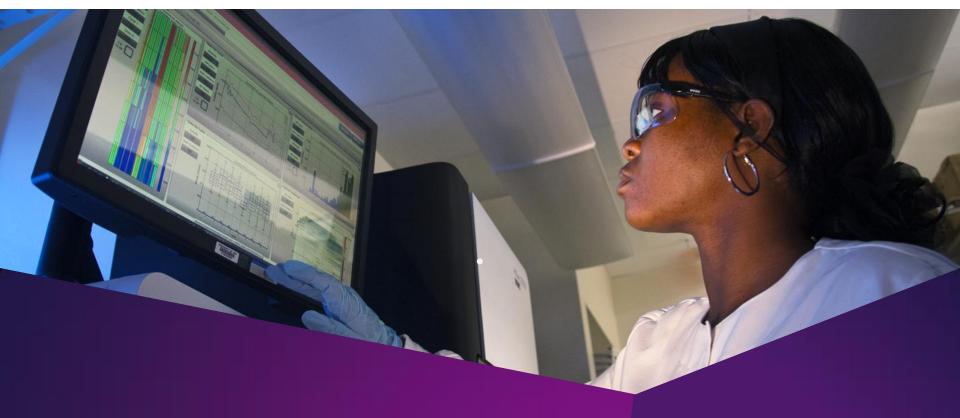# CDR Presentation

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23 July 2015

CDR Overview

- The CDR is a software application for managing data important to biospecimen collection projects. Data are collected, verified, reviewed and exported.

Section A. Donor Demographics

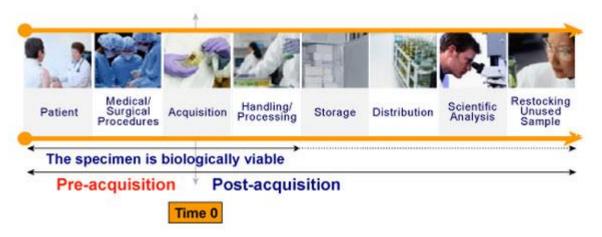|	
Gender ⓘ	Male
Date of Birth ⓘ	**REDACTED (No LDS privilege)**
Age (calculated)	61
Height (inches) ⓘ	67

- It can insert and update specimens via SSL web service from partners; a custom LIMS at the Van Andel Research Institute, and a sequencing pipeline at the Broad Institute. It is the entry point for all clinical data for cases, and collection handling and processing data for specimens. It also houses pathology review and reporting.

- The users of the CDR include all Biospecimen Source Sites (BSS), NIH Program Directors and Leidos staff, Pathology Resource Center (PRC), The Van Andel Institute, The Broad Institute of MIT and Harvard, and the Miami Brain Bank.
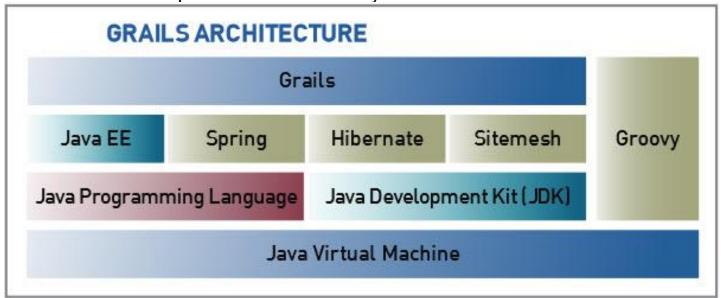
CDR Overview continued…

- The CDR was designed from day one to be a multi-tenant/study application. It can and will support several current and future studies.

- The CDR could be adopted by the broader research community to standardize and streamline biobanking operations.

- The CDR is designed to follow the best practices for biospecimen collection and annotation that the BBRB has published on its website at http://biospecimens.cancer.gov/researchnetwork/lifecycle.asp

Lifecycle of Biospecimens

Patient | Medical/Surgical Procedures | Acquisition | Handling/Processing | Storage | Distribution | Scientific Analysis | Restocking Unused Sample

The specimen is biologically viable

Pre-acquisition | Post-acquisition

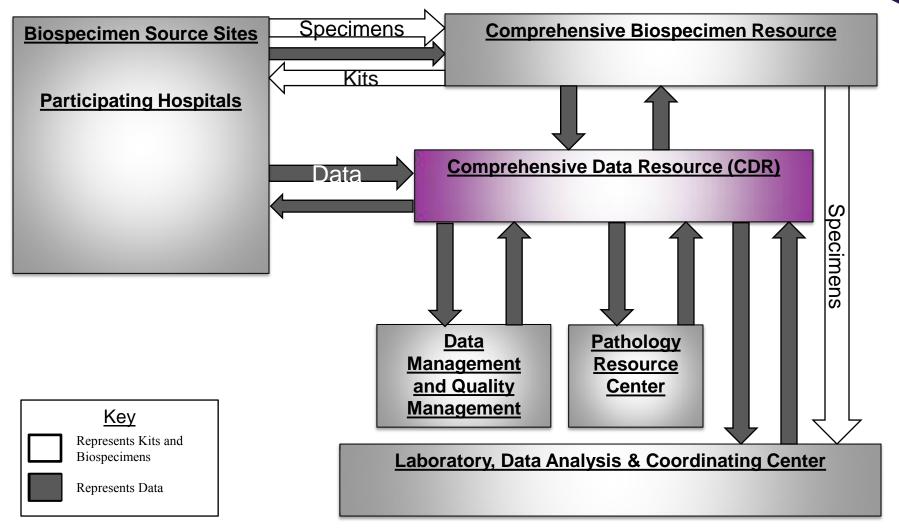Time 0

Leidos Biomedical Research, Inc.
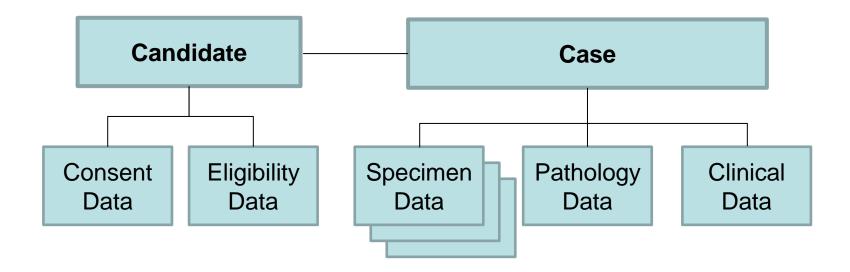
CDR Technology

- The CDR is built on the Grails Framework

  - Leverages Groovy scripting for rapid development and easy learning curve

  - Leverages Spring for security

  - Leverages Hibernate for Object - Relational mapping, keeping the application database agnostic

  - Enables rapid and flexible web service API development, enabling the CDR to interconnect with multiple institutions and systems

GRAILS ARCHITECTURE

Grails				Groovy
Java EE	Spring	Hibernate	Sitemesh	
Java Programming Language	Java Development Kit (JDK)			
Java Virtual Machine				

Biospecimen and Data Flow

Biospecimen Source Sites

Participating Hospitals

Specimens

Kits

Comprehensive Biospecimen Resource

Data

Comprehensive Data Resource (CDR)

Data Management and Quality Management

Pathology Resource Center

Specimens

Laboratory, Data Analysis & Coordinating Center

Key

Represents Kits and Biospecimens

Represents Data

Leidos Biomedical Research, Inc.

CDR Data Model

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CDR User Roles

Role	Write	LDS (access to HIPAA)	Global Access	Notes
BSS	Y	Y	N	Biospecimen Source Site staff role
DM	Y	Y	Y	DM = Data Manager
PRC	Y	N	Y	PRC = Pathology Resource Center Pathologist
LDS	N	Y	Y	LDS = Read only with access to HIPAA identifiers
R/O	N	N	Y	Basic read only account
Ext Org	N	N	N	External organization limited to a subset of read only data
Super	Y	Y	Y	CDR super user account
Service (API)	Y	N	Y	Machine accounts to Web Service APIs

Demo

A demo in our testing environment

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