



October 26, 2009

HIT Policy Committee
Attn: Judy Sparrow
Office of the National Coordinator
U.S. Department of Health and Human Services
330 C Street, SW
Washington, DC 20201

Subject: Meaningful Use of Certified EHR Technology for the Radiology Specialty

Dear Ms. Sparrow and Members of the HIT Policy Committee:

As a professional organization serving more than 32,000 radiologists, radiation oncologists, interventional radiologists, nuclear medicine physicians, and medical physicists, the American College of Radiology (ACR) appreciates the opportunity to comment on the meaningful use of certified electronic health record technology for radiology. We have also collaborated with the Imaging e-Ordering Coalition, an alliance of providers, technology companies, and organizations supporting evidence-based, electronic clinical decision support for diagnostic imaging.

The attachment summarizes the topics the ACR views as relevant to the discussion of meaningful use for radiology in the areas of order entry, decision support, image management, interpretation, communication management, and quality and safety. The information includes functions of these categories, estimated deployability, and associated health outcome priorities. We would like to emphasize the following priorities to improve the quality of patient care, increase patients' accessibility to their radiology information, and reduce the safety and economic costs of inappropriate utilization of imaging.

- **Order Entry:** Meaningful use should include the electronic ordering of diagnostic imaging studies using standardized and codified information to allow a precise study protocol determination by imaging personnel. The examination should be defined in a standardized format, and the process by which the specific imaging protocol is selected should be articulated in the health record.
- **Decision Support:** Computerized radiology order entry should include clinical decision support in terms of immediate normative feedback about the appropriateness of any requested imaging procedures based on the clinical scenario/indications. This feedback should be drawn from authoritative and transparent sources, such as physician-developed Appropriateness Criteria, and should consider both standard procedure descriptions and clinical scenario assertions (i.e., signs, symptoms, known diagnoses, demographics, co-morbidities).
- **Image Sharing:** The exchange of diagnostic images often requires a physical medium, such as a CD or DVD, to be printed and given to patients for sharing with other providers. There is a need within the patient and provider communities for electronic exchange of diagnostic images, which would reduce radiation risk and costs by eliminating duplicative procedures if providers have immediate access to patients' existing images and reports. Any discussion of health information exchange facilitated by EHR technology should also include radiology considerations, such as the ability to export and import patient image data amongst providers and personal health records using Integrating the Healthcare Enterprise (IHE) protocols. This is an area in which ACR and others continue to make headway, and the associated standards (DICOM and XDS) are already well established.

We appreciate your time and consideration and look forward to continuing collaborations with the Office of the National Coordinator for HIT, Centers for Medicare and Medicaid Services, and the HIT Policy and Standards Committees on all topics related to radiology. Please contact Michael Peters, ACR Assistant Director of Regulatory and Legislative Portfolio, at 202-223-1670 / mpeters@acr-arrs.org for additional information.

Sincerely,

James H. Thrall, MD, FACR
Chair, Board of Chancellors
American College of Radiology

Topics for Consideration
MU for Radiology

Order Entry

| Concept | Function | Priority | Care Goal | Deployability Category |
|---|---|---|---|-------------------------------|
| 1 Computerized Physician Order Entry | Orders for outpatient diagnostic imaging are entered electronically by the referring provider at the point of order. These orders contain enough standardized and codified information about modality, body region, contrast, clinical application, and other details to allow the exact study protocol to be determined by imaging facility personnel. | Improve quality, safety, efficiency and reduce health disparities | Use CPOE | II. Ready for Introduction |
| 2 Imaging protocol standardization | Examinations will be defined in a standardized format detailing the examination acquisition and protocol performed in RADLEX format. | Improve quality, safety, efficiency and reduce health disparities | Provide access to comprehensive patient health data for patient's health care team | II. Ready for Introduction |
| 3 Imaging protocol selection | Implies articulation of 'orderables' and 'performables' and a process by which the specific imaging protocol is selected or tailored to the level of specificity required at each point in the process (e.g., pre-authorization, scheduling, scanning) | Improve quality, safety, efficiency and reduce health disparities | Use evidence-based order sets | III. Well Developed |
| 4 Exam scheduling and reconciliation by ordering physician | Exposing examination resource availability to referring physicians for remote scheduling | Care Coordination | Exchange meaningful clinical information among professional health care team | III. Well Developed |
| 5 Exam scheduling by patient | Exposing examination resource availability to patients for remote scheduling | Engage Patients | Provide patients and families with timely access to data, knowledge, and tools to make informed decisions | IV. In Development |

Topics for Consideration
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Decision Support

| | Concept | Function | Priority | Care Goal | Deployability Category |
|---|---|--|---|--|-------------------------------|
| 1 | Ordering physician appropriateness feedback at point of order | Give ordering providers immediate normative feedback (ordinal categories or numeric scores) about the appropriateness of requested imaging exams based on their assertions of clinical scenario/indications during computerized order entry. These categories and/or scores should be drawn from authoritative sources. This depends on having one or more authoritative, transparent, public sources of appropriateness scores such as ACR-AC or ACC-AC. Also depends on Computerized Radiology Order Entry (ROE) with coded capture of both standard procedure descriptions AND clinical scenario (signs, symptoms, known diagnoses, demographics, co-morbidities) assertions. | Improve quality, safety, efficiency and reduce health disparities | Apply clinical decision support at the point of care | III. Well Developed |
| 2 | Clinical Decision Support for ordering physician | This is distinct from normative appropriateness feedback and consists of guidelines and diagnostic pathways linked directly from the ordering client. May also include assistance in protocol selection and notification about prior studies on the same patient that may be relevant | Improve quality, safety, efficiency and reduce health disparities | Apply clinical decision support at the point of care | III. Well Developed |

Topics for Consideration
MU for Radiology

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| 3 | Ordering physician appropriateness feedback retrospectively | If facility has implemented ROE with prospective DS about appropriateness of outpatient imaging, can use these existing scores for aggregation and feedback. If facility does not employ ROE with DS at point of order, appropriateness scores may be generated retrospectively for each examination based on the study modality/type and clinical indications for that study. Most likely, this would be done by a standardized and CMS authorized automated method that applies authoritative appropriateness criteria to electronic administrative data about the examinations. Would have to determine if want to allow facilities to try and do the appropriateness scoring by hand/chart review. However, probably would want to stick to the SAME requirements for percent of providers and studies included. | Improve quality, safety, efficiency and reduce health disparities | Report to registries for quality improvement, public reporting, etc | III. Well Developed |
| 4 | Report ordering physician case-mix adjusted imaging utilization information | Exact methods for aggregating, case-mix adjusting, and reporting radiology resource use data to outpatient referring providers are somewhat controversial, in constant flux, and under development. It is insufficient to simply report raw numbers of examinations ordered by individual providers without some reference to normative criteria based on data from relevant peers. Further, providers with relatively high absolute use rates are likely also those with busier practices and sicker patients. Therefore, any feedback to referring providers about their utilization of imaging must, at least, be corrected for practice size and mixture. In outpatient settings, this implies access to 'denominator' data for each provider and the most obvious is outpatient visits rendered by them. It is important to note that the denominator (visits) and numerator (imaging tests) must derive from the same population of patients. | Improve quality, safety, efficiency and reduce health disparities | Report to registries for quality improvement, public reporting, etc | IV. In Development |

Topics for Consideration
MU for Radiology

Image Management

| Category | Function | Priority | Care Goal | Deployability Category | |
|-----------------|--|--|---|---|----------------------------|
| 1 | Image Sharing via media-free electronic transfer | Capability to export and import all patient image data amongst providers and PHRs using IHE protocols via secure Internet connectivity. | Care Coordination | Exchange meaningful clinical information among professional health care team | II. Ready for Introduction |
| 2 | Image Storage in Digital Format | Storage of all acquired image data using DICOM standards in a certified (FDA Part 10 Image Storage Device compliant or evolved certification in the future) image archive for a period of time mandated by state and federal requirements. | Care Coordination | Exchange meaningful clinical information among professional health care team | I. Mature Technology |
| 3 | Image Sharing via standard media in DICOM format | Capable to export and import standard media (e.g. CD, DVD) to transfer any stored patient image data. | Care Coordination | Exchange meaningful clinical information among professional health care team | I. Mature Technology |
| 4 | Image Display for interpretation | Must use certified software on qualified hardware for the visualization of image data. Display systems must be capable of displaying current as well as all prior and shared image data. | Improve quality, safety, efficiency and reduce health disparities | Exchange meaningful clinical information among professional health care team | I. Mature Technology |
| 5 | Image Display for referring doctors | Must provide a software application for referring physicians to see current image data as well as relevant prior, including shared image data. | Care Coordination | Exchange meaningful clinical information among professional health care team | I. Mature Technology |

Topics for Consideration
MU for Radiology

Interpretation

| | Concept | Function | Priority | Care Goal | Deployability Category |
|---|--|---|---|--|-------------------------------|
| 1 | Report Throughput Time | 90% of all reports will be rendered in digital format and made available for distribution within the prescribed timeframe. | Improve quality, safety, efficiency and reduce health disparities | Exchange meaningful clinical information among professional health care team | I. Mature Technology |
| 2 | Common reporting format | Reports will be rendered and distributed in a single format that is common to the health provider organization regardless of individual interpreter styles. | Care Coordination | Exchange meaningful clinical information among professional health care team | I. Mature Technology |
| 3 | Standardized reporting format | Reports will be rendered and distributed in a single format that conforms with the national standard for structured reporting of radiology information. | Improve quality, safety, efficiency and reduce health disparities | Use evidence-based order sets | III. Well Developed |
| 4 | Structuring and Coding of Key Components | Standard codification of key reporting elements including Procedure performed, Pertinent Findings and Recommendations. | Improve quality, safety, efficiency and reduce health disparities | Report to registries for quality improvement, public reporting, etc | III. Well Developed |

Communication Management

| | Concept | Function | Priority | Care Goal | Deployability Category |
|---|--|--|-------------------|--|-------------------------------|
| 1 | Distribution of Images and Reports to ordering providers | All imaging and report data will be immediately available for consumption by authorized healthcare providers through secure Internet or Intranet access. | Care Coordination | Exchange meaningful clinical information among professional health care team | I. Mature Technology |
| 2 | Distribution of Images and Reports to patients | All imaging and report data will be available for consumption by patients through secure Internet access or PHR providers. | Care Coordination | Exchange meaningful clinical information among professional health care team | II. Ready for Introduction |

Topics for Consideration
MU for Radiology

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| 3 | Critical Findings Management | All urgent and critical findings will be communicated directly with the ordering provider. These findings and their associated communications will be tracked and recorded in a local database. | Improve quality, safety, efficiency and reduce health disparities | Generate lists of patients who need care and use them to reach out to patients (e.g., reminders, care instructions, etc.) | I. Mature Technology |
| 4 | Recommendation tracking and reconciliation | All recommendation for further imaging will be monitored. In cases where the recommendation was not performed within the time specified, communication to the ordering provider will be performed and recorded. | Improve quality, safety, efficiency and reduce health disparities | Generate lists of patients who need care and use them to reach out to patients (e.g., reminders, care instructions, etc.) | III. Well Developed |

Quality and Safety

| | Concept | Function | Priority | Care Goal | Deployability Category |
|---|--------------------------------------|---|---|--|-------------------------------|
| 1 | Radiation Dose | All patient radiation exposure will be recorded at the examination level in a local database and submitted to national registries. | Improve quality, safety, efficiency and reduce health disparities | Report to registries for quality improvement, public reporting, etc | II. Ready for Introduction |
| 2 | Peer Review | 2% of all interpretations will be reviewed by a second interpreter and scored for accuracy. Egregious discrepancies will be internally reviewed and transmitted to a national registry. | Improve quality, safety, efficiency and reduce health disparities | Report to registries for quality improvement, public reporting, etc | I. Mature Technology |
| 3 | Ordering physician outcomes feedback | Digital capture of ordering physician feedback regarding the quality of the interpretation and its usefulness in the process of patient care and effectiveness on patient outcome. | Improve quality, safety, efficiency and reduce health disparities | Provide access to comprehensive patient health data for patient's health care team | III. Well Developed |