Our Journey In Health IT And Health Information Exchange – Working Towards Ubiquitous, Computable Care Data In Kaiser Permanente

Presentation To IOM Committee To Review Data Systems For Monitoring HIV Care

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VP, HIT Strategy & Policy
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“Continuing total health care requires a continuing life record for each individual...The content of that life record, now made possible by computer information technology, will chart the course to be taken by each individual for optimal health.”

Sidney Garfield, MD

*Scientific American*, 1970

*Hospital Computer Systems*, 1974
More than just an electronic medical record

The development and deployment of a highly sophisticated information management and delivery system for health and health care

A Program-wide system that integrates the clinical record with appointments, registration and billing

A complete health care business system that will enhance the quality of patient care
Instant and continuous real-time access to medical records for physicians, patients and their designated family members:

- Review medical records
- Check lab results
- Referrals
- Immunization records
- History of medical visits
- Direct ordering of prescriptions, labs, and referrals from a single system
- Best practice adoption
Our Personal Health Record: My Health Manager on kp.org

- A shared record for the patient, their family, and all members of their care team

- Linked directly to KP HealthConnect, My Health Manager is the patient’s view into their medical record

- Provides information and the ability to act on that information online in real time
  - Self-service appointment scheduling
  - Self-service medication e-refills
  - Secure messaging with your physician
About SNOMED CT, ICD, and KP’s Convergent Medical Terminology (CMT)*

- **Usual use case for ICD-9 or ICD-10:**
  - I have a record. It needs *the right code* in a classification system.
  - Not everything is in the system, therefore “Not Otherwise Specified” (NOS) and “Not Elsewhere Classified” (NEC) codes are important.

- **Usual use case for SNOMED CT:**
  - I have a patient. I can document everything that is relevant, and my EHR will attach codes to much of it. NOS and NEC are meaningless.
  - For semantic interoperability, decision support and care of patients.

- **Kaiser Permanente uses CMT in KP HealthConnect**
  - Based on SNOMED CT and Laboratory LOINC.
  - Mapped to ICD and other codes for administrative classification uses.
  - CMT includes concepts not yet modeled in SNOMED CT, therefore not represented in standard cross-maps to ICD-9 or ICD-10.

* See attached glossary of acronyms

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KP’s Public Donation of CMT, Announced September 29, 2010

What:
- CMT is becoming part of SNOMED CT and will cease to exist on its own
- Over 100,000 medical concepts with clinician-friendly descriptions, patient-friendly descriptions, search terms and cross-maps to other standard vocabularies including ICD-10 and CPT
- Tools for collaborative terminology development and editing

When:
- Quarterly chunks over three years starting October 2010
- Cardiology, Mental Health, & Top 2,500 Problems downloadable now
- Infectious diseases & bloodborne disorders, Q1 2012 from NIH/NLM

Why:
- To enable consistent understanding and repeatable interoperability
- To ease EHR adoption and improve clinical decision support

How:
- Open source, free downloads from NIH/NLM, and the International Health Terminology Standards Development Organization (IHTSDO)
Three Major Mechanisms For Health Data Sharing

1. National Standards: Nationwide Health Information Network
   - NwHIN Exchange: Sharing codified, computable data structured in the HL7 Clinical Document Architecture using Continuity of Care Documents in real time for clinical care
   - NwHIN Direct: Secure email for direct unstructured data communications among physicians, like a fax machine

2. Proprietary Exchange Mechanisms:
   - EMR Vendor-Specific, Example: Care Epic
   - Local /Regional HIE Vendors/Standards, Example: Regenstrief IHIE

3. Personal Health Records and Other Modalities
   - Examples: Microsoft, “Thumb Drives”
Extending EHR Benefits: KP Results In Health Information Exchange

- Nationwide Health Information Network (NwHIN) Virtual Lifetime Electronic Record (VLER) with KP, VA and DoD
  - Sharing HL7 Continuity of Care Documents in real time during patient care visits (more detail follows)

- Microsoft Health Vault Pilot Project with My Health Manager
  - PHR transfer of longitudinal summary records at member’s request

- Colorado Regional Health Information Organization (CORHIO)
  - Transferring medical records among providers for clinical care

- NHIN Expansion Is Underway, as are many State and Local projects
  - Special focus on safety net providers – enabling improved care in disadvantaged communities and rural areas
KP/VA is the first NwHIN production exchange for treatment purposes

NwHIN Exchange is valuable for patients and clinicians
• Clinical benefits of instant information at the point of care
• Improved patient safety and avoidance of life-threatening events
• Patients and clinicians value and use reliable information
• Improved disease management and quality of care delivery

NwHIN technical services performed flawlessly in every exchange

Patient volume in the pilot was kept low intentionally while we address the scalability of operational processes for patient opt-in and patient identity correlation
About NwHIN Exchange Production Pilot

Timeline

• September 2009 – first production system status
• December 2009 – first routine exchange operations for treatment
• September and December 2010 – significant technical enhancements
• Q4 2011 – next planned major upgrade, new technical specifications

What information is exchanged

• Patient Demographics, Active Problem List, Medications, Allergies
• Lab results, Immunizations, Vital Signs were added in an upgrade

Patient Authorization

• Patients opt in prior to exchange; may opt out at any time
### VA NwHIN Release Of Information Form Excerpt:

**VETERAN'S REQUEST:** I request and authorize Department of Veterans Affairs to release the information specified below to the organization, or individual named on this request. I understand that the information to be released includes information regarding the following condition(s):

- [ ] DRUG ABUSE
- [ ] ALCOHOLISM OR ALCOHOL ABUSE
- [ ] TESTING FOR OR INFECTION WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV)
- [ ] SICKLE CELL ANEMIA

**INFORMATION REQUESTED** (Check applicable box(es) and state the extent or nature of the information to be disclosed, giving the dates or approximate dates covered by each)

- [ ] COPY OF HOSPITAL SUMMARY
- [ ] COPY OF OUTPATIENT TREATMENT NOTE(S)
- [ ] OTHER (Specify)

Electronic Health Information required for ongoing care including present and future information (e.g., information created after the date of signature)

**PURPOSE(S) OR NEED FOR WHICH THE INFORMATION IS TO BE USED BY INDIVIDUAL TO WHOM INFORMATION IS TO BE RELEASED**

Treatment and continuity of care

### KP NwHIN Release Of Information Form Excerpt:

**INFORMATION TO BE DISCLOSED**

Information concerning the medical history, treatment, or condition of the member / patient, including physical and mental illness. The disclosure may include, for example, applicable information, if any, about alcohol / drug abuse, sexually transmitted diseases, HIV and genetic information such as genetic test results and family medical history.

The **recipient may use the health information disclosed pursuant to this authorization for the following purposes only:** Treatment and continuity of care.
HHS/HITSP’s data specifications (HL7 CDA and CCD) were much easier to implement than expected.

Standard content specifications and data integrity are critical to patient safety.

Patient ID matching is currently the biggest unsolved issue
- Affects scalability of data sharing broadly, not only in this exchange
- Joint work among Participants underway to address identity management

Operational processes for patient opt-in need to be streamlined and automated.
Alignment of Incentives
  • Quality of care and patient safety as drivers for production exchange

Data Use Agreement - NwHIN Data Use And Reciprocal Support Agreement (DURSA) multiparty agreement
  • Describes permitted purposes for data exchange; duty to respond exists only for treatment purposes
  • Strong breach notification, privacy and security requirements
  • Dispute resolution, liability and governance terms are spelled-out

Data Content
  • Use of the HITSP C32 specification enables interoperability
The NwHIN Exchange technology supports the widest variety of use cases

- Institutional provider use cases for treatment purposes (query-response)
- Direct use cases for treatment purposes (direct push)
- May be used in the future for non-treatment purposes when legally authorized: administrative, public health, quality, research

Growth of the NwHIN Exchange

- There is a long queue of health care institutions ready to implement
- Government should remove barriers such as the current federal contract requirement
- Suitable for safety net, NwHIN Exchange should be promoted and encouraged widely
April 6, 2011: Mayo Clinic, Geisinger Health System, Kaiser Permanente, Intermountain Healthcare, and Group Health Cooperative Announce Plan to Securely Share Patient-Specific Data Through Care Connectivity Consortium

- The goal of the consortium is to demonstrate better and safer care with better data availability.
- Committed to sharing complete medical record data for treatment purposes, starting with critical continuity of care data elements and expanding the data set over time.
- Using national standards, same as NwHIN Exchange

Status: Collaborative work towards production operations is proceeding according to the plan announced April 6th

- Future: consideration of expansion to additional public and private care providers for data exchange for treatment purposes
- Future: consideration of additional use cases

CCC does not enable unrestricted access to medical records
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<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>CCD</td>
<td>Continuity of Care Document Standard</td>
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<td>CDA</td>
<td>Clinical Document Architecture</td>
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<td>CMT</td>
<td>Convergent Medical Terminology</td>
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<td>American Medical Association’s Current Procedural Terminology</td>
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<td>C32</td>
<td>Current US National Standard For Longitudinal Summary Care Record Content &amp; Format</td>
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<td>NwHIN</td>
<td>Nationwide Health Information Network</td>
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<td>SNOMED CT</td>
<td>Systematized Nomenclature of Medicine - Clinical Terms</td>
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<tr>
<td>VA</td>
<td>US Department of Veterans Affairs, Veterans Health Administration</td>
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