Radiology and the Joint Commission: A Perspective on “De Facto” Regulation

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Overview

Mission: “An independent, not-for-profit organization, The Joint Commission accredits and certifies more than 20,000 health care organizations and programs in the United States. Joint Commission accreditation and certification is recognized nationwide as a symbol of quality that reflects an organization’s commitment to meeting certain performance standards.”

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.”

Vision Statement: “All people always experience the safest, highest quality, best-value health care across all settings.”

Disclaimer . . .

• Opinions expressed by the presenter are his own and may not represent the views or official policies of SCPMG or Kaiser Permanente.

History and Authority

1910 – Ernest Codman, MD, proposes an “end result” system of hospital standardization.
1917 – American College of Surgeons (ACS) est. 1913 develops the Minimum Standard for Hospitals. It is one page long.
1926 – ACS begins on-site inspections. Only 8 of 694 hospitals surveyed meet the minimum requirements.
1936 – The first standards manual is printed and is 46 pages long.
1955 – Improvement seen in standard of care, resulting in 3,200 hospitals achieving approval.
1961 – American College of Physicians (ACP), American Hospital Association (AHA), the American Medical Association (AMA) and the Canadian Medical Association (CMA) join ACS to create the Joint Commission on Accreditation of Hospitals.
History and Authority

1953 - JCAH publishes Standards for Hospital Accreditation.
1964 - Congress passes the Social Security Amendments of 1965 with a provision that hospitals accredited by JCAH are "deemed" to be in compliance with most of the Medicare Conditions of Participation for Hospitals and, thus, able to participate in the Medicare and Medicaid programs.
1976 - Standards are recast to represent optimal achievable levels of quality, instead of minimum essential levels of quality.
1977 - The Social Security Act is amended to require that the Secretary of the US Department of Health and Human Services (HHS) validate JCAH findings.
1987 - JCAH changes its name to become the Joint Commission on Accreditation of Healthcare Organizations to reflect expanded scope.

History and Authority

2005 - The Joint Commission publishes "Standing Together: An Emergency Planning Guide for America’s Communities" for small, rural and suburban communities to both prepare for and successfully respond to emergencies.
2006 - CMS grants the Joint Commission deeming authority to accredit durable medical equipment, prosthetics, orthotics and supplies, as provided by the Medicare Modernization Act of 2003.
2007 - Organization’s name is changed from JCAHO to The Joint Commission (TJC).
2010 - CMS names TJC a designated accreditor of advanced diagnostic imaging centers.

2012 Accreditation Manual

- 300 pages
- Accreditation Participation Requirements (APR)
- Environment of Care (EC)
- Emergency Management (EMS)
- Human Resources (HR)
- Infection Prevention and Control (IC)
- Information Management (IM)
- Leadership (LD)
- Life Safety (LS)
- Medications Management (MM)
- Medical Staff (MS)
- National Patient Safety Goals (NPSGs)
- Nursing (NS)
- Provision of Care, Treatment, and Services (PTC)
- Performance Improvement (PI)
- Record of Care, Treatment, and Services (RC)
- Rights and Responsibilities of the Individual (RI)
- Transplant Safety (TS)
- Waived Testing (WT)

TJC Standards That Affect Diagnostic Imaging Services

- Environment of Care
  - EC.02.01.01: The hospital manages safety and security risks.
  - EC.02.02.01: The hospital manages risks related to hazardous materials and waste.
  - EC.02.04.01: The hospital manages medical equipment risks.
  - EC.02.04.03: The hospital inspects, tests and maintains medical equipment.
  - EC.02.06.05: The hospital manages its environment during demolition, renovation or new construction to reduce risk to those in the organization.

TJC Standards That Affect Diagnostic Imaging Services

- Human Resources
  - HR.01.02.05: The hospital verifies staff qualifications.
  - HR.01.05.03: Staff participate in ongoing education and training.
- Medication Management
  - MM.06.01.01: The hospital safely administers medications.
TJC Standards That Affect Diagnostic Imaging Services

- Patient Care
  - PC.01.02.15: The hospital provides for diagnostic testing.
- Performance Improvement
  - PL.01.01.01: The hospital collects data to monitor its performance.
  - PL.02.01.01: The hospital compiles and analyzes data.

February 15, 2004

Specific Impacts: Fluoroscopy and Radiotherapy

- Joint Commission Perspectives, December 2005, Volume 25, Issue 12:
  - Announced the addition of specific radiation doses to list of reviewable sentinel events for 2006:
    - “Prolonged fluoroscopy with cumulative dose>500 rads to a single field or any delivery of radiotherapy to the wrong region or >25% above the planned dose.”

February 15, 2004

Specific Impacts: Magnetic Resonance Imaging

- Magnetic Resonance Safe Practice Guidelines of the University of Pittsburgh Medical Center, presented by Emanuel Kanal, MD, during a categorical course for diagnostic radiology given at the 2001 annual meeting of the RSNA.
- Preventing accidents and injuries in the MRI suite was published TJC’s Sentinel Event Alert, Issue 38, February 14, 2008.

February 15, 2004

Specific Impacts: Fluoroscopy and Radiotherapy

- “Delivery of radiotherapy” applies to both radioisotope therapy and radiation-producing machines.
- “Delivery of radiotherapy to the wrong region” has the same intent as requiring a root cause analysis of wrong site surgery. Minor variations from the intended treatment field are allowed based on acceptability by the medical physics community.
- “>25% above the planned dose” refers to the total dose and not the dose to any single fraction.

February 15, 2004
Specific Impacts: Diagnostic Imaging

- Addressed the TJC’s concerns regarding radiation risks associated with diagnostic imaging.
- Identified “contributing factors” to eliminate avoidable radiation dosing.
- Suggested actions healthcare organizations can take to reduce risks from “avoidable” diagnostic radiation:
  - Right test
  - Right dose
  - Effective processes
  - Safe technology
  - Safety culture

Environment of Care (EC)

- **Standard EC.02.01.01**: The hospital manages safety and security risks.
  - 14. For hospitals that provide magnetic resonance imaging (MRI) services: The hospital manages safety risks in the MRI environment associated with the following:
    - Patients who may experience claustrophobia, anxiety, or emotional distress
    - Patients who may require urgent or emergent medical care
    - Patients with medical implants, devices, or imbedded foreign objects (such as shrapnel)
    - Ferromagnetic objects entering the MRI environment
    - Acoustic noise

- **Standard EC.02.02.01**: The hospital manages risks related to hazardous materials and waste.
  - 17. For hospitals that provide computed tomography (CT), positron emission tomography (PET) or nuclear medicine (NM) services: Staff dosimetry results are reviewed at least quarterly by the radiation safety officer or diagnostic medical physicist to assess whether staff radiation exposure levels are “As Low As Reasonably Achievable” (ALARA) and below regulatory limits.

Note: Most elements of performance related to CT do 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.
Environment of Care (EC)

- **Standard EC.02.04.01**: The hospital manages medical equipment risks.
  - 7. The hospital identifies quality control and maintenance activities to maintain the quality of diagnostic images produced. The organization identifies how often these activities should be conducted.

Environment of Care (EC)

- **Standard EC.02.04.03**: The hospital inspects, tests and maintains medical equipment.
  - 15. The hospital maintains the quality of the diagnostic images produced.
  - 17. For hospitals that provide diagnostic computed tomography (CT) services: At least annually, a diagnostic medical physicist does the following:
    - Measures the radiation dose (in the form of volume computed tomography dose index [CTDIvol]) produced by each diagnostic CT imaging system for the following CT protocols: adult brain, adult abdomen, pediatric brain and pediatric abdomen. If one or more of these protocols is not used by the hospital, other commonly used CT protocols may be substituted.

Environment of Care (EC)

- **Standard EC.02.04.03**: The hospital inspects, tests and maintains medical equipment.
  - 20. For hospitals that provide magnetic resonance imaging (MRI) services: At least annually, a diagnostic medical physicist or MRI scientist conducts a performance evaluation of all MRI imaging equipment. The evaluation results, along with recommendations for correcting any problems identified, are documented. The evaluation includes the use of phantoms to assess the following imaging metrics: image uniformity, slice thickness accuracy, slice position accuracy (when prescribed from a scout image), alignment light accuracy, table travel accuracy, radiation beam width, high-contrast resolution, low-contrast resolution, geometric or distance accuracy, CT number accuracy and uniformity, and artifact evaluation.

Environment of Care (EC)

- **Standard EC.02.04.03**: The hospital inspects, tests and maintains medical equipment.
  - 22. For hospitals that provide positron emission tomography (PET) services: At least annually, a diagnostic medical physicist conducts a performance evaluation of all PET imaging equipment. The evaluation results, along with recommendations for correcting any problems identified, are documented. The evaluations are conducted for all of the image types produced clinically by each PET scanner (for example, planar and/or tomographic) and include the use of phantoms to assess the following imaging metrics: image uniformity/system uniformity, high-contrast resolution/system spatial resolution, low-contrast resolution or detectability (not applicable for planar acquisitions), sensitivity, energy resolution, count rate performance and artifact evaluation.

Environment of Care (EC)

- **Standard EC.02.04.03**: The hospital inspects, tests and maintains medical equipment.
  - 25. For hospitals that provide computed tomography (CT), positron emission tomography (PET), nuclear medicine (NM) or magnetic resonance imaging (MRI) services: The annual performance evaluation conducted by the diagnostic medical physicist includes testing of image acquisition display monitors for maximum/minimum luminance, luminance uniformity, resolution and spatial accuracy.
**Environment of Care (EC)**

- **Standard EC.02.06.05:** The hospital manages its environment during demolition, renovation or new construction to reduce risk to those in the organization.
  - 4. For hospitals that provide computed tomography (CT), positron emission tomography (PET) or nuclear medicine (NM) services: Prior to installation of new imaging equipment, replacement of existing imaging equipment or modification to rooms where ionizing radiation will be emitted or radioactive materials will be stored (such as scan rooms or hot labs), a medical physicist conducts a structural shielding design to specify required radiation shielding.
  - 6. For hospitals that provide computed tomography (CT), positron emission tomography (PET) or nuclear medicine (NM) services: After installation of imaging equipment or construction in rooms where ionizing radiation will be emitted or radioactive materials will be stored, a medical physicist conducts a radiation protection survey to verify the adequacy of installed shielding. This survey is conducted prior to clinical use of the room.

**Human Resources (HR)**

- **Standard HR.01.02.05:** The hospital verifies staff qualifications.
  - 19. For hospitals that provide computed tomography (CT) services: Starting July 1, 2015, the hospital verifies and documents that a radiologic technologist who performs CT exams has the following qualifications:
    - Registered and certified by the American Registry of Radiologic Technologists (ARRT) or certified by the Nuclear Medicine Technology Certification Board (NMTCB)
    - Trained and experienced in the operation of CT equipment.

**Human Resources (HR)**

- **Standard HR.01.02.05:** Staff participate in ongoing education and training.
  - 24. For hospitals that provide computed tomography (CT) services: The hospital verifies and documents that radiologic technologists who perform CT examinations participate in ongoing education that includes annual training on radiation dose reduction techniques, Image (getty) and Image Wardy®.
  - 25. For hospitals that provide magnetic resonance imaging (MRI) services: The hospital verifies and documents that technologists who perform MRI examinations participate in ongoing education that includes annual training on safe MRI practices in the MRI environment, including the following:
    - Patient screening criteria that address ferromagnetic items, medical implants and devices and risk for nephrogenic systemic fibrosis (NSF)
    - Proper patient positioning activities to avoid hazards
    - Equipment and supplies that have been determined to be acceptable for use in the MRI environment (MRI safe or MRI conditional)
    - MRI safety response procedures for patients who require urgent or emergent medical care
    - MRI equipment emergency shutdown procedures
    - Patient hearing protection
    - Management of patients with claustrophobia, anxiety, or emotional distress

**Medication Management (MM)**

- **Standard MM.06.01.01:** The hospital safely administers medications.
  - 11. Before administering a radioactive pharmaceutical for diagnostic purposes, staff verify that the dose to be administered is within 20% of the prescribed dose, or, if the dose is prescribed as a range, staff verify that the dose to be administered is within the prescribed range.

**Provision of Care, Treatment and Services (PC)**

- **Standard PC.01.02.05:** The hospital provides for diagnostic testing.
  - 5. For hospitals that provide computed tomography (CT) services: The hospital documents in the patient’s medical record the radiation dose (CTDIvol or DLP) on every study produced during a CT examination.
    - Note: only applicable for systems capable of calculating and displaying radiation doses. Does not apply to systems used for therapeutic radiation treatment planning or delivery, or for calculating attenuation coefficients for nuclear medicine studies.
  - 6. For hospitals that provide computed tomography (CT) services: The interpretive report of a diagnostic CT study includes the volume computed tomography dose index (CTDIvol) or dose-length product (DLP) radiation dose. The dose is either recorded in the patient’s interpretive report or included on the protocol page.
Provision of Care, Treatment and Services (PC)

- For hospitals that provide diagnostic computed tomography (CT), magnetic resonance imaging (MRI), positron emission tomography (PET) or nuclear medicine (NM) services: Prior to conducting a diagnostic imaging study, the hospital verifies the following:
  - Correct Patient
  - Correct imaging site
  - Correct patient positioning
  - For CT only: Correct imaging protocol
  - For CT only: Correct scanner parameters

- For hospitals that provide diagnostic computed tomography (CT), magnetic resonance imaging (MRI), positron emission tomography (PET) or nuclear medicine (NM) services: The hospital considers the patient’s age and recent imaging exams when deciding on the most appropriate type of imaging exam.

Performance Improvement (PI)

- Standard PL01.01.01: The hospital collects data to monitor its performance.
  - For hospitals that provide magnetic resonance imaging (MRI) services: The hospital collects data on patient burns that occur during MRI exams.
  - For hospitals that provide magnetic resonance imaging (MRI) services: The hospital collects data on the following:
    - Incidents where ferromagnetic items entered the MRI scanner room
    - Injuries resulting from the presence of ferromagnetic items in the MRI scanner room

- Standard PL02.01.01: The hospital compiles and analyzes data.
  - For hospitals that provide diagnostic computed tomography (CT) services: The hospital compiles and analyzes data on patient CT radiation doses and compares it with external benchmarks, when such benchmarks are available.

“Questions are the creative acts of intelligence”

Frank Kingdon