

HIDRA

Hutch Integrated Data Repository & Archive



LabKey User Conference

September 19, 2013

Hutch Integrated Data Repository & Archive (HIDRA)

Strategic Drivers for the Consortium



Larry Corey, MD
Director FHCRC

Catalyzing our efforts to build strength in
clinical molecular diagnostics and precision oncology

- FHCRC "Center News", 4/1/13



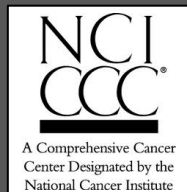
Contribute to building a strong Fred Hutchinson /
University of Washington
Cancer Consortium [translational research] program

- Center Strategic Plan 2010-2015



Strengthening the Consortium's clinical research programs
and infrastructure to permit more rapid development
of diagnostics and therapeutics

- Senior Leadership, Cancer Consortium, RE: areas that require continuing resource commitment

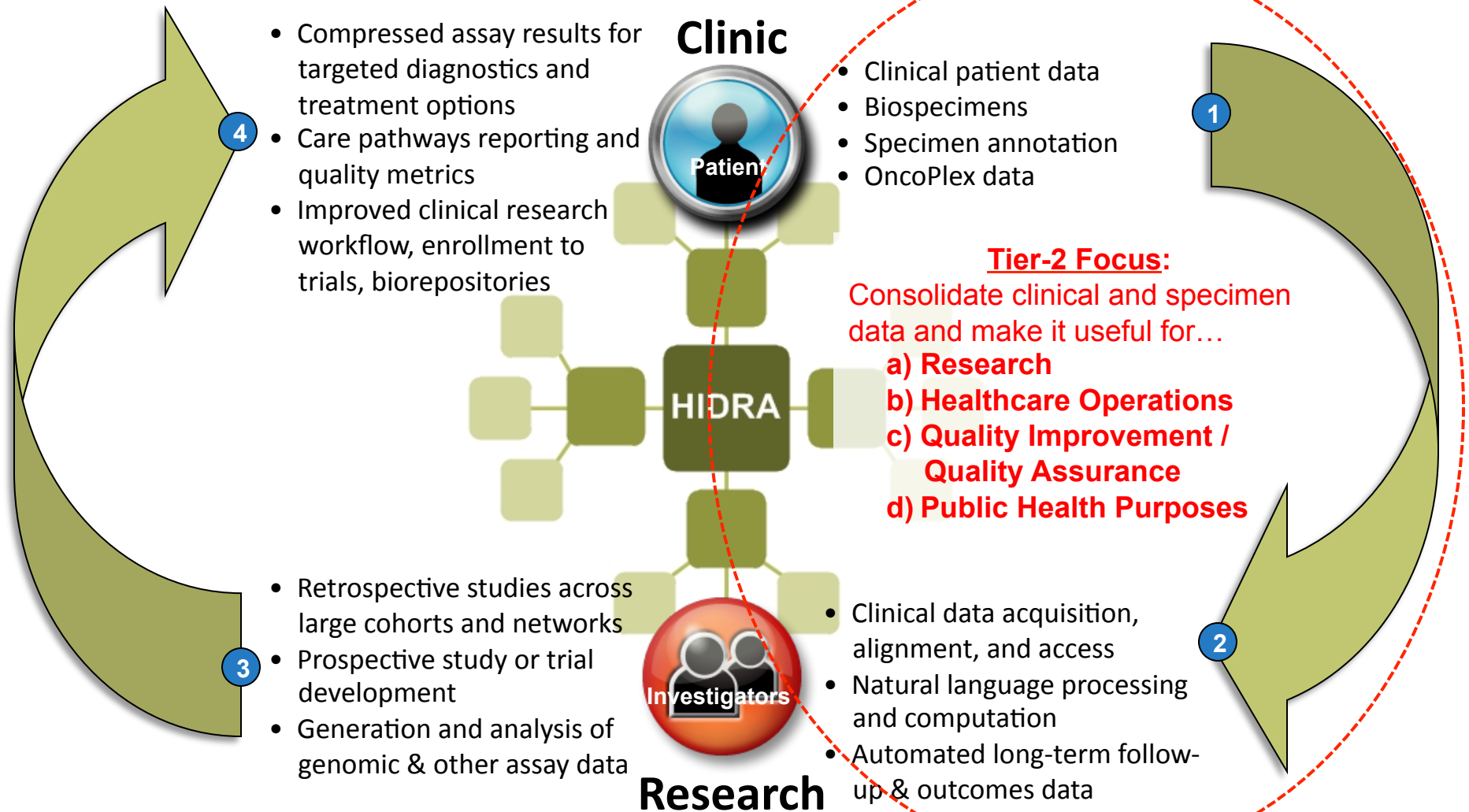


Need an integrated database approach
and a Consortium-wide informatics platform strategy

- CCSG Reviewers, 2008

HIDRA Value Proposition

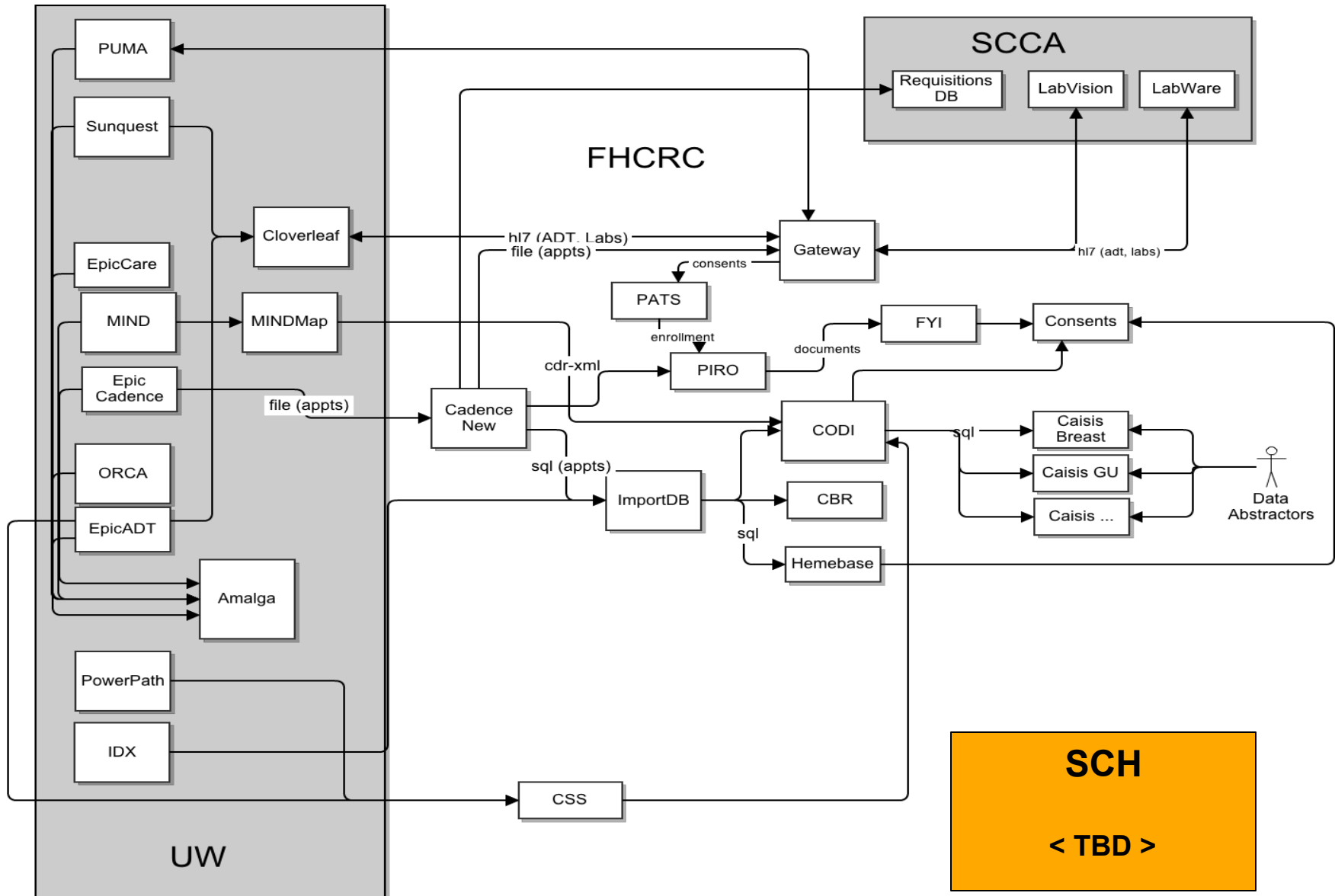
Enabling Precision Oncology & Molecular Diagnostics (Integrating Research and Clinical Practice)



Imperative for a world-class research center's competitive position.

HIDRA Tier-1: Clinical Data Transport

Existing Consortium Data Flows (before HIDRA Tier-1)



HIDRA Axes

*Make all relevant data readily available for search and retrieval
(or inputs to analytical tools)*



HIDRA Program Framework

Multi-Year Consortium Biomedical Informatics Initiative

Tier-4



Integrated Genomic and other Assay Data

Enable data mining and continuous modeling (*annotation/indexing for discovery*)
Enable precision oncology research (*hypothesis-driven search by mutations/biomarkers*)

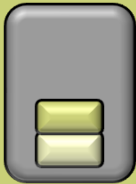
Tier-3



Study Information Management (consent-based security)

Provide data to and reporting from Consortium Clinical Trial Management System (CTMS)
Enable study-specific security groups, driven through enterprise CTMS

Tier-2



Secondary Use of Clinical Data (data alignment, NLP, and UI)

Selecting and reporting on cohorts using clinical and associated biospecimen data
(e.g. feasibility analysis, care pathway reporting, outcomes and translational research)

Tier-1



Clinical Data Transport (platform, plumbing, security & operations)

UW and SCH data feeds for solid tumor databases
UW and SCH data feeds for transplant and hematologic malignancy databases

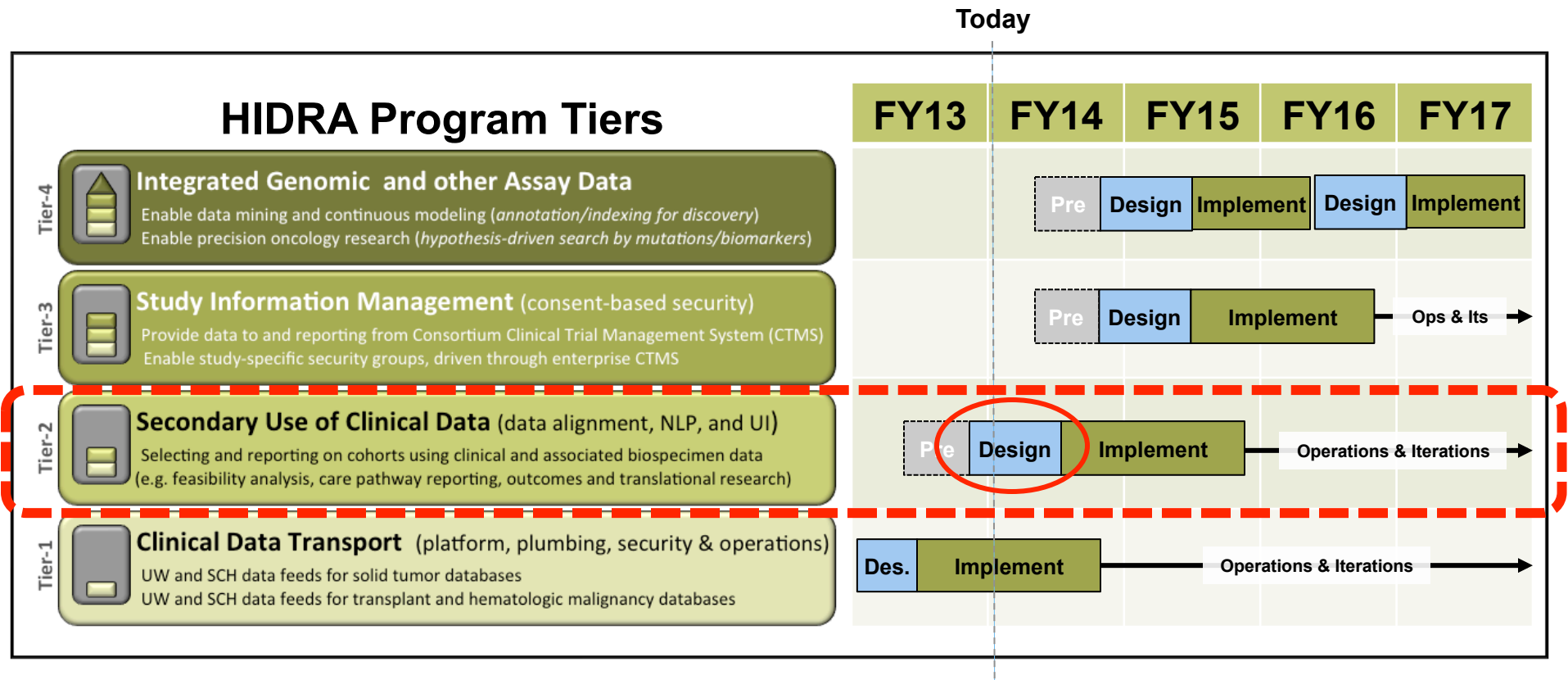
HIDRA Strategic Drivers

Rapid-Learning Informatics for a Competitive NCI CCC

- **Enable us to learn from every patient who comes through the door, and integrate that knowledge back into the clinical care**
 - Secondary use of clinical data for research, activities preparatory to research, healthcare operations, QA/QI, and public health purposes
- **Integrate**
 - Integrate data and systems across disease groups
 - Integrate genomic and other assay data with biospecimen and clinical data
 - Integrate security/permissions with enterprise, Consortium CTMS
- **Automate or facilitate manual, repetitive processes**
 - Manual data abstraction from medical records and clinical reports
 - Patient reported data (e.g. long-term follow-up and outcomes)
- **Strong competitive platform**
 - Be ready for FISMA security or FDA regulatory reviews and audits

HIDRA Program Roadmap

Tier-2: Secondary Use of Clinical Data



Typical Program Lifecycle per Tier:



HIDRA Tier-2

Broad Analysis of End-User Functionality & Services

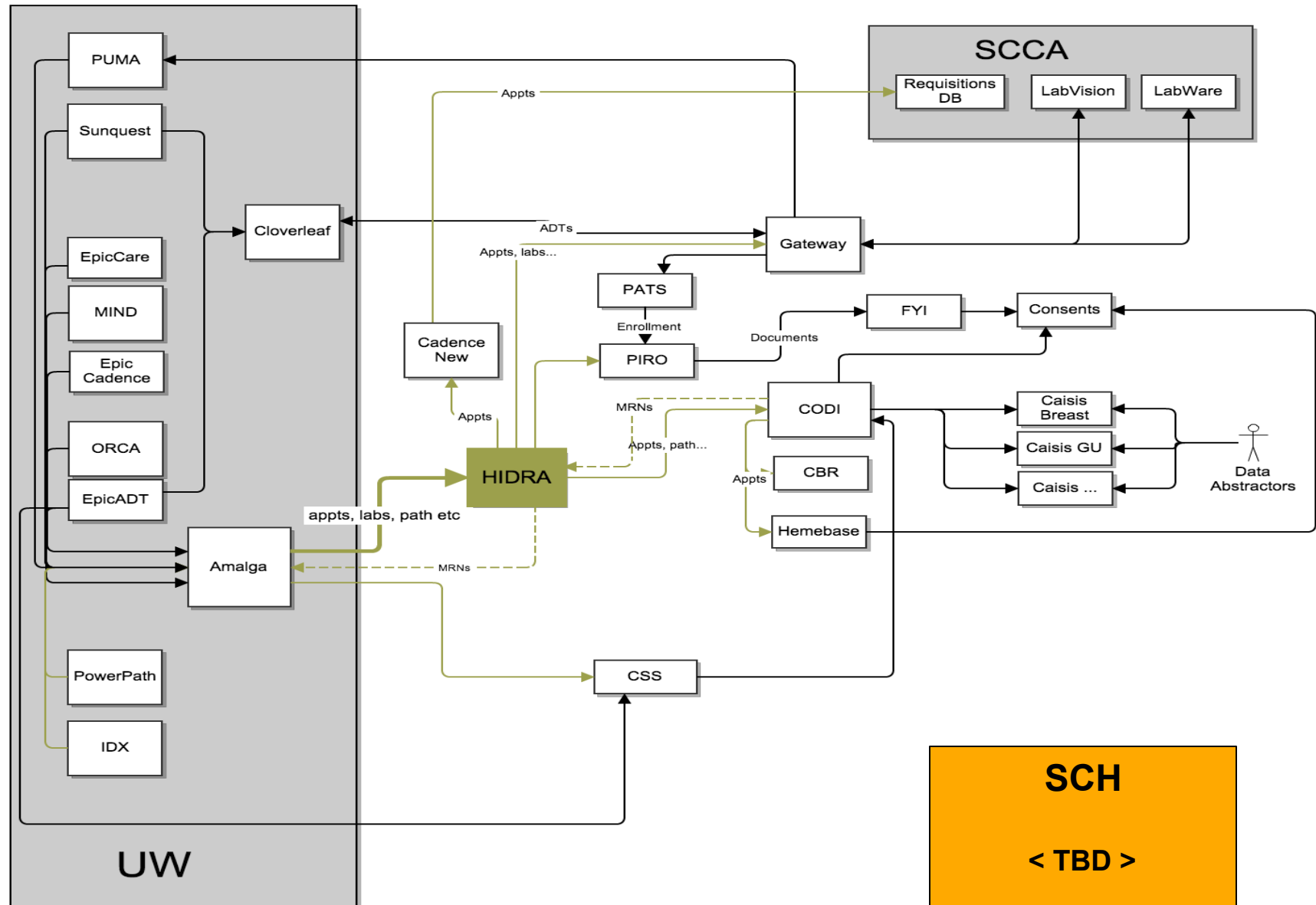
HIDRA Service / Function	Disease Groups												Programs			
	BMT	Breast	GI	GU	Gyn	Head/Neck	Heme	Lung	Melanoma	Neuro Onc	Peds (SCH)	Renal	Sarcoma	CSS / T.Reg	HICOR	Infect.Surv.
1. Cohort View / Dashboard(s)																
2. Single Patient View																
3. Specimen View (VBD)																
4. Queries, Reports, & Feeds																
a. Research (identified)																
b. Reviews P-T-R (de-ID)																
c. Healthcare Operations																
d. QI/QA																
e. Public Health Purposes																
5. Dataset Management																
6. Characterized Data Elements (NLP, Computation)																
7. Patient Reported Data (LTFU, PROs)																

Tier-2 Design Project
 Work with each Group/Program to:
(1) Validate; (2) Refine; (3) Rank Order

Orange = 1st Target Groups (May-Jul)
Yellow = 2nd Target Groups (Jul-Sep)
Gray = 3rd Target Groups (Aug-Oct)

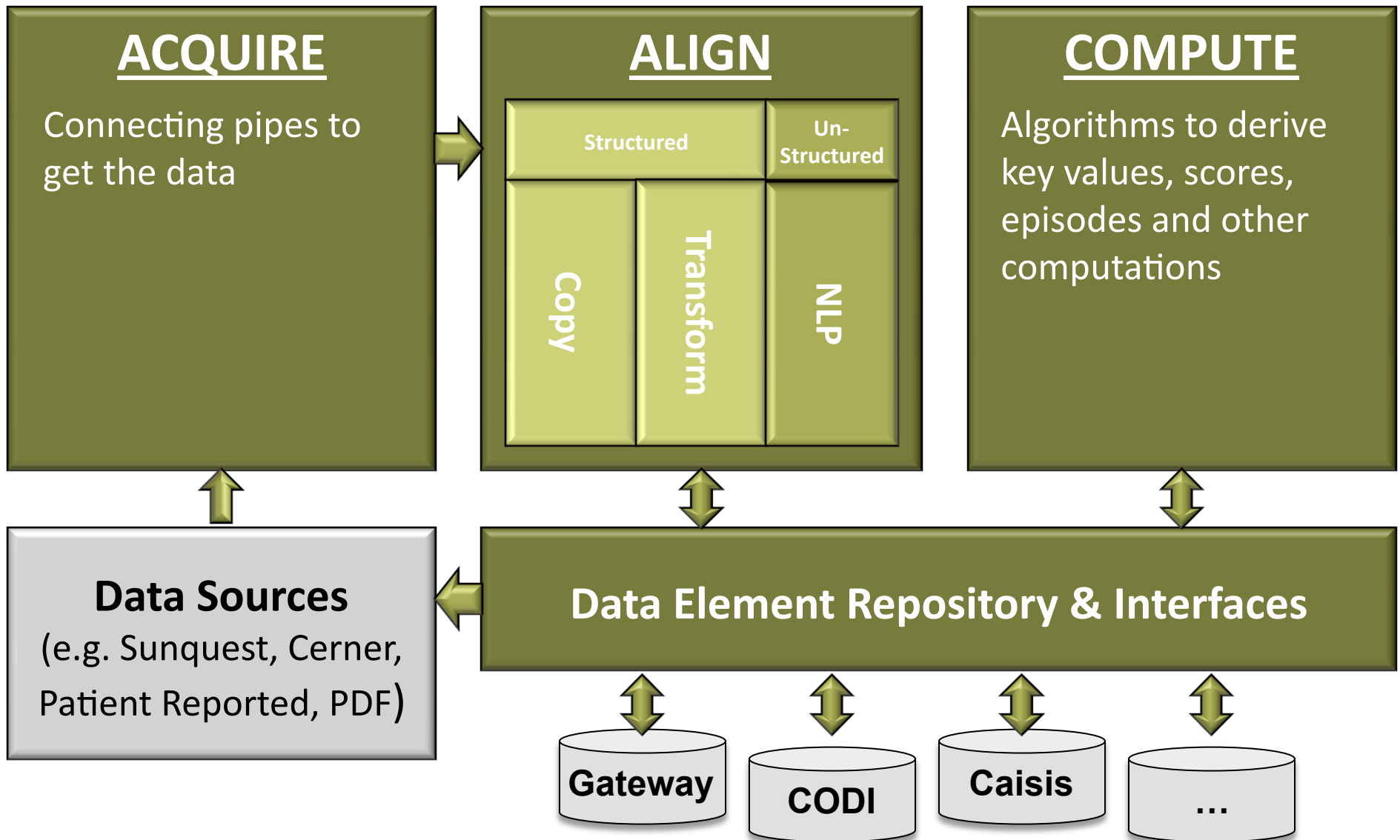
HIDRA Tier-1

New Consortium Data Flows & Repository (T-2 Starting Point)



HIDRA Tier-2

Conceptual Platform Functions: *What's in the "Green Box"?*



We condensed over 14,000 existing and desired fields from 13 different disease groups into just under 4,000 individual elements

- 65% of data elements come from unstructured sources

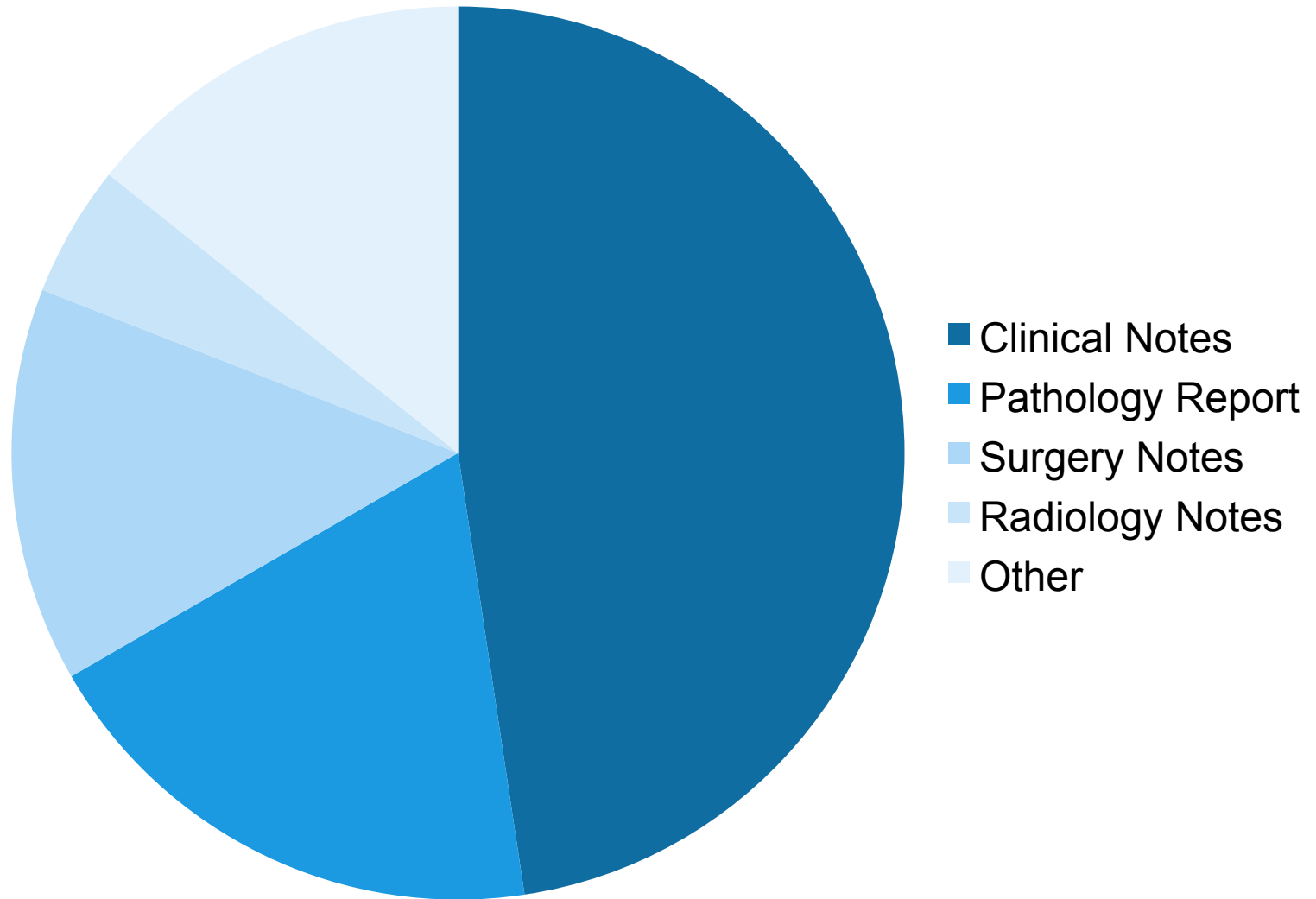
(this estimate was made assuming that patients are diagnosed and receive all of their treatment within the consortium)

- 15% of data elements could be patient reported

(about 75% of these elements are currently coming from unstructured sources)

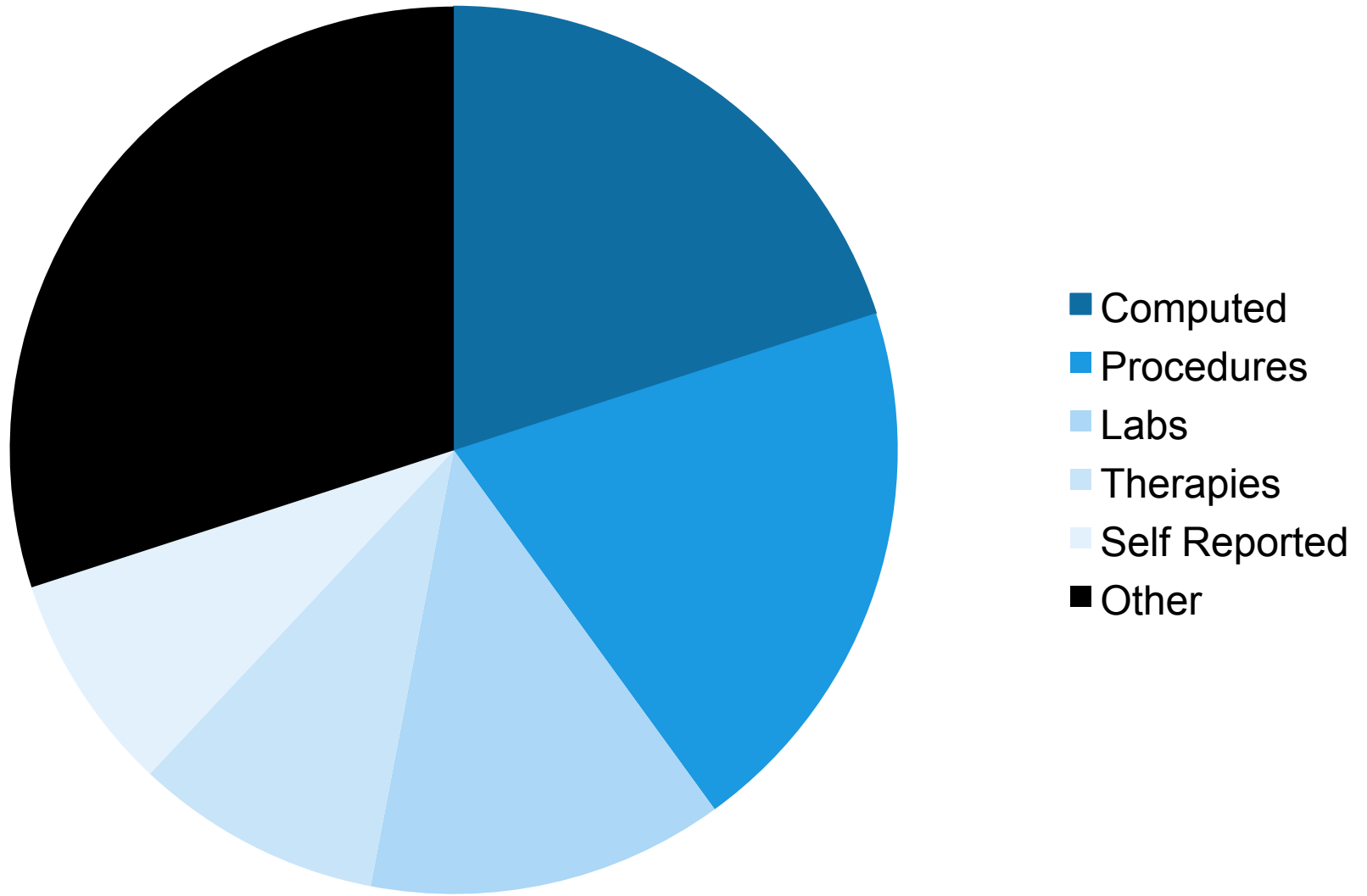
- 15% of data elements are computed from other elements

Sources of Unstructured Elements

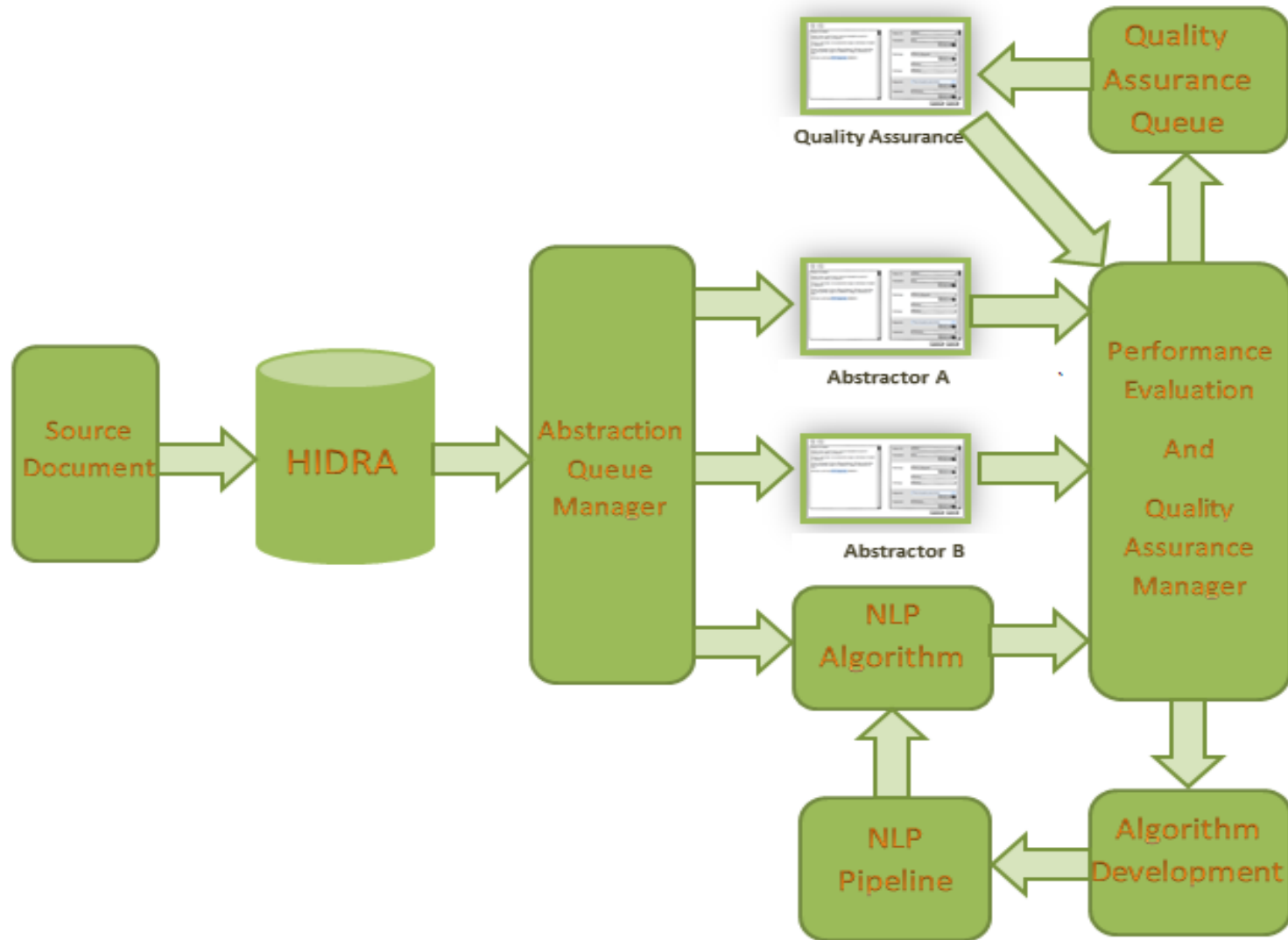


Singleton Elements

(representing 90% of all elements)



Natural Language Processing Lifecycle





mammogram was obtained dated 01/28/12, which showed a mass in the right breast. On 02/10/12, she underwent an ultrasound-guided biopsy. The pathology showed an infiltrating ductal carcinoma Nottingham grade II. The tumor was ER positive, PR positive and HER-2/neu negative. On 02/22/12, she underwent a lumpectomy and sentinel lymph node biopsy. The pathology showed a 3.3 cm infiltrating ductal carcinoma grade I, one sentinel lymph node was negative. Therefore it was a T2, N0, M0 stage IIA breast cancer. Of note, at that time she was taking hormone replacement therapy and that was stopped. She underwent radiation treatment ending in May 2008. She then started on Arimidex, but unfortunately she did not tolerate the Arimidex and I changed her to Femara. She also did not tolerate the Femara and I changed it to tamoxifen. She did not tolerate the tamoxifen and therefore when I saw her on 11/23/12, she decided that she would take no further antiestrogen therapy. She met with me again on 02/22/13, and decided she wants to rechallenge herself with tamoxifen. When I saw her on 04/28/13, she was really doing quite well with tamoxifen. She tells me 2 weeks after that visit, she developed toxicity from the tamoxifen and therefore stopped it herself. She is not going take to any further tamoxifen.

Overall, she is feeling well. She has a good energy level and her ECOG performance status is 0. She denies any fevers, chills, or night sweats. No lymphadenopathy. No nausea or vomiting. No change in bowel or bladder habits.

CURRENT MEDICATIONS: Avapro 300 mg q.d., Pepcid q.d., Zyrtec p.r.n., and calcium q.d.
 ALLERGIES: Sulfa, Betadine, and IV contrast.

PROCEDURE:	Mammogram	01/28/12
MAMMOGRAM:	Mass on right side	
PROCEDURE:	Ultrasound-guided biopsy	02/10/12
TUMOR:	Invasive ductal carcinoma	
Endocrine:	ER positive, PR negative	
HER2:	HER2/neu negative	
Nottingham:	Grade 2	
Procedure:	Lumpectomy	02/22/12
Staging:	T2	Tumor size: 3.3cm
Lymph:	N0	

[CANCEL](#)
[VERIFY](#)

Ranking Capabilities

Critical	Very Important	Somewhat Important	Not Important
Evaluate expected trial enrollment			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify subsets of patients by _____			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generate survival curves for selected subsets			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Generate summary statistics for selected subsets			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Find available specimens based on patient and sample criteria			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collect patient data (e.g. patient reported outcomes) electronically			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Provide automated abstraction of data from notes			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify patients based on treatment			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify patients by clinical tumor markers and mutations			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Manage long-term follow-up or other patient data collection process for cohort(s) of patients			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Critical	Very Important	Somewhat Important	Not Important
View detailed treatment timelines for single patients			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compare treatment timelines for multiple patients			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Add my own data elements or datasets to HIDRA			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Query and extract combined data as spreadsheets/datasets			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Query based on event sequences (e.g. chemo within 7 days of death)			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search across combined data from multiple data sources			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Share subsets of data with only selected people			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enable data use for FDA-regulated studies			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrate my specimen management with the rest of the data			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Explore or run queries on a de-identified view of full database (feasibility for grants, trials, or retrospective studies)			
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Prioritized Capabilities

Scoring Legend:																				
3 = Critical																				
2= Very Important																				
1 = Somewhat Important																				
0 = Not Important																				
ID	FEATURE	Rank = 2.5 or better	Rank = 2.0 or better	Top 10	Neuro Rank = 3 or 2	Breast - Imaging	Breast - SPORE	GI-Hepatobiliary	GI-Lower	GI-Pancreas	Gyn	Heme-AML	Heme-Inherited MDS	Heme-Myeloma	Infection Surv. - Pergam	Lung	Neuro	Peds/SCH	Sarcoma - Med Onc	Sarcoma - Surg / Rad
01	Evaluate expected trial enrollment	2.2	2.2	2.2	3	3	3	2	2	1	2	2	0	2	1	3	3	3	3	3
02	ID subsets of Patients by _____	2.8	2.8	2.8	3	3	3	3	2	3	3	3	2	3	3	3	3	2	3	3
03	Generate Survival Curves for selected subsets	2.1	2.1	2.1	3	3	3	3	2	3	3	1	1	0	2	2	3	2	2	0
04	Generate Summary Statistics for selected subsets	2.5	2.5	2.5	2	3	3	3	2	3	3	3	2	2	2	3	2	1		2
05	Find available Specimens based on Patient and Sample criteria	2.3	2.3	2.3	3	3	3	3	3	1	0	3	0	2	2	2	3	3	3	2
06	Collect Patient data electronically (e.g., PROs)	1.9	1.9	1.9	1	3	2	1	3	3	2	1	1	0	1	2	1	3	3	3
07	Provide Automated Abstraction of data from notes	2.5	2.5	2.5	3	3	3	2	3	3	3	3	2	3	1	3	3	2	1	3
08	Identify Patients based on Treatment	2.7	2.7	2.7	3	3	2	3	3	3	2	3	2	2	3	3	3	3	3	3
09	Identify Patients by Clinical Tumor Markers and Mutations	2.5	2.5	2.5	3	3	3	3	3	3	1	3	3	2	3	3	3	1	0	3
10	Manage LTFU or other Pt data collection process for cohort(s) of Pts	1.8	1.8	1.8	0	3	2	0	2		2	3	3	1	1	1	0	3		2
11	View detailed Treatment Timelines for Single Patients	1.7	1.7	1.7	2	3	2	1		1	1	3	3	0	3	1	2	1	3	0
12	Compare Treatment Timelines for Multiple Patients	1.4	1.4	1.4	1	3	2	1		2	0	1	0	2	1	1	1	1	3	2
13	Add my own data elements or datasets to HIDRA	1.8	1.8	1.8	0	3	2	2		1	0	3	1	3	3	1	0	2	2	2
14	Query and extract combined data as spreadsheets/datasets	2.6	2.6	2.6	3	3	3	3	1	2	3	3	3	3	3	3	3	3	3	1
15	Query based on event sequences (e.g. chemo within 7 days of death)	2.2	2.2	2.2	1	3	2	3		2	3	3	1	1	3	3	1	3		1
16	Search across combined data from multiple data sources	2.8	2.8	2.8	3	3	3	3		2	2	3	3	2	3	3	3	3		3
17	Share subsets of data with only selected people	1.9	1.9	1.9	2	3	3	3		2	0	3	3	1	2	1	2	1	2	0
18	Enable data use for FDA-regulated studies	0.8	0.8	0.8	1	3	0	0		1	0		1	0	3	1	1	0		0
19	Integrate my specimen management with the rest of the data	1.9	1.9	1.9	3	3	3	3		0	2	0	3	0	2	1	3	3		2
20	Explore or run queries on a de-identified view of full database	2.3	2.3	2.3	2	3	3	3			3	2	2	1	3	3	2	2		0

Mock UI Walk-Throughs

Per Group Data Portals

HIDRA Welcome, Dr. Claussen

CLINICAL / RESEARCH GROUPS ALL PATIENTS

BMT 1268 Patients Statistic 2 Data Point 3	GU 1268 Patients Statistic 2 Data Point 3	HICOR 1268 Patients Statistic 2 Data Point 3	Neuro Onc 1268 Patients Statistic 2 Data Point 3
Breast 1268 Patients Statistic 2 Data Point 3	Gyn 1268 Patients Statistic 2 Data Point 3	Infection Surveillance 1268 Patients Statistic 2 Data Point 3	Peds (SCH) 1268 Patients Statistic 2 Data Point 3
CSS/T.Reg 1268 Patients Statistic 2 Data Point 3	Head/Neck 1268 Patients Statistic 2 Data Point 3	Lung 1268 Patients Statistic 2 Data Point 3	Renal 1268 Patients Statistic 2 Data Point 3
GI 1268 Patients Statistic 2 Data Point 3	Heme 1268 Patients Statistic 2 Data Point 3	Melanoma 1268 Patients Statistic 2 Data Point 3	Sarcoma 1268 Patients Statistic 2 Data Point 3

1. Cohort View / Dashboard(s) – Preliminary Concept

The dashboard is titled "HIDRA – GU Program Dashboard" and includes a welcome message for "Dr. Nelson" with a "Logout" link. It is divided into four main sections:

- SPECIMENS:** A table showing specimen counts by person type and tissue type.
- PATIENTS:** A line graph showing the number of patients in the dataset from March 2012 to March 2013.
- STUDIES:** Two overlapping circles representing enrollment and protocols at UW and FHCRC.
- ASSAYS:** A flow diagram showing the progression from DNA to RNA, Protein, and Metabolites, with corresponding data visualization icons.

Person Type	Tissue (non-cancer)	Tissue (cancer)	Blood	Met Tissue
non cancer-female	100 (10 people)		2000 (500 people)	
non cancer-male				
breast cancer	1000 (100 people)	25 (1 person)	1000 (323 people)	35 (20 people)
ovarian cancer	600 (500 people)			
prostate cancer				
lung cancer				
total	1100 (110 people)	75 (6 people)	3000 (800 people)	70 (50 people)

Month	Patients
Mar 2012	348
May 2012	383
Jul 2012	390
Sep 2012	402
Nov 2012	410
Jan 2013	423
Mar 2013	430
May 2013	440
Jul 2013	448
Sep 2013	458
Nov 2013	469
Jan 2014	470

Category	UW	FHCRC
Protocols	207	135
Enrollments	551	455

ASSAYS

The assay flow diagram shows the following sequence: DNA → RNA → Protein → Metabolites. Each step is accompanied by a representative data visualization: a DNA double helix, an RNA microarray, a protein structure, and a metabolite network graph.

UNSAVED Group (1472)

[SAVE](#)
[CLEAR](#)
[OPEN GROUP](#)

- SUMMARY
- DEMOGRAPHICS
- ENCOUNTERS
- DIAGNOSTIC
- MARKERS / MUTATIONS
- TREATMENT
- STUDY
- PROVIDER

by Demographic

- Age		10
+ 0-10		0
+ 11-20		3
+ 21-30		16
+ 31-40	<div style="width: 30%;"></div>	192
+ 41-50	<div style="width: 55%;"></div>	558
+ 51-60	<div style="width: 72%;"></div>	722
+ 61-70	<div style="width: 45%;"></div>	310
+ 71-80	<div style="width: 35%;"></div>	289
+ 81-90	<div style="width: 20%;"></div>	163
+ 91+	<div style="width: 10%;"></div>	19
+ Gender		2
+ Race		6
+ Ethnicity		2

Research Division

Breast

Demographic

3 age groups

UNSAVED Group (1472)

SAVE

CLEAR

OPEN GROUP

SUMMARY

DEMOGRAPHICS

ENCOUNTERS

DIAGNOSTIC

MARKERS / MUTATIONS

TREATMENT

STUDY

PROVIDER

by Diagnostic Group

+ Diseases	10
+ Labs	2
+ Images	6
- Pathology	
+ Diagnosis	6
+ Stage at Diagnosis	5
+ Grade	8
+ Site	4

Research Division

Breast

Demographic

3 age groups

Stage3-4_31-60yr (982)

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[SUMMARY](#)
[DEMOGRAPHICS](#)
[ENCOUNTERS](#)
[DIAGNOSTIC](#)
[MARKERS / MUTATIONS](#)
[TREATMENT](#)
[STUDY](#)
[PROVIDER](#)

by Diagnostic Group

+ Diseases		10
+ Labs		2
+ Images		6
- Pathology		
+ Diagnosis		6
+ Stage at Diagnosis		5
0		11
I		80
IIA		157
IIB		242
IIIA		256
IIIB		303
IIIC		258
IV		165
+ Grade		8
+ Site		4

Research Division

Breast

Demographic

3 age groups

Diagnostic

3 pathology filters (Stage)

UNSAVED Group (982)

SAVE

CLEAR

OPEN GROUP

- SUMMARY
- DEMOGRAPHICS
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- DIAGNOSTIC
- MARKERS / MUTATIONS
- TREATMENT
- STUDY
- PROVIDER

by Diagnostic Group

Save Group



Stage3-4_31-60yr

CANCEL

SAVE

Research Division

Breast

Demographic

3 age groups

Diagnostic

3 pathology filters (Stage)

	III	305
	IIIC	258
	IV	165
+ Grade		8
+ Site		4

Stage3-4_31-60yr (982)

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[OPEN GROUP](#)

SUMMARY

DATA VIEWS

REPORTS

STUDIES

TIMELINES

RESEARCH REQUESTS

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[EXPORT](#)
[COLUMN CHOOSER](#)
[OPTIONS](#)

ID	Gender	Age	Stage at Diagnosis
AR001	Female	33	IIIA
AR005	Female	41	IIIC
AR013	Female	44	IIIC
AR021	Female	56	IIIB
AR025	Female	60	IV
AR028	Female	58	IIIB
AR051	Female	49	IIIA
AR052	Female	53	IIIA
AR053	Female	47	IIIC
AR054	Female	50	IIIA
AR055	Female	59	IIIB
AR056	Female	59	IIIB
AR057	Female	60	IIIC
AR058	Female	44	IV
AR059	Male	39	IIIA

Research Division

Breast

Demographic

3 age groups

Diagnostic

3 pathology filters (Stage)

Stage3-4_31-60yr (982)

SAVE

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COLUMN CHOOSER

OPTIONS

ID Gender Age Stage at Diagnosis Side

COLUMN CHOOSER

<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Demographics <input checked="" type="checkbox"/> Encounters <input checked="" type="checkbox"/> Diagnostics <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Labs <input checked="" type="checkbox"/> Images <input checked="" type="checkbox"/> Pathology <ul style="list-style-type: none"> <input type="checkbox"/> Diagnosis <input type="checkbox"/> Grade <input type="checkbox"/> Site <input checked="" type="checkbox"/> Markers/Mutations <input checked="" type="checkbox"/> Treatment <input checked="" type="checkbox"/> Study <input checked="" type="checkbox"/> Provider 	<p>Side</p> <p>What side the tumor(s) were found:</p> <ul style="list-style-type: none"> • Right • Left • Both 	<ul style="list-style-type: none"> ID Gender Age Stage at Diagnosis <li style="background-color: #e0f0ff;">Side
--	--	--

+ -

Cancel
OK

Research Division

Breast

Demographic

3 age groups

Diagnostic

3 pathology filters (Stage)

Stage3-4_31-60yr (982)

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[STUDIES](#)
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[RESEARCH REQUESTS](#)
[PRINT](#)
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[NEW REPORT](#)

Name	Details	Data Cut Date	Status	Modified	Author
Exams					
Grid View: Physical + Demographics	☰			2011-03-20	
Grid View: Demographics +	☰			2010-07-23	
Systolic vs. Diastolic Blood Pressure	☰			2013-04-24	
Physical Exam	☰			2013-05-26	
Demographics	☰	2013-02-28	✓	2013-06-01	steveh
Participation and Genetic Consent	☰			2012-11-10	
Tests					
Grid View: All Lab Results	☰			2009-06-25	
Grid View: Join for Cohort Views	☰			2009-06-25	
Test Results	☰			2012-11-10	
Lab Results	☰			2013-04-16	
Status Assessment	☰			2012-11-10	
Survival Curves					
Cumulative Survival over Years	☰			2013-04-17	
Average CD4+ Levels Per Cohort	☰			2012-11-14	
R Cohort Regression: Lymph v. Time	☰			2013-06-24	
R Cohort Regression: Lymph v. CD4	☰			2013-06-24	
Viral Load / CD4 Scatter	☰			2012-11-15	
Lymphocyte / CD4 Scatter	☰			2012-11-10	
Lymphocyte Count: Disease Progression without ARV	☰			2012-11-10	
Weight by ARV Regimen Type	☰			2013-04-17	
Height vs. Weight	☰			2012-11-17	

Research Division

Breast

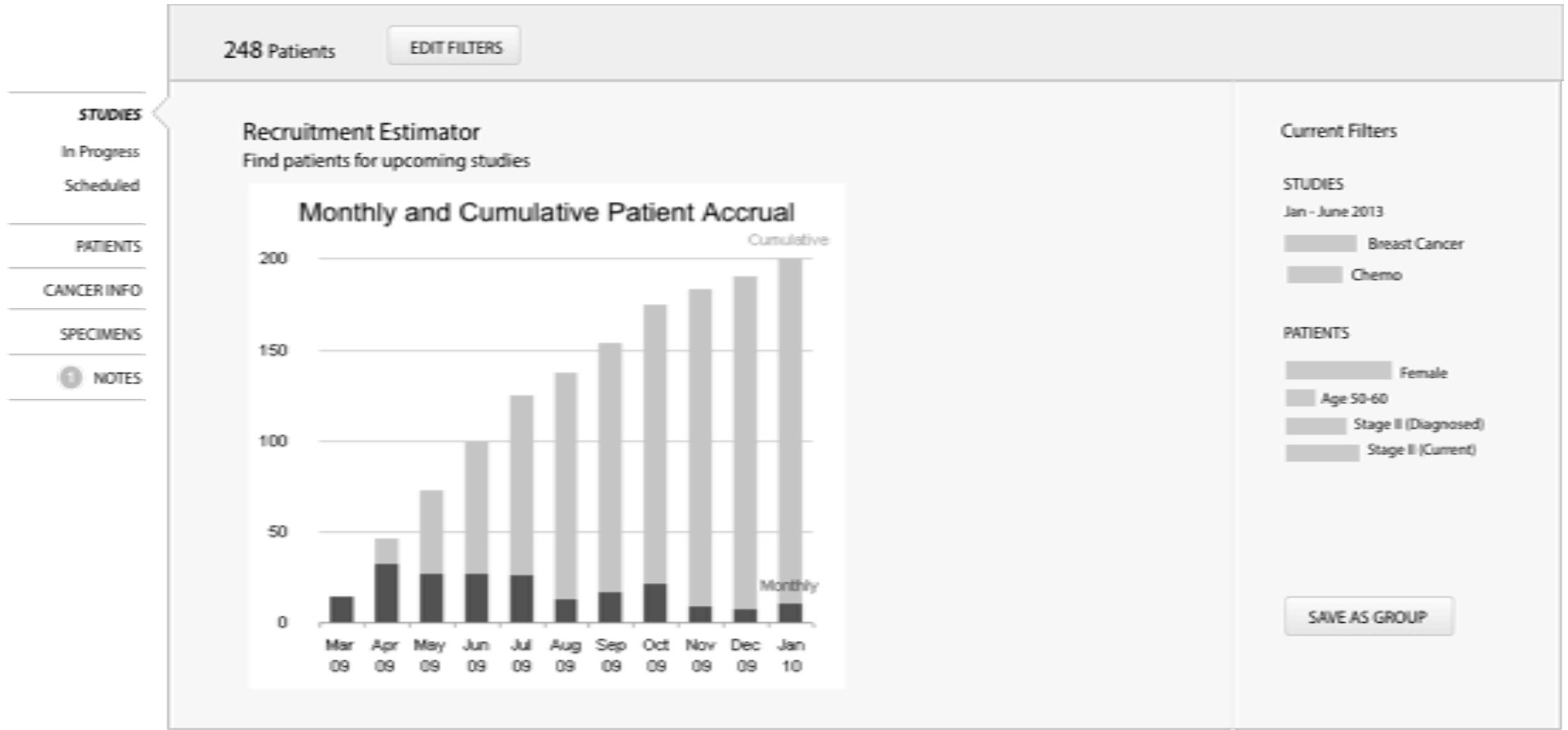
Demographic

3 age groups

Diagnostic

3 pathology filters (Stage)

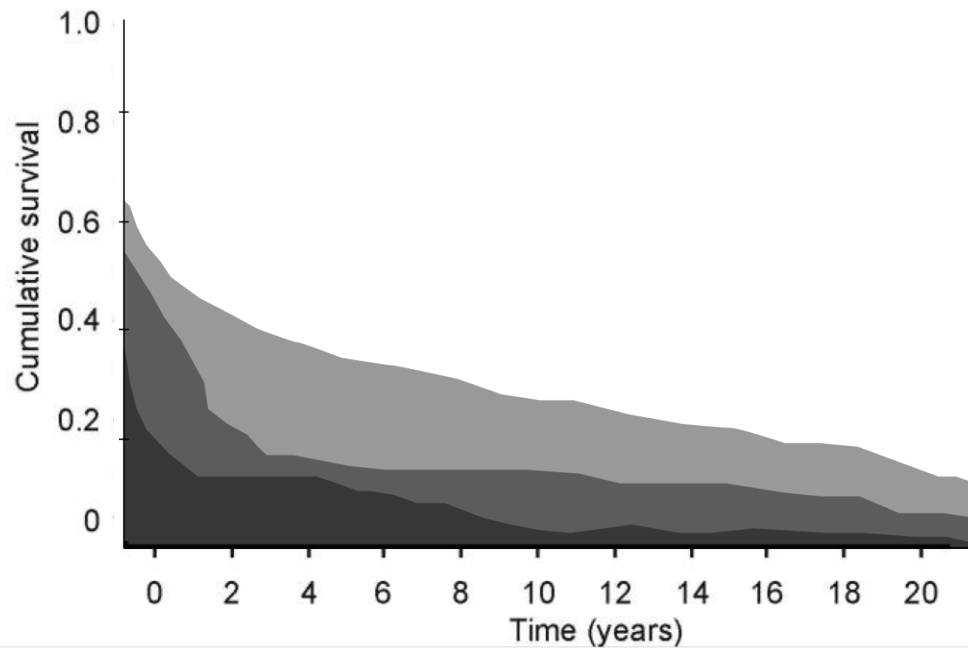
Patient Accrual



Stage3-4_31-60yr (982)

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Cumulative Survival over Years



Research Division

Breast

Demographic

3 age groups

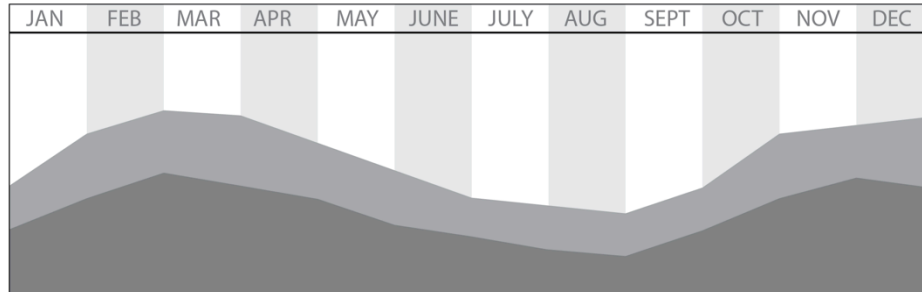
Diagnostic

3 pathology filters (Stage)

Stage3-4_31-60yr (982)

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AR013



Demographics

Female
Married
DOB 12/3/78
5'6"
135 lbs.

123 Streename Here
Cltyname, ST 12345
(253) 555-1212

Emergency Contact
Next of Kin

Referring Physicians
Insurance

Clinical

Former smoker
Diagnosed: March 1, 2013

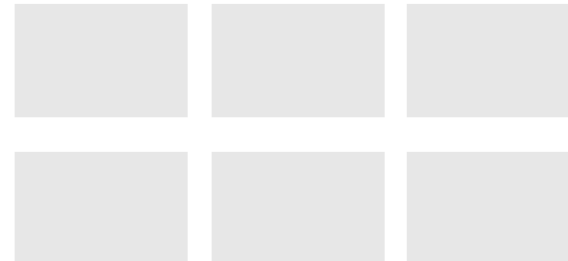
Therapeutic

Current: Chemotherapy Line 1
Started: March 25, 2013
Dose: Here is dose info

Next treatment: June 25, 2013

Cancer Profile

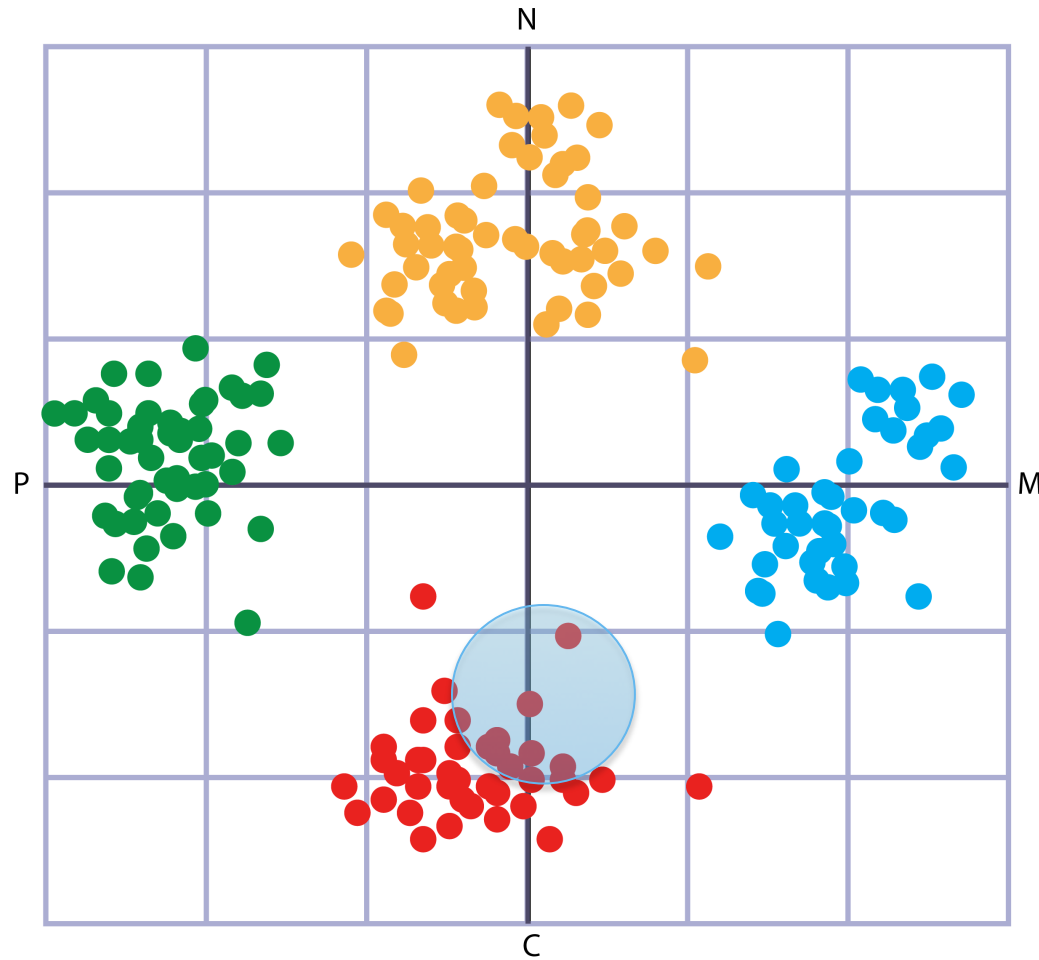
Type
Characteristics



GBM_With_Samples (982)

[SAVE](#)[CLEAR](#)[OPEN GROUP](#)[SUMMARY](#)[DATA VIEWS](#)[REPORTS](#)[STUDIES](#)[TIMELINES](#)[RESEARCH REQUESTS](#)

TCGA Gene Expression Profile



Research Division

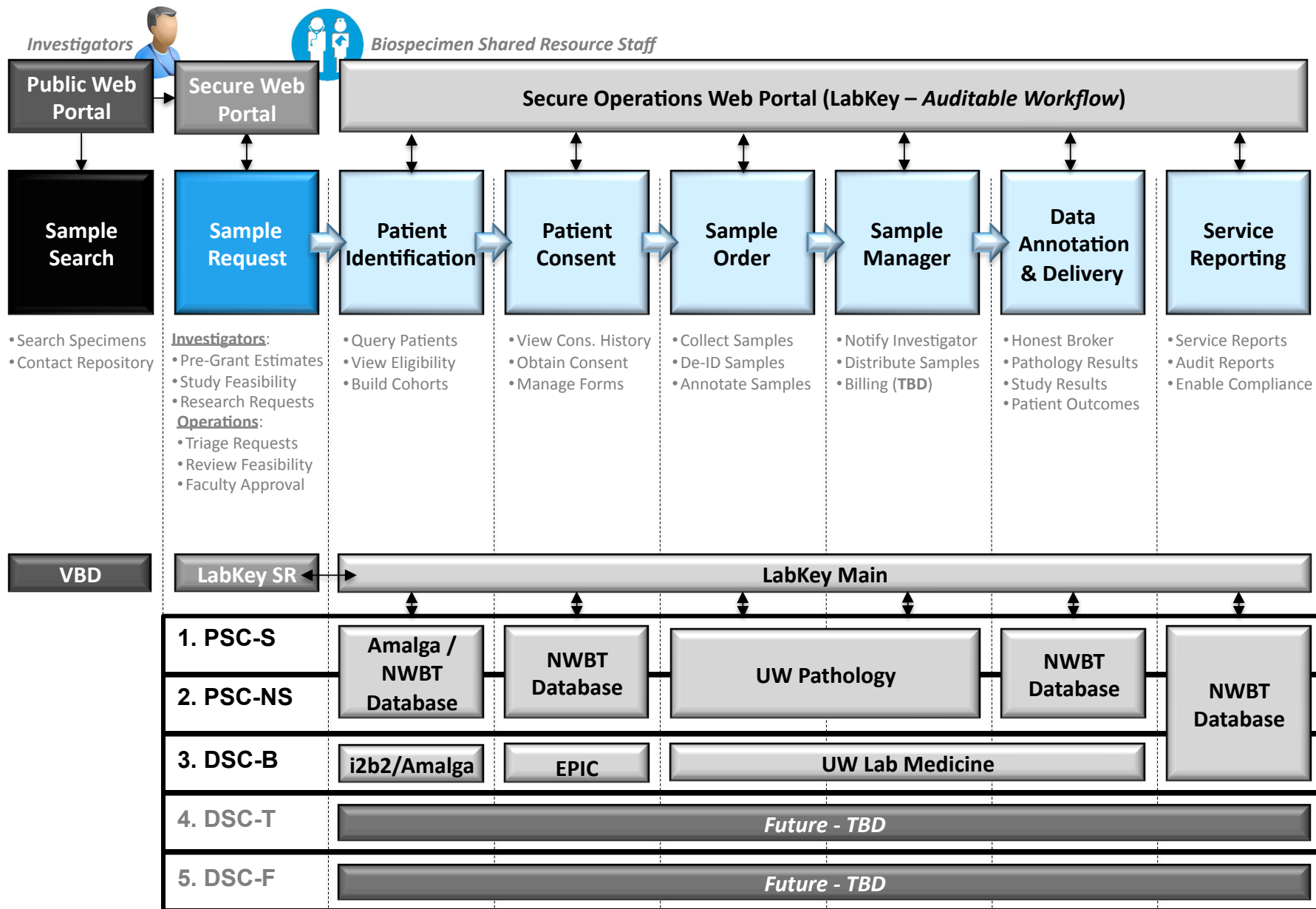
Neuro Onc

Demographic

3 age groups

Diagnostic

4 clinical stages



Specimen View - Summary

VBD Specimen Search

Summary **Matched Specimen**

Person Type	Tissue (non-cancer)	Tissue (cancer)	Blood	Met Tissue	Other	Total
non-cancer male						
non-cancer female	374 (152 people)	2620 (1024 people)	39793 (3294 people)			42787 (4470 people)
breast cancer		2442 (887 people)	3867 (756 people)	3 (2 people)		6312 (1645 people)
ovarian cancer	50 (21 people)	2172 (771 people)	341 (83 people)			2563 (875 people)
prostate cancer		7044 (1596 people)	7321 (1975 people)			14365 (3571 people)
lung cancer						
sarcoma cancer						
neuro cancer						
total	424 (173 people)	14278 (3963 people)	51322 (5524 people)	3 (2 people)		66027 (9662 people)

Specimen View - filters

Filters							
Person Filters				Specimen Filters			
Gender:	<input type="text"/>	<input type="text"/>	<input type="text"/>	Specimen Category:	<input type="text"/>	Cancer Grade:	<input type="text"/>
Race:	<input type="text"/>	<input type="text"/>	<input type="text"/>	Specimen Type:	<input type="text"/>	Tumor Markers:	<input type="text"/>
Ethnicity:	<input type="text"/>	<input type="text"/>	<input type="text"/>	Preservation Method:	<input type="text"/>	Prior Treatment:	<input type="text"/>
Pathology TNM Stage:	<input type="text"/>	<input type="text"/>	<input type="text"/>	Pathologic Diagnosis:	<input type="text"/>	Specimen Site:	<input type="text"/>
Pathologic Diagnosis:	<input type="text"/>	<input type="text"/>	<input type="text"/>	Histologic Diagnosis:	<input type="text"/>	Repository:	<input type="text"/>
Histologic Diagnosis:	<input type="text"/>	<input type="text"/>	<input type="text"/>				
Primary Cancer Site:	<input type="text"/>	<input type="text"/>	<input type="text"/>				

Preservation Method	Gender	Repository	Met	Other	Tissue (non-cancer)	Blood	Tissue (cancer)
null	f	GUTB				3 (1 people)	
		GYN		551 (483 people)	356 (229 people)	147 (131 people)	505 (392 people)
	m	GUTB				7162 (6 people)	
	null	LUNG			50 (48 people)		61 (54 people)
ACD Buffy Coat	f	POCRC		4327 (20 people)			
ACD Plasma	f	POCRC		4567 (22 people)			
Ascites	f	POCRC		1 (1 people)			
EDTA Buffy Coat	f	POCRC		2233 (21 people)			
Formalin	f	POCRC	270 (14 people)	896 (23 people)	427 (27 people)		229 (19 people)
Formalin-fixed	m	GUTB					678 (4 people)
frozen	f	BSR				3884 (17 people)	
	m	BSR				13 (3 people)	
Frozen	f	POCRC	280 (13 people)	679 (20 people)	475 (30 people)		308 (21 people)
		BSR	1 (1 people)		806 (13 people)		1704 (11 people)
OCT	f	POCRC	164 (11 people)	913 (20 people)	466 (29 people)		321 (19 people)
		BSR			2 (2 people)		7 (2 people)
	m	GUTB					6200 (7 people)
Plasma	f	POCRC		11290 (27 people)			
Serum	f	POCRC				14347 (27 people)	
WBC Pellet	f	POCRC				152 (6 people)	

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Specimen View

Detailed Specimen List & Export

Search for Specimens

Export **Request Selected Specimen**

<input type="checkbox"/>		Sample ID	Subject Age At Sample Collection	Subject Gender	Subject Race	Subject Ethnicity	Pt. Cancer Status	Tumor Type/ Organ Site	Patient Diagnosis	Sample Type	Preservation Method	Sample Diagnosis	Pathology Stage	Sample Cancer Status	Path Grade
<input type="checkbox"/>	EDIT >	DETAILS >	BSK-020025-A-1	43 F	Unknown	Unknown/prefer not to answer	Cancer	Breast IDC		Breast Tissue	OCT	IDC	IA	invasive	II/III (high grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSK-020025-A-2	43 F	Unknown	Unknown/prefer not to answer	Cancer	Breast IDC		Breast Tissue	OCT	IDC	IA	invasive	II/III (high grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSR-020025-A-3	43 F	Unknown	Unknown/prefer not to answer	Cancer	Breast IDC		Breast Tissue	OCT	IDC	IA	invasive	II/III (high grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSK-020025-D-1	43 F	Unknown	Unknown/prefer not to answer	Cancer	Breast IDC		White Blood Cells	frozen		IA		II/III (high grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSR-020026-A-1	54 F	Unknown	Unknown/prefer not to answer	Cancer	Breast IDC		Breast Tissue	OCT	IDC	IIA	invasive	II/III (intermediat grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSK-020026-A-2	54 F	Unknown	Unknown/prefer not to answer	Cancer	Breast IDC		Breast Tissue	OCT	IDC	IIA	invasive	II/III (intermediat grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSR-020026-A-3	54 F	Unknown	Unknown/prefer not to answer	Cancer	Breast IDC		Breast Tissue	OCT	IDC	IIA	invasive	II/III (intermediat grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSK-020026-D-1	54 F	Unknown	Unknown/prefer not to answer	Cancer	Breast IDC		White Blood Cells	frozen		IIA		II/III (intermediat grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSR 020027-A-1	52 F	Asian	Not Hispanic/Latino	Cancer	Breast IDC		Breast Tissue	OCT	IDC	not available	invasive	II/III (intermediat grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSK-020027-D-1	52 F	Asian	Not Hispanic/Latino	Cancer	Breast IDC		White Blood Cells	frozen		not available		II/III (intermediat grade)
<input type="checkbox"/>	EDIT >	DETAILS >	BSR 020028-A-2	38 F	Caucasian/White	Not Hispanic/Latino	Cancer	Breast IDC		Breast Tissue	OCT	DCIS	not available	in situ	II/III (intermediat grade)

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