Update from The Joint Commission: Diagnostic Imaging

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Objectives:

1. Review of The Joint Commission’s diagnostic imaging standards effective 7/1/2015
2. Describe experience related to new/revised standards
3. Provide update on future imaging work by the Joint Commission
The Joint Commission: Mission

To continuously improve health care for the public, in collaboration with other stakeholders, by evaluating health care organizations and inspiring them to excel in providing safe and effective care of the highest quality and value.
Reminder

Accreditation requirements – applicable to:

- accredited ambulatory care orgs, (including with ADI certification)
- hospitals that provide diagnostic imaging

Focus on MRI, CT, PET, NM
This element of performance does not apply to dental cone beam CT radiographic imaging studies performed for diagnosis of conditions affecting the maxillofacial region or to obtain guidance for the treatment of such conditions.

This element of performance does not apply to CT systems used for therapeutic radiation treatment planning or delivery, or for calculating attenuation coefficients for nuclear medicine studies.
Review of Diagnostic Imaging Standards Effective 7/1/2015

Equipment that functions properly and a safe environment of care...
Standard EC.02.01.01
The organization manages safety and security risks

EP 14:
Managing MR safety risks associated with –

- Patients: claustrophobia, anxiety, emotional distress
- Patients: urgent, emergent medical care
- Patients: medical implants, devices, metallic objects
- Ferromagnetic objects entering MRI environment
- Acoustic noise
Standard EC.02.01.01
The organization manages safety and security risks

EP 16:
Managing MR safety risks – the environment

- Restricting access: anyone not trained in safety or screened
- Restricted areas controlled, direct supervision trained staff
- Signage: potentially dangerous magnetic field, Magnet always on (if case)
Standard EC.02.02.01

The organization manages risks related to hazardous materials and waste.

EP 17:

Quarterly personnel dosimetry review

- Radiation safety officer, diagnostic medical physicist, health physicist
- Assess whether ALARA, below regulatory limits
Standard EC.02.04.01
The organization manages medical equipment risks

EP 10
Identifies quality control & maintenance activities to maintain image quality (CT, MRI, NM, PET); identifies frequency
Standard EC.02.04.03

The organization inspects, tests, and maintains medical equipment

EP 15:

Maintains quality of images produced (CT, MRI, NM, PET)
Standard EC.02.04.03

The organization inspects, tests, and maintains medical equipment

EP 17:

Measures CTDIvol: 4 protocols, verifies display 20%

- Adult Head, Adult Abdomen, Pediatric Head, Pediatric Abdomen
- Documentation: dates, results, verification
### Standard EC.02.04.03

The organization inspects, tests, and maintains medical equipment

### EP 19

**Diagnostic CT: At least annually, performance evaluation: all listed tests**

- Diagnostic Medical Physicist
- Accountable, may have assistance
- Documentation: dates, results, recommendations
Standard EC.02.04.03

The organization inspects, tests, and maintains medical equipment

EP 20

MRI: At least annually, performance evaluation: all listed tests

- Diagnostic Medical Physicist, MRI scientist
- Accountable, may have assistance
- Documentation: dates, results, recommendations
Standard EC.02.04.03

The organization inspects, tests, and maintains medical equipment

EP 21

NM: At least annually, performance evaluation: all listed tests

- Diagnostic Medical Physicist, Nuclear Medicine Physicist
- Accountable, may have assistance
- All image types produced
- Documentation: dates, results, recommendations
Standard EC.02.04.03

The organization inspects, tests, and maintains medical equipment

EP 22

PET: At least annually, performance evaluation: all listed tests

- Diagnostic Medical Physicist
- Accountable, may have assistance
- All image types produced
- Documentation: dates, results, recommendations
Standard EC.02.04.03
The organization inspects, tests, and maintains medical equipment

EP 23
Performance evaluation: image acquisition display monitors

- Diagnostic Medical Physicist
- MRI scientist (MRI only)
- Accountable, may have assistance
- Specific luminance measurements, resolution, spatial accuracy
- Documentation: dates, results, recommendations
### Standard EC.02.06.05

The organization manages its environment during demolition, renovation, or new construction to reduce risk to those in the organization.

### EP 4

Medical physicist or health physicist conducts structural shielding design assessment to specify required radiation shielding.

- CT, PET, NM
- Installation new, replacement existing
- Modification of rooms
- Not retroactive (7/1/2015)
Standard EC.02.06.05

The organization manages its environment during demolition, renovation, or new construction to reduce risk to those in the organization.

EP 6

Prior to clinical use of room: Medical physicist or health physicist conducts radiation protection survey to verify adequacy of installed shielding.

- CT, PET, NM
- Not retroactive (7/1/2015)
Review of Diagnostic Imaging Standards Effective 7/1/2015

Qualified staff…
The organization verifies staff qualifications

Minimum qualifications for individuals performing diagnostic CT exams

Advanced level certification in CT ARRT, NMTCB  OR
• State licensure CT + documented training
• Registration & certification radiography ARRT + documented training
• Certification NMT by ARRT, NMTCB + documented training

PUBLISHED 2/16/2016, EFFECTIVE 9/1/2016
HR.01.02.05

The organization verifies staff qualifications

EP. 20

Verifies and documents qualifications of diagnostic medical physicists who support CT services

Diagnostic medical physicists who support **CT services:**
Board certification: diagnostic radiologic physics, radiologic physics by the **American Board of Radiology, or**
- Diagnostic Imaging Physics by the **American Board of Medical Physics, or**
- Diagnostic Radiological Physics by the **Canadian College of Physicists in Medicine, or** …
…meet all of the following requirements:

- **Graduate degree**: physics, medical physics, biophysics, radiologic physics, medical health physics, or a closely related science/engineering discipline from an accredited college or university

- **College coursework** in: biological sciences (at least one course in biology/radiation biology and one course in anatomy, physiology, or similar topic related to the practice of medical physics

- **Documented experience** in a clinical CT environment conducting at least 10 CT performance evaluations under direct supervision of a board-certified medical physicist
<table>
<thead>
<tr>
<th><strong>HR.01.05.03</strong></th>
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<tr>
<td><strong>Staff participate in ongoing education and training</strong></td>
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<th><strong>EP. 14</strong></th>
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<td><strong>Verifies and documents technologists who perform diagnostic CT exams participate in annual training</strong></td>
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- Radiation dose optimization techniques and tools
- Safe procedures for operation of types of CT equipment they use
HR.01.05.03
Staff participate in ongoing education and training

EP. 26
Technologists who perform diagnostic CT exams participate in education that prepares them to achieve advanced-level certification by January 1, 2018

PUBLISHED 2/16/2016, EFFECTIVE 9/1/2016
Staff participate in ongoing education and training

Verifies and documents technologists who perform MRI exams participate in annual training

- Patient screening criteria: ferromagnetic items, medical implants, devices, NSF risk
- Patient, equipment positioning avoid thermal injury
- MRI safe, conditional equipment and supplies
- Response for patients requiring urgent, emergent care
- MRI system emergency shutdown procedures
- Patient hearing protection
- Patient management: claustrophobia, anxiety, emotional distress
Processes to ensure safety and efficiency...
Standard MM.06.01.01

The organization safely administers medication

EP 13

Before administering diagnostic radiopharmaceutical verifies within 20% of prescribed dose or within range
Standard PC.01.02.15

The organization provides for diagnostic testing

EP 5

Documents radiation dose index (CTDIvol, DLP, SSDE) every diagnostic CT study, retrievable format

• Only applicable for systems capable of calculating and displaying radiation dose indices
CT, MRI, PET, NM: Prior to exam verifies:
Correct patient, imaging site, patient positioning
CT only: correct imaging protocol, scanner parameters
<table>
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<td>The organization provides for diagnostic testing</td>
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<td>CT, MRI, PET, NM: considers patient age, recent imaging exams; most appropriate type of imaging exam</td>
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Standard PC.01.03.01

The organization plans the patient’s care

EP 25

Establishes or adopts diagnostic CT imaging protocols

- Based on current standards of practice
- Addresses key criteria:
  - Clinical indication
  - Contrast administration
  - Age (ped or adult)
  - Patient size or body habitus
  - Expected radiation dose index range
Standard PC.01.03.01

The organization plans the patient’s care

EP 26

Diagnostic CT imaging protocols reviewed and kept current

Input from:
- Interpreting physician
- Medical physicist
- Lead imaging technologist
- Adhere to current standards of practice
- Account for changes in CT equipment
- Reviewed in time frames identified by organization
Standard PI.01.01.01
The organization collects data to monitor performance

EP 46
MRI exam patient thermal injuries

EP 47
- Ferromagnetic objects unintentionally enter MRI room
- Injuries from ferromagnetic objects in MRI room
### Standard PI.02.01.01

The organization compiles and analyzes data

### EP 6

Reviews & analyzes incidents radiation dose index exceeded expected dose index range; compare to external benchmarks
How Are We Doing?

Data from RFIs tabulated  
7/1/2015-12/31/2015  
Hospitals and Critical Access Hospitals
REQUIREMENT FOR IMPROVEMENT BY MODALITY

- MRI, 21
- CT, 11
CHAPTER RFI BREAKDOWN

- Environment of Care: 74%
- Provision of Care, Treatment & Services: 19%
- Human Resources: 7%
Examples of Items that were scored

EC.02.01.01 EP 14: Managing MR safety risks

Fire extinguishers
Ferrous materials
Restricting access… to magnet room & area preceding; control & supervision; signage

Access:
- Accessible from public area
- Unsecured door
- No staff screening

Signage:
- “Magnet is always on” missing
Manages medical equipment risks - IDs QC and maintenance activities CT, PET, MRI, NM; identifies how often conducted

CT:
• Org policy specifies daily
  • dates missed, no follow up when outside of org specified control limits

MRI:
• Org policy specifies weekly
  • dates missed
Annual performance evaluations of CT, MRI, Nuclear Med, and PET imaging equipment…

Organization policy: Annual evaluation on CT Evaluation performed >13 mos
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<td><strong>EP.1 Staff participate in ongoing education and training to maintain or increase their competency. Staff participation is documented</strong></td>
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<td><strong>EP.14 CT techs: dose optimization, equipment operation</strong></td>
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<td><strong>EP.25 MRI techs: safe practices in MRI environment</strong></td>
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No documented skills evaluation CT, MRI, IV, radiation safety
Prior to conducting CT, MRI, PET, NM exam verify Correct: patient, imaging site, pt. position CT only: correct protocol, scanner parameters

No evidence of verification seen
PC.01.03.01 EP 25

Establishes or adopts CT protocols; clinical indication, contrast administration, age (ped or adult), patient size and body habitus, **expected dose index range**

Protocols don’t contain all elements
No evidence protocols based on current standards of practice
CT protocols are reviewed and kept current, adhere to current standards of practice, account for changes in CT imaging equipment, time frame identified by organization

- Observation: Documented protocol not followed
- Org Policy: biannual review – last review 4 years ago
- Inadequate policy:
  - No time frame for review
  - No date for last review
  - No process for review
Future Joint Commission Work in Imaging
## Research Underway

- Qualifications of Individuals Interpreting CT
- Fluoroscopy
- Will not be addressing cone beam CT
- Radiology assistants
- Other standards
The Joint Commission Disclaimer

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Questions?

THANK YOU