Imaging Document Review Guide for Healthcare Organizations

The following documents and data need to be made available to the surveyor for review, based on the imaging modalities provided by your organization. Note: It is not necessary for you to copy these documents for the surveyor, just ensure that they are available for review. This document will assist you with compiling those documents.

1. Facilities and Equipment:

    - Equipment quality control (QC) and performance maintenance (PM) activities for CT, MRI, PET, and NM equipment, with the dates completed (last 12 months) (EC.02.04.01, EP 5 and 10) (EC.02.04.03, EP 16 and 18)

    - CT annual equipment performance evaluation: EC.02.04.03, EP 21
      Must be documented, done by medical physicist, and include:
        - Image uniformity
        - Slice thickness accuracy
        - Alignment light accuracy
        - Table travel accuracy
        - Radiation beam width
        - High contrast resolution
        - Low contrast resolution
        - Geometric or distance accuracy
        - CT number accuracy and uniformity
        - Artifact evaluation

    - MRI annual equipment performance evaluation: EC.02.04.03, EP 22
      Must be documented, done by medical physicist or MRI scientist, and include
        - Image uniformity for all coils used clinically
        - Signal to noise ratio (SNR) for all coils used clinically
        - Slice thickness accuracy
        - Slice position accuracy
        - Alignment light accuracy
        - High contrast resolution
        - Low contrast resolution
        - Geometric or distance accuracy
        - Magnetic field homogeneity
        - Artifact evaluation

    - NM annual equipment performance evaluation: EC.02.04.03, EP 23
      Must be documented, done by medical physicist or nuclear medicine physicist, and include
        - Image uniformity / system uniformity
        - High contrast resolution / system spatial resolution
        - Artifact evaluation
        - Sensitivity
        - Energy resolution
        - Count rate performance

    - PET annual equipment performance evaluation: EC 02.04.03, EP 24
      Must be documented, done by medical physicist or nuclear medicine physicist, and include
        - Image uniformity / system uniformity
        - High contrast resolution / system spatial resolution
        - Low contrast resolution or detectability
        - Artifact evaluation

    - Fluoroscopy annual equipment performance evaluation: EC.02.04.03, EP 34
      Must be documented, done by a medical physicist, and include:
        - Beam alignment and collimation
        - Tube potential/ kilovolt peak (kV /kVp accuracy)
        - Beam filtration (half value layer)

- High contrast resolution
- Low contrast detectability
- Maximum exposure rate in all imaging modes
- Displayed air-kerma rate and cumulative air-kerma accuracy (when applicable)

- Image Acquisition Display Monitor Performance Evaluations for CT, MRI, NM, PET EC.02.04.03, EP 25
  Must be performed as part of annual equipment performance evaluations and include:
  - Maximum and minimum luminance
  - Luminance uniformity
  - Resolution
  - Spatial accuracy

  Often documented in the CT, MRI, NM, PET, and Fluoro annual equipment performance evaluation

- CT Dose Verification EC.02.04.03 EP 20
  - Annual report from medical physicist on the CTDI vol for adult and pediatric brain and abdomen protocols for each diagnostic CT imaging system

- Lead Apron Assessment EC.02.04.01, EP 2. 4, 5 and EC.02.04.03, EP 3
  - Inventory and inspection for cracks, tears, integrity

2. Radiation Protection and Radiopharmaceutical Management
   Radiation Protection and Radiopharmaceutical Management
   - Records of radiopharmaceutical receipt and disposition MM.03.01.01, EP 24
   - Dosimetry monitoring record for the last 2 years EC.02.02.01, EP 18
   - Documentation of dosimetry monitoring at least quarterly by the radiation safety officer or physicist EC.02.02.01, EP 17

   Structural Shielding:
   If your organization has installed or replaced imaging equipment or modified any rooms where ionizing radiation is emitted or radioactive materials used **since July 1, 2015**, provide the structural shielding design assessment, and the radiation protection survey (EC.02.06.05 EP 4 & 6). Note: The assessment must have been done *before* the renovation, and the survey must have been done *after* the work, but before the area(s) was used for patients.

3. Clinical Policies and Protocols
   - Critical Tests: Written procedures or protocols, and data collected on the timeliness of reporting critical results of tests and diagnostic procedures NPSG. 02.03.01, EP1

   - CT Protocols: Protocols must be based on current standards of practice and address clinical indication, contrast administration, pediatric or adult, patient size and body habitus, expected radiation dose range. Must include input from interpreting physician, lead imaging technologist, and medical physicist and be reviewed at timeframes established by hospital PC.01.03.01, EP 25 and 26

   - Supervision of Contrast Administration: Policy or protocol defining role of physician or other licensed practitioner in direct supervision of contrast administration, including timely intervention in the event of patient emergency. Either a pharmacist reviews orders for contrast OR a physician or other licensed practitioner controls the ordering, preparation, and administration of contrast. MM.05.01.01, EP 1

   - MRI Safety: Policies address: claustrophobia, noise protection, metal detection, patient emergencies while in scanner, restricting access to scanner for all people not trained in MRI safety EC.02.01.01, EP 14 and 16

4. Reporting and Performance Improvement
   - Data collected on thermal injuries during MRI PI.01.01.01, EP 34
   - Data collected on incidents and injuries where ferromagnetic objects unintentionally entered MRI scan room PI.01.01.01, EP35
   - Data collected on incidents where radiation dose (CTDIvol, DLP, SSDE) exceeded the expected range Identified in the imaging protocol PI.02.01.01, EP 6

5. Staff Competencies
   - Credential files for all diagnostic medical physicists who work with CT. HR.01.01.01, EP 33

- Credential files including certification and annual training on dose optimization for CT techs HR.01.01.01, EP 32, and HR.01.05.03, EP 14
- Credential files including annual training for all MRI techs on safe MRI practices HR.01.05.03, EP 25

6. Leadership
   - Documentation / Radiology Director: must be a qualified MD or DO. MS.06.01.03, EP 9
   - Documentation / Nuclear Medicine: must be a qualified MD or DO. LD 04.01.05, EP 7
   - Documentation / Radiation Safety Officer: must be designated. LD.04.01.05, EP 25
   - Documentation of Medical Staff Approval (usually at Med Exec Comm Meeting) for:
     Qualifications of radiology staff who use equipment and administer procedures MS.03.01.01, EP16
     Nuclear Medicine Director's specifications for the qualifications, training, functions, of nuclear medicine staff MS.03.01.01, EP 17

7. Medical Records:
   - Reports, including medical record number, documenting radiopharmaceutical dose received for 5 recent inpatients. RC.02.01.01, EP 2
   - Reports, including medical record number, documenting contrast dose and radiation dose for 5 recent inpatients. RC.02.01.01, EP 2, and PC.01.02.15, EP 5
   - Reports, including medical record number, documenting fluoroscopy radiation dose for 5 recent inpatients. PC.01.02.15, EP 13