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Application of the ILO International Classification of Radiographs of Pneumoconioses to Digital Chest Radiographic Images
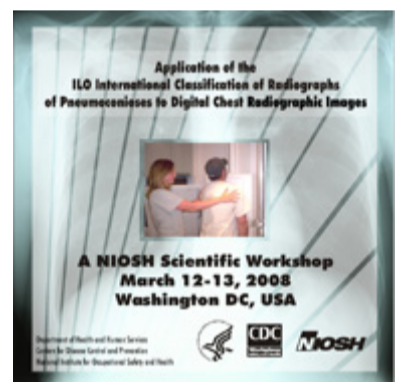
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Acquisition and QC for classification of digital chest radiographs Group discussion and outcome

3 phase approach

- Immediate terms (<1 yr)
- Medium term (1-3 yrs)
- Long term (3-6 yrs)

Immediate term (<1 yr) Approval elements

- Acceptance criteria for equipment/facility
- IQ consistency as the key goal
- ACR guidelines as a starting point
- Equipment attributes (eg, pixel size, bit- depth, baseline performance, resolution, MTF/NPS/DQE/eDQE, speed, QC utilities, DICOM compliance, …)

Immediate term (<1 yr) Approval elements

- QA process in the facility incorporating specific attributes
- QA process oversight (physicist oversight?)
- Documentation of IQ in an standardized fashion (via phantoms) –recommended but required within a longer period of time
- TG10 type testing performance

Immediate term (<1 yr) Approval elements

- Acquisition protocol requirements
  - Scatter reduction: Grid (moving/stat), air gap, slot-scan, photon-counting
  - Beam quality (kVp, filter)
  - kW rating of generators
  - Providing an exposure index (TG116)
  - Exposure monitoring over time
  - AEC and/or exposure chart
  - AEC testing

Immediate term (<1 yr) Approval elements

- Specific file format (processed and "for processing" as available, required for new equipment)
- QC guidelines
- Ongoing demonstration of quality
- Beta testing of the approach

Medium term (1-3 yrs)

- A more representative phantom with automated analysis and objective measures (MTF, NPS, eDQE, processing artifacts, imaging chain issues)
- Exposure requirements (based on eDQE)
- Integrated QC utility per image

Long term (3-6 yrs)

- Automated disease classification
- Automated IQ assessment based on image data

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