Patient Reported Outcome Measures (PROMs) in Radiotherapy: Qualitative Results of a Survey of Healthcare Professionals

Lauren Oliver[1], Daniel Hutton[1,2], Michelle Cain[3], Michelle Bates[4], Elizabeth Mullen[3], Mike Kirby[1] and Anthea Cree[3]

[1]University of Liverpool [2]North West Radiotherapy ODN [3]Clatterbridge Cancer Centre NHS Foundation Trust [4]East of England Radiotherapy ODN

Contact: L.Oliver@Liverpool.ac.uk

BACKGROUND

➢ Radiotherapy (RT) is recognised as an effective treatment modality in the management of various malignancies, however acute and late treatment toxicities pose a significant burden to patients' quality of life[1,2]. Such toxicities are often underreported by clinicians, thus patient-reported outcome measures (PROMs) present a more robust assessment[3].

➢ Despite clear advantages of PROMs including stratified follow-up and evaluation of clinical effectiveness, safety and cost[3,4], barriers exist at patient, healthcare professional (HCP) and service levels[3,4]. The NHS England RT Service Specification calls for routine PROMS use, which requires effective implementation within RT[5]. Several 'enablers' to PROMs implementation have been identified, including use of electronic PROMs, automatic data interpretation and HCP training[3,4,6].

➢ This study aimed to determine the use of PROMs within RT services across England to evaluate current attitudes, barriers and enablers to PROMs use, and to develop practical recommendations to implement PROMs within UK radiotherapy services. The qualitative findings are presented here.

METHODS

Data Collection

An online questionnaire was developed consisting of 12 questions related to PROMs use. Free-text comment boxes permitted rich qualitative responses.	The questionnaire was piloted by a group of RT professionals employed across multiple organisations prior to dissemination.

Recruitment

The online questionnaire was disseminated via email to all 11 RT Operational Delivery Network (ODN) managers, covering the entirety of England.	Participants (n=182) were recruited from 40 out of 50 RT providers across the country, from all 11 RT ODNs. Participants represented a range of professions including Therapeutic Radiographers, Nurses and Researchers.

Data Analysis

A mixed methods approach was utilised. Descriptive statistics were used to provide quantitative analysis of questionnaire responses.	Thematic analysis of free-text responses conducted by three independent researchers identified key themes related to the barriers and enablers of PROMs use and implementation in RT.

RESULTS AND ANALYSIS

Inductive thematic analysis of free-text questionnaire responses resulted in identification of 5 themes relating to the barriers and enablers of PROMs within RT practice. Interestingly, 4 identical themes emerged associated with participants' perceptions of both barriers and enablers to PROMs use; however, an additional theme pertaining to potential enablers of PROMs was identified amongst responses.

1. I.T. Infrastructure

➢ I.T. infrastructure was the most commonly reported barrier to PROMs use. Specific concerns included: lack of integration with existing systems/capacity for patient data input and limited access across multiple sites or at peripheral clinics.
➢ The majority of participants suggested improvements to I.T. infrastructure as a key enabler to PROMs implementation, with a key focus on electronic 'ePROMs'.

Barrier: *"Ability to deliver at peripheral clinics – currently misses a lot of patients and data"*

Enablers: *"Tablets/iPads to do PROMs in clinics in real time" "Simple form to use attached to the radiotherapy or Trust I.T. system"*

2. Time

Barriers: *"Labour-intensive, nobody has time in their role" "Timely to interpret depending on how many PROMs you are collecting"*

➢ Insufficient time to implement and utilise PROMs was identified as a significant barrier to implementation.
➢ Enablers to the use of PROMs included time allocated within job roles to support implementation, assist patients and make use of data collected.

Enablers: *"Additional appointment slots" "Extra time initially to implement PROMs"*

3. Resources (Human/Financial)

➢ Insufficient allocation of funding and staffing presented barriers to the implementation and ongoing use of PROMs.
➢ Participants highlighted specialist commissioning requirements as a driver for PROMs implementation, and emphasised the need for onward referral pathways.

Barriers: *"Serious shortage of workforce in all areas of RT" "No one seems willing to fund it"*

Enabler: *"Collecting patient data and doing nothing is worse than doing nothing at all – need a coordinated fully funded framework"*

4. Training/Education

Barriers: *"How these [PROMs] can be used to advise a necessary intervention is poorly understood" "Seen as 'part of the researcher's job'"*

➢ Participants outlined areas where further training on the use of PROMs is required, for both staff and patients.
➢ The authors identified additional areas for further training, as several participants demonstrated misconceptions in the format of PROMs completion, i.e. staff being required to complete PROMs, or reference to tools not classed as PROMs.

Enabler: *"Training for all staff, not just reviewers"*

5. Standardisation

➢ A final enabler to the implementation of PROMs included a more standardised approach to collect and report data. This included centralised data storage and a standardised set of tools.

Enablers: *"The same tools need to be used across providers" "Need a national solution to allow data sharing and benchmarking"*

CONCLUSIONS

The case for implementing PROMs into practice is clear, the process is perhaps more challenging. These findings demonstrate common barriers experienced across the majority of RT services in England, resulting in a paucity of PROMs data. Considering the enabling factors identified by participants, we provide recommendations to mitigate such barriers and drive PROMs implementation:

➢ Standardised PROMs training packages for HCPs are necessary to increase awareness of PROMs use.
➢ Integration of PROMs into electronic systems, coupled with adequate I.T. support, is required to drive implementation.
➢ Standardisation of PROMs tools and centralised data storage will permit assessment of radiotherapy toxicity data nationally, informing future practice.
➢ Referral pathways to existing specialist services are fundamental to ensuring PROMs data are used meaningfully. Increased use of PROMs may overwhelm existing services, thus significant investment into infrastructure and workforce is required.
➢ Use of 'ePROMs' with automatic data interpretation coupled with increased time allocation within job plans could mitigate challenges surrounding time constraints.

Limitations of the study are recognised; the online questionnaire provided an option for participants to 'skip' questions, potentially resulting in missing data. Participants were not required to disclose their speciality, which may have influenced the individual PROMs tools discussed.

This work provides a crucial insight into the current use of PROMs within RT services across England. It is evident that barriers to the routine use of PROMs within RT remain, however the rich qualitative data reported here provides potential solutions to overcome these. This study presents an important first step in driving PROMs implementation within UK radiotherapy services.

ACKNOWLEDGEMENTS

References
1. Miller, K., Nogueira, L., Mariotto, A., Rowland, J., Yabroff, R., Alfano, C., et al. *CA: A Cancer Journal For Clinicians*. 2019; **69**: 363-385.
2. Macmillan Cancer Support. Cured – but at what cost? Long-term consequences of cancer and its treatment. [Internet] 2013.
3. Nguyen, H., Butow, P., Dhillon, H. & Sundaresan, P. *Journal of Medical Radiation Sciences*. 2021; **68**: 186-195.
4. Kingsley, C. & Patel, S. *British Journal of Anaesthesia*. 2017; **17**: 137-144.
5. National Health Service (NHS) England. Service Specification 170091S: Adult External Beam Radiotherapy Services Delivered as Part of a Radiotherapy Network. [Internet] 2019.
6. Howell, D., Molloy, S., Wilkinson, K., Green, E., Orchard, K., Wang, K. & Liberty, J. *Annals of Oncology. 2015;* **26**: 1846-1858.