



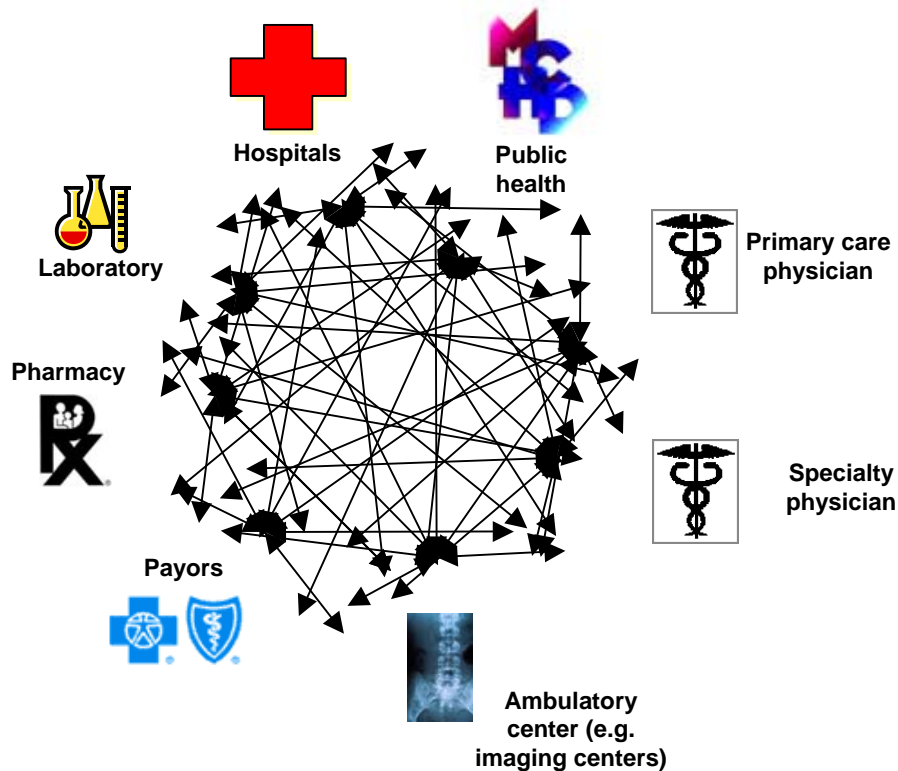
Brief Overview of Regenstrief's Health Information Exchange Activities

**Viki Prescott, Esq.
Regenstrief Institute, Inc.**

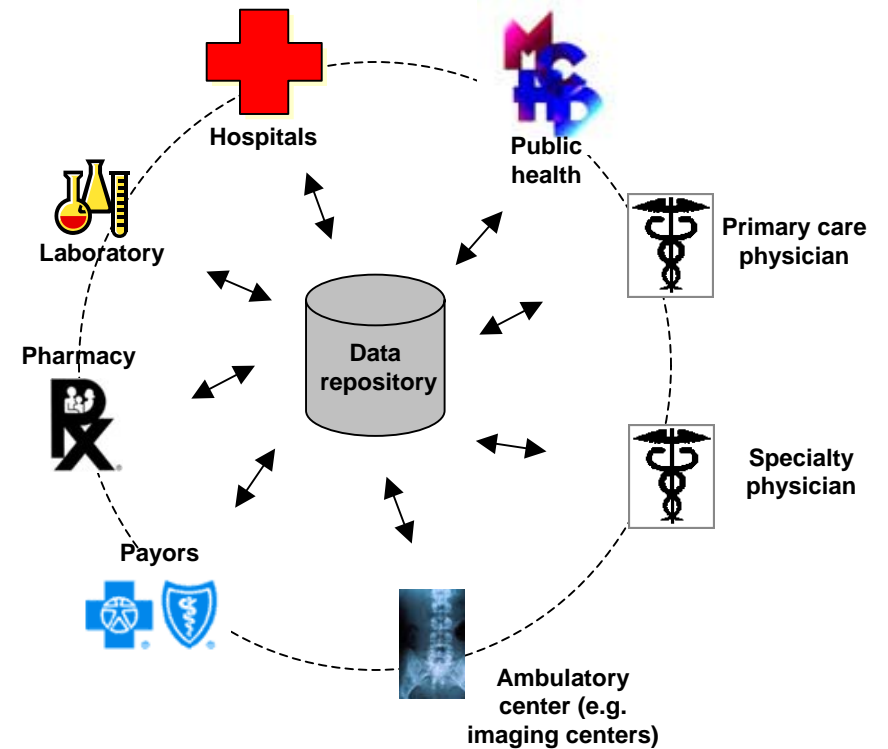
**August 29, 2006
Confidential / Not for Distribution**

OUR GOAL: MAKE CENTRAL INDIANA THE FIRST MAJOR REGION IN THE COUNTRY 'WIRED' FOR HEALTH CARE

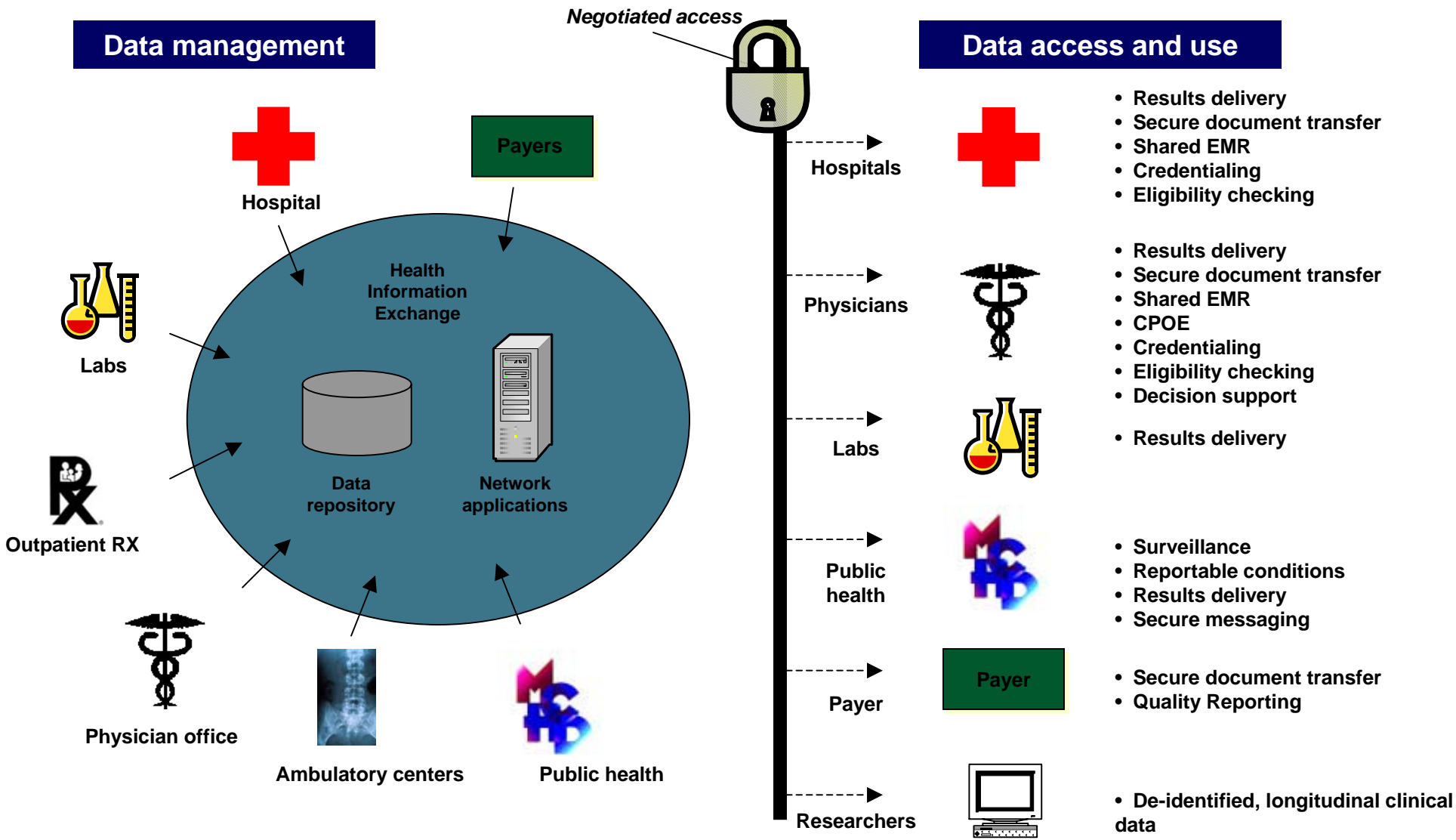
Current system fragments patient information and creates redundant, inefficient efforts



Future system will consolidate information and provide a foundation for unifying efforts



Data Reuse



Step 1 – one way sharing

Wishard shared its RMRS data with institution that care for some of the same indigent patients

- **Community East**
- **Methodist**

1997 - Indianapolis Network for Patient Care (INPC) – a real living community-based information system

A central (community) clinical repository

A secure network for delivering clinical data messages to repository

Tools and processes for standardizing the data and using it for different purposes

Formal agreements among all participants spelling out processes and allowable uses and HIPAA compliance

Step 2 Multi sharing

All large care systems signed agreement for multi sharing

Minimum commitment to sharing now

- **ADT**
- **Laboratory**
- **Radiology**
- **Hospital dictation (Op notes/ Discharge summaries)**

Who contributes data to INPC- so far

Five major Indianapolis hospital systems (14 hospitals) 95% of hospital and ER care

Several neighboring county hospitals

Physician group practices

Homeless clinics

RxHub (PBM)

Private labs

Public health departments

Immunization records

Public health department lab results

Tumor registry (de-identified research only)

Indiana death tapes

Indiana Medicaid

Private payers (in process)

How used

Clinicians

- **For ER patients in any of INPC participating hospitals**
- **Patients in institutions where clinicians have admission privileges (virtual record)**
- **Patients with reports related to clinician. DOCS4DOCS**

Public health

- **reportable diseases**
- **Immunizations**
- **Bioterrorism (PHESS)**

Researchers

Payers – new area

INPC Storage Strategy

Central community repository

Separate medical record vault per institution

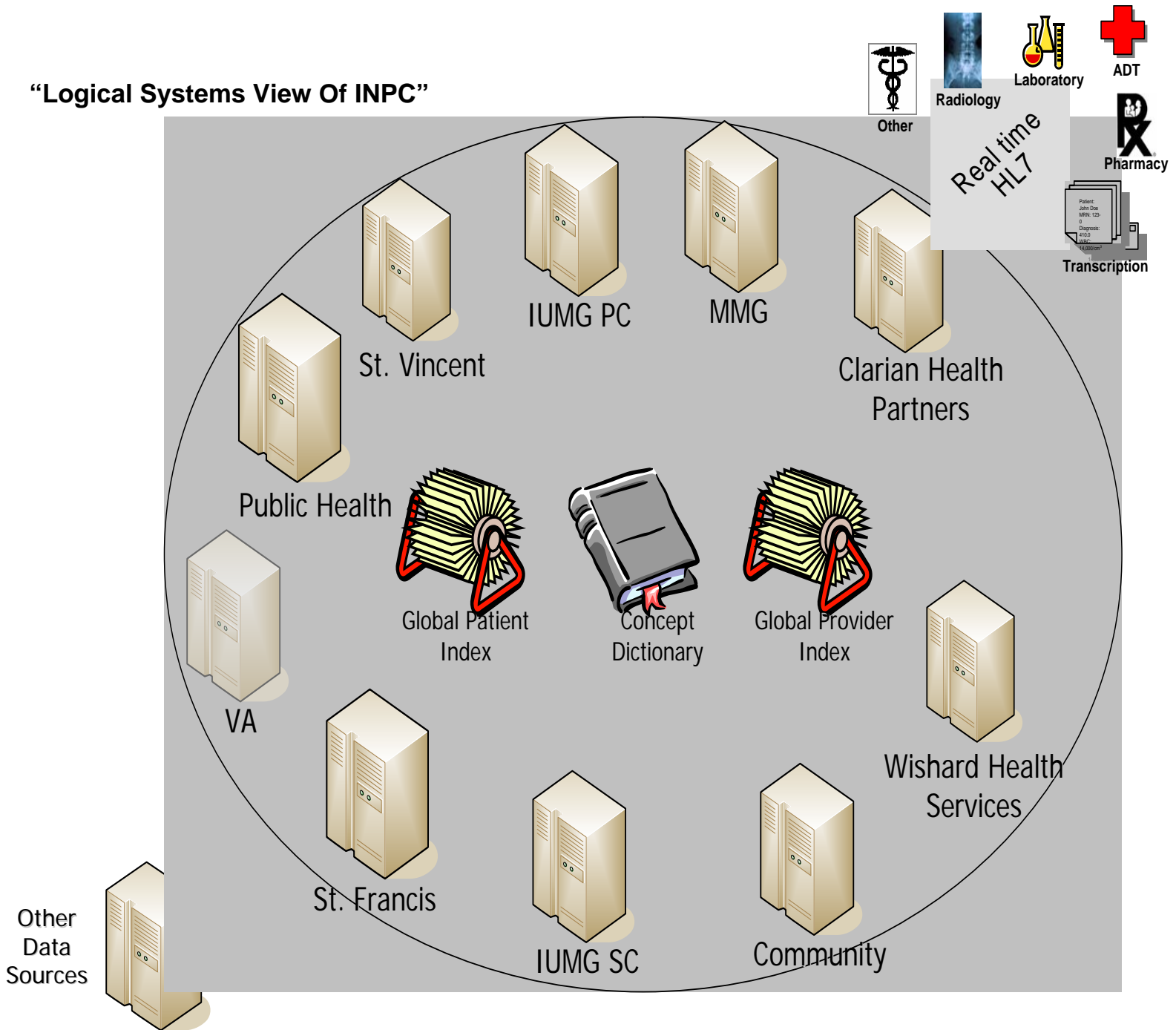
Each vault in separate physical files

Standardized data structure – all use same software and observation codes

Combine on the fly when needed

Patient linking

“Logical Systems View Of INPC”



Flow sheet for blood count

MRF_TBL_DISPLAY - Microsoft Internet Explorer

Address: http://falcon.iupui.edu:7713/REGEN/0/load/top.subdoc

DEMO,JONATHAN DOE #99999999-8 @REGEN_DEVELOP M Age: 57 years BARNES,MIKE

Select a patient | **Browse Patient Record** | Other Browse Patient Record»Flowsheet

Chronologic Results

Flowsheet

Clinical Synopsis

REPORTS

ALL REPORTS

Discharge Summaries

Miscellaneous

Operative

Pathology

Radiology

Face Sheet

Orders

ENCOUNTERS

Brief

Detailed

PRESCRIPTIONS

Inpatient

Outpatient

Advance Directive

Surgery Log

mrf_inq_tst_one

Echocardiogram

Flowsheet

BLD CELL PROFILE	20-Jul-99 11:18	24-Apr-97 11:45	12-Feb-91 10:33	16-Jan-91 00:34	13-Nov-90 06:00	08-Nov-90 06:00	27-Oct-90 06:00	26-Oct-90 06:00
<input type="checkbox"/> WBC #		3.5*L {a}	29.7*H {b}	13.5*H {b}	11.0 {b}	10.9 {b}	8.5 {b}	8.2 {b}
<input type="checkbox"/> WBC CORRECTED # BLD	1 {c}							
<input type="checkbox"/> RBC #		3.88*L {a}	2.7*L {b}	2.4*L {b}	3.3*L {b}	3.4*L {b}	2.7*L {b}	2.6*L {b}
<input type="checkbox"/> HGB		12.5*L {a}	7.6*L {b}	6.4**L {b}	9.1*L {b}	9.8*L {b}	7.6*L {b}	7.4*L {b}
<input type="checkbox"/> HCT BLD		37.3*L {a}	23*L {b}	19*L {b}	28*L {b}	29*L {b}	22*L {b}	22*L {b}
<input type="checkbox"/> MCHC		33.6 {a}	34 {b}	34 {b}	33 {b}	34 {b}	34 {b}	35 {b}
<input type="checkbox"/> MCH		32.2*H {a}	29 {b}	27 {b}	28 {b}	29 {b}	28 {b}	28 {b}
<input type="checkbox"/> MCV		95.9*H {a}	85 {b}	80 {b}	85 {b}	84 {b}	83 {b}	82 {b}
<input type="checkbox"/> RDW CV		15.5*H {a}						
<input type="checkbox"/> MPV		8.6 {a}						
<input type="checkbox"/> PLATELET #		82.0*L {a}					156 {b}	147*L {b}

{a} - From IUH Main Lab, 99999999-8 DEMO,JONATHAN DOE
 {b} - From 99999999-8 DEMO,JONATHAN DOE
 {c} - From Online Data Entry, 99999999-8 DEMO,JONATHAN DOE

[Hide Menu](#) | [Logout](#) | [Help](#) | [Graph](#) | [Select other flowsheet parameters](#) | [Previous page](#) | [Next page](#)

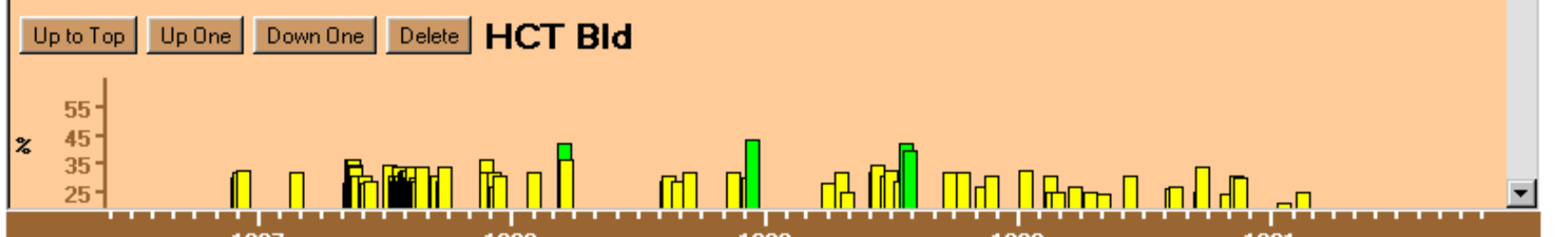
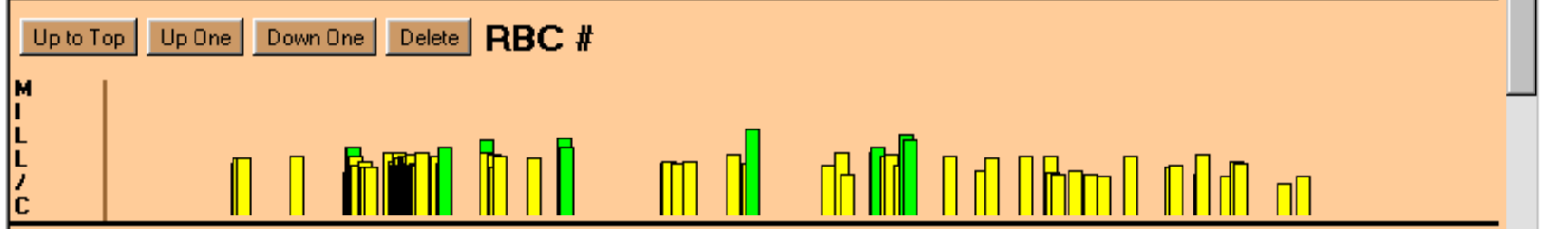
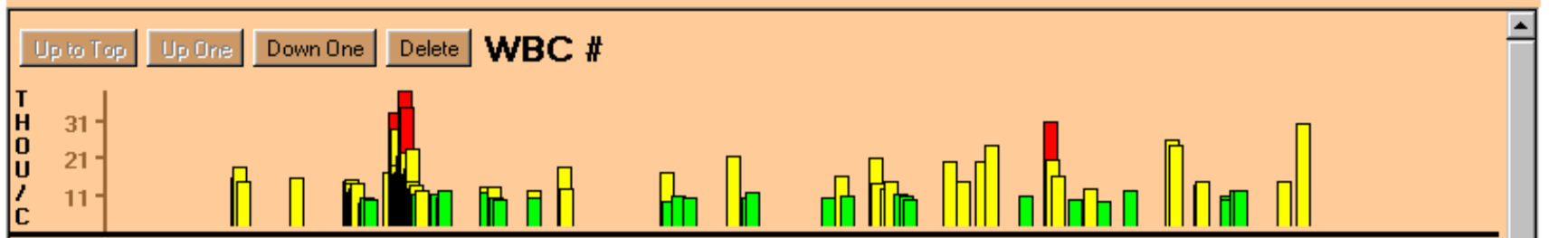
DEMO,JONATHAN DOE #99999999-8 @REGEN_DEVELOP M Age: 57 years BARNES,MIKE

Select a patient Browse Patient Record Other Browse Patient Record»Flowsheet

- Chronologic Results
- Flowsheet**
- Clinical Synopsis
- REPORTS
 - ALL REPORTS
 - Discharge Summaries
 - Miscellaneous
 - Operative
 - Pathology
 - Radiology
 - Face Sheet
 - Orders
- ENCOUNTERS
 - Brief
 - Detailed
- PRESCRIPTIONS
 - Inpatient
 - Outpatient
- Advance Directive
- Surgery Log
- mrf_inq_tst_one
- Echocardiogram

DEMO,JONATHAN DOE #99999999-8 @REGEN_DEVELOP M 57yr

Zoom Out Fully Zoom Out Zoom In Left Right Help



TIME ► 1987 1988 1989 1990 1991 [OLDER] May 25, 1986 Years and Months Nov 17, 1991 [NEWER]

Radiology Images - Thumbnail

File Edit View Favorites Tools Help Address <http://falcon.iupui.edu:9110:/REGEN/0/load/top.subdoc> Go Back

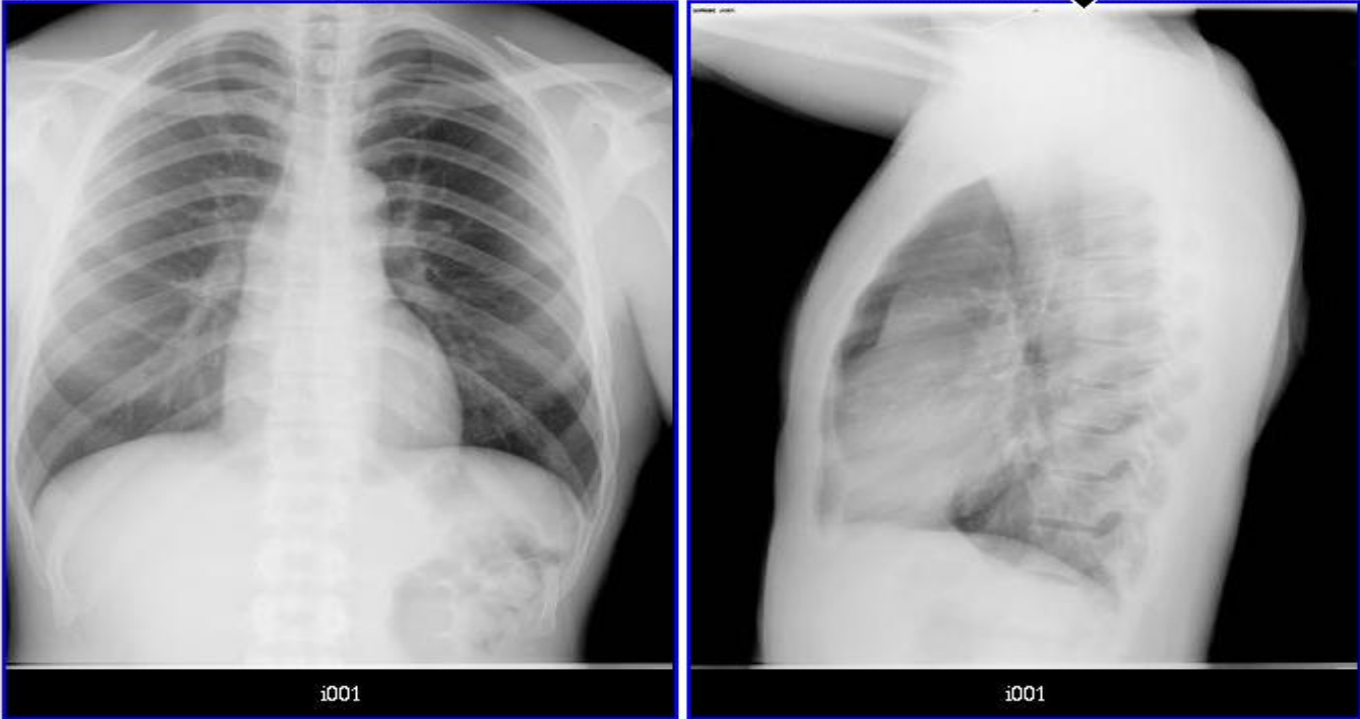
DEMO, JONATHAN DOE #99999999-8 @REGEN_DEVELOP M Age: 56 years DEMO, USER

Select a patient Browse Patient Record Other Browse Patient Record » Flowsheet

Chronologic Results
Flowsheet
Flowsheet (Advanced)
Clinical Synopsis
REPORTS
ALL REPORTS
Discharge Summaries
Miscellaneous
Operative
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Radiology
Face Sheet
Orders
ENCOUNTERS
Brief
Detailed
Master
PRESCRIPTIONS
Inpatient
Outpatient
Advance Directive
Surgery Log

CHEST PA & LAT XR
CHEST, 2 VIEW

Click on a thumbnail image to see full image.
These are compressed images for clinical review.

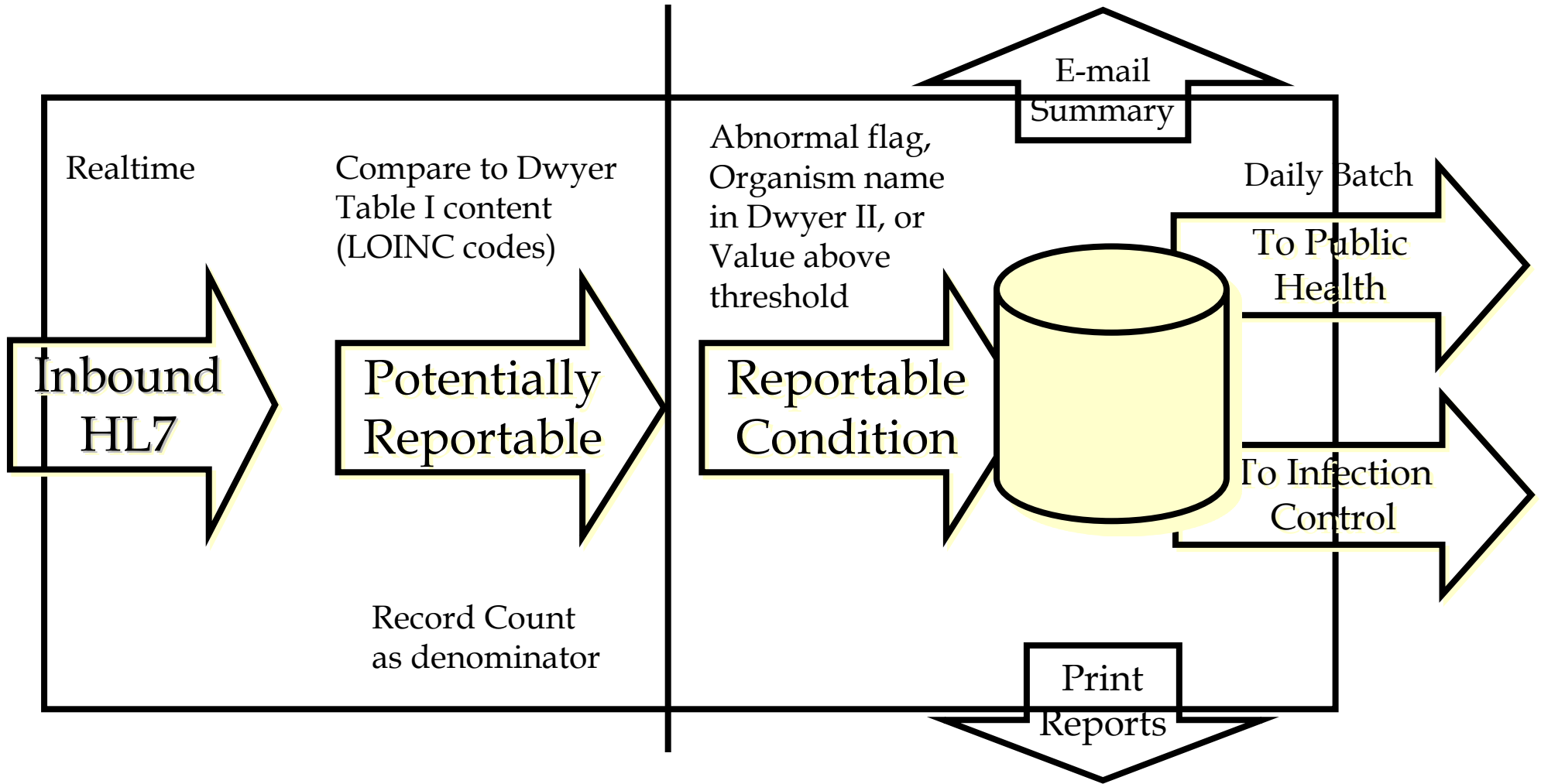


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Hide Logout Help [c] [x] [a] Prev image Next image Newpat

form: DCM_NAV_SHOW_STUDY_PAGE_1 Internet

Reportable condition processor



Back
 Forward
 Run (SPIN)
 Run (RG)

STEP 1: Define cohort by selecting variables and the criteria they must meet

Pick the query variable you want or type in part of its name

Cancer relevant varia...	# OBS	# PAT	Code	Object Type
[-] block			7483	CLINICAL_VA
[-] VITALS	1,558	193	64	CLINICAL_VA
[-] VITALS CLINIC			26277	CLINICAL_VA
TEMP	1,236,179	224,927	65	CLINICAL_VA
PULSE	2,036,226	232,739	66	CLINICAL_VA
PULSE REC...	4,277	3,465	2985	CLINICAL_VA
PULSE STA...	17,191	6,576	2986	CLINICAL_VA
PULSE EXE...	33	28	2987	CLINICAL_VA
PULSE APIC...	25	21	3972	CLINICAL_VA
RR	416,158	136,293	67	CLINICAL_VA
SYS BP SIT...	3,696,955	311,988	68	CLINICAL_VA
DIAS BP SIT...	3,692,682	311,788	69	CLINICAL_VA
SYS BP ST...	62,116	12,675	1051	CLINICAL_VA
DIAS BP ST...	59,642	11,313	2705	CLINICAL_VA
SYS BP RE...	6,483	4,994	2988	CLINICAL_VA
DIAS BP RE...	6,463	4,985	2991	CLINICAL_VA

Cohort query definition	
A	Include if Include if any Bro Aerobe Cult occurred before today minus 100 days
B	Include if Include if any TEMP are within [100, 102] exist

All conditions AND'ed
 All conditions OR'ed

A AND B



STEP 4: Review retrieved information

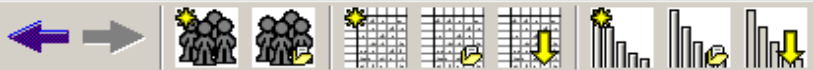
Cross Tab pdf pdf

- Hide empty rows Hide All Dependent Variables
- Hide empty columns Hide Empty Dependent Variables

last RACE value	last PSA SerPI-mCnc value	last GRADE value
		last AGE AT CANCER DX value
		last CANCER OUTCOME STATUS value
		last PLANNED/NEXT FOLLOW-UP value
		last REGIONAL LYMPH NODES.CLINICAL value

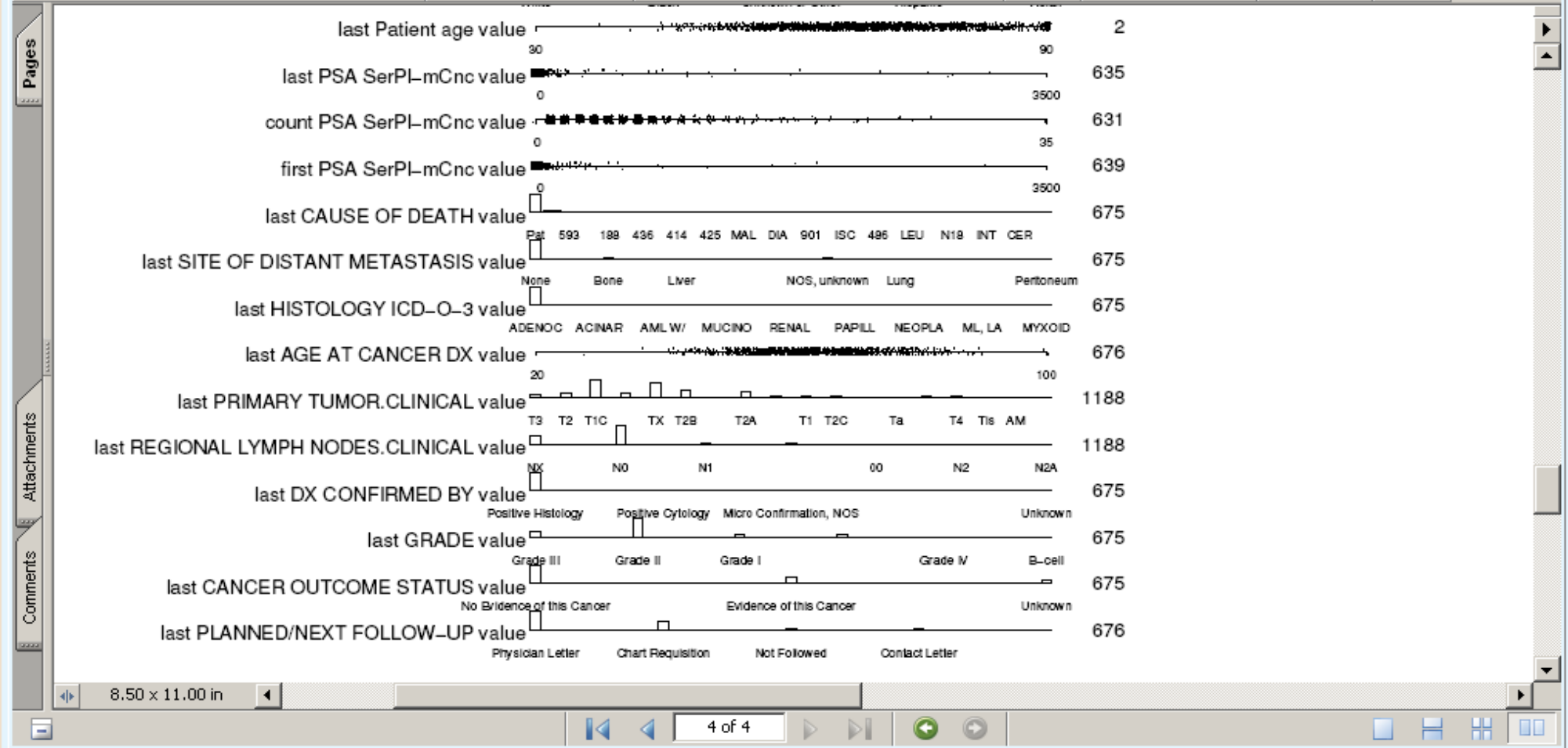
last RACE value		last PSA SerPI-mCnc value						Total
		Missing value	<= 2	(2 - 8]	(8 - 14]	(14 - 20]	> 20	
2 Asian	Frequency		1	1	1			3
	Col %		0.13%	0.86%	3.45%			0.18%
	Adj Col%		0.13%	0.90%	3.45%			0.30%
3 Black	Frequency	26	67	13	5	3	26	140
	Col %	4.09%	8.52%	11.21%	17.24%	23.08%	25.49%	8.33%
	Adj Col%	0.00%	8.75%	11.71%	17.24%	23.08%	26.80%	11.22%
4 Hispanic	Frequency		3					3
	Col %		0.38%					0.18%
	Adj Col%		0.39%					0.30%
5 Unknown or Other	Frequency	44	7	3				54
	Col %	6.93%	0.89%	2.59%				3.21%
	Adj Col%	0.00%	0.91%	2.70%				0.98%
6 White	Frequency	401	688	94	23	10	71	1287
	Col %	63.15%	87.53%	81.03%	79.31%	76.92%	69.61%	76.56%
	Adj Col%	0.00%	89.82%	84.68%	79.31%	76.92%	73.20%	87.20%
7 Total	Frequency	635	786	116	29	13	102	1681
	Col %	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	Adj Col%	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Display Options Print Print Prev.



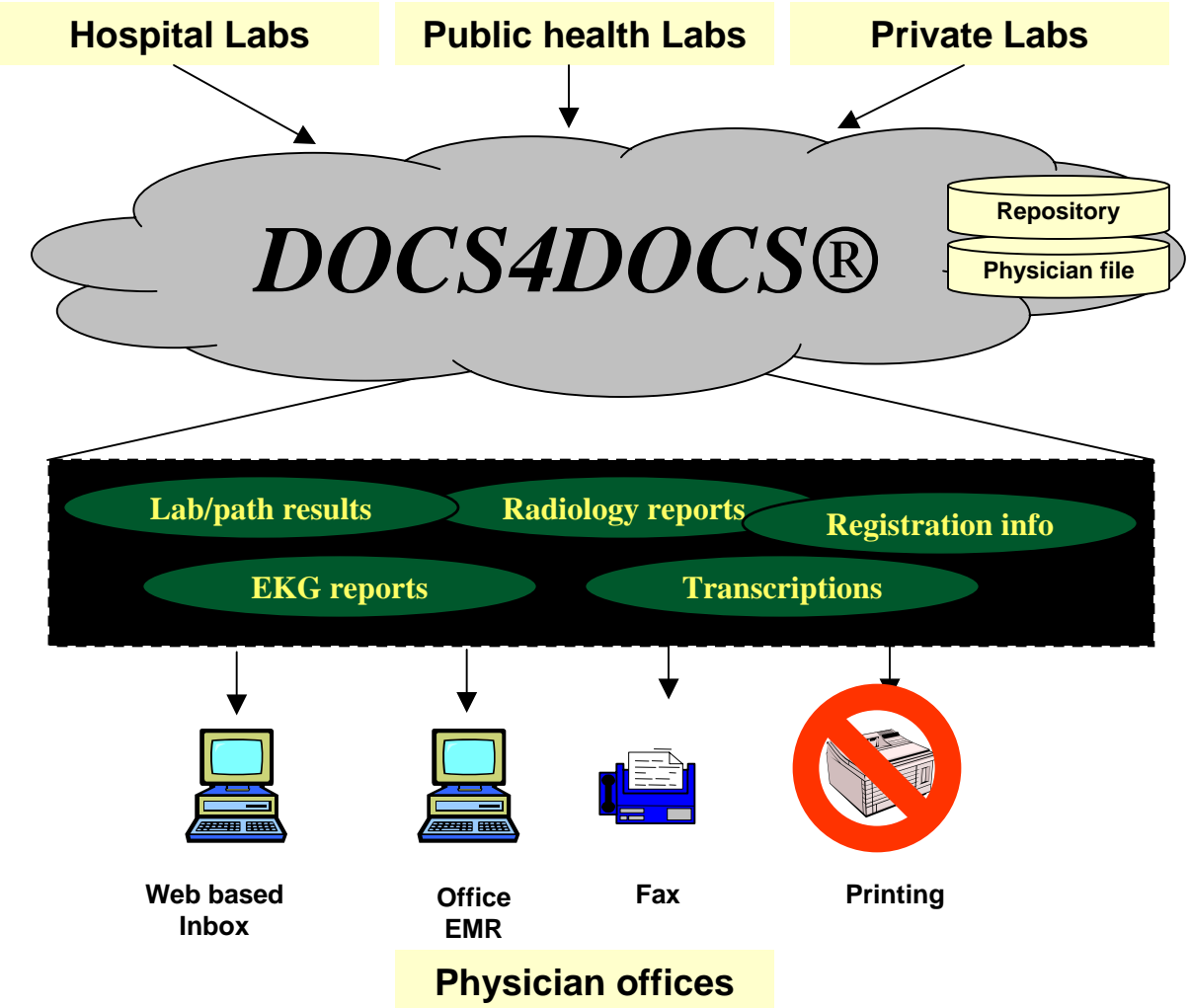
STEP 4: Review retrieved information

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DOCS4DOCS Clinical Messaging Service

Clinical Messaging



DOCS4DOCS[®]

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Iumg - Pc Family Practice Center

General

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- [Change Password](#)
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- [Help](#)
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Document INBOX

Holds all new documents.

Filters:

Actions:

	Provider	MRN	Patient Name	Arrival	Doc Type	Doc Details
<input type="checkbox"/>	Akosa Anthony N		Donald Duck	2004 07/14 10:16 PM	Radiology (Clarian)	Xray Chest PA and Lateral
<input type="checkbox"/>	Akosa Anthony N		Daffy Duck	2004 07/14 10:16 PM	Radiology (Clarian)	Mammogram Screening Bilateral Digital DDI (Direct Digital Image)
<input type="checkbox"/>	Akosa Anthony N		Pluto	2004 07/16 10:38 PM	Radiology (Clarian)	Xray Knee Standing
<input type="checkbox"/>	Akosa Anthony N		Sam Snidely	2004 07/16 10:38 PM	Radiology (Clarian)	Xray Foot 2 Views
<input type="checkbox"/>	Akosa Anthony N		Donald Duck	2004 07/16 10:28 PM	Radiology (Clarian)	Xray Knee 3 Views
<input type="checkbox"/>	Akosa Anthony N		Daffy Duck	2004 07/14 10:16 PM	Radiology (Clarian)	Xray Chest PA and Lateral
<input type="checkbox"/>	Akosa Anthony N		Pluto	2004 07/16 10:28 PM	Radiology (Clarian)	MR Brain - Head - Without then With Contrast
<input type="checkbox"/>	Akosa Anthony N		Sam Snidely	2004 07/08 03:11 PM	Radiology (Clarian)	Xray Abdomen KUB
<input type="checkbox"/>	Akosa Anthony N		Donald Duck	2004 07/19 10:44 PM	Radiology (Clarian)	Xray Elbow
<input type="checkbox"/>	Akosa Anthony N		Daffy Duck	2004 07/13 10:26 PM	Radiology (Clarian)	Xray Hand Min 3 Views
<input type="checkbox"/>	Akosa Anthony N		Pluto	2004 07/15 10:37 PM	Radiology (Clarian)	Xray Chest PA and Lateral
<input type="checkbox"/>	Akosa Anthony N		Sam Snidely	2004 07/16 10:27 PM	Radiology (Clarian)	Xray Wrist AP and Lateral
<input type="checkbox"/>	Akosa Anthony N		Donald Duck	2004 07/09 03:36 PM	Radiology (Clarian)	US Renal
<input type="checkbox"/>	Allen Deborah I		Daffy Duck	2004 07/12 05:31 PM	Radiology (Clarian)	Xray Spine Scoliosis AP and Lateral

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INBOX Review

General

- Inbox
- Inbox History
- Report Search
- Change Password
- System Messages
- Help
- Logout

Navigation:

Actions:



Clarian Health Partners
1701 North Senate Boulevard
P.O. Box 1367
Indianapolis, IN 46206-1367

Radiology Consultation Report

Exam: Xray Chest PA and Lateral

Exam Data: Pt Name: DOB: Sex:

Exam Time: MRN: Pt Location: Out Patient

Accession: Pt Class:

Report To: Akosa Anthony N Ordered By: Akosa, Anthony N

EXAMINATION: PA AND LATERAL CHEST,

COMPARISON:

INDICATION: Cough, hypertension.

FINDINGS: Lung volumes are normal. There are diffuse bilateral infiltrates, which may represent diffuse infection, extrinsic allergic alveolitis, alveolar proteinosis or other etiologies. Clinical correlation is recommended. There is no pneumothorax or pleural effusion. Heart size and mediastinum are within normal limits.

IMPRESSION:

Diffuse bilateral infiltrates, which may reflect the disease processes noted on other

Data Source Benefits

Faster, cheaper more reliable results delivery

Reduces redundancy inside your organization

Physician contact information

Facsimile capabilities

Provides economies of scale

Frees personnel in ancillaries to provide billable services rather than answering the phone and helping find misplaced or worse yet, undelivered, results

Increased provider satisfaction