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## Physics Part of ACR/ASTRO Radiation Oncology Accreditation Program

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## Accreditation Process

- Application
- Site Visit
  - Chart reviews
  - Policies & procedures and QA
  - Interview with the chief physicist
- Survey Report



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## Application

The application consists of submission of

- Facility treatment and equipment information
- Staffing levels and qualifications
- Physics quality assurance/quality control documentation.



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## Information Submitted (I)

- Services offered: IMRT, IGRT, SBRT, TBI, HDR, prostate seed implant, etc.
- Type of Images for simulation and port film
- TPS and algorithm used
- Therapy equipments
- Physics staffing



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## Information Submitted (II)

- Dosimetric Instruments calibration by ADCL every 2 years
- An independent check of the output of each beam is performed annually (RPC TLD/OSLD reports)
- Acceptance testing and commissioning for each treatment unit
- Acceptance testing and commissioning for SRS/SBRT and IMRT



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## On-Site Survey

- Facility tour
- Chart reviews
- Conduct an interview with the chief physicist
- Verify the information submitted in the facility application
- Initial and closing interview



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## Chart Reviews (EBRT)

- Calculations/dose distribution were signed and dated by planner, physicist and physician.
- Documentation of heterogeneity correction
- DVH for targets, critical organs, and normal structures.
- Electron cutout measurements



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## Chart Reviews (EBRT)

- Documentation of patient set-up photos, immobilization devices, DRRs, weekly portal images, physics weekly chart checks
- Evidence that physicist performed an end of treatment check within one week.
- Accuracy of dose distribution documented by performing IMRT QA



## Chart Reviews (EBRT)

- IMRT dose volume constraints from radiation oncologist
- For any SRS/SBRT cases, was a Winston-Lutz test performed prior to treatment delivery?



## Chart Reviews (Brachytherapy)

- A written directive, signed and dated by the physician, should include: type of source, treatment area, dose/fraction, total fractions, and total intended dose.
- A complete dosimetry report with a second physics check
- Patient identification
- Evidence of a post-treatment radiation survey



## Chart Reviews (Brachytherapy)

- The physicist and radiation oncologist were present during HDR treatment
- There was applicator/balloon verification before each treatment
- Post-implant dosimetry for prostate seed implant was performed in a timely fashion.



## On-Site Comprehensive Review

- Evidence of compliance with AAPM TG40/TG142
- Evidence of Compliance with AAPM TG51
- Instrument: ADCL calibration report, intercomparison records, constancy check
- Treatment/Simulation Machines and Devices: Acceptance Testing and Commissioning Report



## On-Site Comprehensive Review

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- Periodic device and equipment mechanical, electrical and safety performance checks of all equipment used for patient setup and treatment (TG 35)
- Machine service and maintenance logs and records of corrective actions
- Periodic imaging QA (e.g. CT sim., EPID, OBI)
- Commissioning report for TPS



## On-Site Comprehensive Review

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- Evidence of annual TP systems quality assurance program (TG 53)
- Log of hardware/software data changes and recommissioning checks
- Treatment planning methods, calculations, protocols and data clearly described in treatment planning P&P manual
- Evidence of adequate and sufficient staff training



## On-Site Comprehensive Review

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- Brachytherapy data complies with TG43 update (TG43U1) consensus data
- Evidence of annual TP systems quality assurance for brachytherapy systems
- Calculation procedures and protocols:
  - evidence of a double check system and documentation performed prior to 3rd fx or 20% of total course dose



## On-Site Comprehensive Review

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- Evidence of an independent check of all computer generated distributions and MU/(t) calculations checked by a physicist
- Record of daily, monthly, and annual QA
- Evidence that the physicist participates in QA meetings and presents documentation of QA activities
- Evidence of an equipment evaluation and assessment policy



## On-Site Comprehensive Review

- Newer technologies such as on board imaging (OBI, CBCT, and kV imagers), respiratory gating are being monitored for consistent performance
- Evidence of a QA program for stereotactic, both single and multiple fractions



## Survey Report

- Has the facility complied with recommendations included in the last Survey Report (if applicable)?
- Comments or recommendations that may help the facility to improve or enhance patient care but that do not impact their accreditation.
- Recommendation for accreditation:  
3 years      Deferred      Deny



**Thank You**