

An overview of the CT protocol review process at UT MD Anderson Cancer Center

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CT Protocol Review

- Two distinct purposes
 - Clinical optimization
 - Regulatory/accreditation



CT Protocol Review for Clinical Optimization

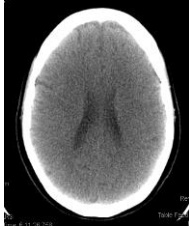
- Depends on Radiologist Section
 - For most sections:
 - When a radiologist complains about a specific exam (QA Report)
 - Protocol is reviewed by the physicist & technologist team together
 - Relevant adjustments appear promising, a new draft protocol created
 - Some number of patients scanned with draft protocol
 - After radiologist final approval  Process may get stuck here
 - New protocol locked in place and populated.

Assumes – radiologist represents section regarding this protocol



CT Protocol Review for Clinical Optimization

- Current example (7/28/16)
- Maxillofacial exam QA report (neuroradiologist):
 - “The brain CT recon is non-diagnostic”
 - Maxillofacial CTDIvol = 14 mGy
 - Routine brain CTDIvol = 65 mGy
 - Not real surprising...
- Decided to delete the brain recon in this protocol
- Made a few other adjustments at the same time...



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CT Protocol Review for Clinical Optimization

- Abdominal Imaging Section (40+ radiologists)
 - Specific committee charged with CT protocol “QA”
 - Meets monthly to review protocols and progress
 - Radiologists (core group plus few interested in specific issues)
 - CT physicists
 - CT Technologist Supervisors
 - Nursing representative
- Agenda prepared
- Action items decided
- Follow-up by radiologists (prodding)
- Most successful approach so far
- Highly dependent on radiologist leaders

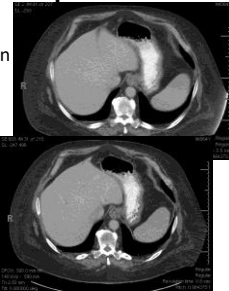


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CT Protocol Review for Clinical Optimization

Examples

- Implementation of organ dose modulation
 - Varies with vendor
 - “Script” for technologists
- Adjustments for large patient abd/pelvis
 - Increase to 140kVp
 - 150 ml IV contrast @4mL/sec
 - Process with Veo if requested (requires background support/training)



ID	Name	Date	Status
610	Male	1/18/2018	Good
611	Female	1/18/2018	Unreviewed
612	Male	1/18/2018	Due soon
613	Female	1/18/2018	Overdue

Good
Unreviewed
Due soon
Overdue

Protocol Name	Review Date	Review Status	Review Comments
CT ABDOMEN	1/18/2018	Good	...
CT ABDOMEN	1/18/2018	Unreviewed	...
CT ABDOMEN	1/18/2018	Due soon	...
CT ABDOMEN	1/18/2018	Overdue	...

Shows changes to protocol since last review

Lessons Learned

- **CT Protocol Review is**
 - Painful but effective. (Example – combining abd/pelvis passes)
 - Has resulted in many noticeable improvements in clinical image quality.
 - Is definitely a team sport. Need ALL of the players.
 - An evolving process.
- **Radiologist feedback is REQUIRED for success of optimization process**
- **Need better and more available tools for this activity!**
 - DICOM Supplement 121 may provide some assistance.
 - Both 'machine language' info AND patient information is required in practice.