

ACR
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RADIOLOGY

The American College of Radiology Computed Tomography Accreditation Program

An Overview for Physicists

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How to achieve accreditation

- www.acr.org
- Diagnostic Modality Accreditation Programs (DMAP) Overview and CT Program Requirements
 - Personnel
 - Equipment and protocols
 - QC
 - Peer Review Process
- Application
- Testing materials packet/instructions – 45 days to submit images

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Accreditation

Articles & Assessments

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Media Kit for Accredited Facilities

- Preparation Assist Customer Liaison
- Professional QIP Areas for Accredited Sites Review New Accredited Sites
- Annual Update Change for ACR Accreditation Certification
- New CT Accreditation Case Study: March 2006 (January 1, 2007)
- The Increase for CT, MRI, DR/CR/DC, and Breast Ultrasound Accredited in Programs (January 1, 2007)
- New ACR Accreditation Training Instructions for Online Radiography QIPs
- ACR ACR to Help Improve Primary Care (United Kingdom Accredited on December 1, 2007)
- New Accreditation Program Peer Review Program (November 1, 2007)
- ACR - 10th Anniversary Accreditation

• Accreditation Criteria: FDA Approval

• Annual Imaging, Reporting, and Data Collection (IR/DR/CR/DC)

• Manual on Clinical Practice, Version 1.0 (2006)

Use the ACR accreditation pack and test data ready to go for your practice and the new, 10th anniversary, 10th ACR 10th Anniversary Accreditation Pack.

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Phantom Submission

- Measurements
 - Slice thickness and positioning
 - CT number accuracy
 - Low-contrast resolution
 - High-contrast (spatial) resolution
 - Image uniformity
 - Artifacts
 - Dose (CTDIw)

Phantom Submission

- ACR phantom performed by technologist or physicist
 - If performed by technologist, physicist should check all images and paperwork
- CTDI portion **must** be performed by physicist

Phantom Submission

- Examination parameters used for phantom submission
 - Adult Head
 - Adult HRCT
 - Adult Abdomen
 - Pediatric Abdomen (average 5 year old technique)
- Use average (typical) techniques, not automatic dose reduction options
- Exams will not necessarily match clinical submission

Phantom Submission - Items to submit

- CT Phantom Site Scanning Data Form (includes Table 1)
- Excel Dose spreadsheets
- ACR Phantom Images (Scanned by technologist or physicist)
- CTDI Images (Must be performed by physicist)

Note – Copies of Clinical Test Image Data Sheets are also provided to phantom reviewers

CT Phantom Site Scanning Data Form

- All parameter information should be consistent on all forms and images
- Team approach – work with the technologists and radiologists
- Verify that information given to you are the ones actually used for clinical examinations

CT Phantom Site Scanning Data Form

- Page 1 – Equipment information
- Page 2 – Table 1 – Parameter information
- Pages 3 and 4 – Measurement Data
- Pages 5 through 7 – Copies of Dose Spreadsheets

CT Phantom Site Scanning Data Form – page 1

- Verify information is complete and correct
- List all **available** kVp stations and slice thickness options

CT Phantom Site Scanning Data Form – page 2

- Table 1
 - Complete this form prior to **any** scanning
 - List "average" or "typical" parameters used in clinical practice
 - Use definitions from Phantom Testing Instructions
 - Use IEC definition of Pitch – I/NT
 - Technologist training may be necessary

CT Phantom Site Scanning Data Form –pages 3 and 4

- Entered by technologist or physicist
- Physicist should verify data

CT Phantom Site Scanning Data Form –pages 5 through 7

- Copies of spreadsheets provided, but excel sheets from website should be submitted
- kVp, mA, rotation time should match Table 1
- Detector configuration should match Table 1 if possible
 - Match total beam width
- Be careful of decimal point placement!

ACR Phantom Images

- Include SMPTE pattern or equivalent as first image on each film
- Check images for correct annotation
- Check images for correct protocol

CTDI Images

- Make sure unused holes are filled
- Must be axial images
- Adult head must be scanned in head holder
- Abdomen images must be scanned on table top

Doses above reference values

- Currently
 - Not pass/fail
 - Must submit Corrective Action Plan, old dose spreadsheets, new dose spreadsheet, low contrast images
- Future
 - Reference values
 - Pass/fail limits (Facilities applying after January 1, 2008)



Examination	Reference Levels		Pass/Fail Criteria
	Old CTDI _w (mGy)	New* CTDI _{vol} (mGy)	New* CTDI _{vol} (mGy)
Adult Head	60	75	80
Adult Abdomen	35	25	30
Pediatric Abdomen (5 year old)	25	20	25



The Future of ACR Accreditation

- Web based
 - All forms
 - Images uploaded – not mailed
 - Reviews on line
 - E-mail notifications
- Compliance audits for all sites
- QC Manuals for CT, Nuclear Medicine, PET
- Physicist and Physician CME and continued competency numbers recommendations are requirements – phased in starting July 2007



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