



Patient Care Coordination

IHE Vendor's Workshop 2007

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Patient Care Coordination

- Support profiles addressing integration issues that cross providers, patient problems or time.
- Deals with general clinical care aspects rather than technology infrastructure.
- Addresses workflows and information sharing needs that are common to multiple specialty areas.
- Started in 2005 and now supports 9 Content Profiles

A content profile is...

- **A sharable information component that can be exchanged...**
 - within an HIE or RHIO (XDS)
 - via Media or USB Device (XDM)
 - via Reliable Messages (XDR)
- **Document content using standards**
 - CDA Release 2.0
 - HL7 Care Record Summary
 - ASTM/HL7 Continuity of Care Document
- **Library of Reusable Parts**

PCC Content Profiles

Standards and Profiles Used

- CDA Release 2.0
- HL7 Care Record Summary
- ASTM/HL7 Continuity of Care Document
- XDS/XDR/XDM
- Notification of Document Availability
- Document Digital Signature
- XHTML 1.0
- XSLT 1.0

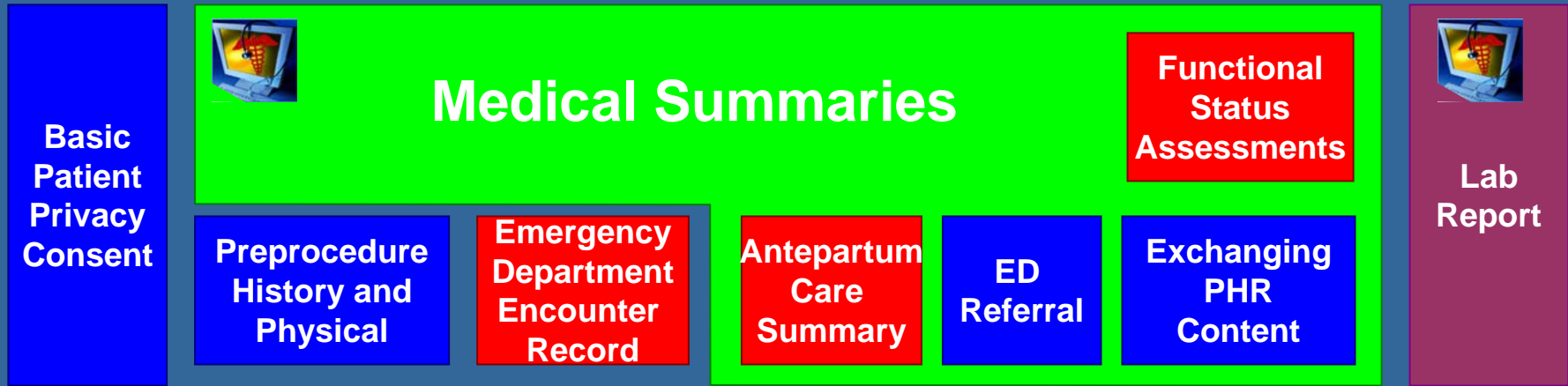
PCC Content Profiles

Key Technical Properties

- Human Readable
- Machine processable
- Digital Signature Enabled
- Can be shared multiple ways
 - RHIO or HIE (XDS)
 - CD or USB Media (XDM)
 - Point to Point (XDR)

PCC Profiles

Content



Integration

Query for Existing Data

2005-06
2006-07
2007-08



- Among 30 Consensus Standards Recommended by HITSP and accepted by HHS Secretary Leavitt.



Antepartum Summary Profile

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Anne Diamond

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Use Case

- Pregnant diabetic patient is seen by obstetrician in office for initial visit.
- Ultrasound performed to determine gestational age.
- Patient sent for perinatology consult as a high risk patient.
- Patient returns to perinatologist biweekly for blood testing and ultrasounds when necessary in addition to regular ob visits.
- Perinatologist reports back to obstetrician after each visit.
- Patient arrives at labor and delivery at the hospital.
- Obstetrician delivers by Cesarean Section after anesthesia.
- Obstetrician provides postpartum care.

Scope

- **Capability to electronically communicate pertinent patient history, treatment, lab and imaging information collected over the course of a pregnancy to care providers and institutions (ambulatory, hospital, specialist, etc.) via perinatal, ambulatory and inpatient EHR systems**

Value Proposition

- **Over 4 million live births per year in US**
- **Obstetric patients must have a complete summary of antepartum care available for all care providers and at admission for labor and delivery.**
- **Incomplete information can be a danger to the mother and child and result in injury, inadequate treatment or undesirable outcome.**

Key Technical Properties

- Use of folders that can contain multiple documents
- Use of an update model for the Visit Summary Flowsheet

Standards Used

- **ACOG Antenatal Form**
- **Medical Summary (MS)**
- **XD-Lab**
- **Clinical Document Architecture Release 2.0 (CDA R2)**
- **Cross Enterprise Document Sharing (XDS)**
- **Document Digital Signature (DSG)**
- **LOINC**
- **SNOMED**
- **Notification of Document Availability (NAV)**

Functional Status Assessment

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Use Case

- **The Institute of Medicine has determined that a high risk for errors occurs during the transfer of care.**
- **The Functional Status Assessment Profile (FSA) supports the handoff of assessment information between practitioners during transfers of care, cross-enterprise or intra-enterprise.**
- **Transfer of physician documentation provides medical assessment, diagnosis and treatment information.**
- **Transfer of nursing documentation provides assessment and treatment of human response (psychosocial, physiologic, emotional and spiritual) of patient/family to changing conditions.**

Key Technical Properties

Considerations for scales

- Scales chosen are evidence based with strong reliability and validity.
- Widely accepted cross-enterprise or required/recommended by accrediting agencies

Content Scales

- Numeric Rating Scale (NRS-11) for Pain
- Braden Scale for Predicting Pressure Sore Risk©
- Geriatric Depression Scale (GDS)
- Minimum Data Set – Section G

Standards Used

- **Continuity of Care Document (CCD)**
- **Logical Observation Identifiers Names and Codes (LOINC)**
- **Systematized Nomenclature of Medicine Clinical Terms (SNOMED-CT)**

In context of Continuity of Care Document, the functional status is the patient's status at the time the document was created. Medical Summary or XPHR Extract will contain FSA if available.

Value Proposition

- **Early intervention by practitioners viewing EHR minimizes complications and reduces length of stay.**
- **Ensure pertinent data is available at the time of transfer without concern about lost data.**
- **Complete information about patient's clinical or home status promotes safety, adequate after-care, improved outcomes and patient satisfaction.**
- **Admitting nurse can plan for appropriate staffing resources based on patient acuity. (Resource maximization)**
- **Continuity of interdisciplinary plan of care promotes early discharge and increased patient satisfaction.**

* Healthcare Outcomes

Standards Used

HL7 Version 3.0 Care Record DSTU

HL7 Version 3.0 Care Record Query DSTU

ASTM/HL7 Continuity of Care Document (CCD)

Web Services Description Language (WSDL)

Simple Object Access Protocol (SOAP)

Extensible Markup Language (XML)

LOINC

SNOMED



Emergency Department Encounter Record

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Todd Rothenhaus, American College of Emergency Physicians

Keith W. Boone, GE Healthcare



Use Case

1. The patient undergoes assessments by a triage nurse, is assigned a triage category (i.e. emergent, urgent, non-urgent).
2. The patient is then registered and demographic data is obtained.
3. The patient undergoes additional assessments by a primary RN,
4. The patient is seen by an ED physician who performs a history and physical, orders various diagnostic tests, determines a course of therapy, orders medications to be administered in the ED and performs procedures on the patient.
5. Upon completion of ED care, the patient is either admitted to the hospital, discharged from the ED, or transferred to another facility.

Scope

- **Emergency Department Information Systems (EDIS)**
- **Inpatient EHR Systems**
- **Ambulatory EHR Systems**

Value Proposition

- The Centers for Disease Control and Prevention (CDC) estimates that there were over 110 million emergency department visits in 2004
- ED visits account for as much as 40% of hospital admissions
- The ED Chart is the most common medical summary in use today
- This profile supports sharing of the clinical information in the ED chart with inpatient care providers and the patient's primary care physician.

Query for Existing Data Profile

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Use Cases

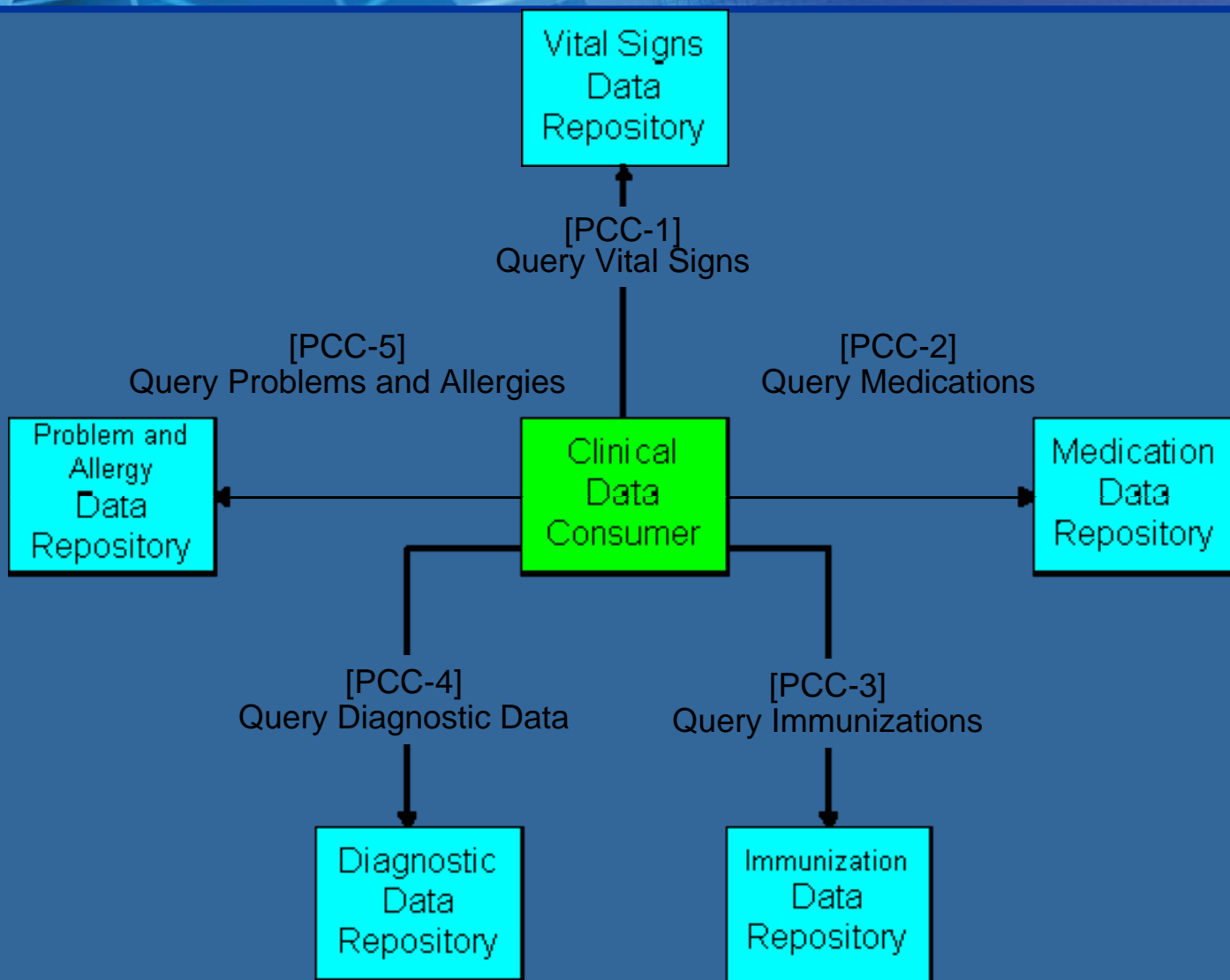
Exchange of information between Data Repositories and Clinical Data Consumers for:

1. Drug Safety
2. Public Health, Biosurveillance and Disease Registries
3. Identifying Qualifying Patients
 1. Clinical Trials
 2. Disease Management
4. Quality Reporting
5. Claims Submission

Scope

- **Problems and Allergies**
 - Disease Registries, EHR Systems
 - **Vital Signs**
 - Monitoring Systems, EHR Systems
 - **Diagnostic Results**
 - Laboratory and Radiology Information Systems, EHR Systems
 - **Medications**
 - Pharmacy, EHR Systems
 - **Immunizations**
 - Immunization Registries, EHR Systems
- Decision Support Systems**

Actors and Transactions



Key Technical Properties

- **Support for Web Services and SOA Architecture**
- **Use of one standard for all queries**
- **Reuse of PCC Technical Framework Templates**
- **Compatibility with ASTM/HL7 CCD**

Value Proposition

Typical institutions have a large number of interfaces (30 – 60 or more) to manage, at a cost of \$10,000 to \$20,000 per year per interface. Few HL7 Version 2.X interfaces provide any query capabilities.

Supporting a single standard to query clinical information is expected to reduce the overall costs of hooking together discrete clinical information systems.

Patient Care Coordination

Schedule for 2007-2008 Season

Development Schedule

Planning Committee decision:	January 2007
Issue Public Comment version:	June 17 2007
Public Comment Due:	July 17 2007
Issue Trial Implementation version:	August 17 2007
Planning for 2008-2009 Season:	Oct-Nov 2007
TC Face to Face for 2008-2009:	Nov-Dec 2007
IHE Connectathon:	January 2008
HIMSS Demo:	February 2008

Face-to-face PCC Technical committee

- to prepare 2007 work items
- held in RSNA headquarters Chicago

July 23-27 2007 Prepare trial implementation version

References

<http://wiki.ihe.net>

<http://www.ihe.net>



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