediately after this, Phase 1 was delivered on-site over two separate sessions. A multi-disciplinary team of roughly 14 attended. Each day was split into two sections. The first half was theory and the second, practical. At the outset some staff reiterated their scepticism about tattoo-free treatments. The theory-based training, with an emphasis on published data, addressed concerns about accuracy and safety, and the practical training took on concerns about workflow and day-to-day usage.

During the practical aspect of the training, 'Colin' was used to practise workflows specific to their protocols from setup, image and treatment. After some initial instruction, the team set up Colin with no marks or tattoos and took a CBCT. Reviewing the CBCT was a critical moment as it would provide the team with clear results of how accurate the setup was. The image showed a perfect match within all the specifications. This was a turning point and the mood among holdouts changed from resistant to enthusiastic.

### Phase 2 & CT Go Live – Mid June

This phase of the project allowed the clinic to consolidate their learning and gave them time to write new protocols. It was supplemented with e-learning, via Vision RT's online training portal. Support was also provided by the CAS who ran supplemental training for staff that had missed Vision RT's Phase 1 training, and included help with reviewing Regions of Interest (ROIs) as well as proof-reading protocols. All these steps ensured UHDB's workflows would be accommodated and optimized when the new AlignRT system was launched.

The staff also received hands-on training with SimRT, which was integrated into the new workflow. Following this training, the first live DIBH patients were scanned. It was another important milestone for the UHDB team: for the first time, they would send patients home from planning sessions entirely free of tattoos and other permanent marks. Since that day, UHDB does not routinely tattoo patients undergoing breast radiotherapy.

### Phase 3 Go Live – 15<sup>th</sup> July

The same CAS who had been working with the team throughout the entire project, supported the go-live over a two-day window in mid-July. They made sure that their most experienced users would be on hand the entire time, to ensure consistency across every workflow. All of the team's hard work, training and preparation soon proved effective, as every project objective was met at go-live.

A new tattoo and mark-free treatment was delivered and has been offered at the hospital since.

### Dave Pilborough, Superintendent Radiographer:

*"We're extremely pleased to now be able to offer Surface Guided Radiotherapy, which has had a great impact on treatment times for our patients. With this system, we have a lot more control over where the patient is lying, which makes it a lot easier for us to get them in exactly the right position, which is crucial for their treatment."*

*"We also don't need to leave marks on the skin using this technique, which has been a great relief to our patients, especially those with breast cancer, where the tattoos can be quite visible. Patients usually read up about the marks before starting radiotherapy, so not having to mention that, has helped calm patients down and made them a lot less anxious about their treatment. It's great that we've taken this step forward and helped improve patient experience in this way."*

### Follow Up –

By the end of 2021, as their experience and confidence increased, UHDB expanded their use of SGRT with AlignRT to all breast, DIBH, lung and lung SABR treatments. They are now in the process of rolling it out for oligometastatic SABR (SBRT) treatments.



*"From the feedback we've received since we introduced this new technique in the summer, being able to have this treatment tattoo-free has been a source of great comfort to our patients and helped them to feel a bit less anxious, before starting treatment. It is fantastic that we've been able to enhance patient experience in this way, whilst also offering an advanced radiotherapy technique that is even more accurate than before and which can reduce the length of treatment too."*

**Dr Magnus Harrison,**  
Executive Medical Director at UHDB