

Literature Review

Radiation therapist peer review: raising the bar on quality and safety in radiation oncology

Crispen Chamunyonga¹, Pete Bridge²

¹*Radiation Therapy Department, The Cancer Centre, Nassau, Bahamas,* ²*School of Clinical Sciences, Queensland University of Technology, Brisbane, Queensland 4001, Australia*

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Abstract

Purpose: An emerging developmental tool to help radiation therapists achieve better outcomes is 'peer review'. This review of the current literature summarises the challenges and benefits of peer review in both individual and departmental practice.

Discussion: There is compelling evidence supporting peer review implementation at both individual and department level in many professions. Implementing peer review requires that radiation therapists and other radiation oncology professionals embrace a culture that supports safety. Peer review can identify trends and barriers associated with quality radiotherapy and share best practice or recommend changes accordingly. Support for peer review must come from pre-registration educational systems as well as clinical managers. Continuing professional development in the workplace is nurtured by peer review of radiotherapy practice and an aptitude for this should be viewed as important to the profession as technical and clinical skills.

Conclusion: It is clear that peer review has the potential to facilitate reflective practice, improve staff motivation and help foster a culture of quality and safety in radiation oncology. To drive the issues of quality and safety a step further radiation therapists need to accept the challenge of adopting peer review methods in day-to-day practice.

Keywords: decision making; peer review; quality and safety; radiation therapists

INTRODUCTION

One of the most important challenges facing the rapidly evolving world of radiotherapy is ensuring effective and feasible methods of improving quality and safety. Radiation therapists are responsible for

ensuring that the prescribed dose of radiation is delivered safely and accurately and it is imperative that they embrace any principles that promote accuracy and safety in the workplace.

Individual peer review¹ is a useful yet under-utilised² tool that can help them to achieve a significant and sustainable level of quality and safety in their practice. Peer review as applied to departments or processes has proven to be

Correspondence to: Crispen Chamunyonga, The Cancer Centre Bahamas, 72 Collins Avenue, Nassau, Bahamas. Tel: +1242 5029610. Fax: +1242 5029619. E-mail: crischams@yahoo.com

effective²⁻⁵ with American Society for Radiation Oncology (ASTRO) describing it as a critical component of a radiation oncology quality assurance (QA) programme that can be used to ensure safety in all the processes involved.¹ Peer review programmes at every stage in radiation oncology management have the potential to identify and eliminate some of the inaccuracies in the treatment that could be a result of poor management decisions, variations in the treatment protocols, inadequate knowledge, lack of resources or weaknesses in QA programmes.¹ Peer review in small groups or teams of care providers would seem to be a logical method to address department-level quality and safety as it matches the 'profile' of effective behaviour change in health care.² Peer review of individual performance, however, remains underused² and this paper aims to both define and outline the potential benefits and challenges associated with its implementation. It will also equip radiation therapists with an understanding of the value of peer review for facilitating decision making and improving safety and quality in both their individual and department-level practice.

DEFINING PEER REVIEW

A peer is defined as an individual practising in the same profession and having the same expertise in the appropriate subject matter.² Peer review is a broad term that encompasses different roles and techniques from various professional arenas. It aims to facilitate formal and informal audit or evaluation of colleagues and provide feedback to improve service delivery and performance. Peer review includes such wide ranging activities as inter-department audits, journal submission procedures and critical appraisal techniques. It exhibits many facets of design and implementation that suit different academic, professional and clinical needs. However, all peer review programmes share the common goal of improving 'safety and quality' in practice. ASTRO described peer review in radiation oncology as a process that is central to quality management or QA programmes and synonymous with the terms 'audit and feedback'.¹

Audits are crucial in radiotherapy and are widely used by organisations such as the International

Atomic Energy Agency,⁶ and American Association of Physics in Medicine⁷ to ensure compliance to benchmarked standards of QA in radiation oncology practice. This has led to peer review playing a pivotal role in such organisations as part of accreditation processes. This formal credentialing aspect of peer review should be distinguished from individual review in order for it to be widely accepted by radiation therapists. McIntyre and Popper argue that audits must not be part of a disciplinary instrument but a tool for learning by feedback.⁸

The term peer review has been used in radiation oncology to encompass a multitude of activities including chart rounds, multidisciplinary meetings, physics audits and 'physician to physician' peer reviews. Radiation therapists may not be directly involved in all radiation oncology peer review activities but it is crucial in the context of addressing quality and safety for them to be aware of the existence of peer review. It is only by embracing these peer review activities that all the relevant radiotherapy processes can be monitored and evaluated formally. Radiation therapist-focused peer review commonly involves audit and feedback mechanisms as part of daily activities such as simulation, treatment and treatment planning. 'Individual' peer review is informally common during such activities and peer consultation aids decision making as well as clarifying doubt about any action.

INDIVIDUAL PEER REVIEW

Individual peer review is characterised by collaboration between two or more individuals for an extended period, with regular meetings and activities (at least once a month) in order to improve quality and safety.² A variety of subjects, interventions and methods are used in a planned and structured way. The process may include setting criteria, data collection, performance appraisal, exchange of experiences, developing guidelines, solving problems in practice and making specific arrangements for achieving changes. Collaboration with respected peers and honest mutual provision and acceptance of evaluation and support are central to the process of peer review. Richard Gregory² described 'a continuous, systematic, and critical reflection by

a number of care providers, on their own and colleagues' performance, using structured procedures with the aim of achieving continuous improvement of the quality of care'. If quality is to be *continuously* improved then peer review must also be a *continuous* process. The term *systematic* emphasises the need for method or a conscious effort by all team members to engage with peer review. *Critical reflection* implies a deeper consideration of the potential impact of actions. These three elements form the foundation of successful individual peer review.

POTENTIAL BENEFITS OF INDIVIDUAL PEER REVIEW

Individual peer review brings many benefits that transfer well to radiotherapy practice. A recent evaluation of feedback from peer reviewees working as clinical teachers highlighted three main themes common to academic peer review as being 'affirmation, motivation and inspiration'.⁹ Although the focus was on clinical teaching these themes are relevant to all aspects of clinical practice. Affirmation provides reviewees with feedback about aspects of their practice at which they excel. This not only increases confidence but enhances continuing professional development (CPD) portfolios as it provides genuine evidence of competence as well as direction for action planning and future development. Motivation can be increased partly due to affirmative feedback and from a desire to engage with the process and respond to the feedback. The process allows both reviewer and reviewee to focus on a particular area of practice in a manner that everyday work cannot allow. The final common theme was inspiration gained from discussion of alternative approaches; peer review is clearly an ideal forum for effective sharing of practice.

The other major benefit of peer review is to the reviewer who will gain insight into the reviewee's practice and ideas as part of the process. Personal experience has demonstrated that much learning can be gained from observing another's practice. Of course while peer review has most obvious benefits to the individuals concerned, the primary aim of the process should be to ensure that clinical practice is being conducted optimally. A recent literature review of peer review research identified its clear value for ensuring that practice

is meeting its aims.¹⁰ By sharing feedback and ideas via individual peer review it is apparent that the whole workplace and ultimately the patients can benefit.

PEER REVIEW IMPLEMENTATION

Implementing systematic or individual peer review has its own challenges. Inconsistency of approach is a potential problem¹¹; this can be further compounded in small centres by a 'lack of peers' to conduct systematic peer review.¹ The process of peer review is often seen as time consuming and a challenge to the already busy schedule of radiation therapists. In spite of these challenges, the value of peer review has the potential to outweigh logistical issues. Creating a true culture of peer review, however, may require leadership and long-term strategies to stimulate and foster this change throughout a department; particularly in the initial phases of implementation.

REVIEWER-REVIEWEE PARTNERSHIPS

Logistical issues aside; the success of peer review lies in establishing an open and honest partnership between reviewer and reviewee. The aim of the process must be to advance CPD and wider practice. Thus it is important that partnerships are formed from individuals who are unlikely to be in competition with each other for promotion opportunities and are willing to engage in open discussion without fear of offence. In the clinical environment, existing high professional standards should ensure the latter. While the potential value of peer review as a part of promotion application or annual review makes it appealing to managers, it is not necessarily useful for line managers to conduct reviews on their subservient staff.¹² For true peer review to take place the partners should be genuine peers. Evidence suggests that pairing for mutual review nurtures the provision of practice sharing and support.¹³

Bias leading to negative feedback has been cited as a potential problem inherent in a peer review process,¹⁴ although much of the current literature surrounding bias in peer review relates to journal submission. In a clinical environment individuals are unlikely to engage in a peer review partner-

ship with a competitor or someone who is likely to be unfairly harsh in their feedback. The converse problem, however, is a threat to the value of peer review. La Lopa¹⁰ refers to the 'halo effect bias' arising from a reviewer who has positive feelings for their reviewee and thus provides more favourable feedback than their performance would merit. Again the potential problem can be averted if the rationale for peer review is expounded clearly; a rose-tinted review is of limited value for CPD.

ENGAGING RADIATION THERAPISTS IN PEER REVIEW

Aside from these relationship issues, one of the main challenges to widespread uptake of the peer review process is engagement; the value of peer review is not always apparent to novices and it can be viewed as intrusive and a burden in terms of additional workload. It is vital that the benefits of peer review are explained in full and that all staff members are encouraged to participate as part of their CPD activity time. In some workplaces, particularly in academia, peer review is a compulsory activity.¹⁴ Although this nurtures an environment that supports peer review, it does run the risk of inducing resentment and participants viewing it as a hoop to jump through rather than a valuable and rewarding activity. Peer review can be made less threatening if participants are provided with opportunities for anonymity of findings with only the reviewer and reviewee having access to the feedback.

A variety of approaches can be used ranging from an informal unprepared discussion to a more formal and structured approach. As a bare minimum reviewer and reviewee should agree to the aims and focus of the review beforehand and meet to share feedback afterwards. Gusic⁹ utilised a checklist approach to provide specific feedback on behaviours; this allows an objective approach but clearly with a wide scope of clinical skills this would need tailoring to specific circumstances. LaLopa,¹⁰ also recommended a rubric or template agreed by all to help increase reliability of feedback. The most important aspect of the process is provision of protected time for review feedback and the discussion and sharing of ideas to be conducted.

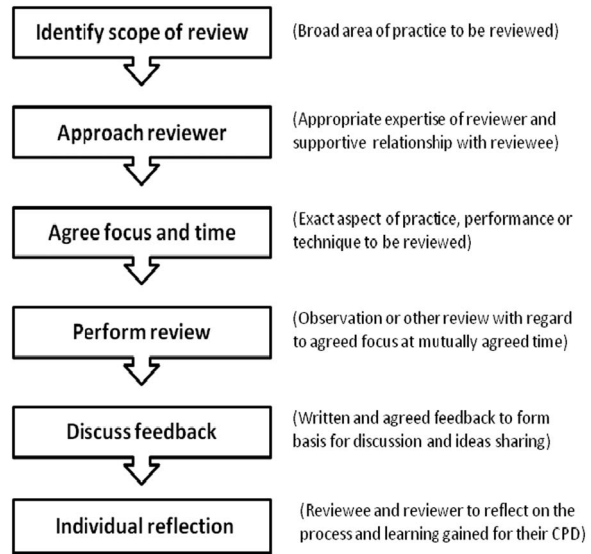


Figure 1. Individual peer review process.

The implementation of peer review programmes clearly requires more than developing check sheets. Essential elements in the implementation of a peer review process by radiation therapists include: identifying peers, determining the purpose and scope, selecting targets for peer review, observation or evaluation, standardisation, documentation and continuous improvement; as seen in Figure 1. In addition, radiation therapists may need create boundaries and focus on higher priority targets based on the complexity of the techniques available in their departments.

SCOPE OF RADIATION THERAPIST-FOCUSED PEER REVIEW

One of the most important principles in the development of peer review programmes is the definition, evaluation and prioritisation of peer review targets. However, it is important to distinguish between 'systematic' peer review (e.g., review of protocols) and 'individual' (typically concerning decision-making skills). There are a wide range of radiation therapist-focused tasks that make useful 'individual' peer review targets that relate to departmental resources, scope of practice and expertise.¹ In general, the more advanced the techniques or cases, the higher the number of peer review targets required. In a radiation therapist-focused peer review programme the need for individual

preferences regarding structure and boundaries must also be considered to ensure the review is practical and relevant.

Radiation therapists are increasingly called upon to formulate clinical decisions including organisational strategy, patient setup and plan production and image-guided radiotherapy (IGRT) actions. The peer review process is ideally placed to form a critical component of the decision making model.¹⁵ When a problem is identified, there is a need to generate alternatives, evaluate them, choose the safest choice, implement and then evaluate the decision. In the context of a 'peer review centred culture' the latter step means a professional should ideally seek evaluation by a peer regarding their decisions. The quality of the decisions made is a predominant factor affecting how safely the radiotherapy can be implemented at each level, affecting the performance of the department as a whole.

Peer review of decision-making skills requires that radiation therapists and others on the radiation oncology team embrace a culture that strongly supports safety. Understanding peer review means valuing the role of a peer in the decision-making process. A culture that nurtures peer review supports consultation of second opinions regarding best practice before proceeding even when under time pressures. In a report on intensity-modulated radiation therapy (IMRT) safety Moran et al.¹⁶ suggested several considerations to support a culture of safety, including trust among department members, and effective communication among team members. Effective communication allows radiation therapists to freely consult a colleague at any stage of the radiotherapy process; peer review establishes an effective forum for this.

INCREASING NEED FOR PEER REVIEW

The delivery of radiotherapy has become sophisticated, promising increased accuracy for targeting of malignancies and avoidance of normal tissues. However, the use of complex technology requires extensive training, continuing education and attention from the radiation therapists who perform various procedures from simulation to treatment delivery. These roles in treatment planning,

dosimetry and treatment continue to evolve to meet the demand for IMRT and IGRT.¹⁷ Pawlicki and Mundt¹⁸ identify 'consistency of practice' as a key aspect of high-quality decision making in radiation oncology. Peer review is one of the methods that can be used to ensure consistency in practice. Most radiotherapy departments track their performance based on quality measures that are put into place by quality management programmes. Quality of care is measured against identified performance benchmarks by our peers and professional organisations or national regulatory bodies.

As radiation therapists are the ultimate gatekeepers in the delivery of curative doses of radiation¹⁹ they must balance efficiency against potential for radiotherapy incidents.^{20,21} An ASTRO document that described the relationship between efficiency and safety highlighted the need for efficiency in radiation oncology.²² It is therefore desirable that radiation therapists recognise the importance of efficient measures such as peer review programmes that have the potential to reduce accidents.

INFLUENCE OF EDUCATIONAL, REGULATORY AND PROFESSIONAL BODIES

The demand for quality and safety in radiotherapy services requires that the concept of peer review is embedded from the grassroots level. This means that professional and educational organisations have a very important role to play. For example, the incorporation of peer review in radiation therapy curricula¹ can reinforce the value of future engagement in improving safety and quality in radiotherapy services provision. Educational institutions are already making widespread use of peer review methods to evaluate and improve teaching practice. Thus the foundations of a peer review culture are already present in academia and this can be readily transferred to students in order to provide them with the tools and enthusiasm to engage with peer review in their professional practice.

In the past decade, there has been a concerted effort by radiation therapists and professional bodies such as the HCPC-UK, CAMRT and AIR to facilitate CPD activities. Educational

institutions also responded by providing underpinning resources that support life-long learning.²³ If such an effort is exerted towards fostering a culture of peer review, safety and quality in radiotherapy will also become a culture. Professional bodies are in a position to educate radiation therapists through CPD activities concerning peer review. The long-term outcome of these measures is likely to be a change in culture to one where peer review of radiotherapy practice has equal importance to technical and clinical skills.

CONCLUSION

Providing safe and high-quality care is imperative in radiation therapy. To drive the issues of quality and safety a step further radiation therapists need to accept the challenge of reviewing their day-to-day practice. This can be achieved through both formal and informal individual peer review. Peer review is a method of improving professional growth and quality of care that can identify trends, challenges and barriers to safe delivery of high-quality radiotherapy and recommend appropriate changes. Although limitations such as time, and peer availability can be overcome, the bigger challenge lies with 'selling' the benefits of peer review, embedding it in everyday practice and changing the culture in radiation therapy to facilitate understanding, acceptance and ownership of peer review. It is recommended that departments foster a culture of individual peer review and that these processes are embedded more firmly in educational curricula and professional body recommendations and CPD activities.

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