



# Connecting Payers, Patients and Providers

The Importance of Standards

John D. Halamka MD

CIO, CareGroup

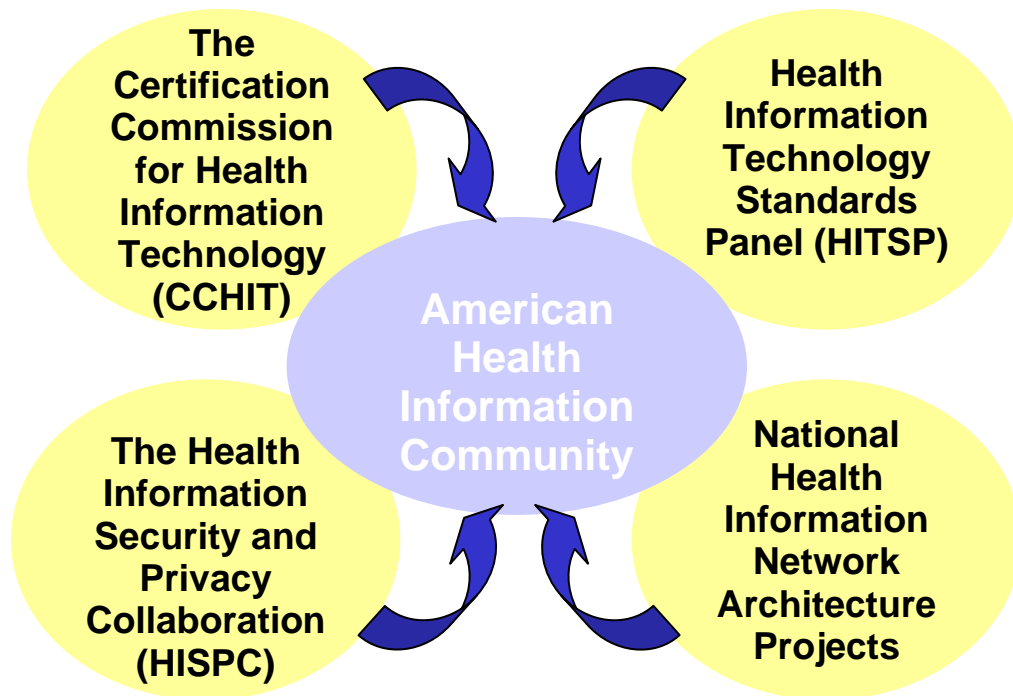
CIO, Harvard Medical School

Chair, NEHEN

CEO, MA-Share

Chair, HITSP

# The National Context



- The Community serves as the hub for identifying breakthrough opportunities
- CCHIT will focus on developing a mechanism for certification of health care IT products
- HITSP will bring together all relevant stakeholders to identify appropriate IT standards
- HISPC is a partnership focused on addressing variations in business policy and state law that affect privacy and security
- NHIN will be focused on interoperability pilots starting in 2006



# Electronic Health Records

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- Demographics
- Laboratory, Radiology and other observations
- Images

**Profile** Results Reports Notes Medications Orders

<b>Address</b> Street: 8 MAIN STREET City: BOSTON, MA 02101 Home: 617-555-1444 Work: 617-222-4578	<b>Insurance</b> REGULAR NEIGHBORHOOD HEALTH PLAN REGULAR MEDICAID - MA. MEDICAID <b>Health Care Proxy</b> <u>No health care proxy chosen</u>	<b>Providers</b> PCP: <a href="#">Sands, Daniel Z. MD</a> Allergy: <a href="#">Sheikh, Javed MD</a> Infectious Disease: <a href="#">Doweiko, John P. MD</a> <a href="#">more...</a>
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**Demographics**

<b>Alerts</b> Patient is <a href="#">anticoagulated</a>	<b>Reminders</b> None	<b>To Do List</b> None
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<p><b>Allergies</b> None on file</p> <p><b>Problem List</b> General Medicine/Primary Care: <a href="#">TENSION HEADACHES</a> 1999 <a href="#">LOW BACK PAIN</a> 2001</p>	<p><b>Outpatient Medications</b> None on File</p> <p><b>Labs</b> (since 03/04/03)</p> <p><b>Outpatient Orders</b> (since 03/04/03)</p> <table border="0"> <thead> <tr> <th>Date filed</th> <th>Order Type</th> <th>By</th> </tr> </thead> <tbody> <tr> <td><a href="#">02/16/2004</a></td> <td>Radiology</td> <td>Sands</td> </tr> <tr> <td><a href="#">02/16/2004</a></td> <td>Referral</td> <td>Sands</td> </tr> <tr> <td><a href="#">02/13/2004</a></td> <td>BMD</td> <td>Sands</td> </tr> <tr> <td><a href="#">02/13/2004</a></td> <td>PT/OT</td> <td>Sands</td> </tr> <tr> <td><a href="#">02/12/2004</a></td> <td>Pulmonary</td> <td>Sands</td> </tr> <tr> <td><a href="#">02/12/2004</a></td> <td>Sleep Study</td> <td>Sands</td> </tr> </tbody> </table>	Date filed	Order Type	By	<a href="#">02/16/2004</a>	Radiology	Sands	<a href="#">02/16/2004</a>	Referral	Sands	<a href="#">02/13/2004</a>	BMD	Sands	<a href="#">02/13/2004</a>	PT/OT	Sands	<a href="#">02/12/2004</a>	Pulmonary	Sands	<a href="#">02/12/2004</a>	Sleep Study	Sands	<p><b>EW Visits</b> (none on file)</p> <p><b>Admissions</b> (none on file)</p> <p><b>Appointments</b> (none since 03/04/03)</p> <p><b>Reports</b> (none on file)</p>
Date filed	Order Type	By																					
<a href="#">02/16/2004</a>	Radiology	Sands																					
<a href="#">02/16/2004</a>	Referral	Sands																					
<a href="#">02/13/2004</a>	BMD	Sands																					
<a href="#">02/13/2004</a>	PT/OT	Sands																					
<a href="#">02/12/2004</a>	Pulmonary	Sands																					
<a href="#">02/12/2004</a>	Sleep Study	Sands																					

**Periodic Screening and Vital Signs**



Profile

Results

Reports

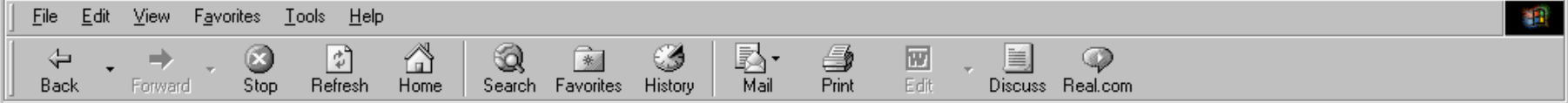
Notes

Medications

Orders

Date	Title	Type	Author	Status	
All	All	DISCHARGE SUMMARY	All	All	All
<a href="#">01/29/2004</a>	Sir/Madam	All	SCRIBNER,LAURA	Signed	Emerg
<a href="#">01/22/2004</a>	TEST	DISCHARGE SUMMARY	ANER,MUSA MD	Unsigned	Pain M
<a href="#">01/14/2004</a>	TEMPLATE EXAMPLE	Initial Note	SANDS,DANIEL Z. MD	Unsigned	Orthop
<a href="#">01/13/2004</a>	Dr. Doweiko	Letter	SANDS,DANIEL Z. MD	Signed	Genera
<a href="#">12/17/2003</a>	TENSION HEADACHES	OPERATIVE REPORT	SANDS,DANIEL Z. MD	Unsigned	Genera
<a href="#">10/28/2003</a>	Mr. Frog	Progress Note	SANDS,DANIEL Z. MD	Unsigned	Genera
<a href="#">10/03/2003</a>	TESTING WEBOMR	Telephone	ROSATO,BARBARA G. RN, CS	Signed	Genera
<a href="#">10/01/2003</a>	Mr. Frog	Letter	ANER,MUSA MD	Unsigned	Pain M
<a href="#">09/26/2003</a>	Dr. Ives	Initial Note	WASILEWSKI,MARCY	Signed	-
<a href="#">09/26/2003</a>	Dr. Parker	Letter	WASILEWSKI,MARCY	Signed	-
<a href="#">09/26/2003</a>	Dr. Ives	Letter	WASILEWSKI,MARCY	Signed	-
<a href="#">09/23/2003</a>	TEST	Letter	WASILEWSKI,MARCY	Signed	-
<a href="#">09/16/2003</a>	Dr. Rind	Initial Note	ANER,MUSA MD	Unsigned	Pain M
<a href="#">09/16/2003</a>	Mr. Frog	Letter	WASILEWSKI,MARCY	Signed	Genera
<a href="#">09/15/2003</a>	Dr. Ives	Letter	WASILEWSKI,MARCY	Signed	Genera
<a href="#">09/13/2003</a>	Dr. Moorman	Letter	SANDS,DANIEL Z. MD	Unsigned	-
<a href="#">09/11/2003</a>	Mr. Frog	Letter	SANDS,DANIEL Z. MD	Unsigned	Genera
<a href="#">09/10/2003</a>	Mr. Frog	Letter	WASILEWSKI,MARCY	Signed	Genera
<a href="#">09/10/2003</a>	Mr. Frog	Letter	WASILEWSKI,MARCY	Signed	Genera

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DISCHARGE SUMMARY

TEST, TEST  
\*\*NOT REVIEWED BY ATTENDING\*\*

Name: FROGG, KERMIT                      Unit No.: 0901910  
Admission Date: 10/28/92                  Discharge Date: 11/05/92  
Date of Birth:                                  Sex: Female  
Service: GYN

HISTORY OF PRESENT ILLNESS: The patient is a 34 year old gravida 0 who presented with lower abdominal pain which was intermittent and approximately every 10 minutes. The patient had undergone a type of in vitro fertilization procedure with a natural cycle where only the ovulated egg is removed by Dr. Taymor three weeks prior to the onset of her pain. Ten days following this procedure she had a bloody discharge consistent with her period and began to feel some right lower quadrant abdominal pain. The patient was thought to have had a tubal infection and was treated with 2 grams per day of Ampicillin every 6 hours. The patient was treated under this regimen for one week without resolution of her symptoms and continuation of a fever as high as to 101.4.

PAST MEDICAL HISTORY: Significant for irregular periods, infertility as well as pelvic reconstructive surgery at Newton-Wellesley Hospital. She had lysis of tubal adhesions at that point. No history of sexually transmitted diseases or intrauterine device placement. No history of known pelvic

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**Allergies** Last Updated on 01/13/04  
 Flagyl (Oral) (Metronidazole); Iodine; Iodine Containing; Sulfa (Sulfonamides)

[View Labs](#)

<input type="checkbox"/> Check All	<u>Medication</u>	<u>First</u>	<u>Latest</u>	<u>Entry</u>	<u>By</u>	<u>Action</u>
<a href="#">Print Med List</a> <a href="#">Print Med Grid</a> <a href="#">New Medication</a>						<b>Checked Meds:</b> <a href="#">D/C</a> <a href="#">Renew</a> <a href="#">Verify</a> <a href="#">Print</a>
<b>Ongoing:</b>						
<input type="checkbox"/>	<b>FLONASE</b> 50MCG Aerosol, Spray One (1)	09/23/2003	01/27/2004	#1 /0	LANDINO,ANTHONY	<a href="#">D/C</a> <a href="#">Renew</a> <a href="#">Change</a> <a href="#">Verify</a> <a href="#">Print</a>
<input type="checkbox"/>	<b>TRAZODONE HCL</b> 100 mg Tablet One (1) Tablet PO once a day.	12/31/2003	12/31/2003	#30 Tablet(s)/2	SANDS,DANIEL Z.	<a href="#">D/C</a> <a href="#">Renew</a> <a href="#">Change</a> <a href="#">Verify</a> <a href="#">Print</a>
<b>Checked Meds:</b>						<a href="#">D/C</a> <a href="#">Renew</a> <a href="#">Verify</a> <a href="#">Print</a>



[Exam List](#)  
[Close Window](#)

Patient Name:  
Patient ID:

Images for reference only



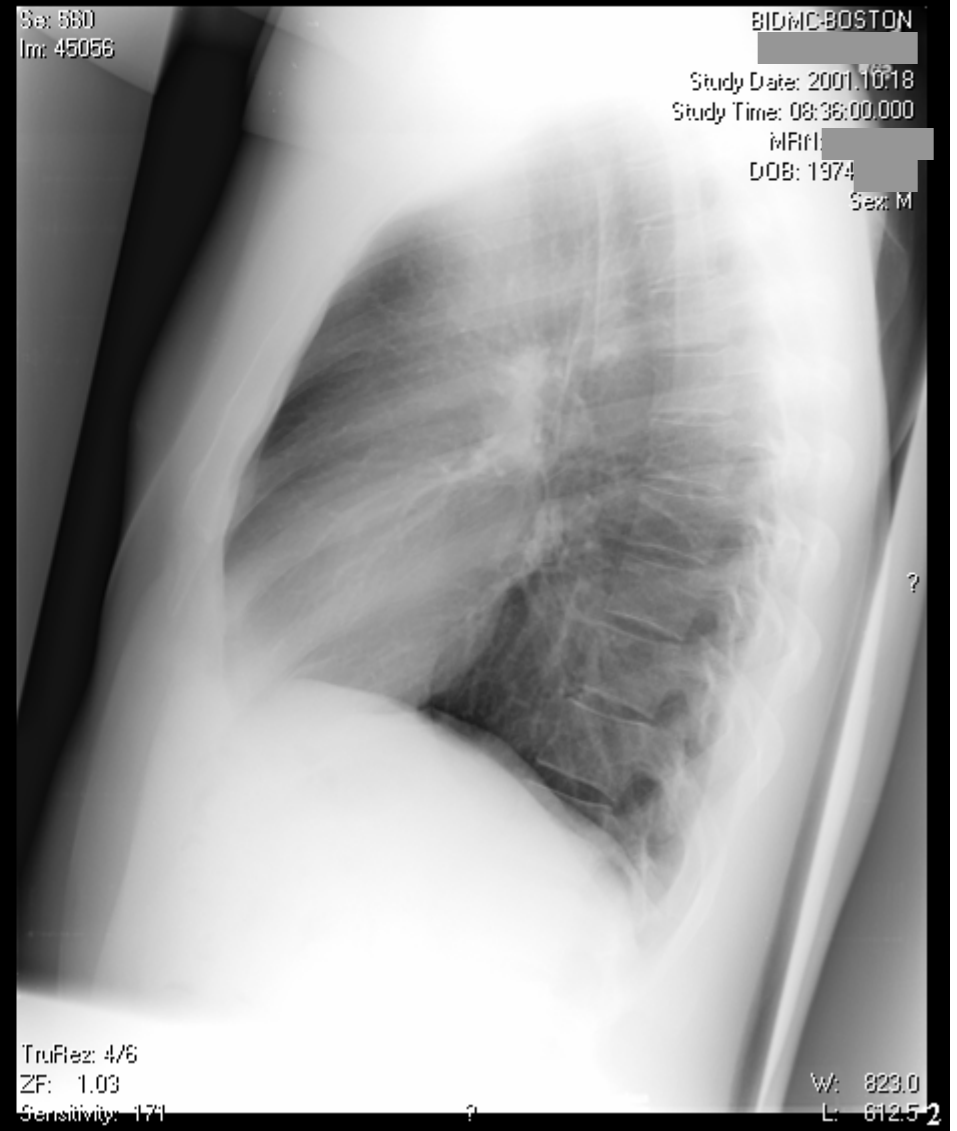
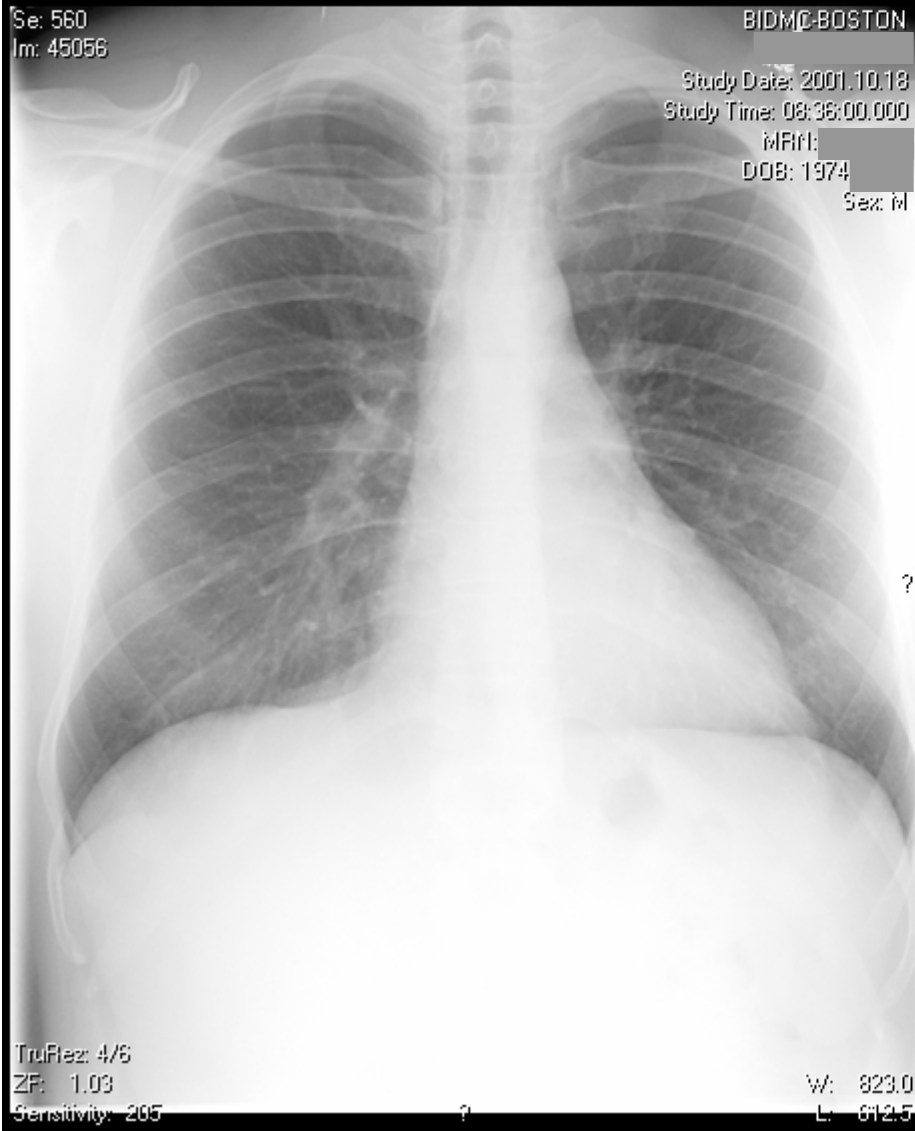
CHEST (PA AND LAT)

2001.10.18 08:36:00.000

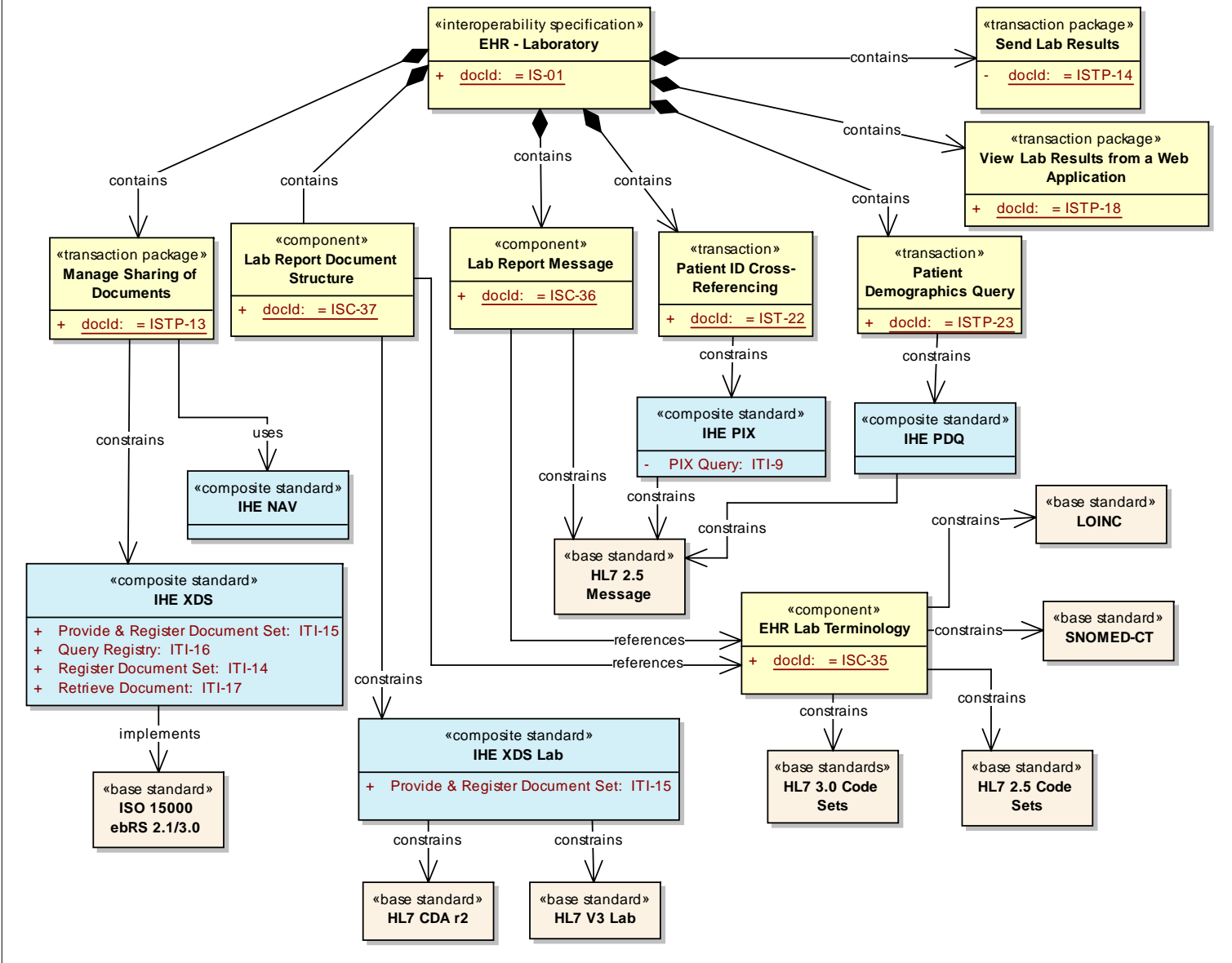
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cd EHR Interoperability Specification





# Personal Health Records

- Shared medical care by involving patients as stewards of their own data
- Full access to electronic medical records including demographics and medications
- Eliminating the Clipboard

*Welcome to*

**PatientSite<sup>®</sup>**

Healthcare you can connect with

***Sign In***

*First Time Here?*

***Take a Tour***

*Want to Join?*

***Register Now!***



**Records of Kermit Frog**

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Check Drug Interactions

02/22/2000	<a href="#">FOLIC ACID 1 MG PO</a> [#30 R5]	ONE TABLET BY MOUTH EVERY DAY	RIND,DAVID	<a href="#">Refill</a>
03/28/2000	<a href="#">IBUPROFEN 400 MG PO</a> [#40 R0]	ONE BY MOUTH THREE TIMES A DAY AS NEEDED -- TAKE WITH FOOD	MITCHELL,NANCY	<a href="#">Refill</a>
02/22/2000	<a href="#">NITROGLYCERIN 400 MCG (1/150 GR) SL</a> [#100 R2]	ONE UNDER THE TONGUE AS NEEDED FOR CHEST PAIN, MAY REPEAT EVERY 5 MINUTES X 2, THEN GOT TO ER IF PAIN PERSISTS	RIND,DAVID	<a href="#">Refill</a>
08/28/2000	<a href="#">LEVOTHYROXINE 50 MCG PO</a> [#30 R5]	ONE TABLET BY MOUTH EVERY DAY	LOONEY,MAUREEN	<a href="#">Refill</a>
08/28/2000	<a href="#">PREDNISONE 2.5 MG PO</a> [#100 R5]	2 BY MOUTH EVERY MORNING AND ONE BY MOUTH EVERY EVENING	LOONEY,MAUREEN	<a href="#">Refill</a>
02/22/2000	<a href="#">ASPIRIN E.C. 325 MG PO</a> [#30 R5]	ONE TABLET BY MOUTH EVERY DAY	RIND,DAVID	<a href="#">Refill</a>
08/28/2000	<a href="#">FLUOXETINE 10 MG PO</a> [#30 R5]	ONE BY MOUTH EVERY DAY	LOONEY,MAUREEN	<a href="#">Refill</a>
08/28/2000	<a href="#">VERAPAMIL SR 240 MG PO</a> [#30 R5]	ONE TABLET BY MOUTH EVERY DAY	LOONEY,MAUREEN	<a href="#">Refill</a>
08/28/2000	<a href="#">ATORVASTATIN CALCIUM 10 MG PO</a>	ONE TABLET BY MOUTH EVERY DAY	LOONEY,MAUREEN	<a href="#">Refill</a>

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## Records of Kermit Frog

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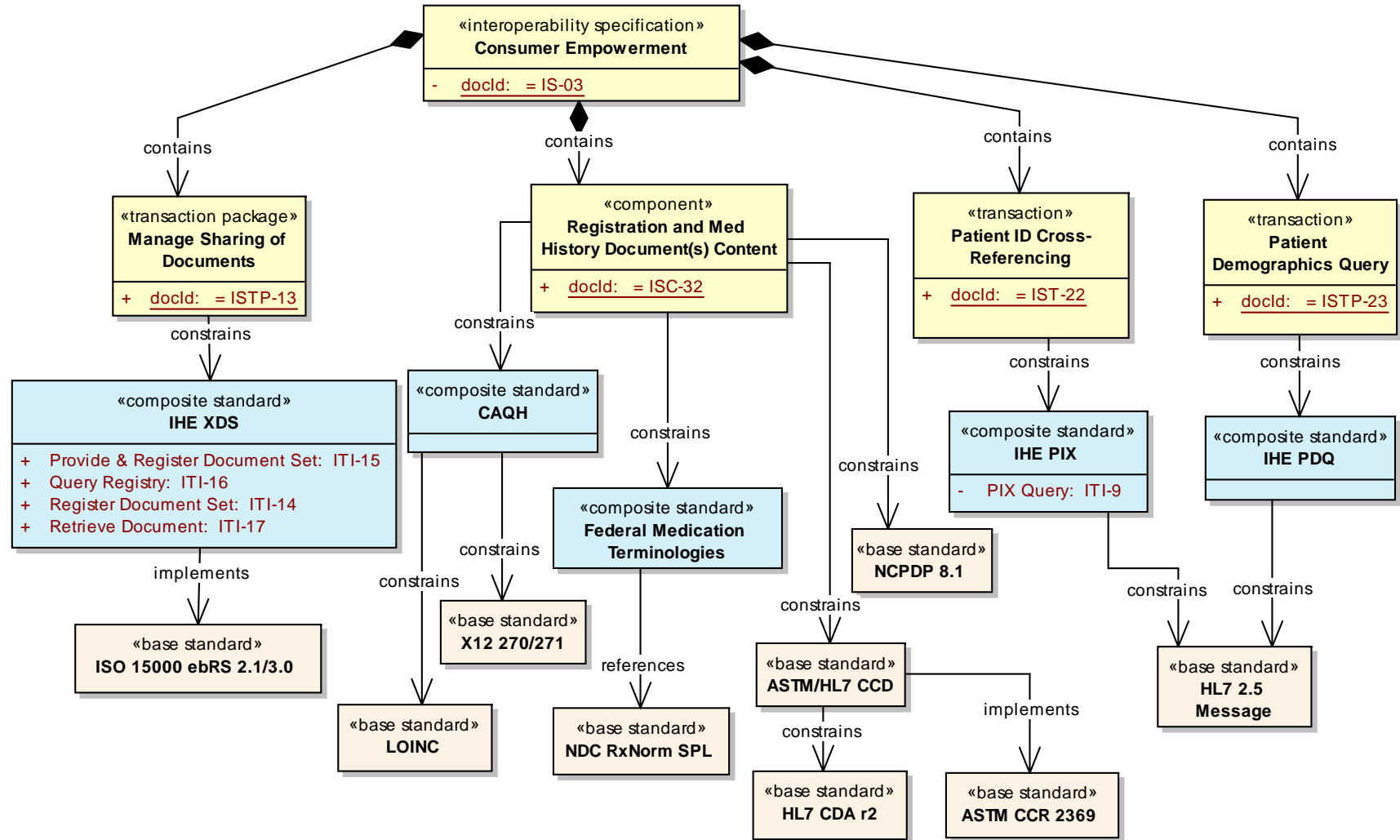
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BACK PAIN  
FALLS  
DEPRESSION  
DEMENTIA  
OSTEOARTHRITIS  
HEMATOLOGIC / ONCOLOGIC  
WEIGHT LOSS  
HYPERCHOLESTEROLEMIA  
GASTROINTESTINAL  
RESPIRATORY  
PULMONARY  
COMPUTER DEMONSTRATIONS  
TINNITUS  
CONSTIPATION  
PSYCHOSOCIAL  
HYPERTENSION  
CLAUDICATION  
DRUG ALLERGIES

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# Biosurveillance

- Gathering de-identified population level information about symptoms
- Re-identifying critical cases
- Implementing controlled vocabularies



SELECT DATE

19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
----	----	----	----	----	----	----	----	----	----	----	----	----	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----

SELECT HOSPITAL/SYNDROME

	MGH	ACH	ALL MA	BEV	BIDMC	CHB
RESP	...					
GI						
RASH						
NEURO						
HEMOR						
ALL						
INJ						

SELECT ABERRATION

Aberrations For Current Selection

... MGH RESP 9/7 [details](#) [report](#)

Other Aberrations

... MGH RESP 9/7 [details](#) [report](#)

... MGH RESP 9/6 [details](#) [report](#)

... CHB RESP 8/26 [details](#) [report](#)

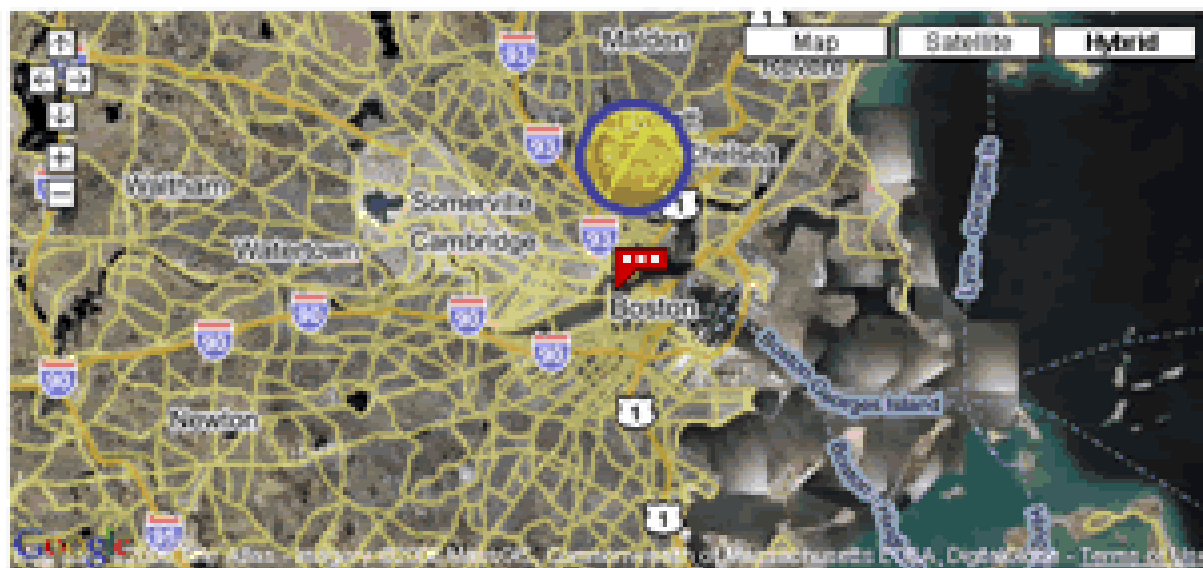
SSHOPE GI 9/1 [details](#) [report](#)

LEGEND

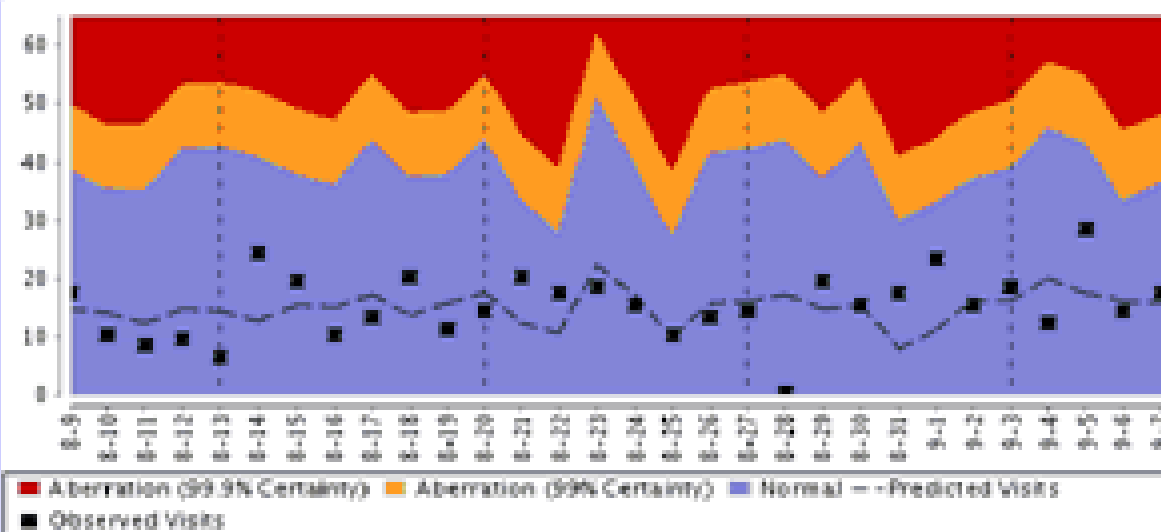
Active	Inactive	
<span style="background-color: blue; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	<span style="background-color: gray; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	- Normal
<span style="background-color: orange; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	<span style="background-color: gray; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	- Aberration (99% Certainty)
<span style="background-color: red; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	<span style="background-color: gray; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	- Aberration (99.9% Certainty)
<span style="background-color: white; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	<span style="background-color: white; border: 1px solid black; display: inline-block; width: 15px; height: 10px;"></span>	- Result not yet available
		S/T - Spatial/Temporal Aberration

Help

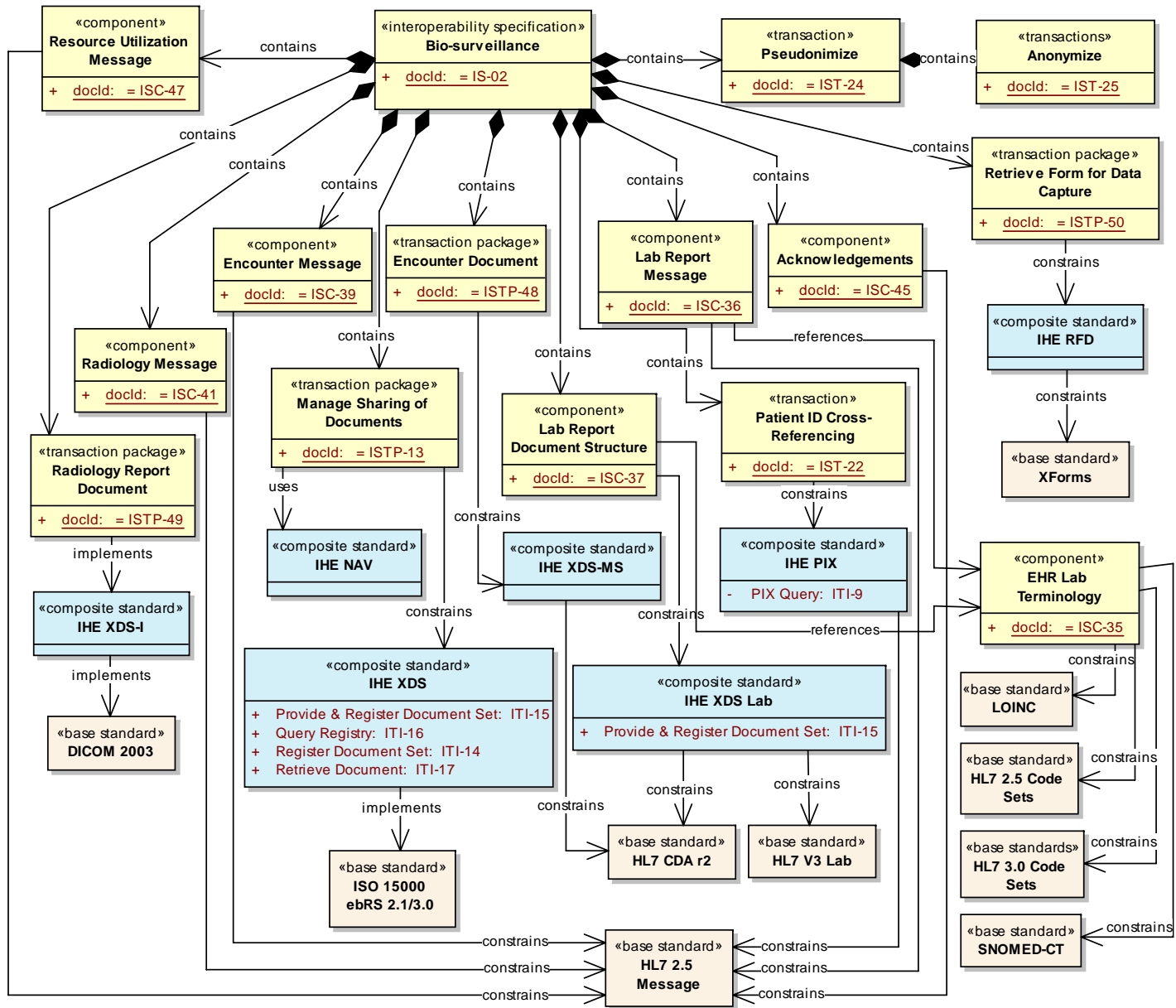
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TEMPORAL HISTORICAL



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# Summary

- Standards are key enablers to connect patients and providers within an organization for clinical care
- Health information exchange among organizations for clinical care relies upon standards
- Beyond direct clinical care, National Biosurveillance and Quality Measurement depend upon standards