



# Pathfinding Session: IT Infrastructure and Patient Care Coordination

**IHE North America Webinar Series 2008**

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# Learning Objectives

## Your Product:

- What Profiles may be relevant?
- What do the Profiles do?
- If the relevance isn't clear, Ask now.

## Goal:

Help you decide which detailed webinars to attend

# Why Are IT Infrastructure and Patient Care Coordination Presented Jointly ?

- Implementations are “joined at the hip”
- Principally PCC focused on clinical content; ITI focused on infrastructure
  - but it’s actually a Venn diagram
- PCC profiles championed by clinicians to support clinical integration; ITI profiles necessary IT components to support the desired secure interchange
- PCC and ITI profiles are often co-developed or are a development “tag team” spanning successive IHE cycles

# Product Classes Targeted

- **Ambulatory and In-Patient Electronic Health Record Systems (EHRs / EMRs)**
  - both Primary Care and Specialty Care
- **Emergency Department Information Systems (EDIS)**
- **Personal Health Record Systems (PHRs)**
- **Infrastructure Systems/Modules Supporting Health Information Exchange**



# Infrastructure *supporting* Health Information Exchange

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# IHE IT Infrastructure

- **ITI Profiles**

- designed to provide infrastructure support to “content” profiles developed for the other clinical domains
- profiles providing infrastructure to the Patient Care Coordination domain fall into the following categories...

- **Patient Identity Management**

- **Transport for Health Information Exchange**

- **Security and Privacy Services**

- **Special content**



# Patient Identity Management

- **PIX – Patient Identifier Cross Referencing**
  - management of patient identifiers amongst hospitals, sites, HIE networks
- **PDQ – Patient Demographics Query**
  - facilitates the retrieval of patient information from a central server
- **Characteristics**
  - client and server components
  - supports HL7v2 & HL7v3 infrastructures

# Transport for Health Information Exchange

- **XDS – Cross Enterprise Document Sharing**
  - registration and sharing of EHR documents amongst healthcare enterprises
- **XDM – Cross Enterprise Document Media Interchange**
  - transfer of XDS documents and metadata using media (CD, USB, email attachments)
- **XDR – Cross Enterprise Document Reliable Interchange**
  - document exchange using point-to-point networks
- **Characteristics**
  - Two modes of transport: OASIS/ebXML (xds.a) and Web Services (xds.b)
  - Content neutral: support for structured and unstructured MIME types (PDF, CDA, DICOM images, etc.)

# IHE Security and Privacy Services

- **CT – Consistent Time**
  - auto-synchronize system clocks
- **ATNA – Audit Trail & Node Authentication**
  - record HIPAA events; use security certificates
- **BPPC – Basic Patient Privacy Consent**
  - allows the setting up and access to patient consent directives
- **XUA – Cross-Enterprise User Assertions**
  - conveys user assertions to enable access control

# Special Content Profiles

- **XDS-SD – Cross Enterprise Sharing of Scanned Documents**
  - support for exchange of “unstructured” or scanned content for all disciplines
- **RFD – Retrieve Form for Data Capture**
  - facilitating the capture of data within an EHR application to support clinical trials

# Recommended Webinar Sessions

<b>ITI Profiles</b>	<b>Date &amp; Time</b>
XDS.a, XDS.b, XDR, XDM	July 22, 2008 Q1
XDS-SD	July 22, 2008 Q2
ATNA, BPPC, XUA	July 22, 2008 Q3

# Ambulatory and In-Patient EHR Systems

- PCC profile support related in part to targeted market segments
- Primary Care practices in role as aggregator of longitudinal patient record information increases profile support requirements
- Depending on the profile, may be required to participate as an information source, information consumer, or both

## Mandatory IT Infrastructure Client for:

- PIX/PDQ, XDS/XDR/XDM, CT, ATNA, BPPC, XUA

# Ambulatory EHR Systems

## Patient Care Coordination Content Profiles

- **Medical Summary (XDS-MS) [Source/Consumer]**
  - A CDA-based medical summary for exchanging a PCP-Specialist Referral or a Discharge Summary from an acute care / inpatient care setting
- **Emergency Department Referral (EDR) [Source]**
  - A special variation on a MS for referring a patient to the Emergency Department
- **Emergency Department Encounter Summary (EDES) [Consumer]**
  - A special variation on a MS for describing an encounter in the Emergency Department
- **Antepartum Summary (APS) [Source]**
  - A documentation set supporting a pregnant woman's admittance to an acute care setting for the purposes of Labor & Delivery
- **Antepartum Record (APR) [Source]**
  - Describes the content and format of the data that is relevant to the course of antenatal care e.g. history and physical, laboratory results, visit summary information, medical summary information, etc
- **Personal Health Record Exchange (XPHR) [Source/Consumer]**
  - A special variation on a MS for the exchanging of a patient's health information with a consumer-owned health record system

# In-Patient EHR Systems

## Patient Care Coordination Content Profiles

- **Medical Summary (XDS-MS) [Source]**
  - A CDA-based medical summary for exchanging a PCP-Specialist Referral or a Discharge Summary from an acute care / inpatient care setting
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- **Personal Health Record Exchange (XPHR) [Source/Consumer]**
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# In-Patient EHR Systems

## Patient Care Coordination and Other Domain's Integration Profiles

- **Functional Status Assessments (FSA, Patient Care Coordination)**  
*[Source/Consumer]*
  - Describes the clinician documentation set to support the transfer of a patient between different acute care / hospital / emergency department care settings
- **Device to Enterprise Communication (DEC, Patient Care Devices)**  
*[Consumer]*
  - Defines the format and content for exchanging information from patient monitoring devices
- **Laboratory Testing Workflow (LTW, Laboratory)** *[Order Source, Result Tracker]*
  - Integrates ordering and performance of in-vitro diagnostic tests by a clinical laboratory inside a healthcare institution.
- **Scheduled Work Flow (SWF, Radiology/Cardiology)** *[Order Source]*
  - Integrates the ordering, scheduling, imaging acquisition, storage and viewing activities associated with radiology exams.

**(Plus IT Infrastructure profiles as described in the IT Infrastructure for Intra-Enterprise presentation)**

# Ambulatory and In-Patient EHR Systems

## Patient Care Coordination Content Profiles (cont'd)

- **Care Management (CM) [Source]**
  - An overarching profile representing the set of information content definitions to communicate to Care Management systems in support of specialized care programs, e.g. immunization Registries, Cancer Registries, etc
- **Immunization Content (IC) [Source]**
  - Part of the CM suite of content profiles which defines the standard immunization data set for exchanging this information with public health systems or other Immunization Information Systems
- **Cancer Registry Pathology Report Content (CPR) [Source]**
  - Part of the CM suite of content profiles which defines a completed pathology report to be sent to a cancer registry system

# Ambulatory and In-Patient EHR Systems

## Patient Care Coordination and Other Domain's Integration Profiles

- **Cross-Enterprise Sharing of Scanned Documents (XDS-SD, IT Infrastructure) [Source/Consumer]**
  - Describes the transport and content for the exchange of “unstructured” or scanned content
- **Query Evidence Documents (QED, Patient Care Coordination) [Source/Consumer]**
  - Describes how information systems are to query data repositories for clinical information on vital signs, problems, medications, immunizations, and diagnostic results
- **XDS for Imaging (XDS-I, Radiology) [Consumer]**
  - Defines the transport and the content for the exchange and presentation of clinical images to non-radiology entities
- **Portable Data for Imaging (PDI, Radiology) [Consumer]**
  - Defines the format and content for the exchange and presentation of clinical images transferred via physical media
- **Sharing Laboratory Report (XD-Lab, Laboratory) [Consumer]**
  - Describes the content (human and machine readable) of an electronic clinical laboratory report (used in conjunction with the XDX/XDR/XDM profile suite for transport)
- **Eye Care Displayable Report (ECDR, Eye Care) [Consumer]**
  - Describes the creation, query/retrieve and reading of ubiquitous display-ready eye care reports

Plus IT Infrastructure profiles noted earlier

# Emergency Department Information Systems

- **Required to provide a health data exchange with both Ambulatory EHR systems and Inpatient / Hospital Information systems**
  - responsibility to support profiles from both types of care setting
- **Depending on the profile, may be required to participate as an information source, information consumer, or both**

## **Mandatory IT Infrastructure Client for:**

- **PIX/PDQ, XDS/XDR/XDM, CT, ATNA, BPPC, XUA**

# Emergency Department Information Systems

## Patient Care Coordination Content Profiles

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# Emergency Department Information Systems

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Plus IT Infrastructure profiles noted earlier

# Emergency Department Information Systems

## Patient Care Coordination and Other Domain's Integration Profiles – Intra-Enterprise Focus

- **Functional Status Assessments (FSA, Patient Care Coordination)**  
*[Source/Consumer]*
  - Describes the clinician documentation set to support the transfer of a patient between different acute care / hospital / emergency department care settings
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**(Plus IT Infrastructure profiles as described in the IT Infrastructure for Intra-Enterprise presentation)**

# Personal Health Record Systems

- **Classes of PHRs required to support IHE profiles are the free-standing and networked type (“tethered” PHRs are typically portals to Ambulatory/In-patient EHRs or other parent systems)**
- **IHE profile support expanding to reflect increased role of the consumer in their overall health management**
- **Depending on the profile, may be required to participate as an information source, information consumer, or both**

## **Free-standing PHR: Mandatory IT Infrastructure Client for:**

- **XDM, CT, ATNA**

## **Networked PHR: Mandatory IT Infrastructure Client for:**

- **PIX/PDQ, XDS/XDR, CT, ATNA, BPPC, XUA**

# PHR Systems

## Free-standing and Networked Class of PHRs

- **Personal Health Record Exchange (XPHR) [Source/Consumer]**
  - A special variation on a MS for the exchanging of a patient's health information with a consumer-owned health record system
- **Portable Data for Imaging (PDI, Radiology) [Consumer]**
  - Defines the format and content for the exchange and presentation of clinical images transferred via physical media

Plus IT Infrastructure profiles noted earlier

## Networked Class of PHRs

- **Cross-Enterprise Sharing of Scanned Documents (XDS-SD) [Source/Consumer]**
  - Describes the transport and content for the exchange of “unstructured” or scanned content
- **XDS for Imaging (XDS-I, Radiology) [Consumer]**
  - Defines the transport and the content for the exchange and presentation of clinical images to non-radiology entities
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<b>Domain</b>	<b>Profiles</b>	<b>Date &amp; Time</b>
<b>ITI</b>	<b>XDS.a, XDS.b, XDR, XDM</b>	<b>July 22, 2008 / Q1</b>
	<b>XDS-SD</b>	<b>July 22, 2008 / Q2</b>
	<b>ATNA, XUA, BPPC</b>	<b>July 22, 2008 / Q3</b>
<b>PCC</b>	<b>XDS-MS, XPHR, EDR, EDES, APS/APR, FSA</b>	<b>July 16, 2008 / Q1</b>
	<b>QED, CM, IC, CPR</b>	<b>July 16, 2008 / Q3</b>
<b>Radiology</b>	<b>SWF, PDI</b>	<b>June 24, 2008 / Q1</b>
	<b>XDS-I</b>	<b>June 24, 2008 / Q2</b>
<b>Eye Care</b>	<b>ECDR</b>	<b>June 24, 2008 / Q3</b>
<b>Laboratory</b>	<b>XD-Lab, LTW</b>	<b>July 8, 2008 / Q1</b>
<b>Patient Care Devices</b>	<b>DEC</b>	<b>July 8, 2008 / Q2</b>

# Resources: [www.ihe.net](http://www.ihe.net)

## Web Resources:

- [http://www.ihe.net/north\\_america/connectathon2009.cfm](http://www.ihe.net/north_america/connectathon2009.cfm)  
Info on Connectathon 2009 including timeline, Webinar schedule and recorded sessions
- [http://www.ihe.net/Technical\\_Framework/index.cfm](http://www.ihe.net/Technical_Framework/index.cfm)  
IHE Technical Frameworks and Supplements
- <http://www.ihe.net/profiles/index.cfm>  
Overview of IHE profiles and brief descriptions
- <http://wiki.ihe.net/index.php?title=Profiles>  
More detailed descriptions of many profiles
- [ihe@himss.org](mailto:ihe@himss.org), [ihe@rsna.org](mailto:ihe@rsna.org)  
Inquire about Connectathon, committee participation, IHE membership, etc.