Safety in Radiation Therapy
Radiation Therapist Perspectives

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Objectives

- Review traditional and current evolving role of the Radiation Therapist
- Where therapists “sit” in the safety process
- Review British Columbia Model
Traditional Role

- “Button Pusher” or “Technologist”
- Least formally educated team member
- Always involved in treatment errors
  - “How could they do that”
  - “Why didn’t they pick up that”
- Historical focus on developing systems to check RT’s (eg Record and Verify)
Evolving Role

- Emerging Profession
- Degree as entry to practice
- MSc. Qualified
- Research Role
- Autonomous practice (image approval)
- Practitioner Status (UK and Canada)
Evolving Role

- Daily QA of machines
- QA of Patient Chart / Care Process
- Assessment / monitoring of patient
- Treatment delivery
- Image review and corrective action
- **Verification of treatment delivery**
Evolving Role

– “Computers can provide only so much help. In the past, they checked the work of RT’s, but now therapists check the computers”

Dr. H. Amols – MSKCC – NYT Jan 2010
Role in Safety: Swiss cheese model
Role in Safety

- Last line of defence
- Least level of defence (2\textsuperscript{ND} Therapist / R+V systems)
- Dual Role: delivery of treatment and patient care
- Errors are not all dosimetric
Last line of defence:

- If Mr. ZZZ’s skin damage was a mystery to his doctors, two therapists had already concluded that he was being over-radiated. ..was so concerned that she refused to administer the radiation...
- The protest did not go over well. Their supervisor admonished them for questioning and later that month, both therapists were fired (NYT, Jan 2010)
Last Line of Defence:

- There was still one final chance to intervene before the overdose. All the therapists had to do was watch the computer screen — it showed that the collimator was open. But they were not watching the screen. Instead, their eyes were fastened on Mr. XX, out of concern that he might vomit into the mask that stabilized his head. Earlier, he had been given a drug known to produce nausea, (NYT Jan 2010)
Role in safety:

• Can Commit:
  – Errors that are minor (eg single patient single field)
  – Errors that are major but correctable if detected (single patient few fractions)
  – Errors that are major (single patient all fractions)
  – Errors in patient care
Role in Safety

- Missed 8cm move from tattoo
- Concurrent Radiation/Chemotherapy – missed chemotherapy bookings
- Patient left with empty oxygen tank for 1 hour
- Unobserved adverse reaction to sufentanil – patient required defibrillation
Role of radiation therapists

- Can detect:
  - Errors that are minor (e.g., single patient single field)
  - Errors that are major but correctable (single patient few fractions)
  - Errors that are major (single patient all fractions)
  - Errors that are catastrophic (multiple patients / multiple fractions)
  - Errors in Patient Care
Role of radiation therapists

- Patient had left side lung tumour – planned on right side, detected during patient education prior to first treatment (by RT student)
- Patient had back pain and numbness in legs – not detected at Oncologist review – observed and acted on by RT’s – pending cord compression
BC Model

• Provincial Program (5 full centres)
• Communication of errors (laterality policy)
• RT’s recognized as profession (Professional practice leaders)
• Practice to full scope (treatment and dosimetry)
• Safety culture, reporting system, standards (eg two RT’s deliver treatment)
• Supported by Educators, Resource RT’s, Clinical Instructors
• In province education (BCIT- Degree)
Conclusions

• RT’s are emerging profession – role and status is changing
• Role in safety is changing – from being verified to verifying
• Errors are not just dosimetric
• RT’s act as last line of defence
• - need to be supported as such within broader team