Meaningful Use, EHRs & Imaging

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Meaningful Use

- Improving health through use & efficiency of healthcare
  - Improve quality, safety, efficacy & reduce disparities
  - Engage patients & families
  - Improve coordination
  - Improve population & public health
  - Ensure privacy & security

Key Themes

- Flexibility
  - Not all/nothing process; allows for variety of challenges being faced
- Simplicity
  - Easier reporting of HIT functionality measures by eliminating manual chart review requirements & using electronic calculation
Key Themes

- Consistency
  - Align program requirements across hospitals & professionals; Medicare/Medicaid
- Quality & Patient-Centeredness
  - Make care delivery patient-centered
  - Improve quality, safety & efficiency

Image Data

- Stage 1
  - Did not include image data (2015)
  - Need to address in net version & stages
- Challenges
  - Platform variability
  - System interoperability
  - Privacy & security (unique identifier)
  - Storage & retrieval large datasets

Challenges

- Multiple EHRs/EMRs
  - Lots of sub-systems
  - Competing intentions & needs
  - Not interoperable
  - No standards, best practices etc.
  - Integrating multi-media: images, signals/devices, video, models, diagnostic aids, visualizations/dashboards
- Legacy systems
Modern View

• Cloud
  • Access anywhere, anytime, anybody
  • Handles multiple devices, formats
  • Data liquidity in exchange & reuse
• Needed
  • Data elements tagged & indexed
  • Rules for processing, assembly, communication
  • No separation EHR, EMR, PHR

Radiology

• Rates & types imaging increasing
• No longer ancillary – core to diagnosis & therapy in many specialties
• PACS closely integrated RIS but not EMR/EHR
  • Vendors afraid of image size & complexity
  • System viewers can pull images up but rarely do advanced imaging processes

Imaging

• DICOM, IHE, HL7 exist & work well
• MU should/will dictate process of implementing decision support order entry – reduce unnecessary procedures/cost & reduce dose
• Better integrate & monitor patient identification
  • Bar code, RFID solutions
• Approximately 74% (22,000+) active radiologists perform some services outside hospital
• Participate extensively in Medicare
• MU of HER technology must be defined to make clinical sense & be reasonably achievable

ACR/ABR/SIIM/RSNA

• Many HIT functionality measures for EPs not applicable to radiology
  • e.g., telerad where image procedures done one site & transmitted to remote radiologist for interpretation
  • CMS should allow EPs to choose HIT functionality measures from list of 25 that are pertinent to specialty & workflow

ACR/ABR/SIIM/RSNA

• Example
  • Objective: use CPOE
  • Measure: CPOE used for 80%+ all orders
  • Most radiologists do not order physician services but rather receive orders
  • Any HIT measure that examines discrete #/% orders placed inapplicable
  • CMS should require that EPs who receive orders “enable functionality to receive electronic orders”
ACR/ABR/SIIM/RSNA

• Example
  • Objective: Generate & transmit permissible prescriptions electronically (eRx)
  • Measure: 75%+ prescriptions transmitted electronically via EHR technology
  • eRx generally inapplicable to radiology
  • Contrast media from medical suppliers ordered in bulk – not using traditional physician-to-pharmacy model

Questions & Issues

• PACS part of or just linked to EMR/EHR?
  • Most vendors use URL to access data so feasible now
  • Does info vary by specialty?
  • All data too much, complicated & costly?
  • Common language across specialties?
  • Various image formats? DICOM & DICOM wrappers exist – is routine!

Questions & Issues

• Outside radiology imaging is pt “encounter”, in radiology is “case” = different ways looking at orders, storage, reporting etc.
  • If include all in record becomes part of legal record & open to litigation
  • Should silos be store & viewing rather than specialties?
Questions & Issues

- Who wants/needs access to what?
- What would a cardiologist want with ob/gyn data images in the first place?
- PACS administrators often locked into radiology – have knowledge but can’t share – need to cooperate
- Structured/standardized reports/data entry

Ortho

- Large (full body) radiographs
- Wound images
- Templating & magnification
- Video (dynamic shoulder & knee)
- Intra-operative (arthroscopic) images
- Different sharing/use environments

Ob/Gyn

- Rad, path, colposcopy, ECG/EKG, fetal heart tracings, intraoperative, breast
- Images with annotations
- Transportability: OB – patients often go to multiple sites, temporal integration; GYN – mobile population, chronic conditions
- Decision support tools
- Typically do not store many images
Cardiology

- History
- Physical exam
- ECG
- Chest x-ray, CT, MRI, echo, molecular
- Radionuclides
- Angiogram
- RT, multiple views/slices, 3D, color

Neurology & Neurosurgery

- CT, MRI, SPECT/PET, angiography, labs, NIHSS, risk mngt tools
  - Modest = key select images for diagnosis
  - Moderate = large planning data sets
  - Extensive = advanced techniques, fused
- 2-way audio-visual (tele-trauma)
- Multi-disciplinary (neuro, pain, etc.)
- Time = brain

AAFP Perspective*

- 60% AAFP have adopted EHR
- Many more images
  - Picture of patient, video clips
  - Trauma, wounds, medicolegal
  - Medications
  - ECG/EEG/EMG
  - Maps & directions
  - Process/decision maps
  - Patient education

*David Kibbe, MD
Consumers

- Mobile, caring for others, being seen at multiple sites & FRUSTRATED!
- Should pt bear responsibility of making sure images stored/copied properly & get them to other clinical facility?
- Privacy may be less of an issue for pts than for government!
- PHR may be useful/easy for some but for most too much work & trouble

What’s Next?

- Integrate PACS, HIS, EMR, EHR etc.
- Virtual archive
  - Multi-client hosted cloud archive
  - Multiple image types & formats
- Interoperable viewers with pull vs push
- Decision support @ data entry
- Discrete data exchange
  - Structured input, reporting, documentation

What’s Next?

- Community (HIE) record banks + PHR & e-visits
- Address regulations with: CMS, FDA, ONC, federal agencies in general
  - Involve – all healthcare provider segments, scientists, IT, vendors, patients
  - Do it soon!