EMR Standards

by

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Why EMR Standard

- IT growth in Health care institutions
- Network of Health care facilities.
- Telemedicine
- Business / Knowledge process out sourcing
- Technology Convergence

Few standards for modern day EMR systems

- ASTM Continuity of Care Record
  - A patient health summary standard based upon XML, the CCR can be created, read and interpreted by various EHR or Electronic Medical Record (EMR) systems, allowing easy interoperability between otherwise disparate enities. [2]
- ANSI X12 (EDI)
  - A set of transaction protocols used for transmitting virtually any aspect of patient data. Has become popular in the United States for transmitting billing information, because several of the transactions became required by the Health Insurance Portability and Accountability Act (HIPAA) for transmitting data to Medicare.
- CEN - EN13606,
  - The European standard for the communication of information from EHR systems, and HISA, a services standard for inter-system communication in a clinical information environment.

Few standards for modern day EMR systems

- ISO TC215
  - has defined the EHR, and also produced a technical specification ISO 18308 describing the requirements for EHR Architectures.
- openEHR
  - next generation public specifications and implementations for EHR systems and communication, based on a complete separation of software and clinical models.

ISO TC215 Workgroups

- Working group 1 (WG1): Data Structure
  - Digital imaging and communication in medicine (DICOM) including workflow and data management
  - Electronic health record communication
- Working group 2 (WG2): Data interchange
  - Exchange of information between healthcare information systems - Method for the development of messages
  - Health informatics - HL7 version 3 - Reference information model
- Working group 3 (WG 3): Semantic content
  - Point of care medical device communication (Analytical instruments - point of care test)
  - Medical Waveform format
  - Vocabulary for terminological systems

ISO TC215 Workgroups

- Working group 4 (WG 4): Security
  - Security management in health Care institutions
  - Classification of safety risks from health software
- Working group 5 (WG5): Health cards
  - General characteristics
  - Numbering system and registration procedure for issuer identifiers
  - Patient health card data - Extended clinical data, Identification data, Administrative data, Electronic prescription (medication data)
- Working group 6(WG6): Pharmacy and medicines business
  - Electronic reporting of adverse drug reactions
  - Business requirements for an international standard terminology system for medicinal products
- Working group 7 (WG 7): Devices
  - Use of mobile wireless communication and computing technology in healthcare facilities - Recommendations for the management of electromagnetic interferences with medical devices

EMR Standards @...

- Access of patient data by clinical staff at any given location
- Accurate and complete claims processing by insurance companies
- Sending to and viewing by external diagnostics institutions
- Building automated checks for drug and allergy interactions

Public implementations

- As of 2005, one of the largest projects for a national EMR is by the National Health Service (NHS) in the United Kingdom.
- The Canadian province of Alberta's Alberta Net-care project is a large-scale operational EMR system.

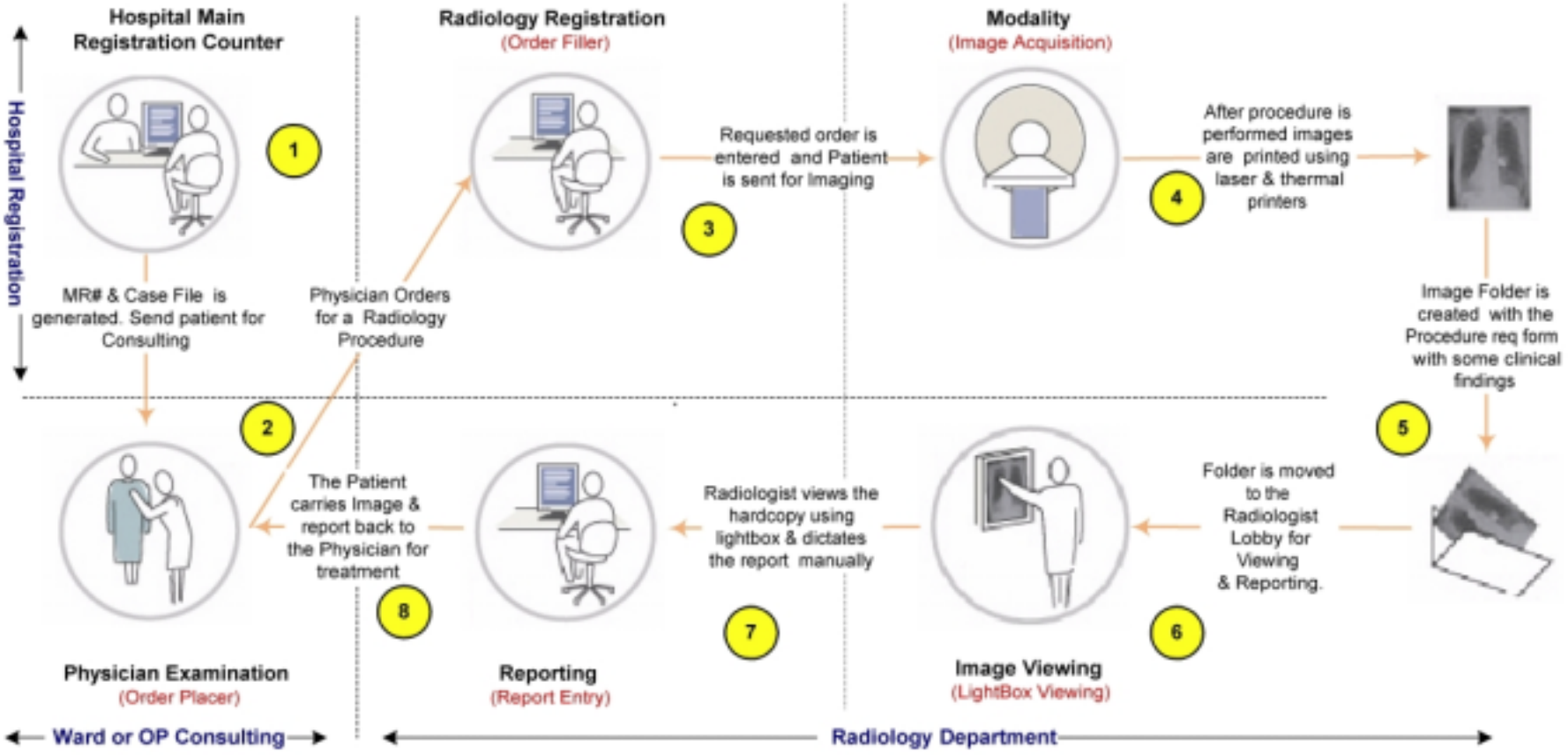
- Adoption of electronic medical records by US doctors is increasing slowly.

Barriers to adopting an EMR system include –

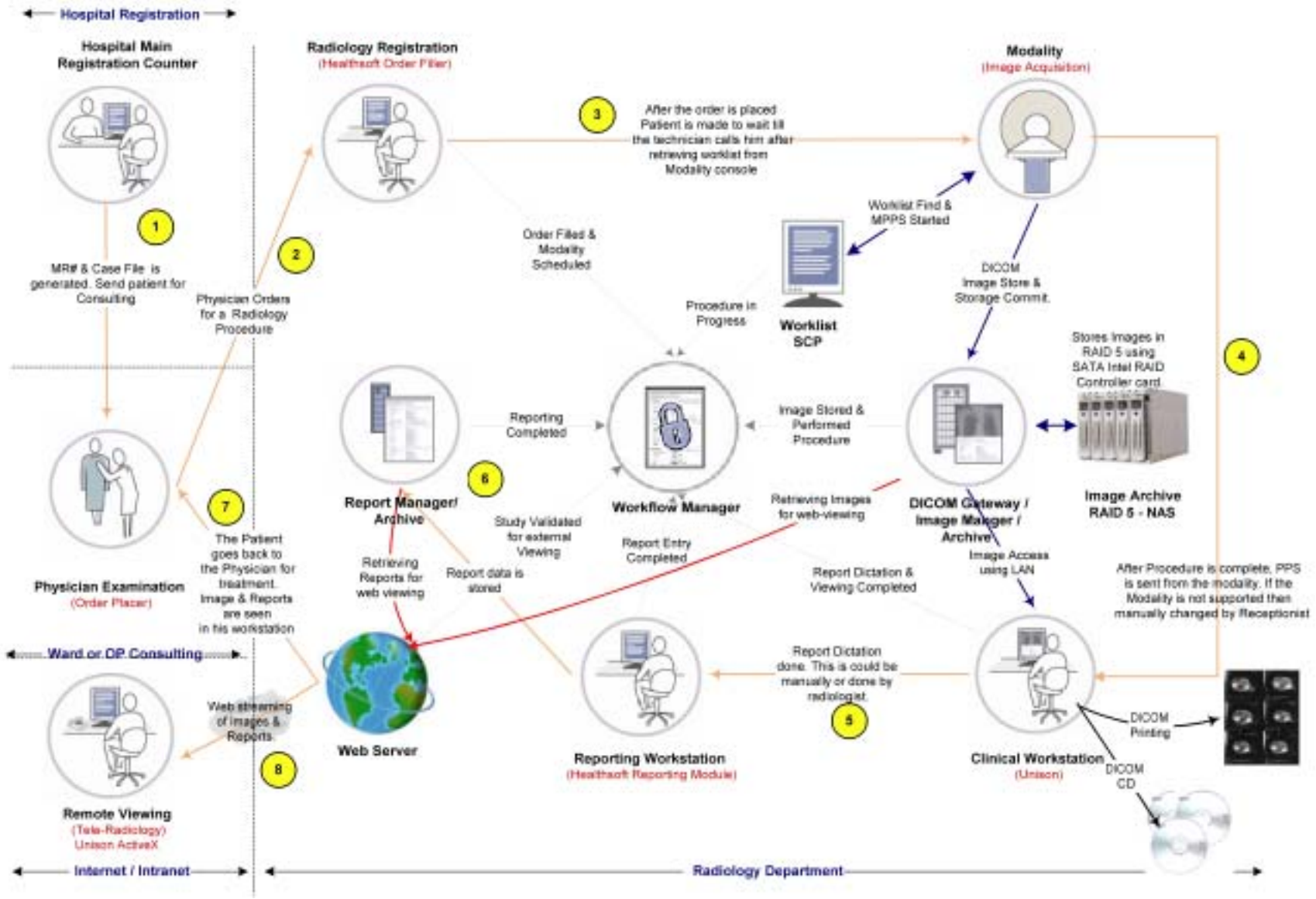
-Training
- Costs
- Complexity as well as the lack of a national standard for interoperability among competing software options.

Live Demonstration

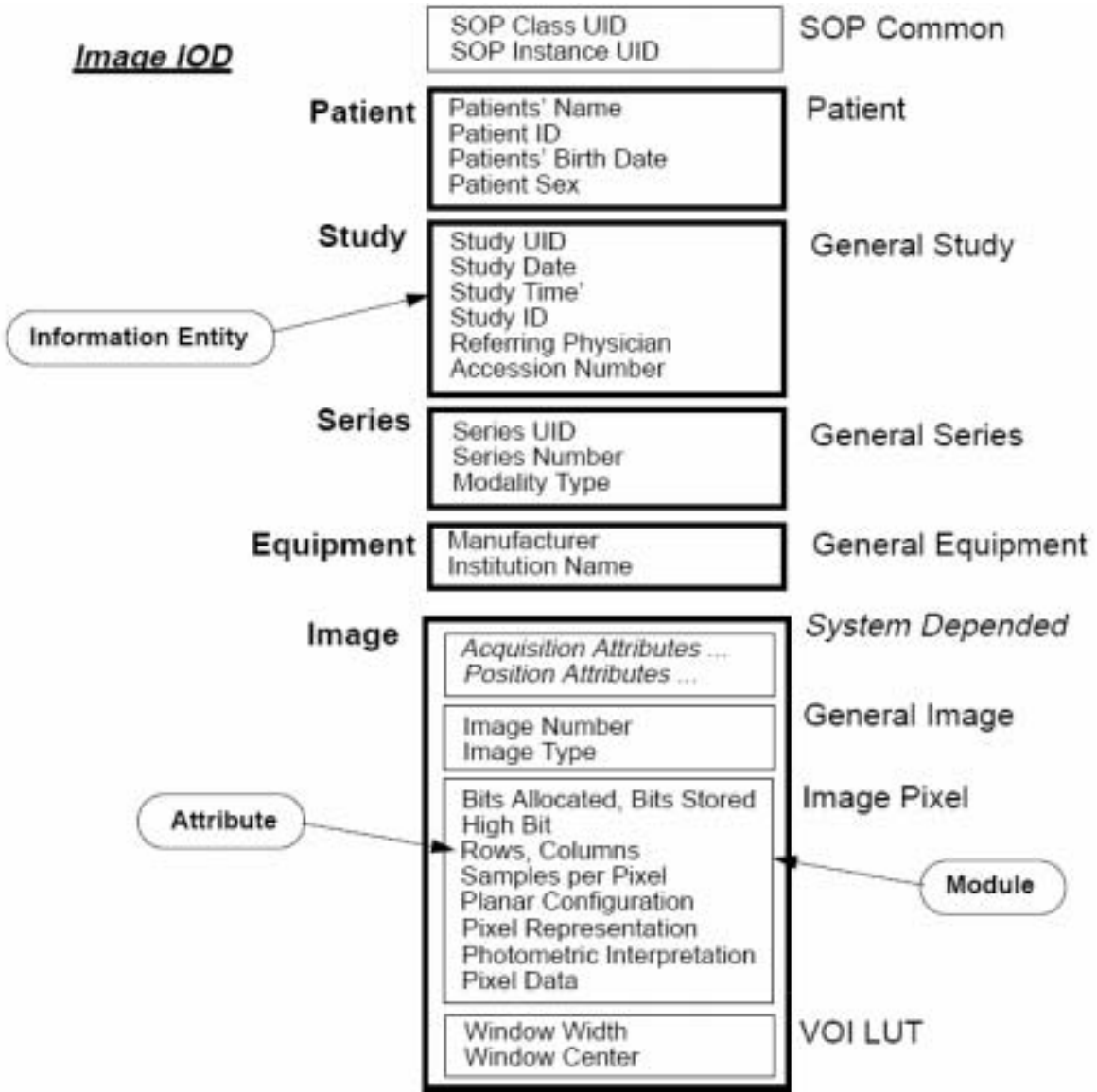
Workflow across departments.



EMR enabled workflow



DICOM File Format



HL7 Message Format

- Message
  - Segment (Some are Repeatable) <cr>
    - Fields (Some are Repeatable) “|”
      - Components “^”
        - Subcomponents “&”

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MSH|^~\&|EKG||MyEPA||||ORF^R04|X981672|P MSA|AA|CDB22222|P
QRD|200304180943|R|I|Q4412|||10|RD|0123456-1|RES QRF|EKG||200301010000
PID|1||0123456-1||Nordstein^Peter^H|||||||9821111
OBR|1|43215^OE|98765^EKG|93000^EKG
REPORT|R|200301111000|200301111330|||RMT||||200301111330|-|
P030|||||200301120930|||||02^126666|A111|Viranyi^Andrew
OBX|1|ST|93000.1^VENTRICULAR RATE(EKG)||91|/MIN|60-100
OBX|2|ST|93000.2^ATRIAL RATE(EKG)||/MIN|60-100 |2|^ST DEPRESSION
OBX|10|FT|93000&ADT^EKG COMMENT||\.br\ 1. Ein vergleich mit einem EKG
vom 31.10.2002 zeigt, dass die ventrikulär Frequenz um 30 bpm
gestiegen ist.\.br\2. Die Kriterien für einen Seitenwandinfarkt sind
nich länger gegeben.
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