

# Incremental Interoperability (II)

George Cole  
Principal Scientist, Integrated Solutions  
Allscripts



# Incremental Interoperability (II)

- Where we started
- What we have today: pros and cons
- Why we need to move forward
- How you can get Involved

# Starting with Integration

- **Billing Systems**
- **Laboratory Information Systems**
- **Radiology and Cardiology Systems**
- **Order Entry Systems**
- ...
- **Systems Integration**
- **HL7**

# Interoperability - Evolving

- *Functional interoperability*  
the capability to reliably exchange information without error.
- *Semantic interoperability*  
the ability to interpret, and, therefore, to make effective use of the information so exchanged.
  - Source: IEEE Standard Computer Dictionary: A Compilation of IEEE Standard

# Incremental Interoperability

- Human readable content is required
- Discrete elements are optional
- Sources provide details as per their capabilities
- Consumers show human readable content
- Consumers handle discrete data as per their capabilities and its presence

# Document Review

## Reason for Referral

No Reason for Referral was given.

## History of Present Illness

No HPI available.

## Problems

- Normal Routine History And Physical Geriatric (80 +) (V70.0) Active
- Fever (780.6) Active
- Abdominal Pain (789.00) Active
- Diarrhea (787.91) Active

## Reason for Referral

No Reason for Referral was given.

## History of Present Illness

No HPI available.

## Problems

- Normal Routine History And Physical Geriatric (80 +) (V70.0) Active
- Fever (780.6) Active
- Abdominal Pain (789.00) Active
- Diarrhea (787.91) Active

## Allergies and Adverse Reactions

- Penicillins: Active

# XDS-MS Medical Summary or PHR Extract Exchange

Profile based on HL7 CDA Rel 2 and ASTM/HL7 CCD

**Structured and Coded Header**  
 Patient, Author, Authenticator, Institution,  
 Time of Service, etc.

Structured Content with coded sections:

- Reason for Referral
- Vital Signs
- Medication



- Studies
- Allergies



- Social History
- Problems



- Care Plan

**Level 1** → Header always structured and coded

**Level 2** → Title-coded sections with non-structured nor coded content (text, lists, tables).  
 → Simple Viewing (XML Style sheet)

**Level 3** → Med, Problems and Allergies as highly structured text.  
 → Text easy to import/parse

**Level 3** → Med Problems and Allergies have a fine-grain structure with optional coding. Coding Scheme explicitly identified.

**XDS-MS and XPHR enable both semantic interoperability & simple viewing !**

CCHIT 08

CCHIT 09

# Incremental Interoperability

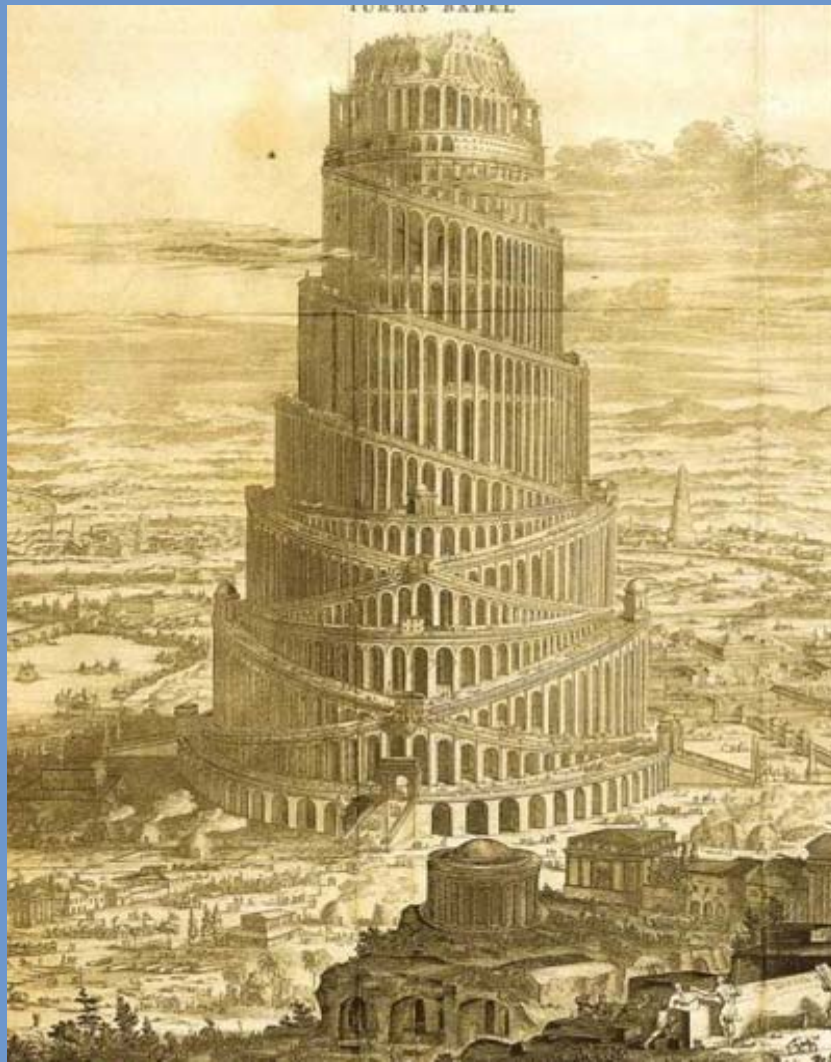
- **Lowers the participation barriers**
- **Encourages breakdown of data silos**
- **Providers may find human readable text beneficial**
- **Systems work to their capabilities without impact on others**
- **Easy for iterative improvement**

# Incremental Interoperability

- Over time you open up the data fire hose
- Drown Providers in Information
- Reduce Provider Satisfaction
- Reduce Data Integrity
- May Increase Liability

# What do we have here ?

- Jan 6, 2008: Hemoglobin A1c--10.5
- March 15, 2008: Glycosylated Hemoglobin--9.8
- July 21, 2008: HbA1C--9.4
- Nov 16, 2008: A1C--9.1



# Moving to Semantic Interoperability

- **Functional Interoperability is the foundation**
- **Incremental Interoperability is an optional step**
- **Common Information Exchange Reference Model is necessary**
- **Contents must use defined vocabularies**

# IHE Profiles

- **XD\* family for transport**
  - XDS for Communities
  - XDM for Patients
  - XDR for point-to-point
- **IHE Content Profiles and HL7 work based on the CDA**
  - CDA – R2
  - CCD
  - C32

IHE Profiles are  
consistent with HHS  
Accepted Standards  
(HITSP Interoperability  
Specifications)

**HITSP Interoperability Specifications and  
supporting IHE Profiles**

<b>Electronic Health Record</b> Laboratory Test Results <b>IS-01</b>  NAV - PDQ - PIX - XCA - XD*Lab - XDS	<b>Emergency Responder</b> <b>IS-04</b>  ATNA - CT - EDES - PDQ - PIX XCA - XDS - XDS-MS - XUA
<b>Biosurveillance</b> <b>IS-02</b>  NAV - PIX - PIX - RFD - XD*Lab	<b>Consumer Empowerment and Access to Information via Media</b> <b>IS-05</b>  ATNA - CT - PDQ - PIX XD*Lab - XDM - XUA
<b>Consumer Empowerment</b> Registration and Medication History <b>IS-03 v2.1</b>  XCA - XDS - XDS-I - XDS-MS XCA - XDS - PIX - PDQ	<b>Quality</b> <b>IS-06</b>  ATNA - CT - DSG - QED XDS-MS - XUA
<b>Consumer Empowerment</b> Access to Clinical Information <b>IS-03 v3</b>  ATNA - BPPC - CT - DSG - PDQ - PIX - XCA - XD*Lab - XDS - XUA	<b>Medication Management</b> <b>IS-07*</b> *still in development  ATNA - BPPC - CT - PDQ - PIX - XCA - XDS - XUA

**Upcoming Use Cases Later in 2008-2009**

Patient Provider Secure Messenger	Immunization and Response Management
Personalized Healthcare	Remote Monitoring
Public Health Case Reporting	Consultations and Transfers of Care

# The Time is Now

- IHE – [ihe.net](http://ihe.net)
- HITSP – [hitsp.org](http://hitsp.org)
- NHIN – [hhs.gov](http://hhs.gov)
- HL7 – [hl7.org](http://hl7.org)

# How can I participate?

## As a Provider or Vendor Contributor

- Offer Clinical Use Case Input to Drive IHE Profile Development
- Become a member of relevant domain's Planning or Technical Committees
- Become a member of relevant Regional/National Committees
- Help to shape IHE's future direction

## As a Vendor Participant

- Respond to Public Comments of Domain Supplements
- Attend the June Educational Workshop
- Participate in Connect-a-thons and Demonstrations

## As a Provider/Consultant Participant

- Respond to Public Comments of Domain Supplements
- Attend the June Educational Workshop
- Attend Demonstrations and include IHE Integration Profiles in your RFPs and Integration Projects.



**iHE**<sup>®</sup> *changing the way healthcare*  
[www.ihe.net](http://www.ihe.net) *connects*

**WWW.IHE.NET**