An Update of Radiation Oncology Quality and Safety Initiatives

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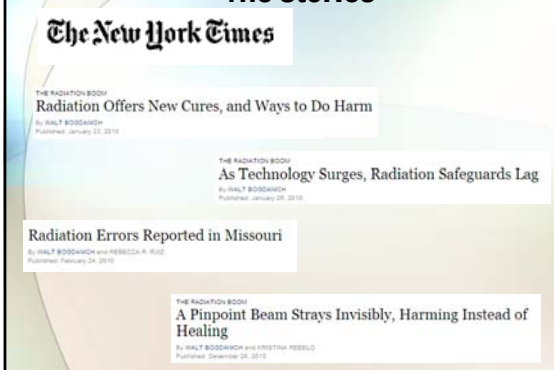
Objectives

- Review importance of quality and safety in radiation oncology.
- Discuss the role radiation therapists have in maintaining quality and safety in radiation oncology.
- Inform audiences of the resources available from the International Atomic Energy Agency.
- Discuss highlights of recent reports and publications highlighting radiation safety and quality.
- Discuss future trends regarding quality and safety in radiation oncology.

The Stories



The Buzzwords Since 2010

Key Trends

- **Teamwork**
- **Trust**
- **Communication**
- **Error Reporting**
- **Standard Operating Procedures**
- **Creating, maintaining and supporting a culture of safety**

Resources Available

- ASTRO Initiatives/Publications
  - Target Safely Initiative
    - Safety White Papers
  - *National Study to Determine the Comfort Level of Radiation Therapists and Medical Dosimetrists to Report Errors*
  - *Safety is No Accident*
- International Atomic Energy Agency Resources
- Health Care Industry Advisory Council Subcommittee on Patient Safety and Quality in Radiation Oncology

Target Safely

- Goal is to improve patient safety and reducing the chances of medical errors during radiation therapy treatments
  - How?
    - Support the development of a national medical error reposting database and patient safety database for radiation oncology
    - Improve integration of equipment used in radiation treatments
    - Improve practice accreditation – encourage all radiation oncology practices to participate
    - Pass the CARE Act
    - Incorporating quality and safety content into meetings and self-assessment modules

ASTRO Safety and Quality Publications

- Series of Patient Safety White Papers
  - Quality and Safety Considerations in Intensity Modulated Radiation Therapy
  - Quality and Safety Considerations in Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy
  - QUANTEC
    - Users Guide
    - Specific Reports
- Coming soon: *Best Practices*

Quality and Safety Considerations in Intensity Modulated Radiation Therapy

- Safety concerns
  - Unsafe to deliver IMRT for emergency cases
  - Required components of IMRT program
  - Responsibilities of team members
    - Radiation therapist
      - Before primary treatment:
        - Review treatment plan
        - Check to make sure all pre-treatment quality assurance tasks are complete

Quality and Safety Considerations in Intensity Modulated Radiation Therapy

- Radiation Therapist responsibilities, cont.
  - Before treatment each day
    - Check prescription to ensure no changes
    - ASRT recommends time out be performed prior to beam on each day, verifying right patient and right isocenter
  - Obtain images and seek approval of images per Standard Operating Procedure
  - Monitor conditions and patients
  - Notify physicist of machine or software problems

Quality and Safety Considerations in Intensity Modulated Radiation Therapy

- Department environment
  - Currently there are no regulations for training of non-physician staff regarding the application of IMRT
    - It is recommended:
      - 2 radiation therapists per treatment machine for IMRT patients
        - One to focus on the patient, one to focus on the console to verify MLC movement
      - All plans be independently reviewed by 2nd physicist or dosimetrist prior to treatment
      - Peer review of treatment volumes and plans by physicians, as well as offering continuing education workshops regarding image segmentation

Quality and Safety Considerations in Intensity Modulated Radiation Therapy

- Event tracking
- Training and appropriate personnel
  - Training should educate therapists how IMRT is different than static, and what to monitor (ie leaf motion)
- Must have standard operating procedures
  - Guidelines of what should be included are in the document
- Practice accreditation
  - In July of 2011, only 9% of practices were accredited

Quality and Safety Considerations in Intensity Modulated Radiation Therapy

- Common problems with IMRT and how to handle
  - In table format
- Quality Assurance
  - Pretreatment IMRT
  - Monitoring the QA program
    - Ask yourself – if this change is made to the machine, what impact does that have on patients who are receiving IMRT? Does any patient specific qa need to be completed?

Quality and Safety Considerations in Intensity Modulated Radiation Therapy

- End to end testing
  - Complete a test patient from start to finish. How did the process work?
- Independent audits
- Checklists
- Collaboration with vendors
- Appendices
  - Example of workflow
  - Safety checklists

Quality and Safety Considerations in SRS/SBRT

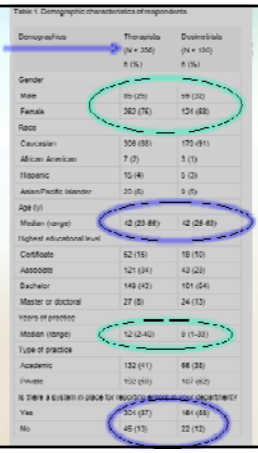
- Safety concerns
- Elements of 'successful' SRS/SBRT QA
  - Program
  - Personnel requirements
    - Radiation therapist
      - Must have ARRT certification, state license as applicable
      - Initial and periodic training with SRS and SBRT
      - Responsibilities – preparing room, patient positioning and immobilization, operating the treatment unit after radiation oncologist and medical physicist have approved the clinical and technical aspects

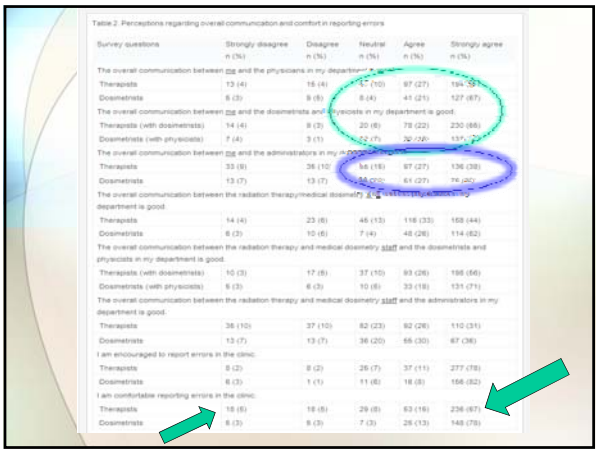
Quality and Safety Considerations in SRS/SBRT

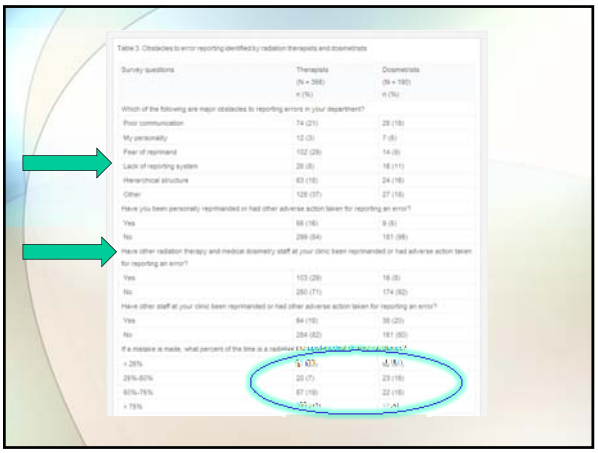
- Personnel requirements
  - Staff education, training, job description/responsibilities and staffing
- Technical requirements
- Acceptance and commissioning
- SRS/SBRT QA – equipment and patient, should be ongoing
  - Time-out
- Appendices
  - Recommendations to guard against failures
  - Examples of quality checklists

National Study to Determine the Comfort Level of Radiation Therapists and Medical Dosimetrists to Report Errors

- In 2011, 1500 radiation therapists and 528 medical dosimetrists were surveyed to answer that question
  - Results were recently published in ASTRO's *Practical Radiation Oncology*







What Can We Learn?

- Error reporting systems are necessary for safety and quality in radiation oncology
  - But…we need to encourage a culture that allows error reporting without the fear of reprimand
  - The authors suggest medicine adopt a system like the airlines, whereas the safety of many depends on workers reporting errors promptly

Safety is No Accident

- A framework for quality radiation oncology and care
- Sponsored by ASTRO
- DEVELOPED AND ENDORSED BY:
  - American Association of Medical Dosimetrists (AAMD)
  - American Association of Physicists in Medicine (AAPM)
  - American Board of Radiology (ABR)
  - American Brachytherapy Society (ABS)
  - American College of Radiology (ACR)
  - American College of Radiation Oncology (ACRO)
  - American Radium Society (ARS)
  - American Society for Radiation Oncology (ASTRO)
  - American Society of Radiologic Technologists (ASRT)
  - Association of Freestanding Radiation Oncology Centers (AFROC)
  - Society of Chairmen of Academic Radiation Oncology Programs
  - (SCAROP)
  - Society for Radiation Oncology Administrators (SROA)

Safety is No Accident

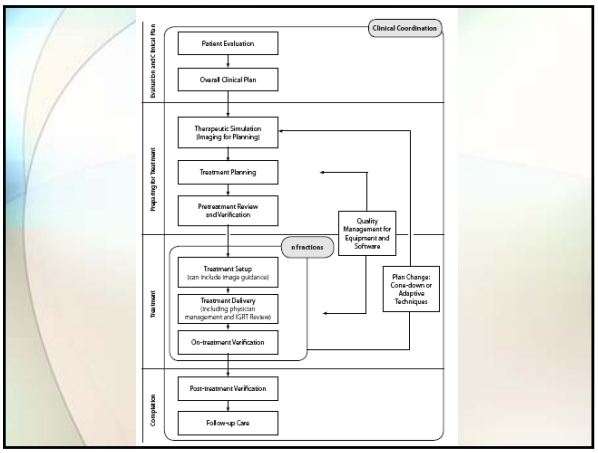
- Replaces ‘The Blue Book’
- Over the past twenty years, radiation therapy technology has advanced.
- In addition, treatment planning and delivery have increased in their complexity.
- The goals of these guidelines are to encourage safety through teamwork and simplifying qa procedures

Safety is No Accident

- Is divided up into chapters:
  - Process of Care
    - Framework to guarantee appropriateness, quality and safety of all patients
  - Radiation Oncology Team
    - Ensures patients get appropriate, multidisciplinary care
  - Safety
  - Management and Assurance of Quality in Radiation Oncology
    - Similar to the traditional Blue Book

Process of Care

- Framework to ensure appropriateness, quality and safety for all patients
- Recognizes that there are five major operations
  - Patient evaluation
  - Preparing for treatment
  - Radiation treatment delivery
  - Radiation treatment management
  - Follow-up evaluation and care



Patient Evaluation

- Review of patient information by the radiation oncologist
- Also includes patient counseling, informed consent, coordinating care, and making further recommendations regarding care
- Discussions about patient case with a multidisciplinary team

Preparing for Treatment

- Clinical treatment planning
  - Determining where disease is
  - Identifying type of radiation needed and the method
  - Specifying areas treated, dose and fractionation
  - Directive is needed prior to starting treatment planning

Preparing for Treatment

- Therapeutic simulation
  - Patient should be in comfortable and appropriate treatment position with appropriate immobilization
  - Standard operating procedures (SOPs) are essential for all radiation oncology departments
    - Contingency plan for when SOP cannot be followed

Preparing for Treatment

- Dosimetric Treatment Planning
  - Computer integrates patient's anatomy, desired dose distribution to the tumor and normal tissue, and technical specifications of treatment delivery device
  - MD must define target volumes and OARs prior to planning
  - Everyone must be appropriately trained

Pretreatment Quality Assurance

- Independent calculation of MU's
- Treatment verification with electronic portal imaging devices (pre IMRT days)
- Patient specific QA is necessary
- You may also include qa to check accuracy of dose calculations and data transfers

Radiation Delivery

- After the treatment plan and treatment portal verification is complete, the patient is ready for treatment
- The physician is responsible for the verification and documentation of the accuracy of the treatment delivery related to the initial treatment planning and set-up
- In addition, with IGRT the physician is responsible for the supervision and review of daily images and shifts, as well as motion management

Radiation Treatment Management

- The overall management of the course of treatment and care for patients
- Requires and includes a minimum of one exam of the patient by the physician each week
  - Many people provide care, but the radiation oncologist must provide a personal evaluation at least once per five fractions

Follow-Up Evaluation and Care

- Necessary to manage acute and chronic toxicities, as well as monitor patients for tumor relapse
- Can be by physician or nonphysician provider
- Consultation with other members of the radiation therapy team when there are unexpected toxicities is advised
- Outcomes are dependant on training and board certification

Radiation Oncology Team

- Ensures every patient gets appropriate care
  - Requires a collaborative and multidisciplinary environment
- Primary team includes a radiation oncologist, medical physicist, medical dosimetrist, oncology nurse, and radiation therapist
- Additional staff should be either on site or available by consult

Table 2.1. Roles and Responsibilities of the Radiation Oncology Team

	Radiation Oncologist	Medical Physicist	Medical Dosimetrist	Radiation Therapist	Nurse Practitioner/Physician Assistant	Oncology Nurse
Clinical evaluation	x				x	x
Ongoing psycho/social evaluation	x				x	x
Decision to deliver external radiation therapy (XRT)	x					
Patient +/- family education	x			x	x	x
Interdisciplinary coordination of care	x			x	x	x
Patient positioning and image acquisition	x	x	x	x		
Fusion and registration	x	x	x			
Contouring/segmentation	x	x	x			
Dose-volume constraints	x	x	x			
Dose calculation	x	x	x			
Review of final treatment plan	x	x	x	x		
Patient-specific QA	x	x	x	x		
Treatment delivery	x	x	x	x		
Special procedures (SRS, SBRT, HDR, etc.)	x	x	x	x		
Monitor accuracy of delivery (ports, dose, etc.)	x	x	x	x		
Weekly evaluation	x	x	x	x	x	x
Follow-up	x				x	x
Survivorship	x				x	x
Equipment, software and systems acceptance testing, maintenance and commissioning	x	x	x	x		

Radiation Oncology Team

- Qualifications
  - Board certified
  - State licensed (when applicable)
- Facilities should have a policy regarding orientation, competency, credentialing and evaluations to ensure continuous quality care
  - Continuing education is necessary because radiation oncology continues to develop and expand

Table 2.2. Certification and Licensure Requirements

Profession	Relevant Certifying Body	State Licensure Required?	Information Resources
Radiation Oncologist	ABR	Yes	www.theabr.org
Medical Physicist	ABR ABMP CCPM	In 3 states as of 2011 (FL, NY, TX)	www.theabr.org www.abmpexam.com www.ccpm.ca
Medical Dosimetrist	MDCB	No	www.mdcb.org
Radiation Therapist	ARRT ASRT	Yes (Currently in 35 states)	www.arrt.org www.asrt.org
Nurse Practitioner	AANP ANCC	Yes Yes	www.aanp.org www.ancc.org
Oncology Nurse	ANCC ONCC	Yes	www.www.nursecredentialing.org www.oncc.org
Clinical Nurse Specialists	ANCC	Yes	www.ancc.org
Physician Assistant	NCCPA	Yes	www.nccpa.net

Radiation Oncology Team

- Staffing
  - Unique to each facility – depends on patient mix, the type and complexity of treatments offered
  - Also depends on the patient load, number of machines, number of affiliates, teaching and vacation time
  - Impossible to put a hard number on staffing levels!

Radiation Oncology Team

- Staffing
  - Must have a radiation oncologist on call 24/7
  - Other members of the team must be available to provide urgent treatment off hours
  - The staffing model suggested in this document is based on many studies by many organizations
    - More staff is needed than what the model suggests for research, education and administration
    - More staff is also needed for 'progressive' clinics

Table 2.3 Minimum Personnel Requirements for Clinical Radiation Therapy

CATEGORY	STAFFING (See important comments below.)
Chief Radiation Oncologist	One per facility
Chief Medical Physicist	One per facility
Department Manager	One per facility (in some departments this function may be filled by a member of the team)
Medical Dosimetrist*	As needed, approximately one per 250 patients treated annually
Radiation Therapist*	As needed, approximately one per 90 patients treated annually
Brachytherapy Technologist*	As needed, approximately one per 100 brachytherapy patients treated annually
Mold Room Technologist	As needed to provide service
Social Worker/Dietician	As needed to provide service

* This number may be higher or lower depending upon the complexity of patients treated by an individual physician or by the complexity of technology.

**It is recommended that a minimum of two qualified individuals be present for any routine external beam patient treatment.

Safety

- Safe delivery requires coordination of many people with many responsibilities
- Safety and efficiency go hand in hand
  - Insufficiencies lead to problems
  - Increased efficiency is necessary in the changing environment of healthcare
- Processes and workflows need to continually be reassessed
- All members of the team must be open to raising safety concerns and suggesting change

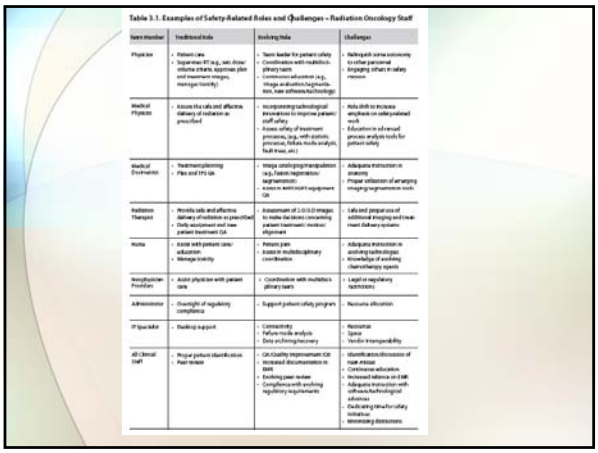
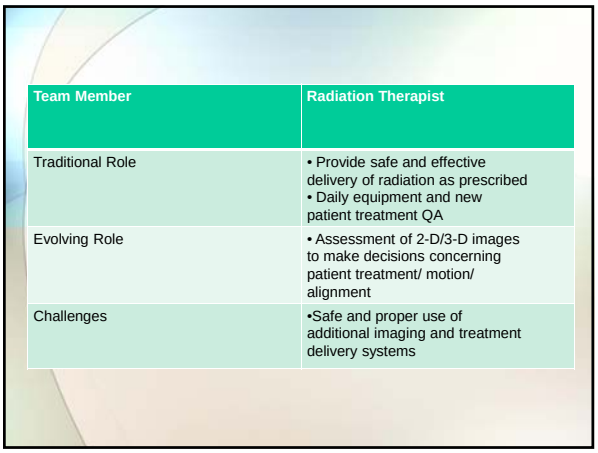


Table 3.1. Examples of Safety-Related Roles and Challenges – Radiation Oncology Staff

Team Member	Traditional Role	Evolving Role	Challenges
Physician	• Patient care • Supervises RT (e.g., set, draw volume criteria, approves plan and treatment images, manages toxicity)	• Team leader for patient safety • Coordination with multidisciplinary team • Communicates outcomes (e.g., image evaluation/segmentation, new software/technology)	• Relinquish some autonomy to other personnel • Engaging others in safety mission
Medical Physicist	• Assures the safe and effective delivery of radiation as prescribed	• Incorporating technological innovations to improve patient/staff safety • Assess safety of treatment processes, (e.g., with statistic processes, failure mode analysis, fault trees, etc.)	• Role shift to increase emphasis on safety-related work • Education in advanced process analysis tools for patient safety
Medical Dosimetrist	• Treatment planning • Plan and TPS QA	• Image contouring/manipulation (e.g. fusion registration/segmentation) • Access to and QA/QC equipment	• Adequate instruction in anatomy • Proper utilization of emerging imaging/segmentation tools
Radiation Therapist	• Provide safe and effective delivery of radiation as prescribed • Daily equipment and new patient treatment QA	• Assessment of 2-D/3-D images to make decisions concerning patient treatment/ motion/ alignment	• Safe and proper use of additional imaging and treatment delivery systems
Nurse	• Assist with patient care, education • Manage toxicity	• Patient pain • Assist in multidisciplinary coordination	• Adequate instruction in evolving technologies • Knowledge of evolving chemotherapy agents
Nonphysician Providers	• Assist physician with patient care	• Coordination with multidisciplinary team	• Legal or regulatory restrictions
Administrator	• Oversight of regulatory compliance	• Support patient safety program	• Resource allocation
IT Specialist	• Desktop support	• Connectivity • Failure mode analysis • Data archiving/recovery	• Resources • Space • Vendor interoperability
All Clinical Staff	• Proper patient identification • Peer review	• QA/Quality improvement QA • Increased documentation in EMR • Evolving peer review • Compliance with evolving regulatory requirements	• Identification/discussion of near misses • Continuous education • Increased reliance on EMR • Adequate instruction with software/technological advances • Dedicating time for safety initiatives • Unnecessary distractions



Team Member	Radiation Therapist
Traditional Role	• Provide safe and effective delivery of radiation as prescribed • Daily equipment and new patient treatment QA
Evolving Role	• Assessment of 2-D/3-D images to make decisions concerning patient treatment/ motion/ alignment
Challenges	•Safe and proper use of additional imaging and treatment delivery systems

Staffing

- Levels and schedules need to be adjusted according to workload
- Workloads must be realistic
  - Excessive workloads lead to errors, but light workloads are also problematic

Communication/Facilities

- Look at hand-off's and interdependent tasks
- Departments should have well-defined charting procedures
- Dosimetry should be centrally located in the facility
- There should be dedicated physician-dosimetry time
- Finally, there should be a well defined communication plan

Workflow/Efficiency

- Harried workers are prone to errors
- Eliminate nonessential tasks
- Adapt Lean approaches
  - Streamline clinical workflow and alter the work environment when needed
  - Process map tasks
    - Identify wasteful steps
    - Show stressors
    - End result is a streamlined and standardized process

Standardization

- Standardization decreases not only errors, but confusion too
- Standardization is helpful when many people have their way of doing things
- It is recommended to have reference or guide sheets
  - Policies and procedures
  - These should be regularly updated, have a review committee and be posted for easy access

Hierarchy of Effectiveness

- Because just having P&P are not enough, in order to provide safe and quality care, it is recommended to:
  - Use checklists and time outs
    - Focus on the task at hand
    - User must believe in their utility in order for them to be useful
    - They must be a hard stop

Human Factors Engineering

- Design the workplace to decrease errors
- It has been shown that safety in improved in workplaces that decrease noise, interruptions and clutter
  - This never happens at the treatment console, right?
- Standardize nomenclature, monitor layouts, and shortcuts amongst vendors

Incorporate QA Tools into the Software

- Planning and Record and Verify
  - Recommended that they are embedded into the software
    - User-designed checklists
    - Time-outs
    - Many others
  - Some of these exist, and many other are in the development stage

Peer Review

- Prospective peer review is especially important for IGRT and IMRT techniques
  - Physician to physician review
  - Review of target delineation
  - Review of image segmentation prior to planning
  - Chart rounds
- Important for other staff members as well

	Peer Review	Quality Assurance
Physician	• Target definition	• Verify appropriate nomenclature and documentation • Verify dose constraints are within policy • Review portal films
Medical Physicist	• Verify machine output	• Verify the correct transfer of data from the planning system to the treatment machine
Medical Dosimetrist	• Assess selection of beam orientation and weighting • Evaluate plan for target coverage and normal tissue exposure	• Verify that prescription matches the treatment plan
Radiation Therapist**	• Double check patient setup accuracy	• Ensure patient-specific procedure time-out

* Examples shown are items that might be (somewhat arbitrarily) divided into the peer review and quality assurance.
** In addition, two radiation therapists should always be available in the event of emergencies and as a "second set of eyes" to verify information during time-outs for procedures.[13]

Daily Morning Meetings

- All members of the team should meet daily to review the upcoming clinical day
  - Review all CT patients
  - Review schedule for the day
  - What patients are challenging?
  - What plans need attention?
  - Review treatment census and number of anesthesia cases
  - Raise any concerns, share any announcements
- Anticipate challenges to avoid chaos

Safety Rounds

- Brief meeting lasting 15-20 minutes with the chairman of the department or a member of the quality and safety committee
- Happens at the worksite
  - Ask about near misses and unsafe conditions

Routine Announcements

- Regularly report on safety rounds to everyone in the department
- This shows leadership responsiveness and commitment to quality and safety
- Achievements should be acknowledged and celebrated
- Address errors and near misses
  - Near misses should be addressed positively
  - Address near misses with the same rigor as errors

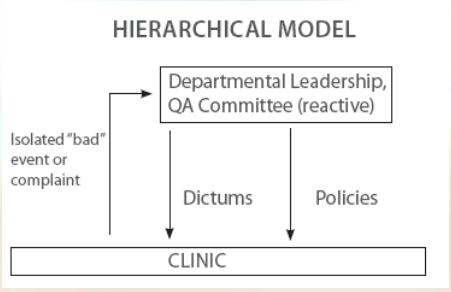
QA Committee

- A multidisciplinary team which should meet regularly
- Should develop initiatives in regards to patient safety
- Create mechanisms for error and near miss reporting, watch trends, and have processes for implementing change when needed
- Maintain compliance with local, state and national laws
- Complete a root cause analysis when errors do occur
- Disseminate safety information to the department

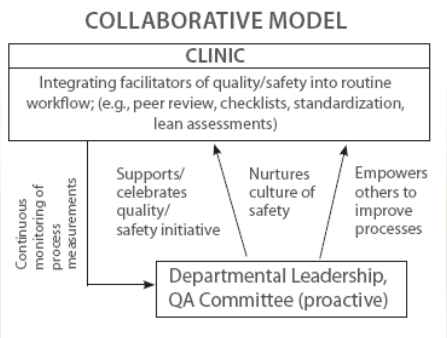
Credentialing

- Must have institutional policies to ensure staff is trained and credentialed
- How do you ensure staff are qualified?
- Especially difficult with new and advanced technologies

Make Safety Part of Everyday



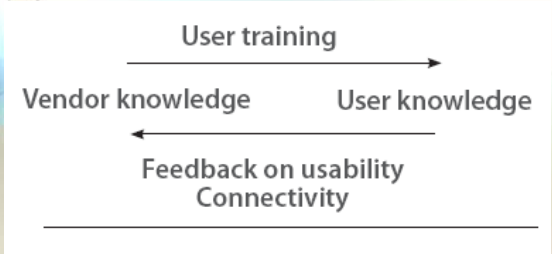
Make Safety Part of Everyday



Collaboration between Users and Vendors

- There are more vendors in radiation oncology, which increases the need for open communication
- Vendors should educate the user for capabilities and limitations of their products
- Users should share their concerns with vendors and work with them to improve their products
  - Users should also report potential and actual problems to vendors

Collaboration between Users and Vendors



Involve Others Beyond Radiation Oncology

Radiation Oncology Initiative	Analogous Multidisciplinary Initiative
Pretreatment team discussion	Tumor board
Daily meeting	Regular multidisciplinary meetings to review patients under treatment
Determining unambiguous methods of communication between team members in the radiation oncology EMR	Determining unambiguous methods of communication between multidisciplinary care providers in an oncology-specific or hospital-wide EMR
Safety rounds within radiation oncology	Safety rounds within cancer center
Departmental safety culture	Cancer center or hospital-wide safety culture
Discipline-specific training	Team training

Management and Assurance of Quality in Radiation Oncology

- Guidelines similar to the traditional blue book
  - Facilities
  - Program requirements
    - Program Accreditation
    - Required capabilities
    - Policy and procedures
  - Radiation safety
    - Accelerator safety
    - Imaging safety

Management and Assurance of Quality in Radiation Oncology

- Monitoring safety, errors and medical quality
  - Quality and Error Reporting
  - Safety, Morbidity and Mortality Rounds
  - Minimizing time pressures

Process Step	Minimum Process Time Required for Safety
After imaging: Completion of target volumes, definition of plan intent, normal structure volumes; anatomy approved	x days
After anatomy approval: Planning: 3-D CRT Planning: 3-D IMRT, Volumetric Modulated Arc Therapy (VMAT) Planning: 3-D SBRT Planning: SRS	 x days x days x days x hours
Plan evaluation and physician approval	x minutes (though xx hours must be allocated to schedule this time)
IMRT QA and analysis	To be completed x hours before treatment
Treatment preparation (transfer from treatment planning system to treatment management system before treatment start)	Allow x hours
Final checks before treatment	x minutes or hours
Treatment setup and delivery (based on complexity)	x minutes

Management and Assurance of Quality in Radiation Oncology

- Monitoring professional performance
  - All medical specialties should have maintenance for certification (MOC)
  - ASTRO Safety White Paper on Peer Review
- Ongoing monitoring and evaluation of staff qualifications
  - ASTRO Safety White Paper on IMRT
- Equipment and devices
  - Device QA, maintenance, connectivity, etc

Management and Assurance of Quality in Radiation Oncology

- Patient related quality management
  - General guidelines
    - Patient chart rounds
- Charting and documentation
- Outcome assessment
- Outcome registry

- External Beam Quality Assurance
  - Table 4.6 summarizes all of the patient specific checks that should be completed for each plan

IAEA

- International Atomic Energy Agency
  - One goal of the agency is to protect patients
  - Accidental exposure most often occurs when there is a lack of responsibilities defined, and a lack of a culture of safety
    - RPOP – Radiation Protection of Patients
    - SAFRON – Safety in Radiation Oncology

RPOP – rpop.iaea.org

- Website which offers a variety of information for healthcare professionals and patients
  - Radiotherapy
    - Standards
    - Accident Prevention
    - Information for patients
    - Additional resources
      - Publications
      - Training Materials

SAFRON – rpop.iaea.org/safron

- Web based system designed to share knowledge about incidents and near incidents
  - Users can post their incidents and near misses to an international database
  - You can track your information as a facility, as well as compare it to those reported internationally
  - Anonymous
  - Supports safe and beneficial use of radiation

SAFRON

- Steps to using SAFRON
  - Register your facility
  - Submit your incident report
- Once you are using the system, you can collect, store and search information about reported incidents
- The system has the ability to sort incidents by where in the process the incident was discovered, who discovered the error, and how it was discovered
- Not only can you learn from others, but you can use the system to evaluate quality and safety at your facility

Health Care Industry Advisory Council Subcommittee on Patient Safety and Quality in Radiation Oncology

- Founded by the ASRT Education and Research Foundation
- Meet annually to discuss issues and identify solutions to support radiological technologists and radiation therapists
  - The meeting in 2011 focused on application training processes to improve the quality of radiation therapy treatments
  - Subcommittee was formed

The Critical Role of the Radiation Therapist in Patient Safety

- Workplace staffing
  - As of February 2012, 15 states do not regulate radiation therapists
  - Accreditation programs address radiation therapist certification and staffing
    - Recommend minimum of 2 therapists per machine regardless of patient volume
      - A 2010 staffing survey found:
        - Most facilities schedule 2 RTTs per linac
        - 41% of facilities schedule 1 RTT per linac 1-8 hrs per day (most were 1 hr instances)
        - 10% of facilities schedule 1 RTT for an entire 8 hr day

The Critical Role of the Radiation Therapist in Patient Safety

- Workplace staffing – Best Practices
  - All radiation therapists should have ARRT certification in order to practice
  - All sites should staff 2 therapists per machines at all times
- Workplace staffing – Recommendations
  - Support the CARE Bill!
  - Sites should evaluate workflow and staffing to determine whether (and if so when) there are fewer than 2 therapists at a machine and correct as soon as possible

The Critical Role of the Radiation Therapist in Patient Safety

- Workplace culture
  - The radiation therapist is the gatekeeper of delivery of radiation to a patient
  - In order to promote a culture of safety, it is necessary that radiation therapists are viewed as professionals
  - Radiation therapists must continually promote and practice our profession's standards and ethics
    - Time-outs and double checks

The Critical Role of the Radiation Therapist in Patient Safety

- Workplace culture
  - Minimizing distractions while delivering treatments
    - Primary distraction is interruptions from other people (physicians, nurses and even fellow therapists)
    - Work together to develop policies, procedures, communication standards or physical barriers if necessary to minimize distractions while the beam is on

The Critical Role of the Radiation Therapist in Patient Safety

- Workplace culture
  - Remember our existing standards
    - Ethical violation to not report an error when you know one occurs
    - It is in our scope of practice to withhold treatment due to safety concerns
  - Radiation therapists must be able to feel they can report errors without fear of repercussions
  - Error reporting should not be tied to performance evaluation

The Critical Role of the Radiation Therapist in Patient Safety

- Workplace culture – Best Practices
  - All members of the team should embrace a culture which supports radiation therapist professionalism
  - Radiation therapists should adhere to professional standards and ethics
  - Reporting of errors should be expected and encouraged

The Critical Role of the Radiation Therapist in Patient Safety

- Workplace culture – Recommendations
  - ASRT and its members should support mandatory error reporting
  - Implement changes to encourage a systematic approach to error and near miss reporting, tracking and correcting
  - Radiation therapists should embrace professionalism through lifelong learning, error reporting and process improvement

The Critical Role of the Radiation Therapist in Patient Safety

- Skills Assessment
  - Radiation therapists must be prepared with knowledge for new equipment before the equipment is installed
    - This improves the application training at the site at the time of installation
  - Skills of new and temporary staff should be a primary concern for administrators
    - Competency checklists
    - Can also be used for new equipment

The Critical Role of the Radiation Therapist in Patient Safety

- Skills Assessment
  - ACR and AAPM facilitate peer-to-peer review to share best practices
    - Similar assessment could be used for radiation therapists, which would minimize problems with communication and fear of reprisal among staff
  - Training and continuing education is an ongoing process
    - Post training assessments and competency assessments should be used to identify areas in which staff can learn and grow
    - ARRT's CQR

The Critical Role of the Radiation Therapist in Patient Safety

- Skills Assessment – Best Practices
  - Preassessments of skills of the radiation therapists should be completed prior to applications training, as well as follow-up assessments
  - Radiation oncology providers should continue peer-to-peer assessment
- Skills Assessment – Recommendations
  - Sites should work with vendors to create pre and post assessment checklists
  - Therapists should use the assessments to identify gaps in skills and opportunities for continued professional development

The Critical Role of the Radiation Therapist in Patient Safety

- Applications Training and Support
  - Challenges are time constraints for training, increased time needed to cover complex modalities and inconsistencies to commitment to training
  - The goal of applications training?
    - Often viewed as an interruption
    - Necessary that staff make time to attend the entire applications training session
      - View as 'safety time'
    - Multivendor training

The Critical Role of the Radiation Therapist in Patient Safety

- Applications Training and Support – Best Practices
  - Facility and vendors should work together to ensure successful implementation and training of new equipment
  - Vendors should cooperate to improve multivendor implementation, training and support
- Applications Training and Support – Recommendations
  - HCIAC will spearhead guidelines for application training
  - HCIAC member companies will conduct multivendor testing prior to release
  - Sites installing equipment should support uninterrupted training of all radiation therapy staff

Practice Accreditation

- **ACR/ASTRO program split in September 2012**
- **Still offered by ACR**
- **ASTRO will be rolling their program for public comments this spring**
  - **Beta testing in late 2013**
  - **Full roll out in 2014**