Radiotherapy Peer Review: a QA/QI tool to improve radiotherapy treatment for sarcoma patients

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Radiotherapy

• Essential cancer treatment
• 4/10 cases where cancer is cured.
• Relatively cheap, safe, cost effective

And Complex…
Outline

- What is radiotherapy peer review?
- Is it important and why?
- Current recommendations, practice and context of peer review in radiation oncology
- Review targets for peer review
- Associated challenges
- What can we do as a network to promote this
  - Radiotherapy peer review for sarcomas: recent development update
  - Practicalities
  - Future aims: ? Radiotherapy peer review at a National level.
Evolution in RT

Scottish Sarcoma Network

2D
3D CRT
IMRT
therefore

Need to maintain QA procedures to keep pace and maintain safety.

Increased treatment complexity

Ensure QA/QI systems evolve to ensure safety
What is peer review?
What is peer review?

“The evaluation of creative work or performance by other people in the same field to enhance the quality of work.”

Requires organizational culture to allow and encourage review of physician’s decision.

Work in partnership where all members of the team have a role.

“Patient specific rather than process control”

“The evaluation of components of a radiation treatment plan by a second radiation oncologist.”
Is it important?

Several reports are questioning the safety of radiotherapy → QA procedures must be in place

• Reduce errors– improve care
• Promote a more cohesive practice through shared knowledge and experience
• Promote Education – tool for learning
• Promote collaboration and partnership
• Identify areas of improvement
Any evidence?

- Canadian data and high interest worldwide to implement peer review as a process to improve radiotherapy outcomes.

- Meta-analysis of RCTs tested the role for peer review (audit and feedback) on health outcomes showed it to be effective in improving professional practice. 

(Jamtvedt et al, Cochrane Database Syst Rev, 2006)
Any evidence?

• Large study assessing real time pre-treatment peer review
• 3,052 plans
• 8-year period in Ontario

Feasible!
8% of cases required modification of treatment plan

(Brundage et al, Int J Radiat Oncol Biol Phys 1999)
Any evidence?

A prospective study showed peer review recommended changes in 4% of plans.

(Boxer et al, 2009)

A post treatment peer review audit of 80 cases noted 5% of patients had controversial decisions ie treatment intent, dose, fractionation

(Shakespeare et al, 2005)

Survey on pattern of peer review in North American academic radiation oncology facilities-> protected time and monitoring attendance improved participation.

(Lawrence et al, 2011)
Any evidence?

A survey of radiation treatment planning peer-review activities in a provincial radiation oncology programme: current practice and future directions

Michael Brundage, Sophie Foxcroft, Tom McGowan, Eric Gutierrez, Michael Sharpe, Padraig Warde
Special Article

Enhancing the role of case-oriented peer review to improve quality and safety in radiation oncology: Executive summary

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Clinical Investigation: Quality Assurance


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THE ROYAL COLLEGE OF RADIOLOGISTS

Response to:

NHS England - Modernising Radiotherapy Services in England - developing proposals for future service models

- Clinician peer review of radical plans (both volume definition but also plan evaluation) needs to be explicitly supported. Achieving this will require dedicated time in consultants job plans. Linking the re-design of radiotherapy services with a clear expectation of clinical peer review of radiotherapy volume definition will significantly improve the quality and consistency of radiotherapy but also provide the lever with which to achieve this rapidly.
Aims and objectives

• What are we trying to achieve and promote through radiotherapy peer review?

Reduce errors– improve care
Promote a more cohesive practice through shared knowledge and experience
Promote Education – tool for learning
Promote collaboration and partnership
Identify areas of improvement

Peer review of case specific qualitative decisions ie dose, target volumes
INTER OBSERVER VARIATION OF TARGET VOLUME DEFINITION /OARS KNOWN IN CLINICAL SETTINGS CAN BE REDUCED

IDENTIFY AND SHARE THE EVOLUTION OF BEST PRACTICE
Targets for RT peer review

- Target definition
- OARs physician’s task
- Planning directive (dose/volume goals/constraints for targets and normal tissues)
- Technical plan quality
- Treatment Delivery (therapist-focused task)
Challenges and barriers…

- Protected time for routine peer review (insufficient time)
- No clear targets/poorly defined peer review processes
- Increasing treatment complexity
- Insufficient physical resources
- No guidelines for appropriate documentation of peer review
- RT imaging information sharing
- Small centers without peers
- Culture
Effective peer review doesn’t just happen. It must be planned, acknowledged, and monitored.

To make this happen first step is to engage and have standardized systems to define when, who and how peer review will be conducted and that expectations are clear.

Time, space and culture to support peer review process
Scottish Sarcoma Network

PEER Model

Process

why?

how?

communication

what?

who?

Structure

Culture
Updates

• Starting retrospective peer review of sarcoma plans
• Beatson and ECC
• Preliminary stage (bimonthly meetings, retrospective review of contours and radiotherapy plans).
• Inter-center peer review
• Developing radiotherapy peer review for sarcomas across Scotland.
• Focus is on educational element of peer review, share experience, learn from one another.
• Aim to develop a cohesive approach to radiotherapy for sarcomas across Scotland