## AAPM 2012 PROFESSIONAL COUNSIL SYMPOSIUM

**THERAPY MEDICAL PHYSICS – THE EFFECT OF MINIMUM PRACTICE STANDARDS IN FREE-STANDING AND SMALL COMMUNITY CLINICS**

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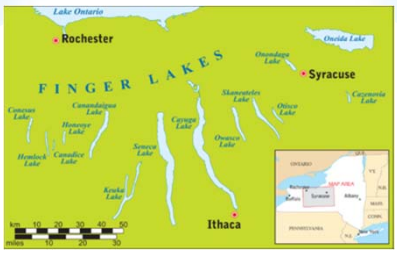
## Where are the Finger Lakes?

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## CREDENTIALS:

- Certified therapy physicist since 1996
- Work at a small community cancer center
- AAPM member since 1989
- ACR member since 1997
- ACR physicist practice accreditation surveyor since 1998
- ACR radiation oncology practice accreditation committee physicist member since 2006

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## REFERENCE:

"ACR-ASTRO RADIATION ONCOLOGY PRACTICE ACCREDITATION PROGRAM"

By: Tariq Mian PhD, FACR; Patrick Conway MD, FACR; Peter Hulick MD, FACR; Matthew Pacella MS, DABR; Prabhakar Tripuraneni MD, FACR, FASTRO

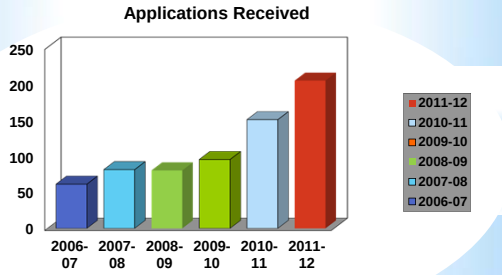
## PURPOSE:

- Physicists prospective on minimum practice standards through voluntary accreditation – What's it all about?
- How have voluntary accreditation programs impacted community-based radiation oncology practice environments, particularly those with fewer resources and a solo physicist?
- Has it helped the physicist to advocate for resources to provide appropriate support for the clinic's needs?

## OVERVIEW OF PRACTICE ACCREDITATION:

- Offered by ACR and ACRO
- This talk will focus on physics requirements from the ACR radiation oncology practice accreditation (ROPA) program
  - 3rd party impartial review
  - History: 1986 – 2008
    - 1973 NCI Patterns of Care Study
  - Since 2008, ROPA has been a collaborative program of the ACR and ASTRO
  - Web based program launched in January 2011

## RADIATION ONCOLOGY ACCREDITATION PROGRAM GROWTH 2006 – 2012




## CURRENT STATISTICS:

| | |
|---|---|
| Accredited Facilities | 363 |
| Facilities Under Review | 114 |

**"Under Review"**

- **Deferred/submitting corrective action**
- **Site visit has not yet been completed**
- **Final report has not been written yet**

## BENEFITS OF ACCREDITATION:

- Offers specific recommendations for improvement from experienced, practicing radiation oncologists and practicing medical physicists
- Accreditation results can be used by the facility as part of their continuing quality improvement activities
- Survey report can be used to support requests for increased staffing and equipment improvements/ replacements

## WHY IS ACCREDITATION IMPORTANT?

- Evidence of achievement in the areas of quality and patient safety
- Education and learning process for staff
- Demonstrates commitment on the part of the facility to meeting the highest standards in the field of radiation oncology
- Enhances credibility in the eyes of the public
- Broader recognition by peers in the field
- ACR has recommended mandatory accreditation of all facilities to legislators
- ASTRO has strongly recommended accreditation for all facilities

## QUALITY AND SAFETY:

- The ACR/ASTRO Radiation Oncology Practice Accreditation process strives to stand for such a pillar
- Federal guidelines
  - CARE bill in Congress will mandate accreditation
- Quality & Safety tied to Billing & Reimbursement
  - Some states (NJ, NY) have already mandated such law
- All VA hospitals are required to have ACR Accreditation

## GENERAL PROCESS (4 PARTS):

1. Submit an online completed application
   a. **https://ropa.acr.org/pages/Login.aspx**
2. Site visit (survey) by radiation oncologist and physicist
   a. Initial interview
   b. Review of patient charts (10 cases)
   c. Review of department policies and procedures for equipment QA and patient safety
   d. Exit Interview
3. Report of survey submitted to ROPA committee
   a. Reviewed by one physicist and MD member
   b. Final decision made by committee co-chairs

## GENERAL PROCESS:

4. Final report with recommendations sent to facility
   a. 3 outcome categories:
      - ✓ Accredit – Even if your facility is accredited, you will receive recommendations for improvement but no response is needed
      - ✓ Defer - 90 days to submit corrective action plan
      - ✓ Denial of Accreditation - 90 days to submit corrective action plan, second site visit
   b. Accreditation Cycle is 3 years


## ACR-ASTRO ROPA COMMITTEE:

- Part of the ACR Commission on Quality and Safety
- 16 voluntary members, 2 co-chairs
  - Review completed survey reports
  - Committee members serve as active practice surveyors
- Responsible for forming and updating on line data collection tool used by surveyors
  - ACR and ASTRO practice guidelines
  - ACR Appropriateness Criteria®
  - ASTRO white papers
  - AAPM Task Group reports


## PHYSICIST SURVEYORS:

- Surveyors must be:
  - ABR certified
  - ACR or ASTRO member
  - In active practice in radiation oncology
- Advantages to being a surveyor:
  - Stay current with treatment practices/ guidelines/standards/AAPM reports
  - Chance to give back to the profession
  - Opportunity to learn from the surveyed institution
  - Meet fellow physician and physicist surveyors from practices around the country

## HOW CAN I PREPARE FOR ACCREDITATION?:

- ACR-ASTRO Practice Guidelines/Technical Standards
  - 16 ACR practice guidelines
    - 11 in collaboration with ASTRO
    - 4 medical physics technical standards
- ACR Appropriateness Criteria®
  - Important quality and safety resource
- ASTRO white papers
  - Target Safely campaign
  - Quantitative Analyses of Normal Tissue Effects in the Clinic (QUANTEC) – Dose/volume constraints
- AAPM Task Group Reports – 25, 35, 40, 43, 51, 66, 103, 106, 142


## MOST COMMON GUIDELINES AND STANDARDS REFERENCED:

- ACR Practice Guideline for Communication: Radiation Oncology
- ACR-ASTRO Practice Guideline for IMRT
- ACR Practice Guideline for Radiation Oncology
- ACR Technical Standard for the Performance of Radiation Oncology Physics for External Beam Therapy
- ACR-ASTRO Practice Guideline for Performance of HDR Brachytherapy Treatment Planning


## WHAT HAPPENS DURING THE ON SITE SURVEY? (5 PARTS)

1. Interview with key personnel (Chief MD, Chief physicist, Chief therapist, Dosimetrist, RN, Dept. Administrator)
   a. Consultation and simulation process
   b. Treatment planning process
   c. Patient treatment process – Identifying patient, time out policy, etc.
   d. Portal Imaging frequency and verification policy
   e. Patient on treatment visits and follow up policy
   f. Chart Rounds
   g. QA Activities – M & M conference, Focus and Outcome studies, etc.

## WHAT HAPPENS DURING THE ON SITE SURVEY?

h. Divisional Policies – RTOG protocols, etc.
i. Miscellaneous Policies – Patient satisfaction surveys, disaster plan, etc.
j. Training and Competence of Staff – Radiation and machine safety, infection control, etc.

2. Tour of facility
   a. Looking for cleanliness and any potential patient hazards
   b. May also want to see condition of physics equipment


## WHAT HAPPENS DURING THE ON SITE SURVEY?

3. Chart Review
   a. The facility should provide one or 2 staff to help with navigating through charts/EMR.
   b. Facilities must provide internet access since questions are on-line
   c. Review prescription/treatment plan/MU calculations/DVHs
   d. Physicist double check of treatment plans/MU calculations prior to patient treatment whenever possible but definitely before third fraction
   e. For 5 or fewer fractions, the calculation must be checked prior to delivery of the first treatment


## WHAT HAPPENS DURING THE ON SITE SURVEY?

f. IMRT Documentation
   i. Documentation includes: delivered doses to volumes of target and non-target tissues, in the form of DVHs and representative cross sectional isodose treatment plans
   ii. Inverse planning performed (including heterogeneity corrections)
   iii. Prior to the start of treatment, accuracy of dose delivery documented by irradiating a phantom containing a dosimetry system (film, chamber, array) to verify that the dose delivered is the dose planned

## WHAT HAPPENS DURING THE ON SITE SURVEY?

g. Brachytherapy records including written directive, treatment parameters and radiation safety survey of the patient and surrounding areas
h. Documentation of weekly physics chart check
i. Documentation that physicist checked the chart within 1 week from end of treatment
   i. End of treatment summary performed


## WHAT HAPPENS DURING THE ON SITE SURVEY?

4. Interview with Chief Physicist – Review of physics quality assurance program: Involves equipment and procedures used in radiation treatment to ensure a consistent and safe fulfillment of the dose prescription. This includes:

a. Procedures and protocols to periodically monitor the baseline performance characteristics of equipment (daily, monthly, and annual QA; RPC OSLDs)


## WHAT HAPPENS DURING THE ON SITE SURVEY?

b. Calibration procedures/constancy checks for instruments which are used for calibration of equipment and for patient dosimetry to ensure traceability to accredited calibration facilities.
c. Independent calibration/output check of each beam of treatment machine (TG-51)
d. Records of treatment planning computer systems acceptance/commissioning and periodic tests (TG-53)

## WHAT HAPPENS DURING THE ON SITE SURVEY?

e. Procedures for checking integrity of mechanical and electrical patient care devices (TG-35)

f. Brachytherapy QA records

g. Radiation protection program

h. Physicist peer review program (TG-103)

"Well, I think those are all the questions Mr. Binky has."

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## WHAT HAPPENS DURING THE ON SITE SURVEY?

5. "Exit Interview" - prior to departure with same personnel from initial interview.

   a. The team will not give their recommendations but will use this opportunity to clarify any issues, etc.

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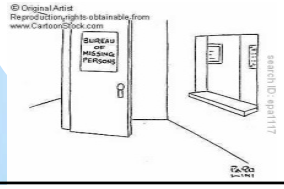
## COMMON REASONS FOR DEFERRAL (PHYSICS):

- No physicist chart check at end of treatment
- No documented IMRT QA
- No documented TPS QA, including:
  - Evidence of a program of annual confirmation of TPS constancy
- Lack of second check of plans/calculations
- Lack of appropriate physics coverage

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## HOW LONG DOES THE SURVEY TAKE?

- A single site is completed in one day (generally 8 a.m. to 5 p.m.); multi sites vary depending on number of sites, MD's and location
- The final report is currently issued approximately 4 weeks following the survey

## IMPACT ON PHYSICISTS AT SMALL CENTERS:

- In general, physicists going through the ACR accreditation process at small centers have had a positive experience
- Areas that the accreditation process has helped these physicists:
  - Better policies and procedures – Physics manual
  - Better and more efficient machine QA
    - New equipment purchases
  - Get a comparison to national standards
    - Staffing
  - Peer review

## STAFFING:

- STRATA are defined as:
  - Academic/CCC: Comprehensive Cancer Center or main teaching hospital of a medical school
  - H1 Hospital based; >600 patients
  - H2 Hospital based; 201-599 patients
  - H3 Hospital based; <200 patients
  - F1 Freestanding; >600 patients
  - F2 Freestanding; 201-599 patients
  - F3 Freestanding; <200 patients

## STAFFING:

| | ALL | Academic /CCC | H1 | H2 | H3 | F1 | F2 | F3 |
|---|---|---|---|---|---|---|---|---|
| New pts/RO | 206 | 212 | 271 | 216 | 127 | 277 | 213 | 160 |
| New pts/MP | 269 | 195 | 293 | 277 | 139 | 414 | 307 | 277 |
| New pts / Dosimetrist | 268 | 321 | 399 | 273 | 195 | 334 | 246 | 216 |
| New pts/Therapist | 71 | 74 | 100 | 74 | 45 | 83 | 73 | 61 |
| Therapist/Machine | 3.2 | 4.1 | 3.5 | 3.2 | 3.1 | 3.6 | 3.3 | 2.4 |
| New pts/Machine | 226 | 299 | 317 | 232 | 135 | 293 | 231 | 141 |


## PEER REVIEW:

- The medical physicist should engage in a formalized peer review on a regular basis
- Physicists engaged in solo practice (being the only qualified medical physicist at a facility, or serving as a consultant - providing the only medical physicist service to the facility) should follow published AAPM recommendations, including peer review recommendations (TG-103)


## FUTURE?:

- Accreditation has moved from a "Backstage/In the Shadows" status to "Upfront", because of safety concerns in the "Eyes of the Public"
- Will it become mandatory???

**QUESTIONS?:**