

# Rapid-RT Study: The feasibility of implementing rapid-learning methodology to inform radiotherapy treatment: Healthcare professionals' views

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## 1. BACKGROUND

Formal evaluation of technical changes in radiotherapy can be challenging. Pragmatic continuous learning approaches ('rapid-learning') using 'real-world data' (RWD) have the potential to provide evidence to optimise interventions in radiotherapy. The RAPID-RT study aims to use routinely collected RWD to measure the impact of changes in standard-of-care radiotherapy practices on patient outcomes.

### 1A. WHAT IS RWD?

Data relating to patient health, experience or care delivery collected as part of the normal care pathway.

### 1B. RAPID-RT STUDY: CLINICAL EXEMPLAR

Research has shown irradiating the top of the heart during radiotherapy for lung cancer increases the risk of premature death. RAPID-RT aims to introduce a new dose limit to this region to avoid radiation-induced heart disease and increase survival.

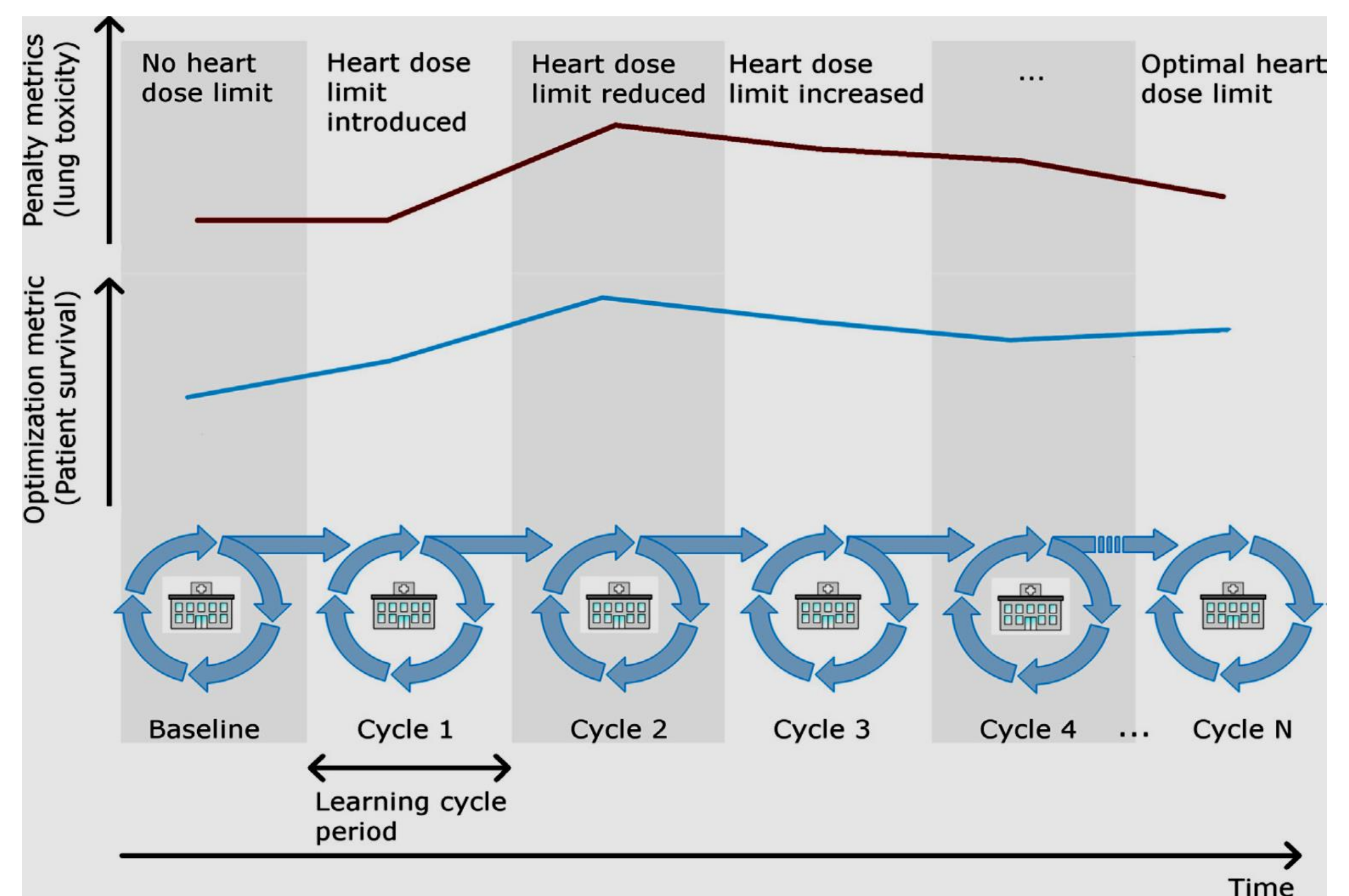
## 2. STUDY AIM

- Examine HCPs' opinions of rapid-learning and RWD
- Identify key factors that affect implementation of rapid-learning approaches in the clinic

## 3. STUDY DESIGN AND METHODOLOGY

- A multi-centre, qualitative interview-based design
- Five geographically diverse UK cancer sites
- 23 semi-structured interviews: *clinical oncologists (7), radiotherapy physicists (5), treatment planning staff (2), radiographers (2), digital learning (2), research and information governance (2), medical/clinical outcomes directive team (3)*
- Inductive thematic analysis

## 1C. RAPID-RT STUDY: A RAPID-LEARNING APPROACH



**Baseline/Cycle 0:** Starting with no heart dose limit, baseline survival and lung toxicity are assessed (using retrospective data) **Cycle 1:** A heart dose limit is introduced – survival and toxicity levels assessed (impact on outcome assessed through analysis of RWD (Patient reported outcome measures (PROMS) of symptom burden and health-related quality of life) **Cycle 2:** Heart dose limit is decreased further (if toxicity levels are acceptable) – this will provide the 'unacceptable lung toxicity' level **Cycle 3:** Heart dose limits are raised to reduce toxicity **Cycle N:** Heart dose limit is increased and decreased until dose limit and balance of risks is considered clinically optimal.

## 4. RESULTS: KEY THEMES

**1: The alignment of rapid-learning with the reality of practice**

- Challenges of RCT evidence
- Rapid-learning offers potential for
  - More timely evidence
  - Treatment personalisation
- Incremental changes in technique are routinely implemented with 'less evidence'

**3: The maturity of data and digital infrastructures for rapid-learning**

- Integration of clinical & digital services
- Capacity of different-sized centres to implement rapid-learning

**2: Concerns related to the variability of clinical and RWD**

- Scepticism over data accuracy e.g. incomplete data-sets

**4: Further support, education and evidence needed to convince adoption of rapid-learning**

- Risk management & safety
- Professional buy-in
  - Analytical support
  - Time & space

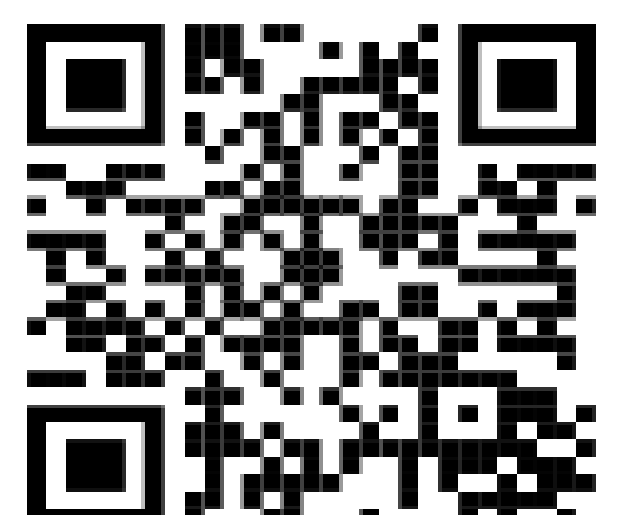
## 5. SUMMARY OF FINDINGS

- HCPs welcomed the potential of rapid-learning approaches to address real-time gaps in radiotherapy development

HCPs raised the following areas to consider for successful implementation:

- The quality of clinical and RWD
- Maturity of data and digital infrastructures
- Capacity of different-sized centres to implement rapid-learning approaches
- Strength of evidence and understanding needed to convince teams and centres to implement rapid-learning

Want to know more about RAPID-RT?  
Scan the code and visit our website!



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