

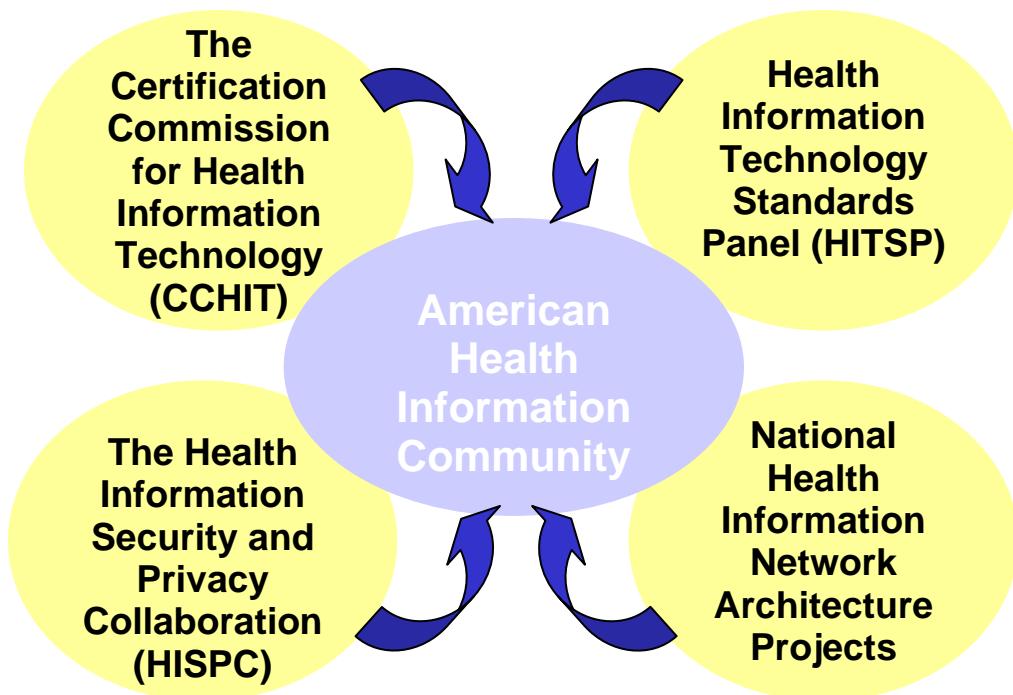


Connecting Payers, Patients and Providers

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

- Demographics
- Laboratory, Radiology and other observations
- Images

FROG,KERMIT 130-33-39 M 54 Session # 3182225 - Microsoft Internet Explorer provided by CareGroup - IE5.5sp2 - Flash 5.0

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[Profile](#) [Results](#) [Reports](#) [Notes](#) [Medications](#) [Orders](#)

Address Street: 8 MAIN STREET City: BOSTON,MA 02101 Home: 617-555-1444 Work: 617-222-4578 **Insurance** REGULAR NEIGHBORHOOD HEALTH PLAN REGULAR MEDICAID - MA. MEDICAID **Providers** PCP: Sands, Daniel Z. MD Allergy: Sheikh, Javed MD Infectious Disease: Doweiko, John P. MD [more...](#)

Demographics

Alerts Patient is anticoagulated	Reminders None	To Do List None
Allergies None on file	Outpatient Medications None on File	EW Visits (none on file)
Problem List General Medicine/Primary Care: <u>TENSION HEADACHES</u> 1999 <u>LOW BACK PAIN</u> 2001	Labs (since 03/04/03) Outpatient Orders (since 03/04/03) Date filed Order Type By 02/16/2004 Radiology Sands 02/16/2004 Referral Sands 02/13/2004 BMD Sands 02/13/2004 PT/OT Sands 02/12/2004 Pulmonary Sands 02/12/2004 Sleep Study Sands	Admissions (none on file) Appointments (none since 03/04/03) Reports (none on file)

Periodic Screening and Vital Signs

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Profile Results Reports Notes Medications Orders

Note: For Cytogenetics results see Clinical Information System

Blood Urine Microbiology Blood Bank CSF Other Fluid Screening Flow Sheets

Last Day Last Week Last 30 Days All Results Hide Comments From Date 03/04/03 To Date 03/03/04 Go

Hematology

+ COMPLETE BLOOD COUNT WBC RBC Hgb Hct MCV MCH MCHC RDW Plt Ct
03 Mar 2004 11:31AM 10.6 3.87* 11.5* 35.6* 92# 29.7 32.2 493*#

TEST

+ DIFFERENTIAL Neuts Bands Lymphs Monos Eos Baso Atyps Metas Myelos Promyel Young Blasts Hyperse NRBC Plasma Other
03 Mar 2004 11:30AM PND PND PND PND PND

TEST

+ RED CELL MORPHOLOGY Hypochr Anisocyt Poikilo Macrocyt Microcyt Polychr Spheroc Ovalocyt Target Sickles Schisto Burr Pencil Stipple MacroOv Tear Dr How-Jol Papp
11 Feb 2004 04:21PM PND PND PND PND PND

+ HEMOGLOBIN ELECTROPHORESIS Hgb A Hgb S Hgb C Hgb A2 Hgb F
12 Feb 2004 11:05AM 90 5* 5*

+ BASIC COAGULATION PT PTT Plt Smr Plt Ct INR(PT) MPV LPIT PltClmp
03 Mar 2004 11:31AM 493*#

TEST

+ BASIC COAGULATION Fibrino FDP D-Dimer Thrombn Reptlas Rept Ct Bleed T
12 Feb 2004 02:52PM 150

+ MISCELLANEOUS HEMATOLOGY ESR Eos Ct Sickles G6PD LAP Gran Ct QG6PD Mono Ct Pairst S Prblm
03 Mar 2004 11:30AM PND

TEST

+ Flow Cytometry CD19 CD20
16 May 2003 09:05AM DONE*# DONE

+ T LYMPHOCYTE SUBSET WBC Lymph Abs Lym CD3% Abs CD3 CD4% Abs CD4 CD8% Abs CD8 CD4/CD8

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Profile Results Reports Notes Medications Orders

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

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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 malignancy.

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Profile Results Reports Notes Medications Orders

Active Meds Discontinued Meds

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

[View Labs](#)

Check All

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

Checked Meds: [D/C](#) [Renew](#) [Verify](#) [Print](#)

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

Patient Name:
Patient ID:

Images for reference only



CHEST (PA AND LAT)

2001.10.18 08:36:00.000

[View Report](#)

1x1 1x2 2x2 2x3 3x3

Prop Reset Info

Page Image **Image** Page

[Browse Thumbnails](#)

Se: 560
Im: 45056

BIDMC-BOSTON
Study Date: 2001.10.18
Study Time: 08:36:00.000
MRRI:
DOB: 1974
Sex: M

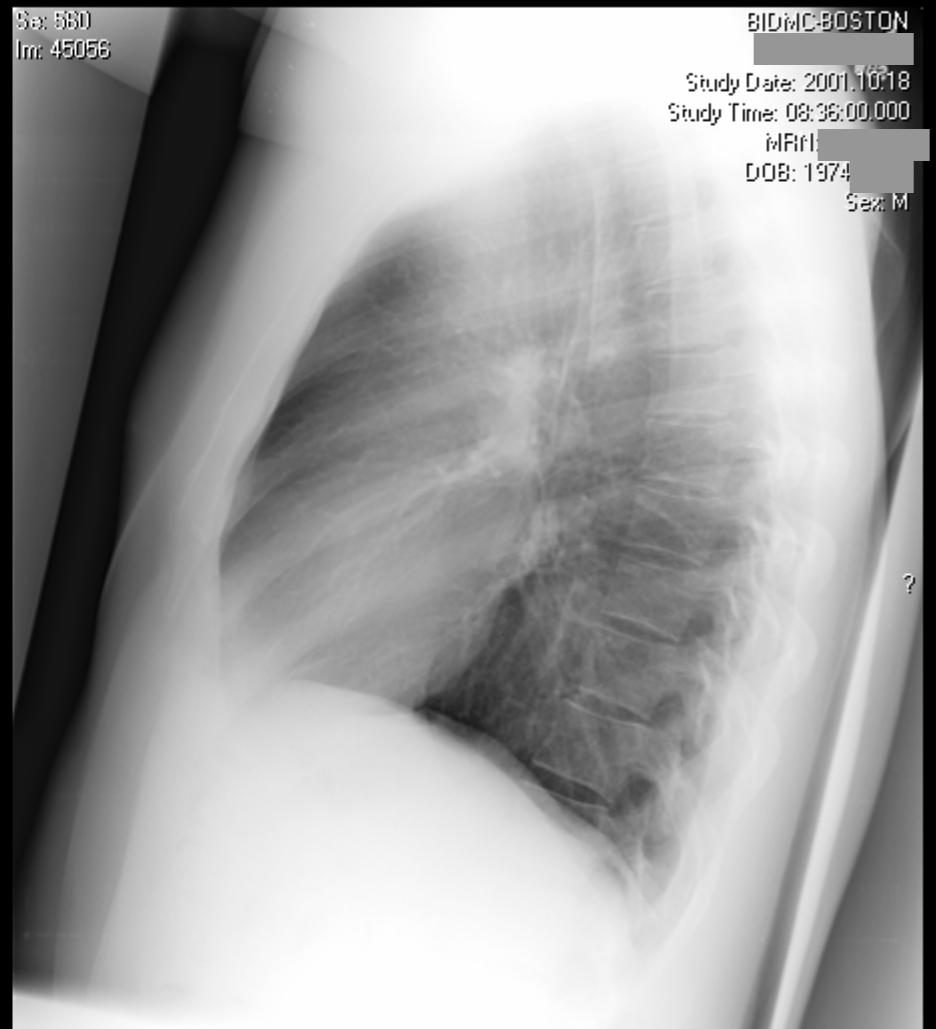
Se: 560
Im: 45056

BIDMC-BOSTON
Study Date: 2001.10.18
Study Time: 08:36:00.000
MRRI:
DOB: 1974
Sex: M



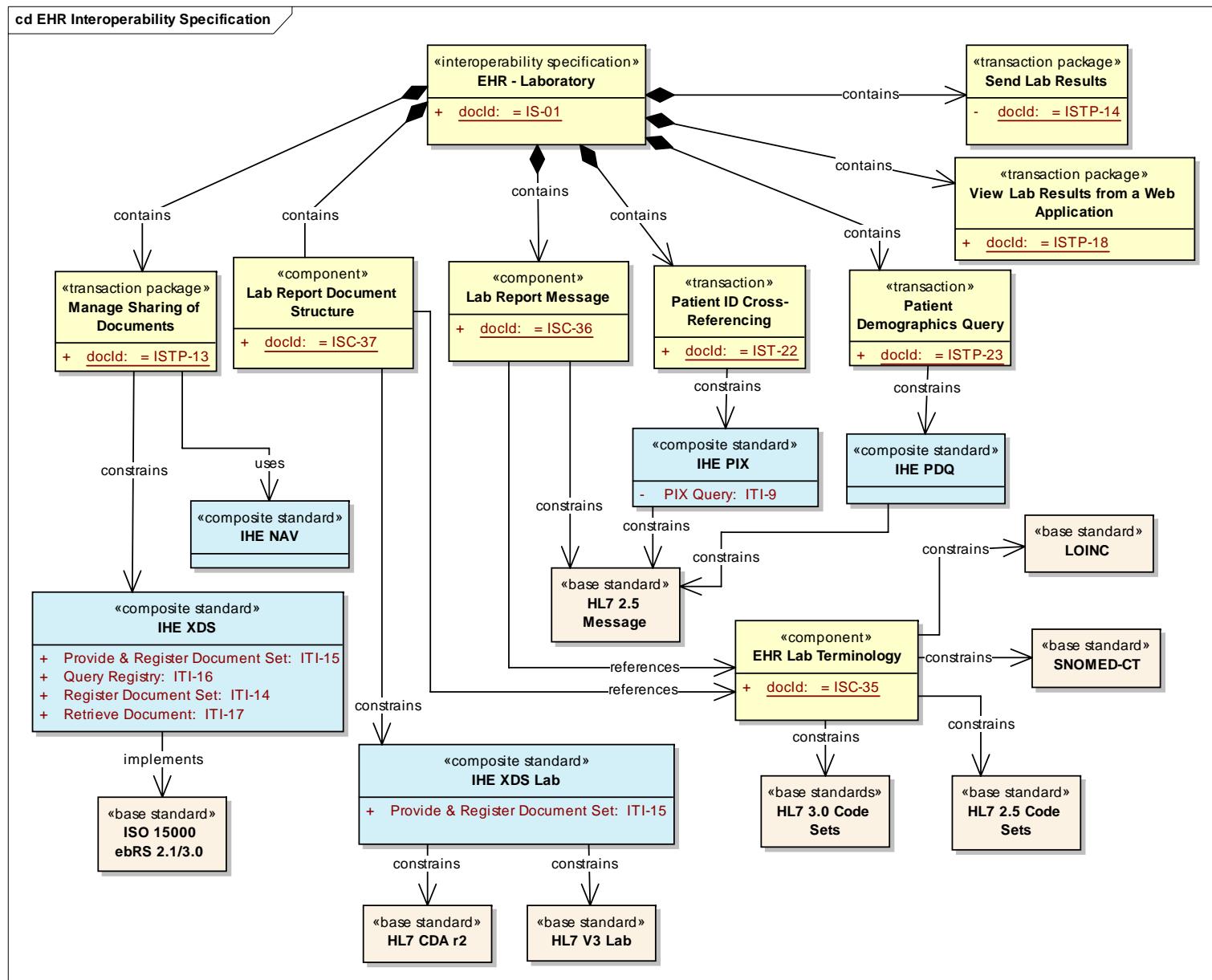
TruRez: 4/6
ZF: 1.03
Sensitivity: 205

W: 823.0
L: 612.5 1



TruRez: 4/6
ZF: 1.03
Sensitivity: 174

W: 823.0
L: 612.5 2





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[®]
Healthcare you can connect with

Sign In

*First Time Here?
Take a Tour*

*Want to Join?
Register Now!*



Welcome to the Personal Health Website of Kermit Frog DEMO

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Profile

Tech Support

Records of Kermit Frog

[Security Audit]



BIDMC

MtAUBURN

WEST

MyEntries

Problems

Meds

Allergies

Visits

Reports

X-rays

Labs

Micro

Check Drug Interactions

02/22/2000	FOLIC ACID 1 MG PO [#30 R5]	ONE TABLET BY MOUTH EVERY DAY	RIND,DAVID	Refill
03/28/2000	IBUPROFEN 400 MG PO [#40 R0]	ONE BY MOUTH THREE TIMES A DAY AS NEEDED -- TAKE WITH FOOD	MITCHELL,NANCY	Refill
02/22/2000	NITROGLYCERIN 400 MCG (1/150 GR) SL [#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	Refill
08/28/2000	LEVOTHYROXINE 50 MCG PO [#30 R5]	ONE TABLET BY MOUTH EVERY DAY	LOONEY,MAUREEN	Refill
08/28/2000	PREDNISONE 2.5 MG PO [#100 R5]	2 BY MOUTH EVERY MORNING AND ONE BY MOUTH EVERY EVENING	LOONEY,MAUREEN	Refill
02/22/2000	ASPIRIN E.C. 325 MG PO [#30 R5]	ONE TABLET BY MOUTH EVERY DAY	RIND,DAVID	Refill
08/28/2000	FLUOXETINE 10 MG PO [#30 R5]	ONE BY MOUTH EVERY DAY	LOONEY,MAUREEN	Refill
08/28/2000	VERAPAMIL SR 240 MG PO [#30 R5]	ONE TABLET BY MOUTH EVERY DAY	LOONEY,MAUREEN	Refill
08/28/2000	ATORVASTATIN CALCIUM 10 MG PO	ONE TABLET BY MOUTH EVERY DAY	LOONEY,MAUREEN	Refill

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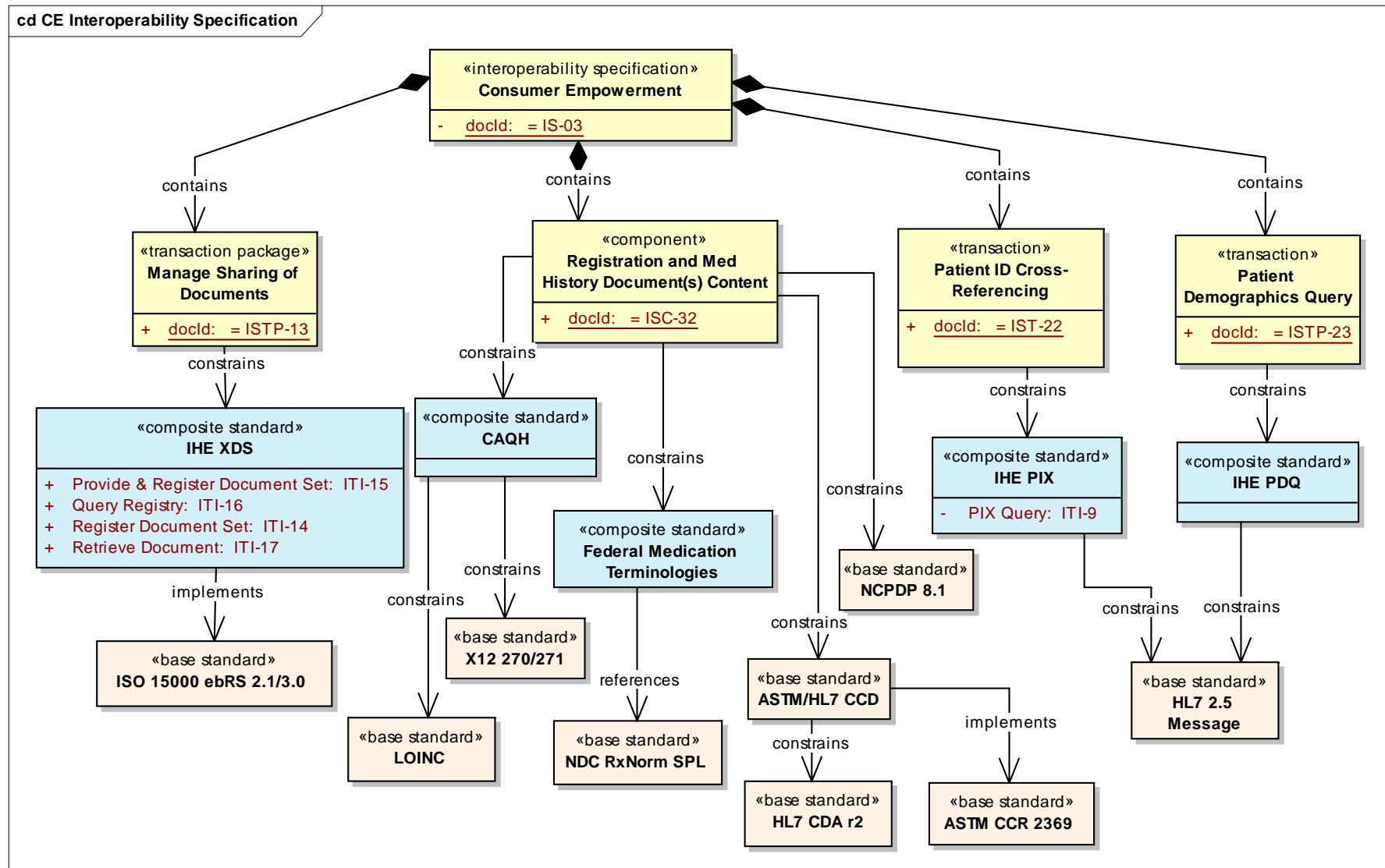
Records of Kermit Frog

[Security Audit]

[BIDMC](#) [MtAUBURN](#) [WEST](#) [MyEntries](#)

[Problems](#) [Meds](#) [Allergies](#) [Visits](#) [Reports](#) [X-rays](#) [Labs](#) [Micro](#)

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





Biosurveillance

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

A E G I S

HARVARD
MEDICAL SCHOOL



Children's Hospital Boston

SELECT DATE

							19	
20	21	22	23	24	25	26	27	28
27	28	29	30	31	1	2	3	4
4	5	6	7	8	9	10	11	12
10	11	12	13	14	15	16	17	18

SELECT HOSPITAL/SYNDROME

	MCH	ACH	ALL MA BEV	BIDMC	CHB
RESP	***				
GI					
RASH					
NEURO					
HEMOR					
ALL					
INJ					

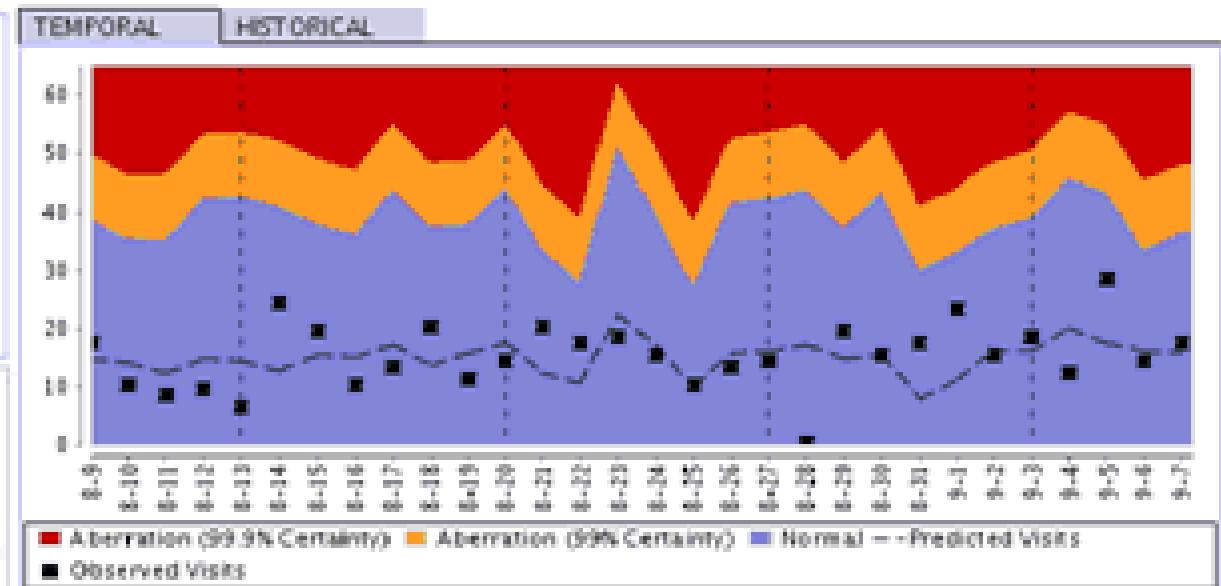
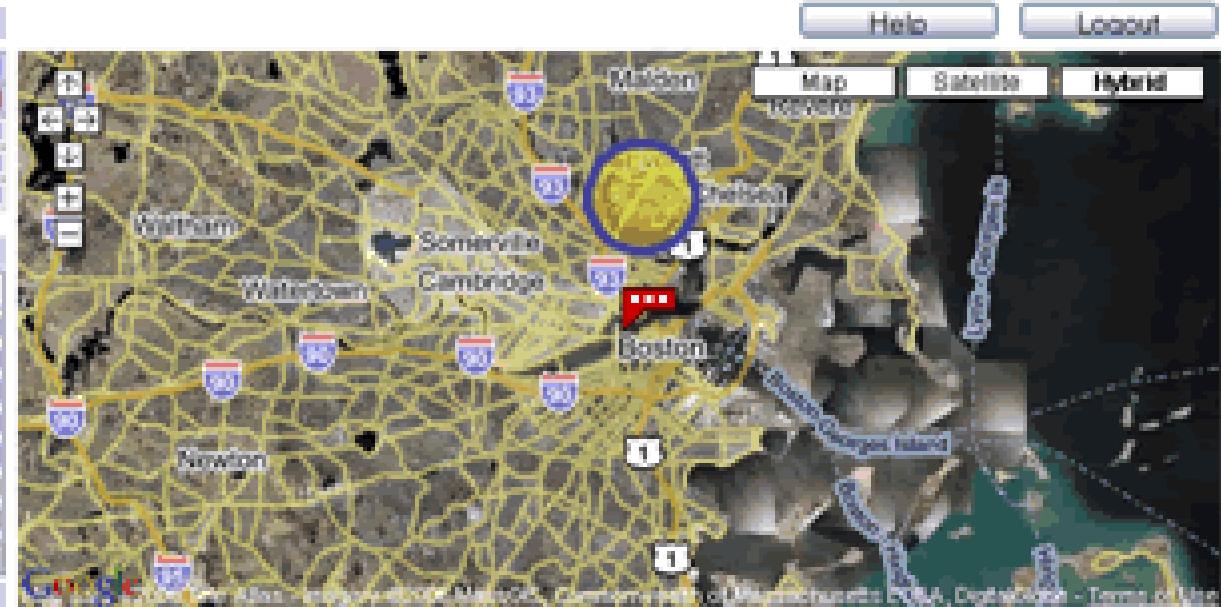
SELECT ABBERRATION

Aberrations For Current Selection

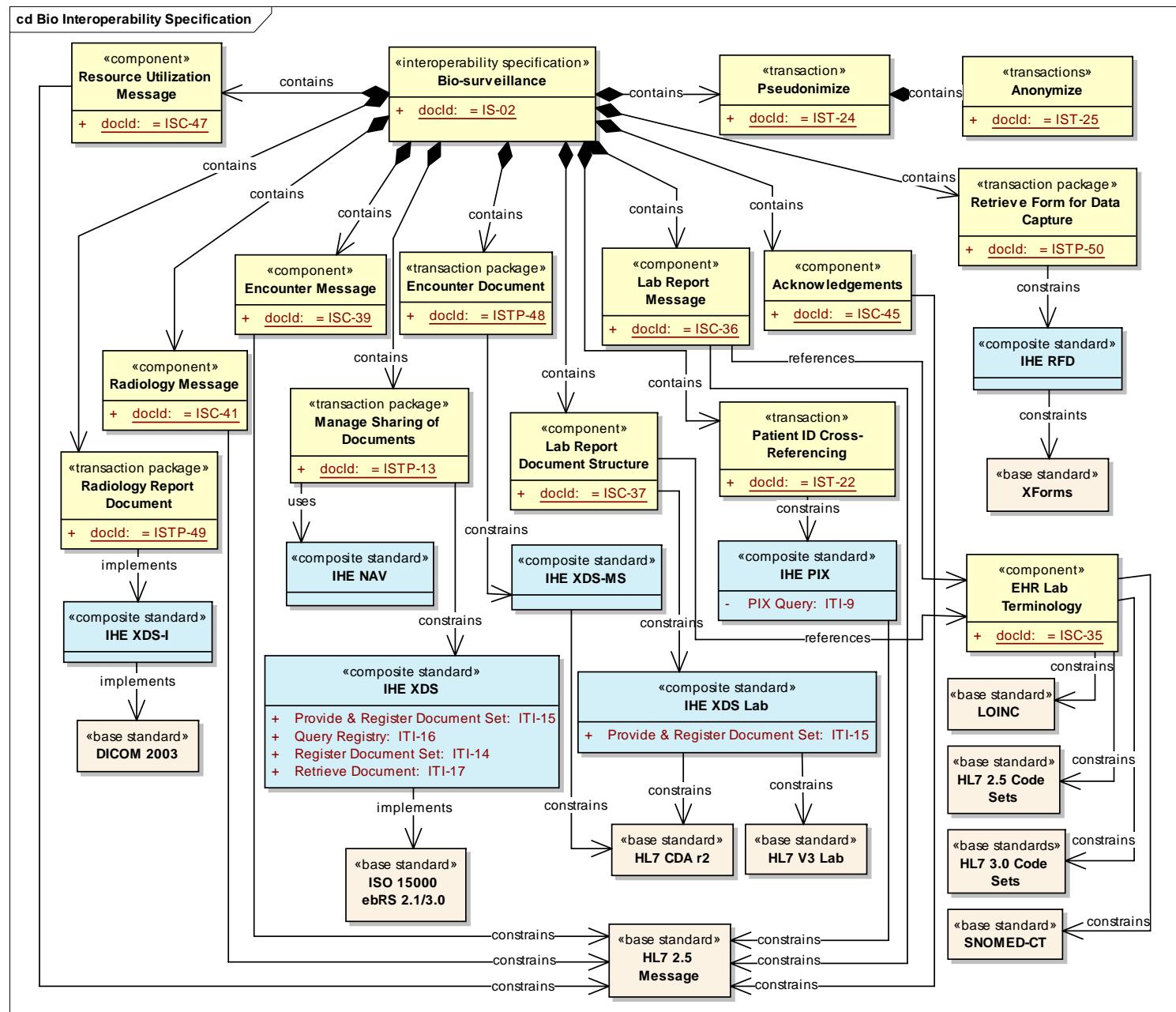
*** MCH RESP 19/7	details	export
Other Aberrations		
*** MCH RESP 19/7	details	export
*** MCH RESP 19/6	details	export
*** CHB RESP 18/26	details	export
--- SSHORE GI 19/1	details	export

LEGEND

Active	Inactive	
■	■	- Normal
■	■	- Aberration (99% Certainty)
■	■	- Aberration (99.9% Certainty)
■	■	- Result not yet available
S/T		- Spatial/Temporal Aberration



Done





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