Update on EMR and EHR Standards: Finally Starting to Come Together?

(and the Data Standards Life Cycle)

ASIS&T 2017 Annual Meeting
Standards Update Panel
October 30, 2017

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DataHarmony from Access Innovations, Inc.

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Electronic Health Information

EMR vs EHR

Often used interchangeably, but different:

- EMR = Electronic Medical Record

A single practice's digital version of a patient's chart, encounter notes, etc.

- EHR = Electronic Health Record

More inclusive; medical history; designed to be shared (with other providers, hospitals, etc.)

Sharing Health Information

…is complicated!

- Hospitals vs Practices vs Labs vs vs vs…
  - Have different systems, requirements, needs
- Privacy concerns
- Legal issues/Liability (for breeches etc.)
- Regulatory Compliance
  - Minimum requirements
  - But for different countries…
  - (also language problems!)

Sharing Health Information (continued)

Moreover, there are actually *interesting* problems to solve:

- Classical records management problems
  - Storage
  - Preservation
- Interoperability
- Synchronization
  - You sent me a record about a patient; I updated it
  - Do I have to push it back to you? And who else?!
- And, of course: Data Quality

Current Standards Landscape

ASC X12 (EDI) – transaction protocols used for patient data, billing data (USA)

ASTM International – Continuity of Care Record

CEN TC/251 – EHR standards (Europe):

- EN 13606 – communications
- CONTSYS (EN 13940) – continuity of care
- HISA (EN 12967) – clinical information

DICOM – international protocol for image-based data (sponsored by NEMA (National Electrical Manufacturers Association))

HL7 – text communications protocol between hospital and physician record systems, and between practice management systems

- Fast Healthcare Interoperability Resources (FHIR) – a modernized proposal from HL7 designed to provide open, granular access to medical information

Pronounced “fire”

Current Standards Landscape (continued)

ISO –

- ISO TC 215 (international) technical specifications for EHRs
- ISO 18308 describes EHR architectures

xDT – (Germany) medical data exchange formats

Open specifications

- openEHR – community-developed for shared health records. **Multilingual**.
- Virtual Medical Record: HL7's proposed open model
- SMART (Substitutable Medical Apps, reusable technologies): an open platform for multiple healthcare applications

HL7 and FHIR

- HL7 is becoming the accepted standard
- AMA is pushing this
- Adoption is slow, uneven

FHIR is designed to help with this adoption and implementation, speed up buy-in, ease transitions

FHIR XML data is platform (EHR, EMR) agnostic!

FHIR

- Interoperability is the primary goal
- Patient-service centric
- Keeps providers from being locked into an EHR
  - FHIR designed specifically to work with all of them
- RESTful APIs
- XML-based back-end
- CSS
- JSON or XML output for consuming applications

FHIR

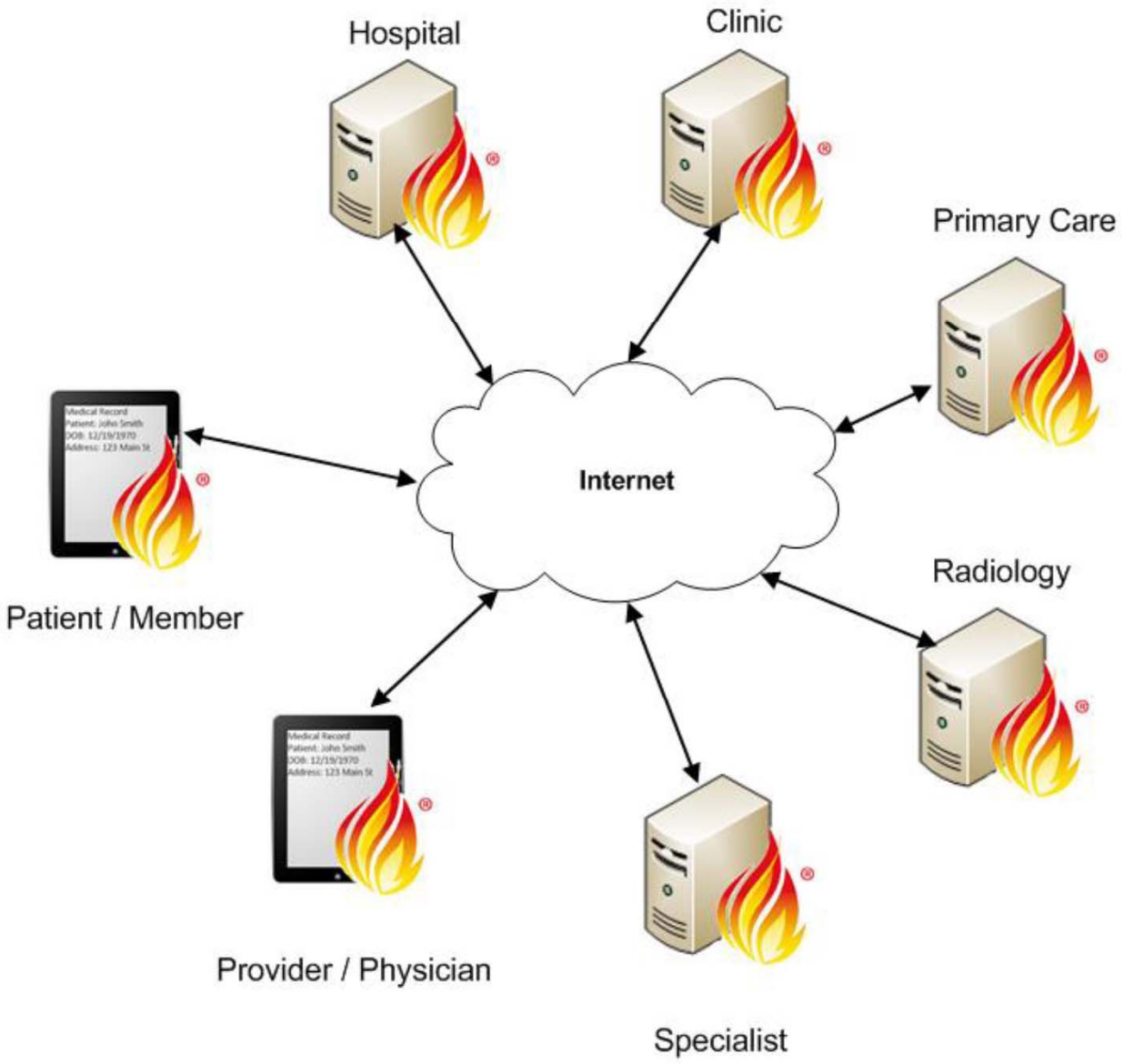


Image via Aegis PPT from Allscripts Developer Summit, May 2017

Data-centric format

- Not designed for any one system
- **Interoperability** is the byword – which is great, but:
- How long until extensions and “flavors” will appear?

This leads to:

- The SKOS problem

The SKOS Problem

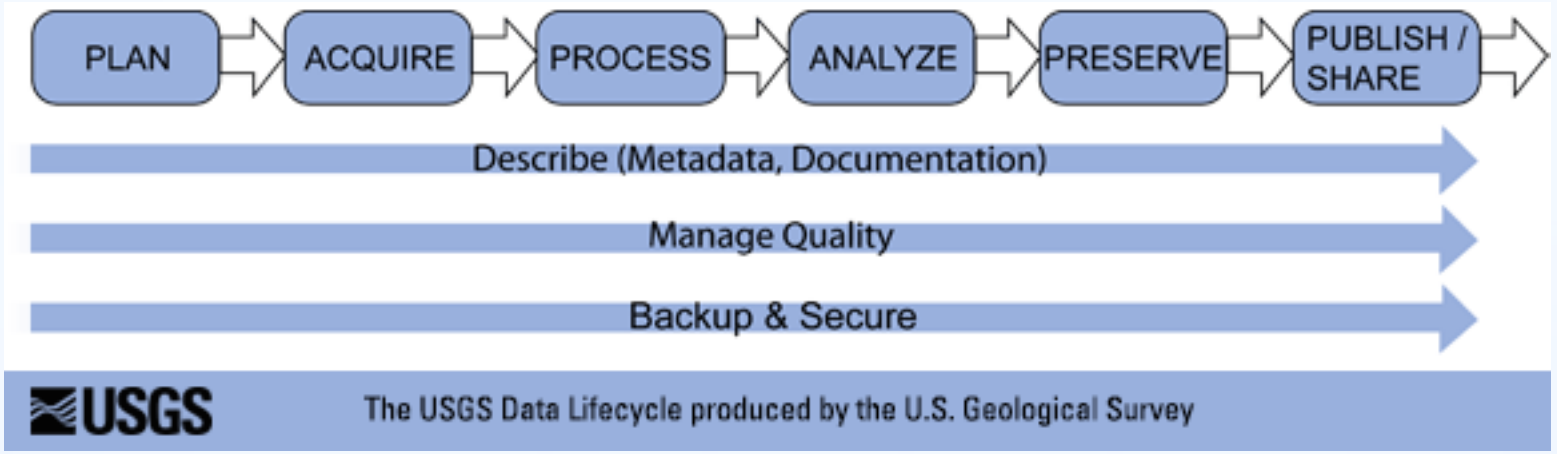
There are so many flavors and extensions of SKOS that consuming applications can often no longer ingest SKOS from other organizations without significant pain:

- Scripting
- Time
- Money
- Frustration

Can you use SKOS?

- Of Course
- ...
- WHICH ONE?
  - Atypon?
  - Temis?
  - Highwire?
  - Skos 1
  - SKOS – XL?
    - Which XL
  - Etc.

Data Standards Life Cycle



Its a circle, not a line, and it proliferates!

Example of a typical Life Cycle diagram (from USGS)

What's missing from this picture?

How do extensible standards remain interoperable?

Thank You

Questions?

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