

Agile Path to SGRT Success: Launching Tattooless Breast and Thorax Treatments from Day One.



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- 1,200-bed teaching hospital serving around 1.1 million people in Norfolk and Waveney
- The Radiotherapy Department treats approx. 3,000 patients annually, delivering around 29,000 fractions
- Paperless workflows with full ARIA integration
- Radiographer-led dosimetry planning and review service including a late-effects review service
- Extensive SABR service
- Bravos brachytherapy reference site
- 5 Varian TrueBeam Linacs – all with AlignRT
- 1 GE CT Scanner
- 1 Canon Aquillion-LB with SimRT
- Now a reference site for VisionRT



VisionRT and Tattooless Radiotherapy at NNUH

Clinical implementation of surface guided radiotherapy (SGRT) at NNUH using VisionRT systems aimed to:

- Reduce re-imaging and repeat setups
- Reduce set up times
- Remove need for tattoos/skin marks – permanent reminder of treatment
- Minimise manual handling of patients – reduction in injury to staff and patients

Studies have demonstrated a reduction in treatment appointment times of up to 33%. Fewer adjustments and improved visualisation of patient position

Opportunity to become a reference site and to promote the department and attract staff.

AlignRT

The AlignRT system is made up of 6 cameras which track the 3D surface of the patient.

It helps us to recreate the same position as the planning CT scan, without tattoos or skin marks. SGRT monitors patient position before and during treatment.

Immediately cuts off the beam if the patient moves.

Key Advantages:

Accuracy: Real-time surface tracking reduces alignment errors.

Comfort: Eliminates tattoos and reduces need for invasive immobilization.

Motion Management: Critical for managing respiratory motion in thoracic regions.

Enhanced Precision: Especially important for high-dose SABR treatments.

Challenges Addressed with SGRT:

Respiratory-induced motion.

Reproducibility of patient positioning.

Reassurance of accurate treatment delivery



Why SGRT Implemented using Agile: Challenges

- Staff survey – post covid drop in morale
- Staff engagement in projects – response to feedback
- Major investment so keen to utilise technology quickly
- Capacity pressures – realise time gains quickly
- Tattooless from day 1 – benefit to patient experience
- Impact on retention and recruitment

Agile (DSDM) Project Management

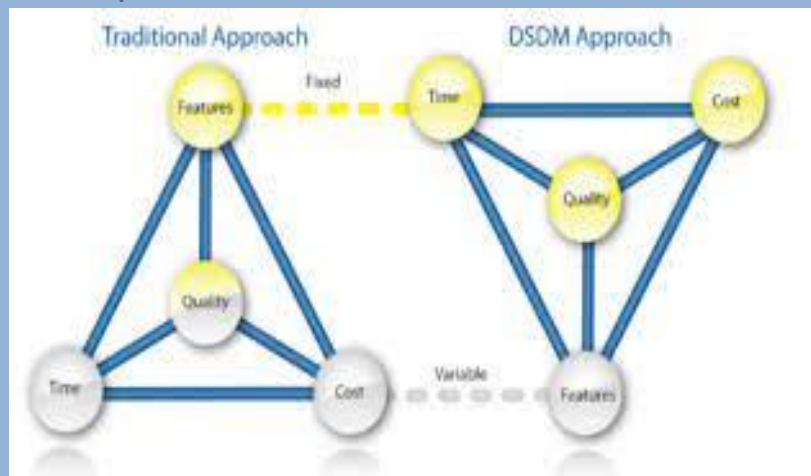
Definition:

Agile (DSDM) provides a structured and disciplined approach to agile project management, allowing organizations to deliver value efficiently and effectively while maintaining control over project scope, time, and cost.

Why Agile Project Management?

Agile Project Management

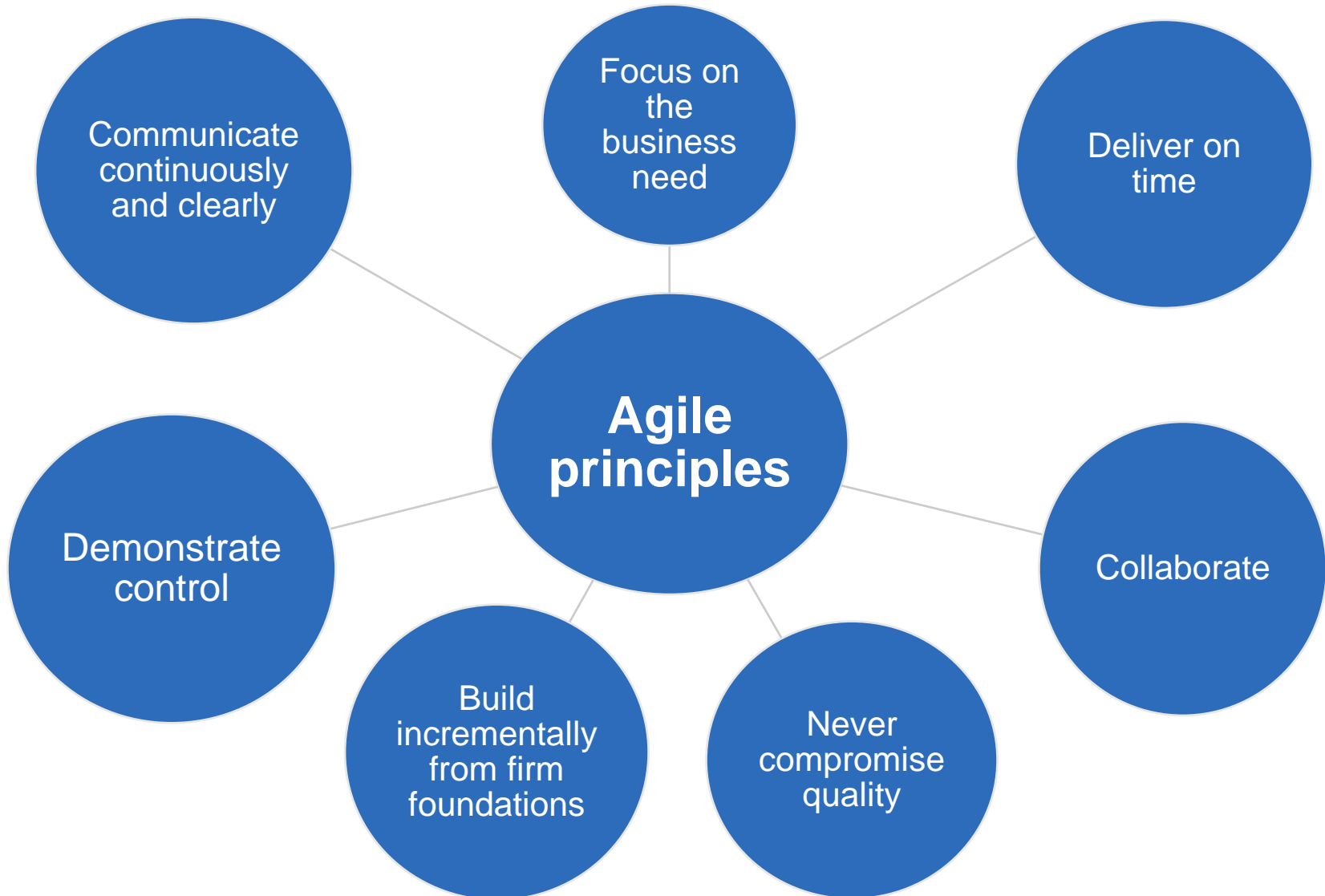
- Individuals and interactions over processes and tools
- Working solution over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan



The Benefits of Agile PM

- Involves solution stakeholders throughout project lifecycle
- Stakeholders have ownership of solution as it transitions into live use
- Prioritisation enables timely delivery whilst protecting quality
- The risk of building wrong solution is greatly reduced
- Deployment more likely to go smoothly due to cooperation of all parties concerned throughout development
- Evolutionary development (use of increments, timeboxes and iterative testing)

Agile Principles



Pre Project Phase: Setting and sharing our Vision

Key Objectives:

- Achieve tattooless treatment for all breast and thorax patients.
- Ensure workflow integration with minimal disruption.
- Enhance patient satisfaction and confidence.

Measurement of successful implementation:

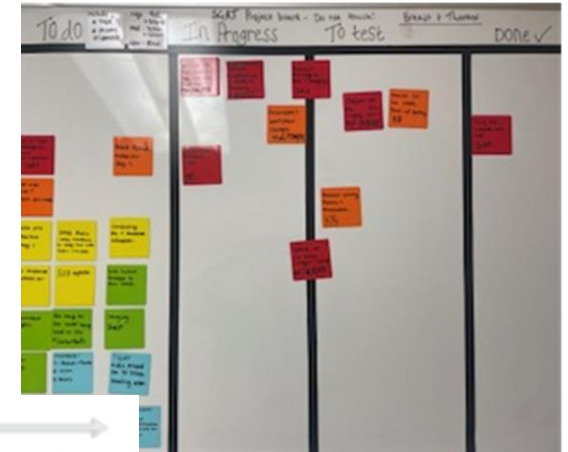
- Patients treated tattooless from day one.
- Staff proficiency in SGRT protocols.
- Patient-reported satisfaction.
- Time savings

Project Launch

- Quality and time expectation set
- Project team - MDT across grades
- Select the appropriate Agile tools and methods to keep the project on track
 - Interactive project boards, stand-up meetings, timeboxing
- Identify limitations and allow for planning
- MoSCoW - prioritise the focus of the project
- Iterative development over rigid
- Small, incremental goals (reduce risk/encourage continuous improvement and innovation)
- Design tests and ensure they have worthwhile outcomes.

Agile PM Tools

- Interactive project boards



- Timeboxing



- Stand up meetings – 2-minute talk limits!
- MoSCoW Prioritisation



MoSCoW Example

MUST HAVE- 60%	SHOULD HAVE-20%	COULD HAVE- 20%	WON'T HAVE THIS TIME
3 Linacs commissioned with SGRT	SimRT commissioned	5 Linacs commissioned with SGRT	MapRT
All FB breast and thorax techniques treated with SGRT	Incorporated Gated and DIBH workflows	Pelvis and Abdo	H&N workflows
ROI's for thorax and breast	Tattooless for breast and thorax	Process for Adaptive treatments	New H&N immobilisations
Process for importing into SGRT	Wider staff rotation and training	VSIM	Process for managing 6DoF
Staff trained with clear competencies	Limbs		
QA process incorporated into WI			
Skin tone checks			
Patient information updated			

Agile Project Journey

Research:
SGRT
systems,
criteria and
Scoring.



Building a
multidisciplinary
project team:
Staff buy in, mix
of experience.
Super user
training



Develop:
Development
team create
WI and
mitigate any
safety
concerns



Training:
practical
sessions,
SGRT
Saturday's,
E-Learning



CT GO LIVE
TATTOOLESS!

Business
case:
Identifying
stake holders



Plan: what
are the
priorities.
Plan
increments
and break
down into
tasks



Test and
adapt:
Testing
team test
the WI and
feedback



GO LIVE!
Tested on 3
patients 1
week prior
with
concessions

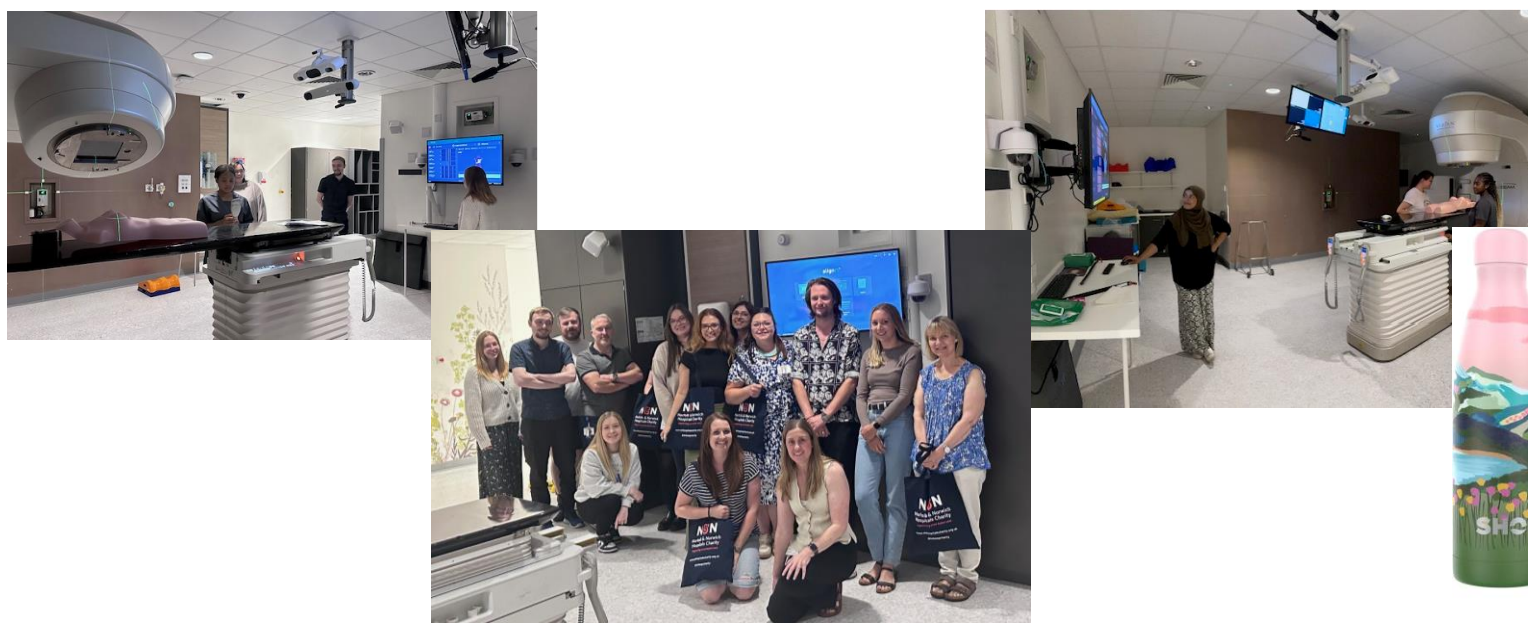


Start

End

SGRT Saturdays

- Introduced as a voluntary option to manage training during a period of no spare machine capacity. 45 Radiographers attended these sessions.
- 3 stations; QA & ROI creation, FB breast workflow inc functionality of the system and problem solving, DIBH breast workflow.
- Secured funds through NNUH charity, this included:
 - Payment for radiographer training time
 - A wellbeing bag which included a SHO water bottle, Vision RT merchandise and some goodies from NNUH charity.
 - Welcome drinks and Lunch.



Implementation Obstacles and Agile Solutions

Implementation obstacles	The Agile Solutions
Staff resistance to change	Diverse project team consisting mostly of Band 5/6's. Staff were involved in creating work instructions and testing the system so became invested and able to promote SGRT.
Training	Superuser training for project team and e-learning modules available to all. "SGRT Saturday's" were introduced to reinforce training, using previous sessions as a foundation we were able to create comprehensive work instructions.
Workflow integration	Careful planning, frequent testing and flexibility enabled effective scrutiny and standardisation of clinical workflows, while an MDT approach ensured alignment with existing systems.
Technical learning curve	Thorough testing reduced the learning curve, enabling staff to build confidence and competencies before go-live, which allowed early patient use and made the transition smoother and less daunting.

Implementation Obstacles and Agile Solutions

Implementation obstacles	How Agile overcome them
Time constraints	The successful launch of SGRT while managing increased patient capacity was made possible using Agile methods; prioritising features, holding weekly stand-ups and breaking the project into manageable time boxes with clear targets enabled early project sign-off. We were able to start using the system 1 week before Go-Live on 3 breast patients, FB and DIBH.
Patient communication	Patient information was consistently updated and communicated throughout their treatment. Patients with more than 3 fractions remaining at the point of Go-Live were transitioned to SGRT, and the changes were discussed with them. Feedback from the first 3 patients treated with SGRT prior to Go-Live was used to improve the process, including information on TV screens in waiting area and involving them in the hospital communications for better engagement.

Project Timeline

First Align
RT
Equipment
installed:
20th May
2024

LA2,3,6
Commissioned:
1st August
2024

CT
Tattooless
for Breast,
Thorax
and Abdo:
19th
August
2024

Treatment
GO-LIVE
PH1 for
Breast,
Thorax and
Abdo:
9th
September
2024

Treatment
GO-LIVE
PH2 for
everything
except H&N
:
12th May
2025

PH3- SGRT
& Faceless
masks for
H&N and
CNS:
In
progress

Operational Benefits

We reviewed 120 Breast, thorax and Abdo pts before go live and 120 after.

- 32.5% re-set up rate before SGRT compared to afterwards where it had reduced to 17.5%
- All Breast treatment techniques including IMC and DIBH are taking on average 5 mins less with SGRT compared to previous
- SGRT using AlignRT now in use across all bodysites except head and neck – consistency in training
- Enhanced problem solving
- Improved morale (staff survey results)

Challenges of Agile Project Management within the NHS

- Requires significant staff time, including repeated iterations and out of hours testing.
- Organising the right staff at the right time
- Relies on experience of project implementation and understanding of Agile principles – the qualification!
- Requires confidence and trust from stakeholders to commit to iterative approach.
- Demands on strong management experience to guide and support the process.
- Needs ongoing enthusiasm and motivation to sustain momentum during change.
- Involves challenges in accuracy in accurately estimating time and resources within a complex NHS structure.
- Can strain already limited NHS capacity.
- NNUH charity funds were used to fund SGRT Saturday's. This equivalent may not be available at other trusts.
- Not always possible to complete tasks in tight timelines so be realistic!

Any Questions?

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Thanks to:

- VisionRT for their support especially during our Go Live (Kate, Shay and Elise)
 - Derby and Poole RT depts for their advice/support