

# Phase II – Data & Technical Objectives

Achieve interoperability between research and care by 2019

#### Data Harmonization Team



Daniella Meeker, USC

Lisa Schilling, U of Co

Tara Knight, USC

Calvin Chang, UCD

Zhen Wu, UCD

Martha Michel, UCSF

Ray Pablo, UCI

Amy Perkins, VA

Claudiu Farcas, UCSD

Fern Fitzhenry, VA

Don Torok, Ephir

Mark Khayter, Ephir

Brian Tep, Cedars

Michael Matheny, VA

Rob Follett, UCLA

Michael Hogarth, UCD

Vijay Rayanker, UCSF

Lisa Dahm, UCI

Dax Westerman, VA

Dave Anderson, San Mateo

Ayan Patel, UCI

Paulina Paul, UCSD

Spencer Soohoo, Cedars

Jessica Bondy, U of Co

Javier Sanz, UCLA

Srivatsa Hura, San Mateo

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# Network – 14 Source Systems

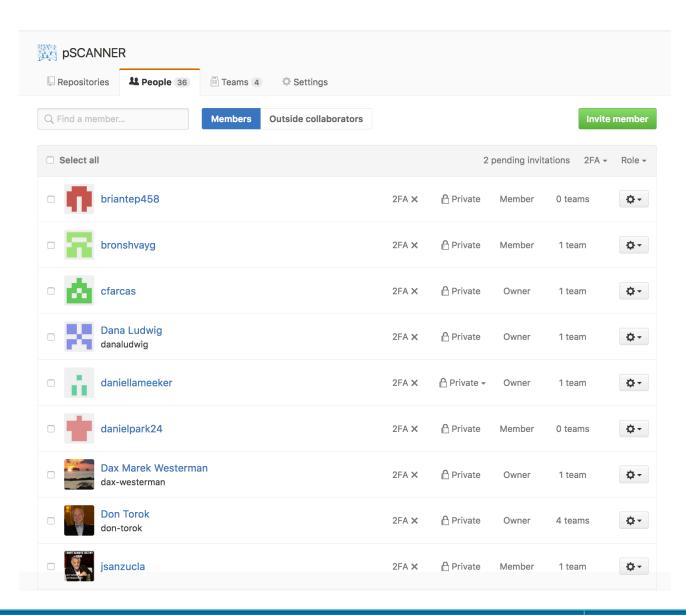


- 1. VA Data Mart (All VA Facilities)
- 2. USC Data Mart (5 sources)
- 3. UCI
- 4. UCSF
- 5. UCSD
- 6. UCD
- 7. UCLA
- 8. San Mateo
- 9. Cedars Sinai

# pSCANNER GitHub

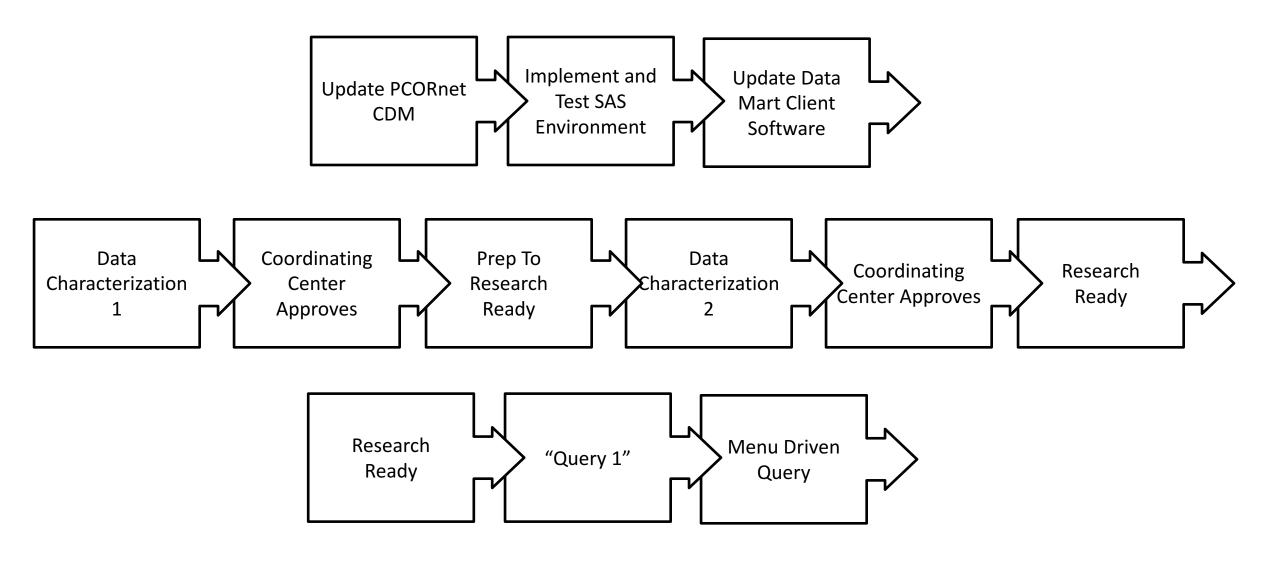


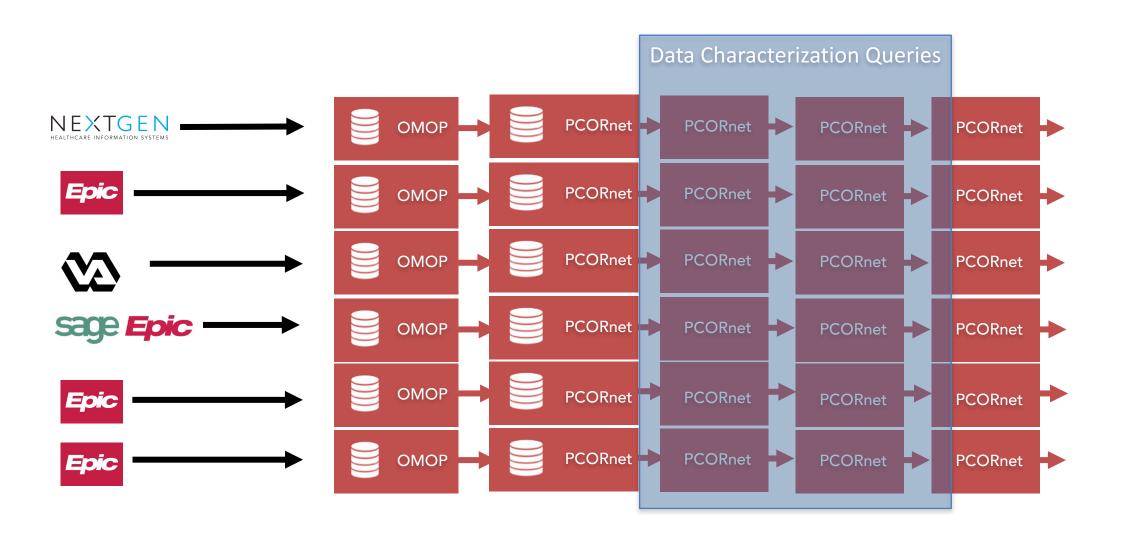
- 36 Users
- 10+ Repositories
  - Shared ETL Programs
  - Research Queries for Distribution
  - pSCANNER Methods for integration with PopMedNet
    - » Distributed Analytics -Generalized Linear Models
    - » Record Linkage Methods
    - » Quality Measures



# PCORnet Deliverables Since Last Year pSCANER





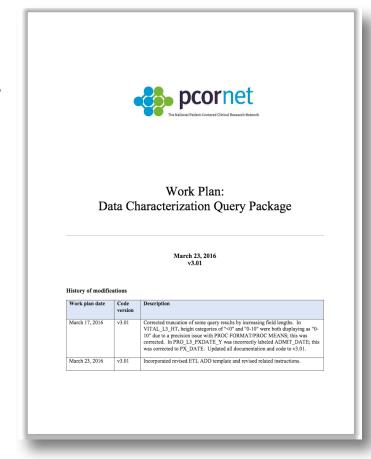


#### Data Characterization



30 Pages of Instructions ————— 30 Page Report ———— Meeting with CC

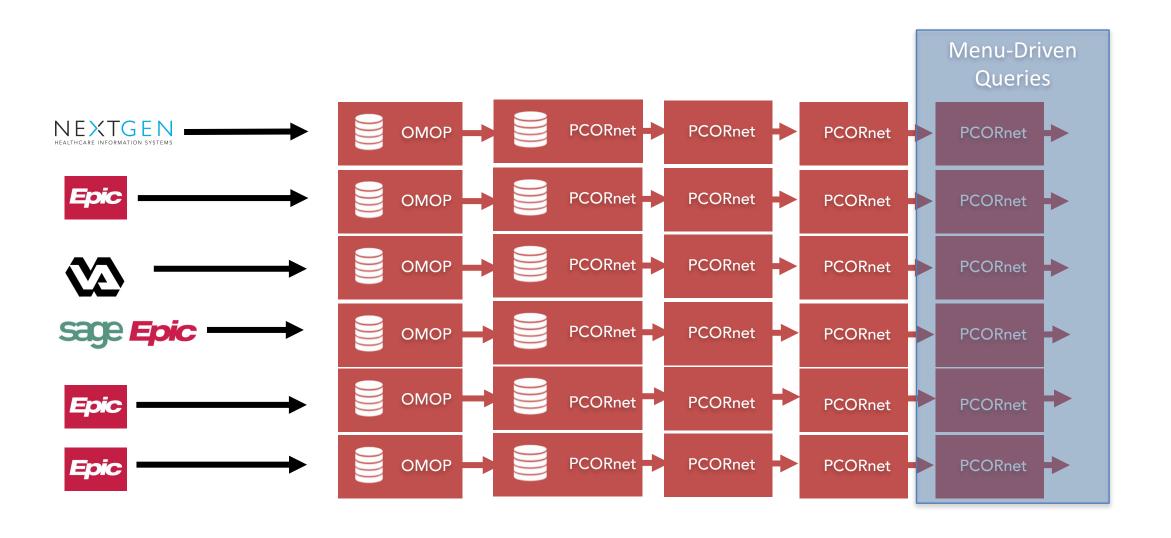
- All Sites
- Multiple Iterations
- Thanks to Colorado Team for help reviewing



PCORnet Empirical Data Characterization Report This report is derived from a DataMart's responses to the Data Characterization Query Package. Please refer to the Work Plan for details about the source tables. Response Date: 2016-06-17 Low Cell Count Threshold: 0

Section	Table	Table Description	Data Check(s)
Section I: Descriptive Information and Analysis Considerations	Table IA	Demographic Summary	n/a
	Table IB	PCORnet Dashboard Metrics	n/a
	Table IC	Height, Weight and Body Mass Index (BMI)	n/a
	Chart IA	Vital Measures by Measurement Date, 2010-Present	n/a
	Table ID	Records, Patients, Encounters, and Date Ranges by Table	4.01, 4.02, 4.03
	Table IE	Records Per Table By Encounter Type	4.04
	Table IF	Records Per Table By Year	n/a
	Chart IB	Trend in Encounters by Admit Date and Encounter Type, 2010-Present	n/a
	Chart IC	Trend in Institutional Encounters by Discharge Date and Encounter Type, 2010-Present	n/a
	Table IG	Date Obfuscation or Imputation	4.05
Section II: Data Model Conformance	Table IIA	Primary Key Definitions	1.05
	Table IIB	Values Outside of CDM Specifications	1.06
	Table IIC	Non-Permissible Missing Values	1.07
Section III: Data Plausibility	Table IIIA	Future Dates	2.01
	Table IIIB	Records With Extreme Values	2.02
Section IV: Data Completeness	Table IVA	Diagnosis Records Per Encounter, Overall and by Encounter Type	3.01
	Chart IVA	Diagnosis Records Per Encounter by Admit Date and Encounter Type, 2010-Present	n/a
	Table IVB	Procedure Records Per Encounter, Overall and by Encounter Type	3.02
	Chart IVB	Procedure Records Per Encounter by Admit Date and Encounter Type, 2010-Present	n/a
	Table IVC	Missing or Unknown Values	3.03, 3.04

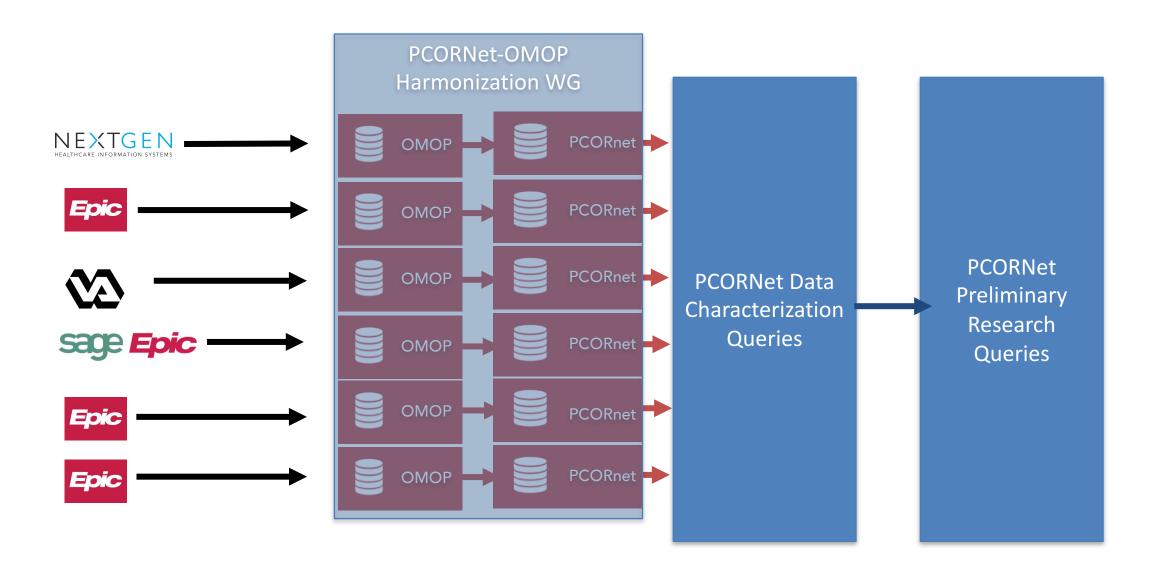
Response date is the date the data characterization query package was run, not the date the results were received by the DRN OC. Cell counts below the low-cell count threshold will be displayed as 'BT' (below threshold) and treated as zeroes (0s).



# Menu Driven Queries from PCORnet



- Intended to give an "i2b2" like experience to query authors
- Participants
  - > UCI
  - Cedars Sinai
  - > UCLA
  - > USC
- Debugging –configurations



#### **OMOP** Harmonization



PCORNet-OMOP
Harmonization WG

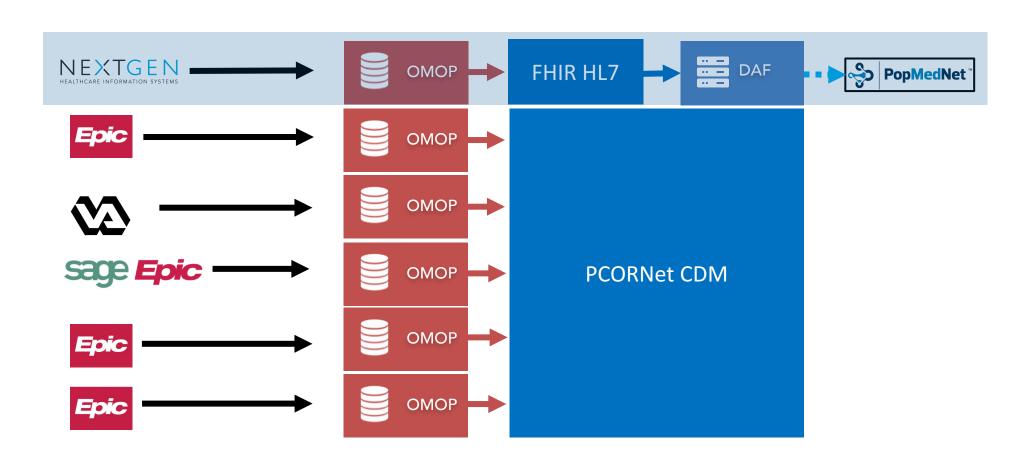
- Objective: Maintain interoperability between OMOP and PCORnet CDMs
  - Maintain OMOP-to-PCORnet Data Transformations
  - Manage new vocabulary and track conventions
- Participants
  - > PedsNet & NYC CDRN
  - > Don Torok
  - > Rob Follett
  - Lisa Schilling

# Projects on our To-Do List



- Create network-wide identifier
  - > Record Linkage Algorithms need to be integrated into the pSCANNER Query Distribution Framework
- Update remaining sites to OMOP V5
  - > UCSF Leading
- Claims Data Integration
  - > USC Leading CMS (Jason Doctor)
- pSCANNER Queries for Quality Measures and OHDSI Studies

# pSCANNER Data Harmonization for HL7 APIs pSCANER ONC Pilot with REACHnet





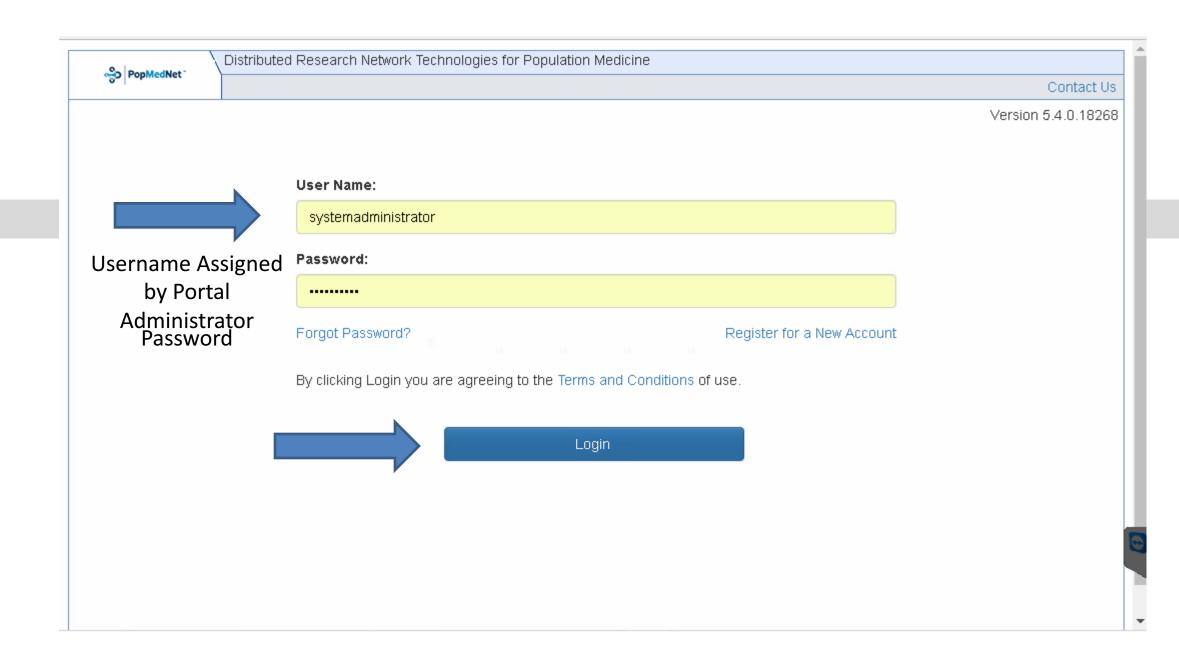
# Technical Update

Dax Westerman, Lead Developer Bill Clarke, PopMedNet Developer

# Overview of the PopMedNet pSCANNER Adapter

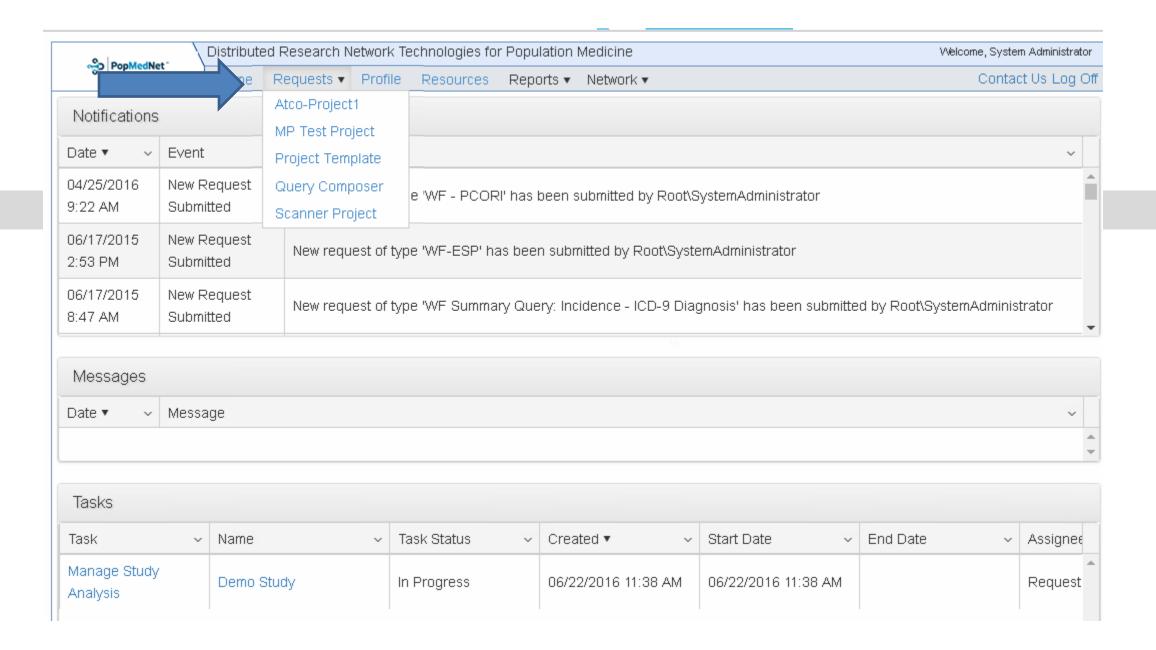


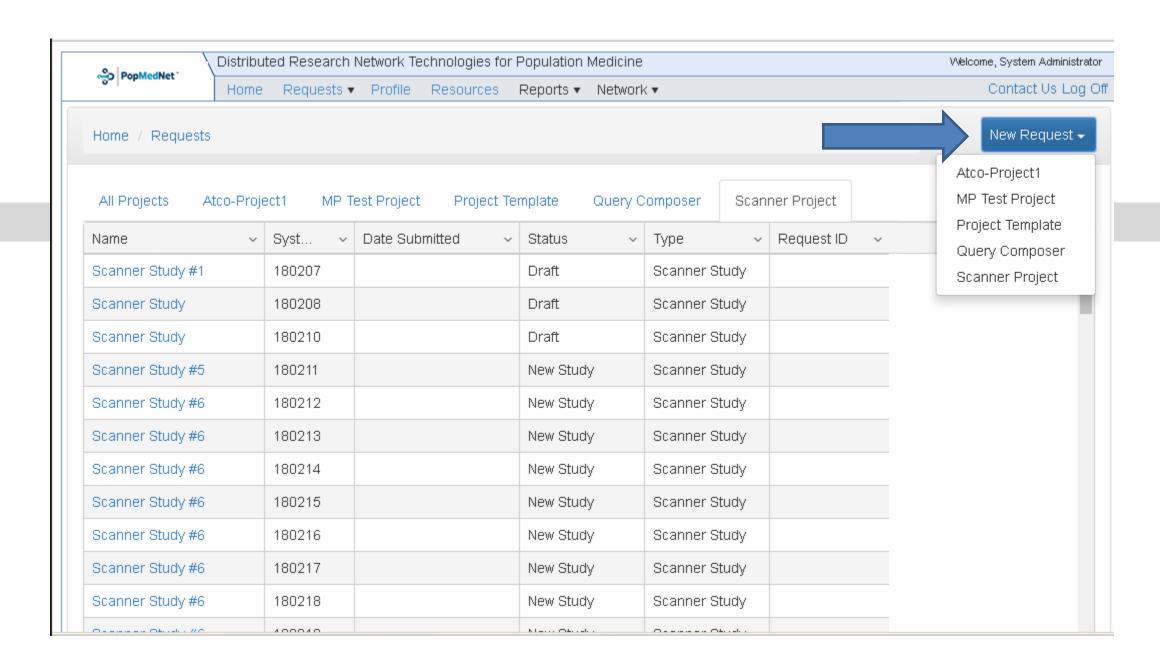
- Create "on demand" networks with any sites that have PopMedNet
   Data Mart Clients
  - No "Coordinating Center" a network can be proposed by anyone
  - Opt-In by Data Mart Administrator
  - Analysis Queries
  - "SHRINE" like queries (on hold seeing how MDQ works)
- REST-ful Framework for Analysis Queries
- Distribute Analysis Programs from GitHub or other repositories



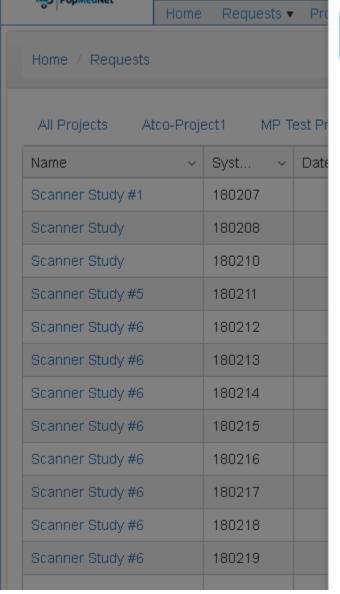


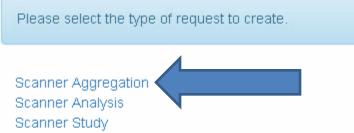
Setting Up an "On-Demand" Research Network

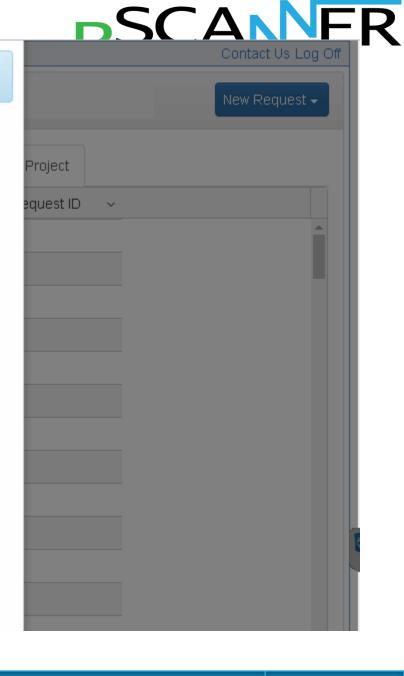


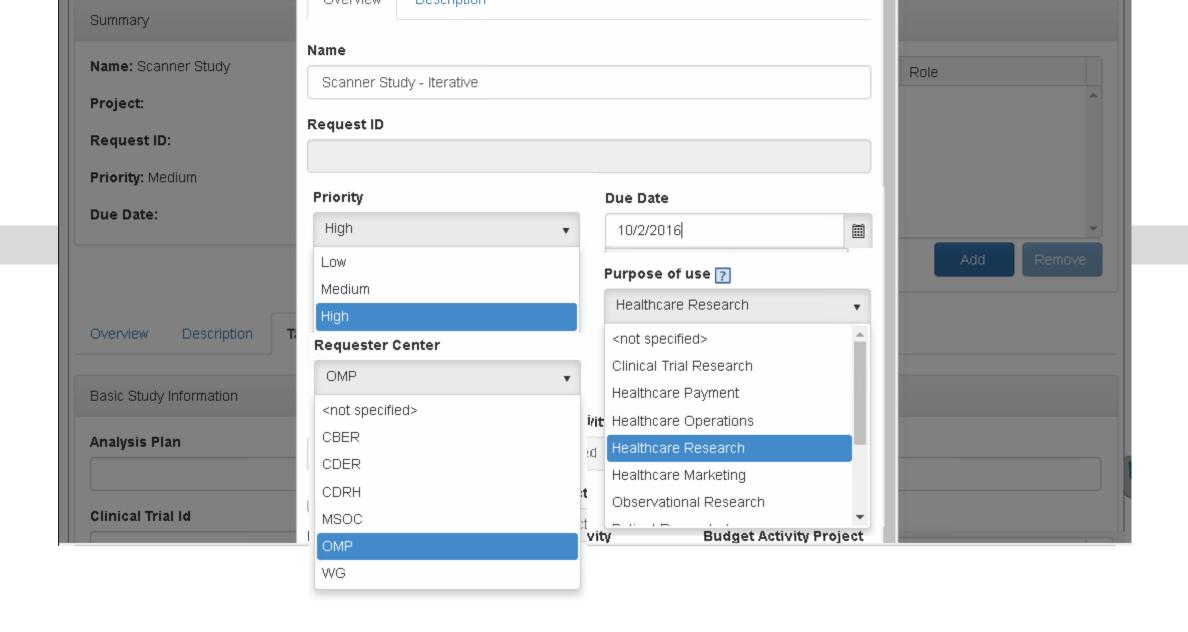


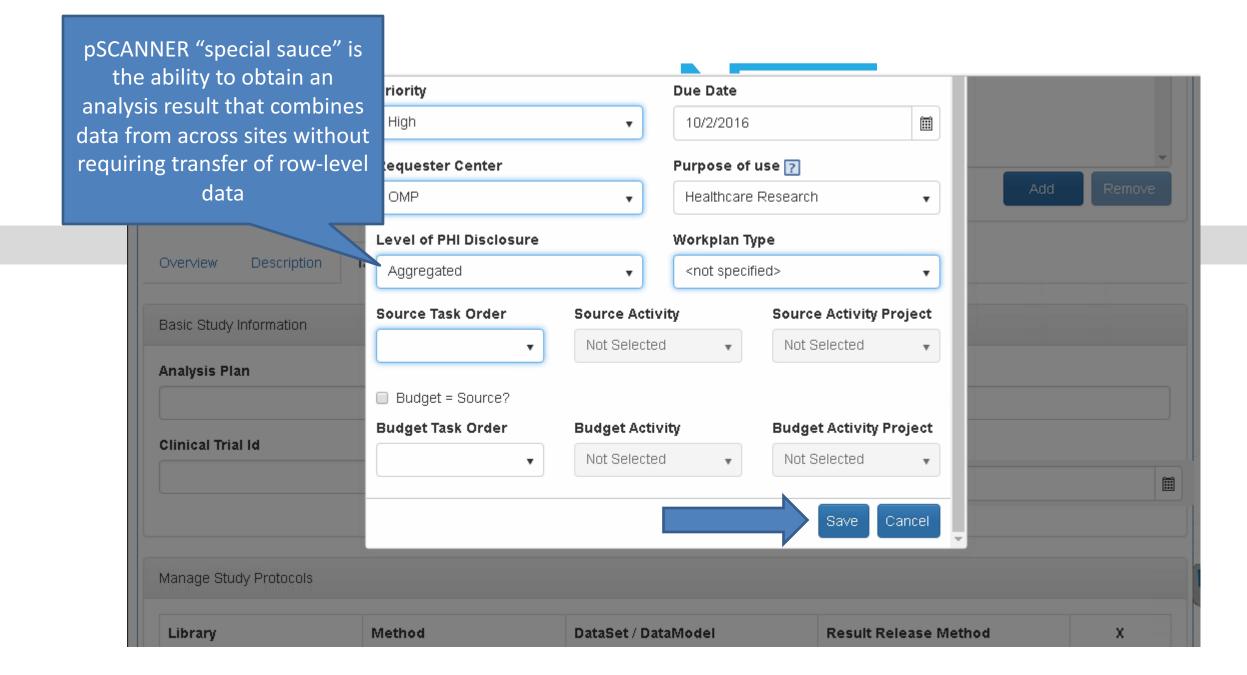
Specifying a new research network

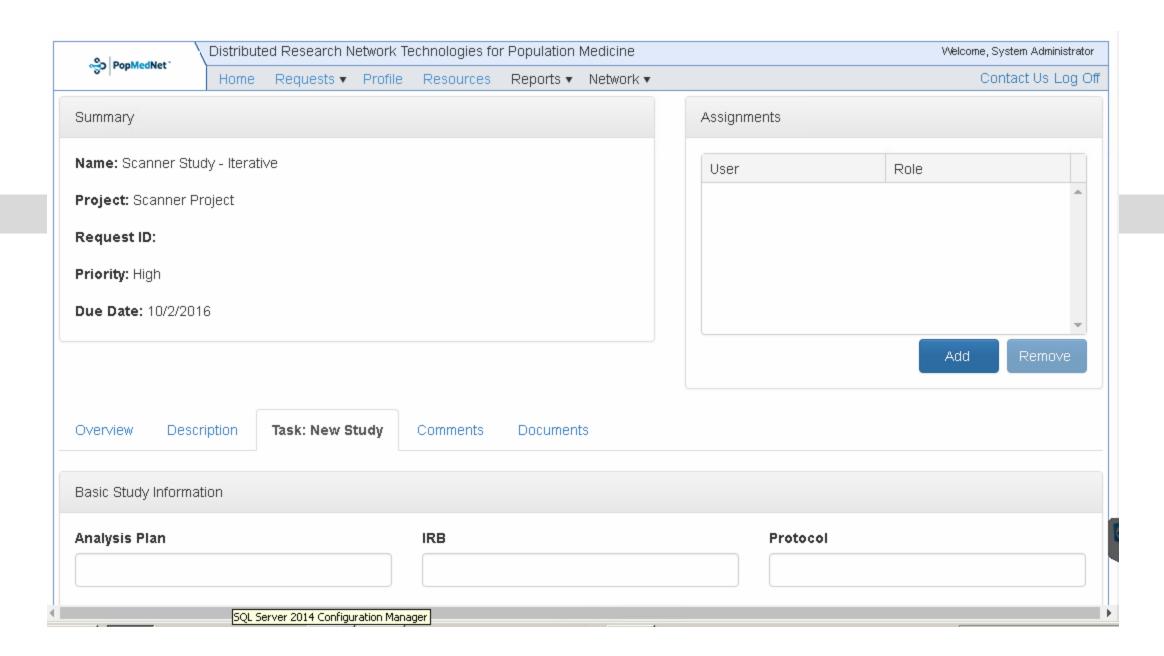


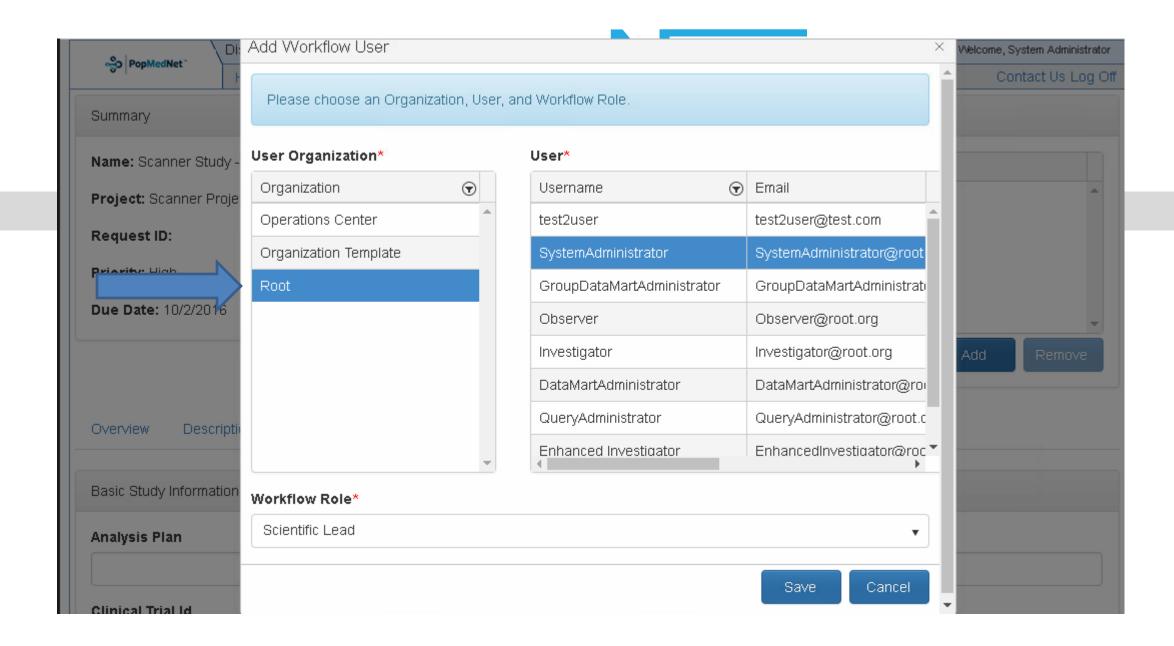


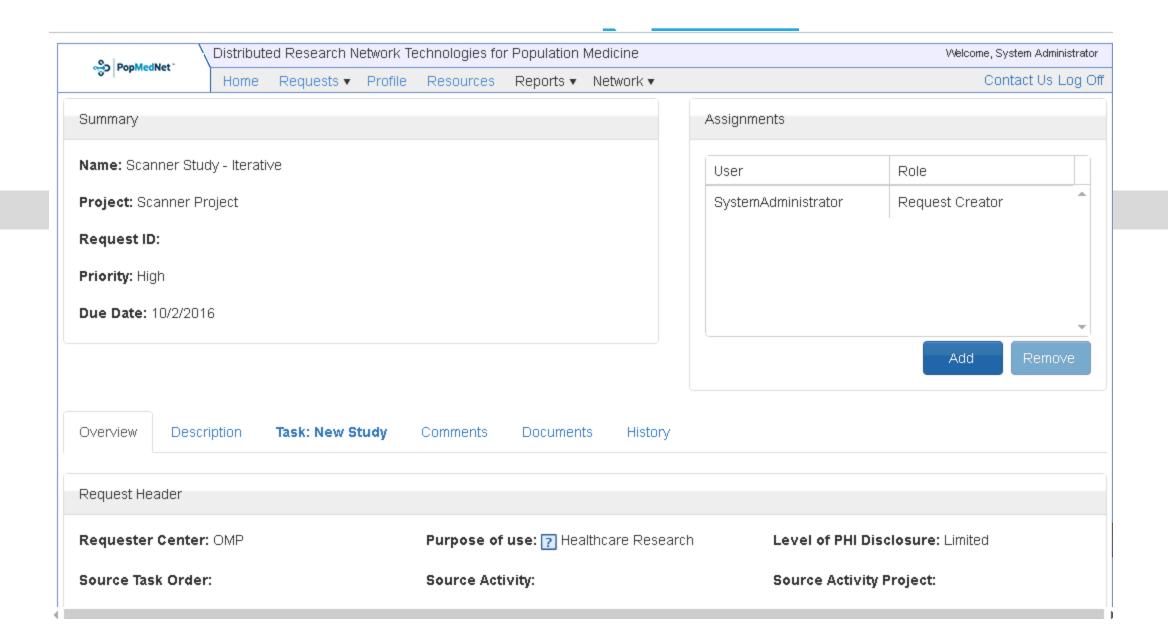


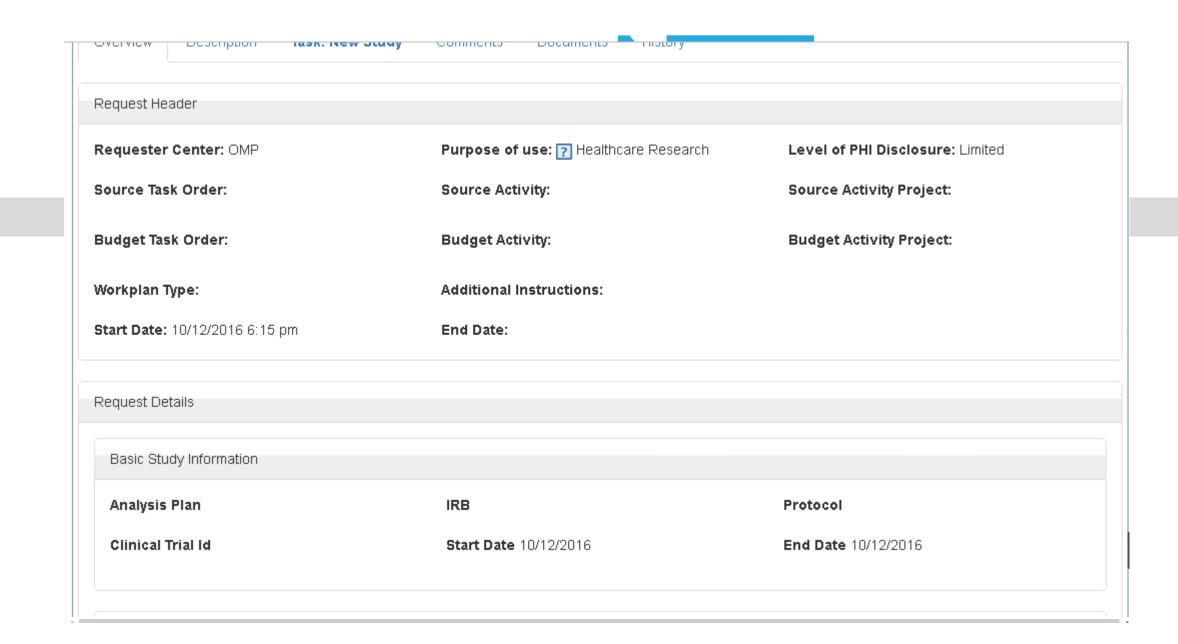




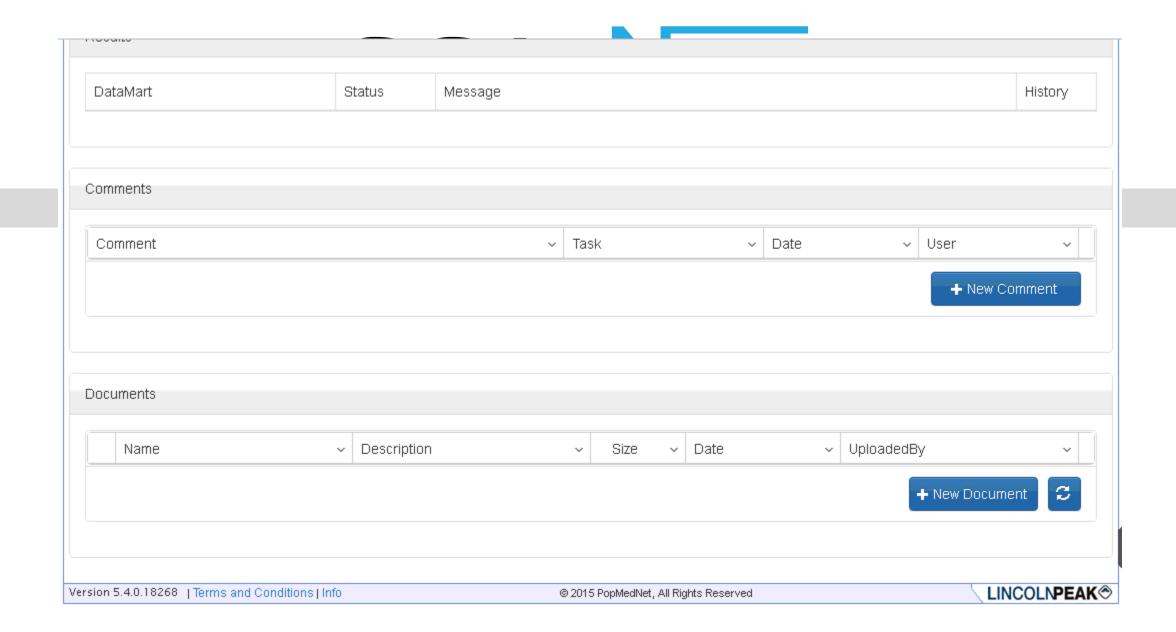


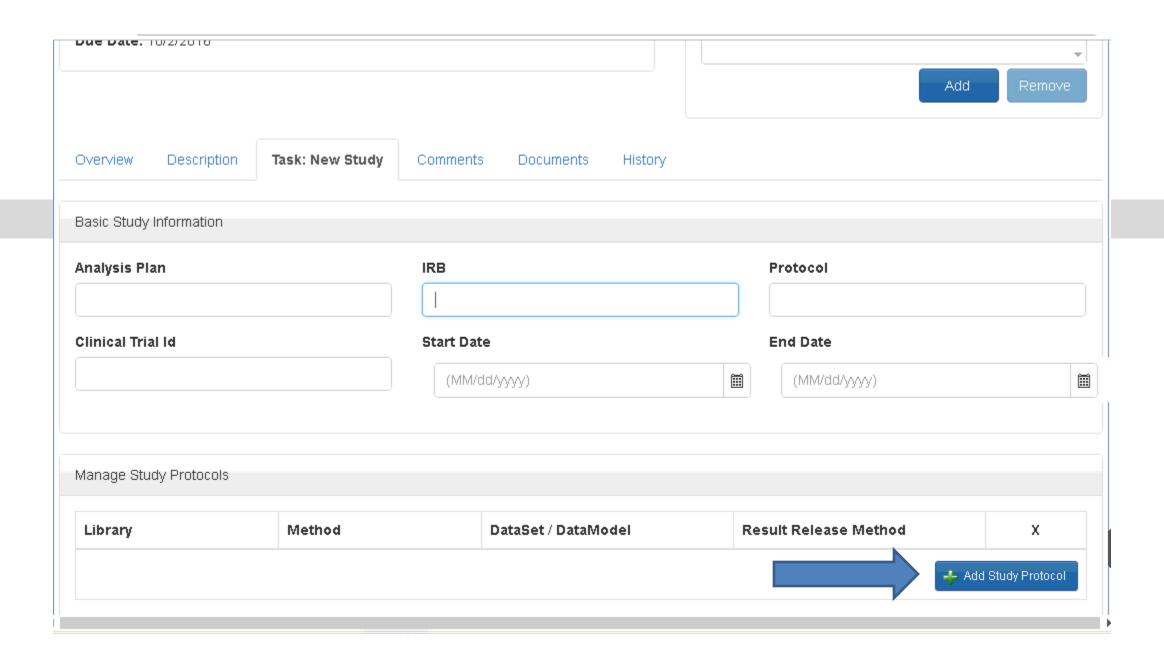


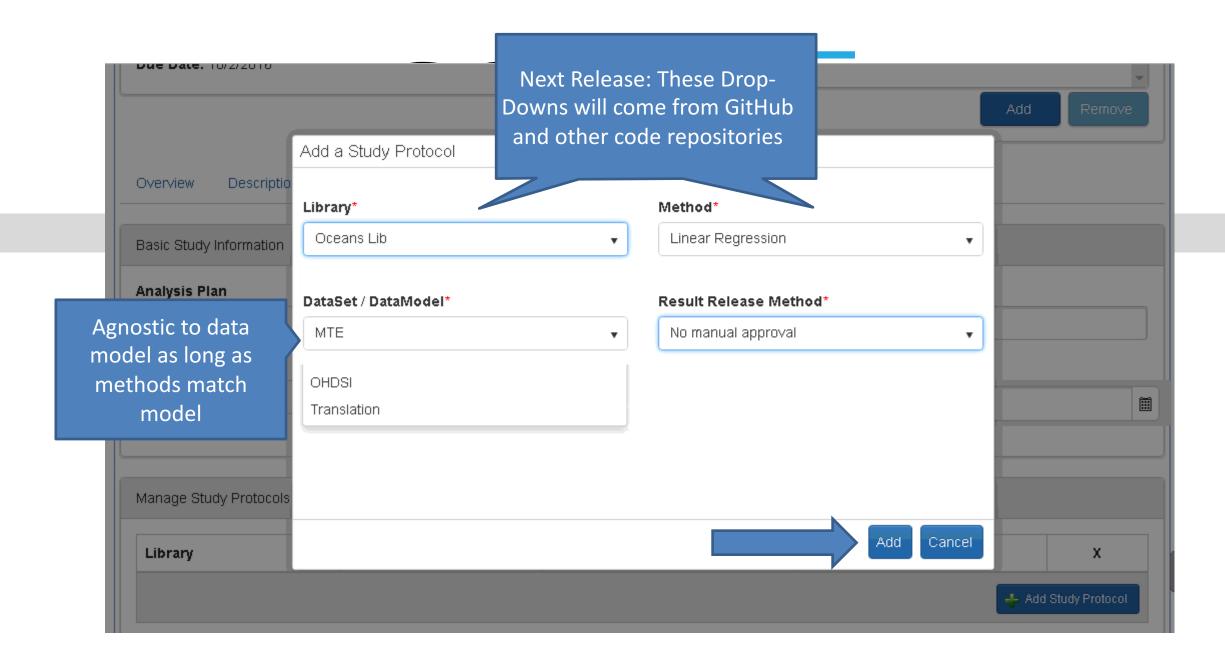




nalysis Plan		IRB	Protocol	
linical Trial Id		<b>Start Date</b> 10/12/2016	<b>End Date</b> 10/12/2016	
tudy Protocols				
Library	Method	DataSet / DataModel	Result Release Method	
Library				
	1000100			
ults	Status	Message		History
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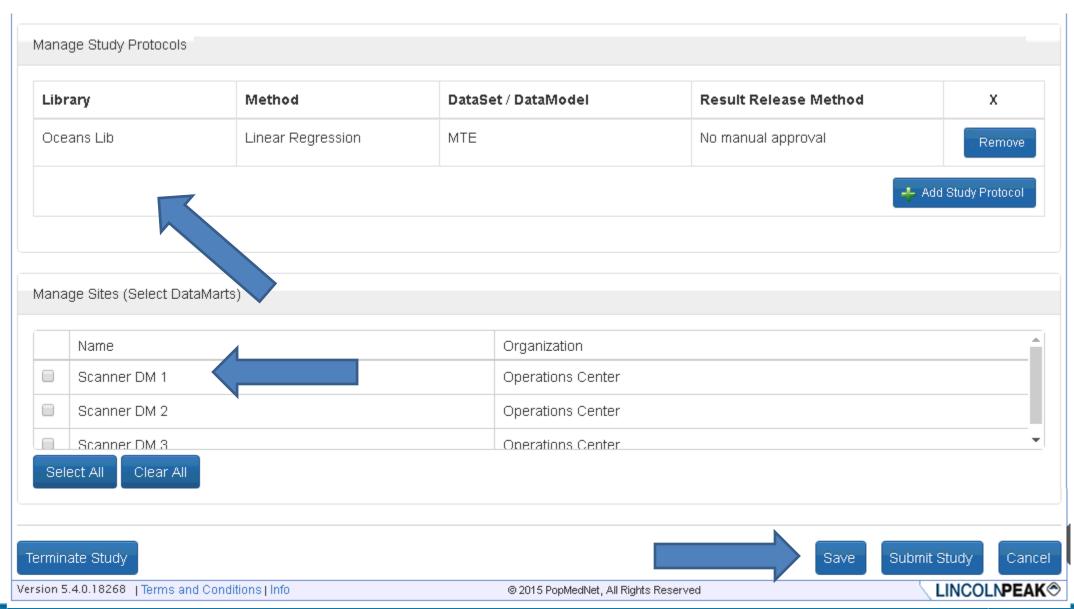


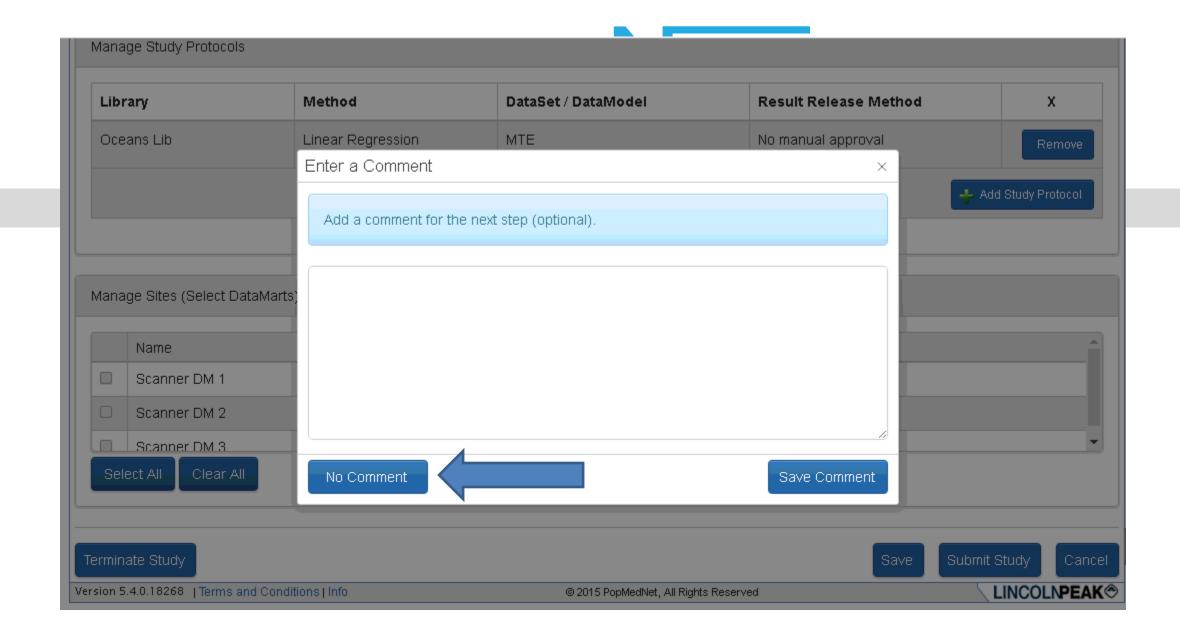


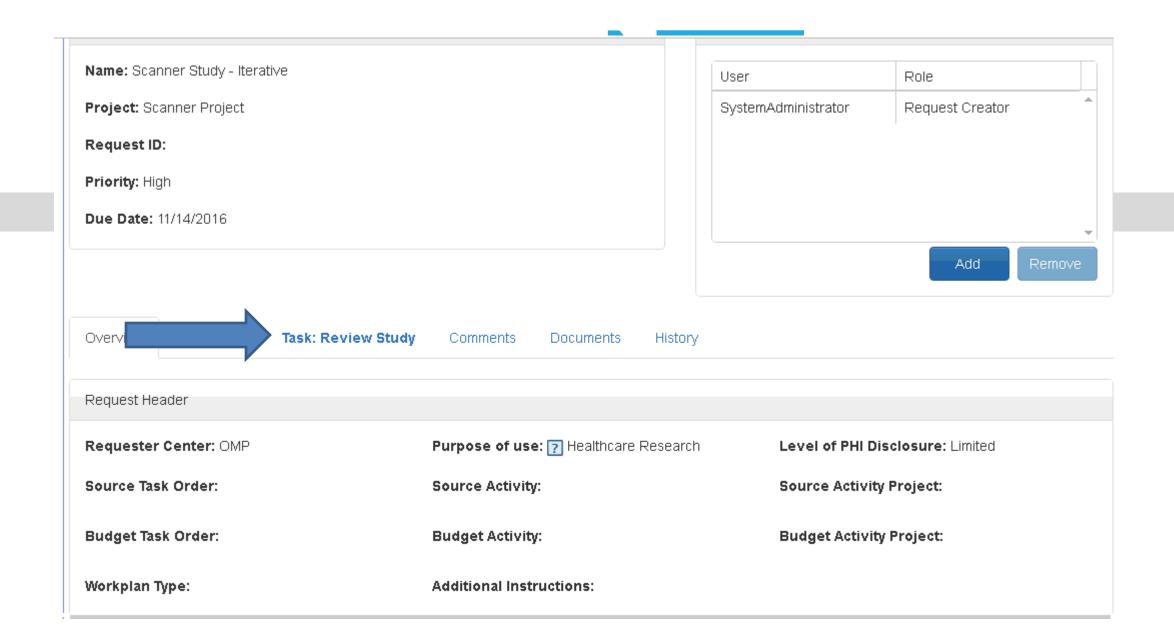


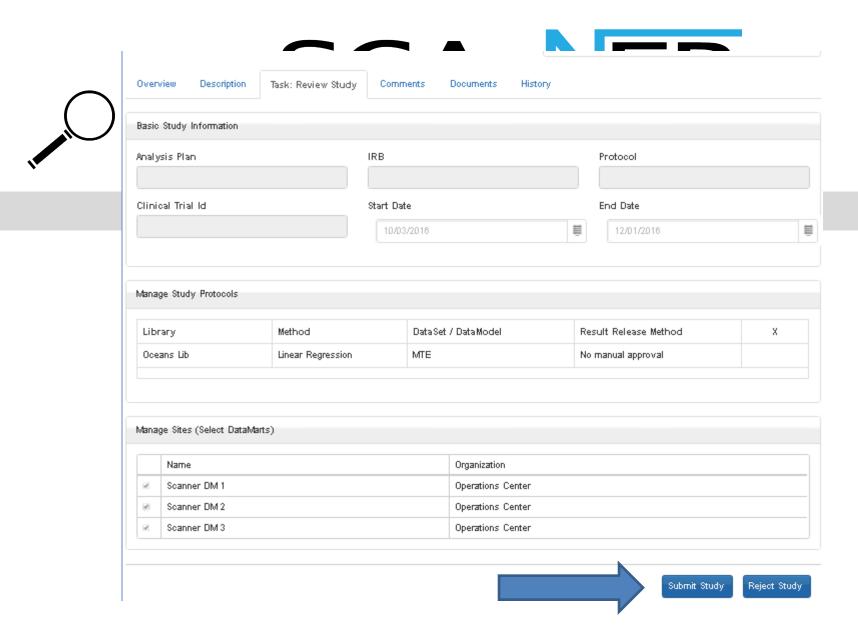
# Sending out a proposal for a network



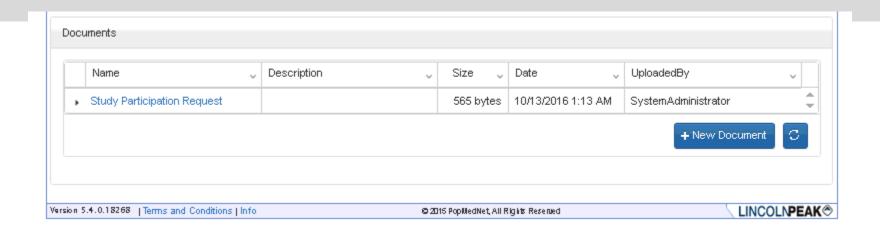


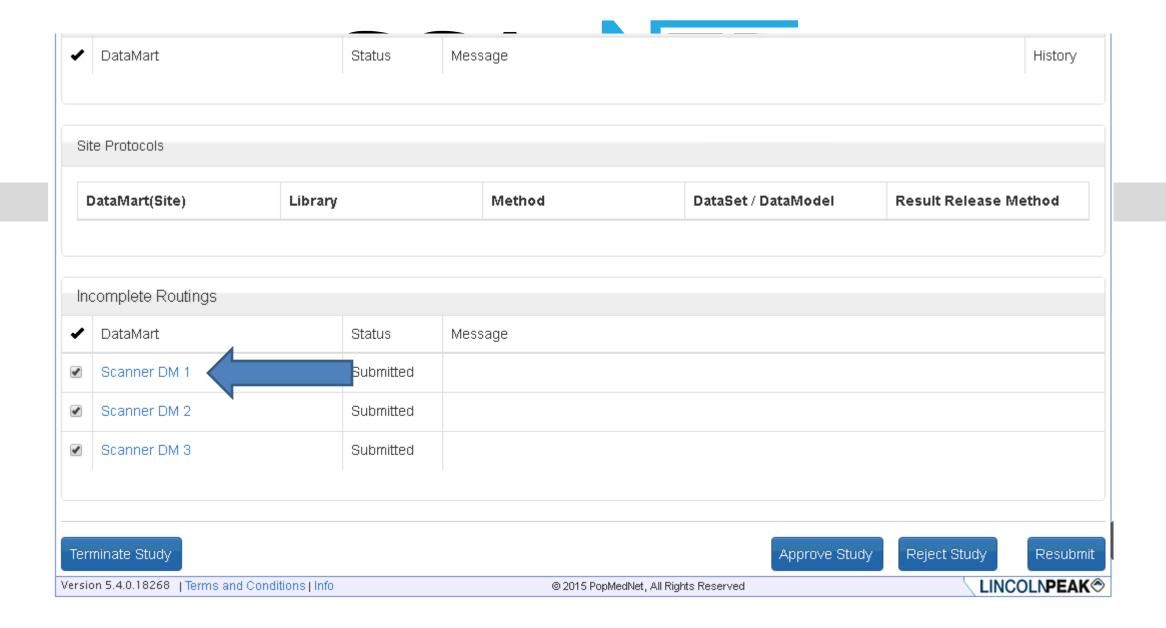


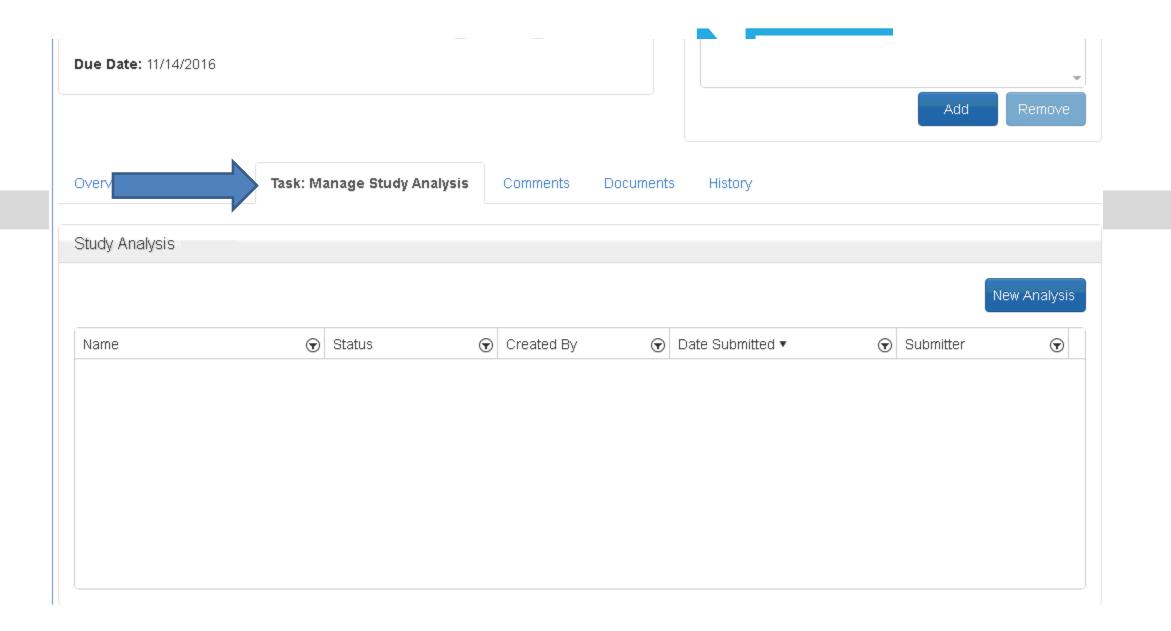


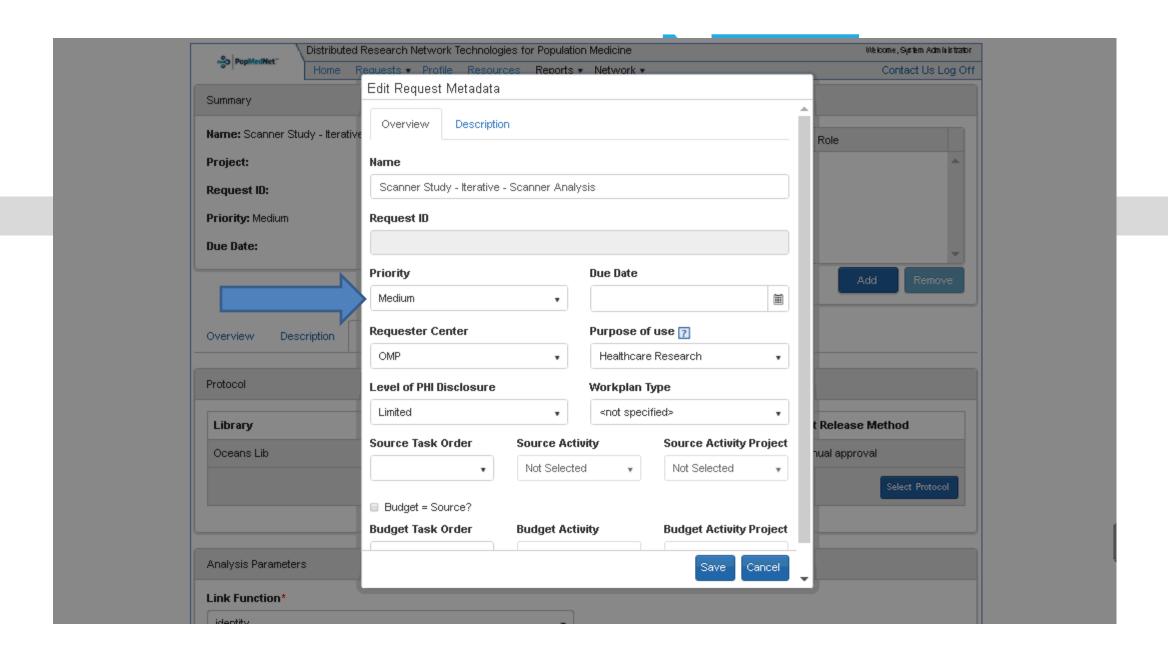


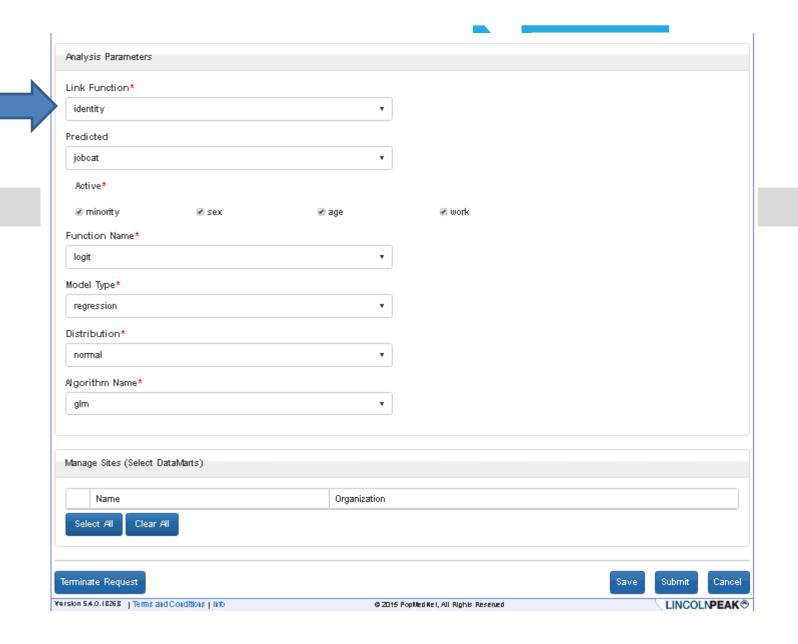


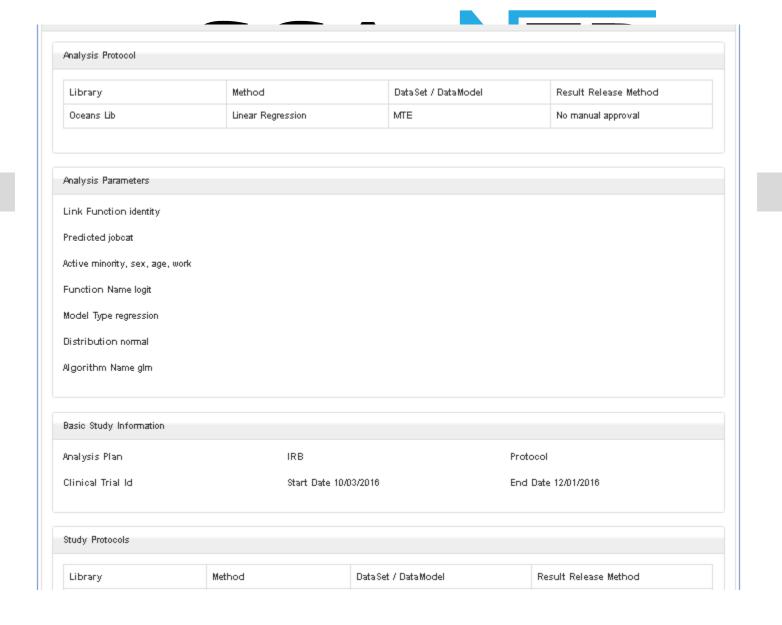


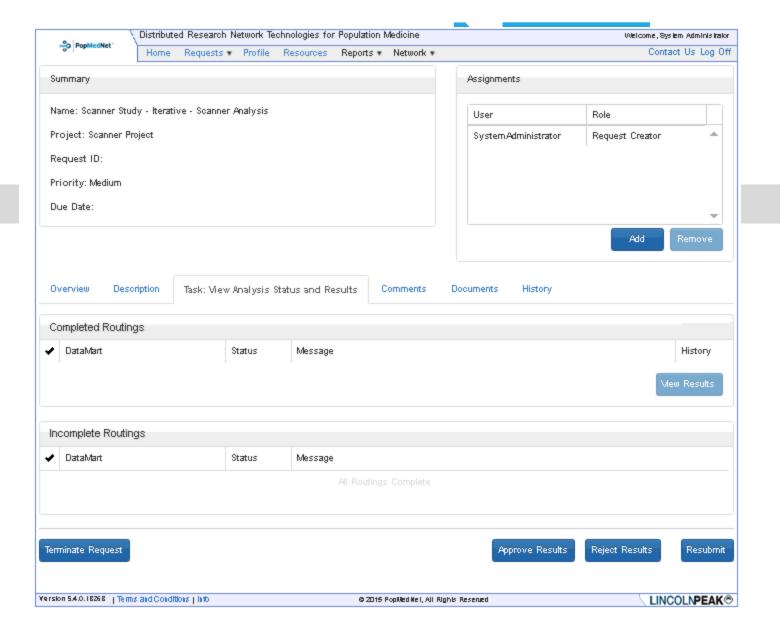


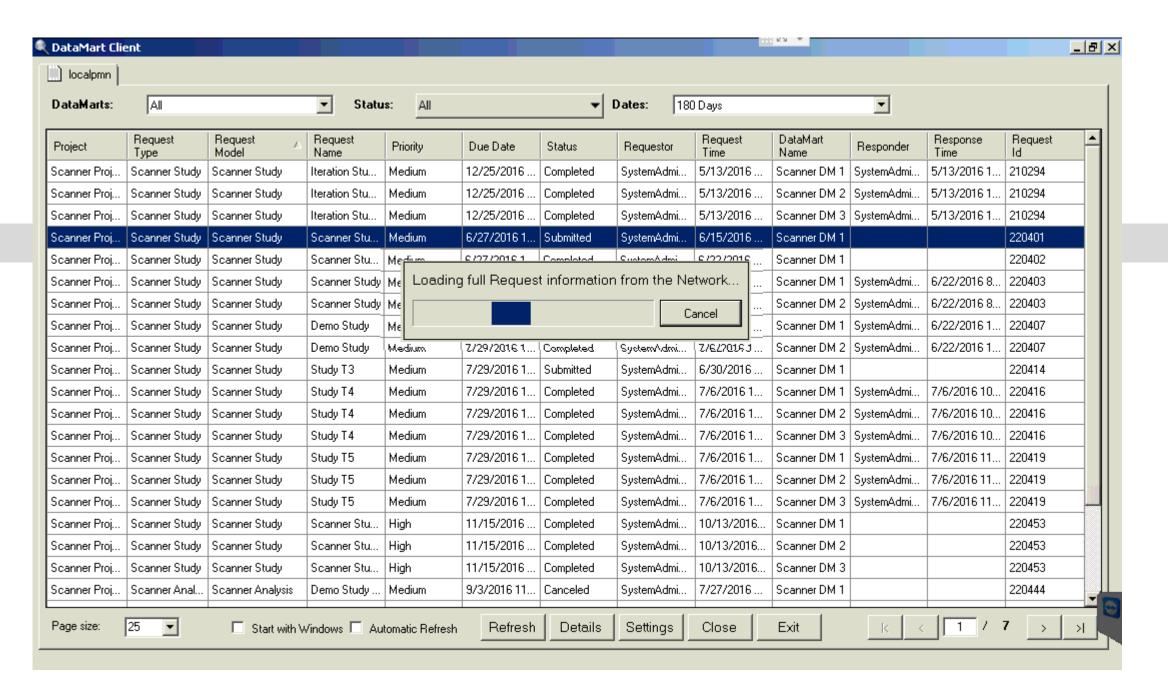


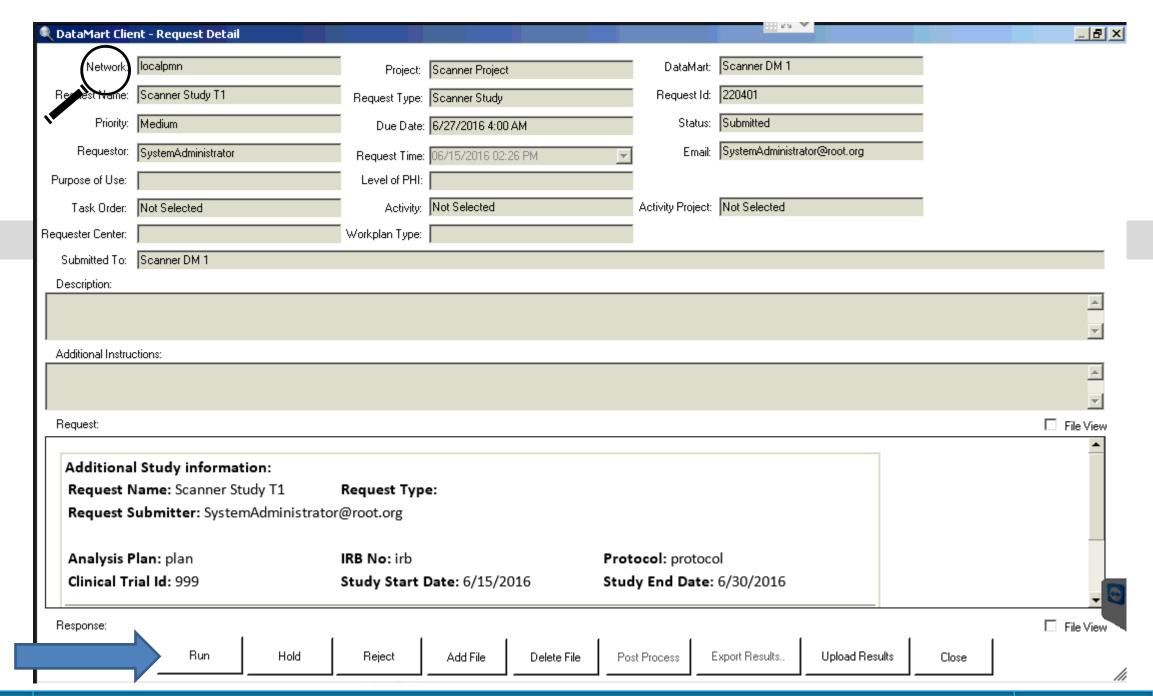








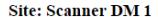


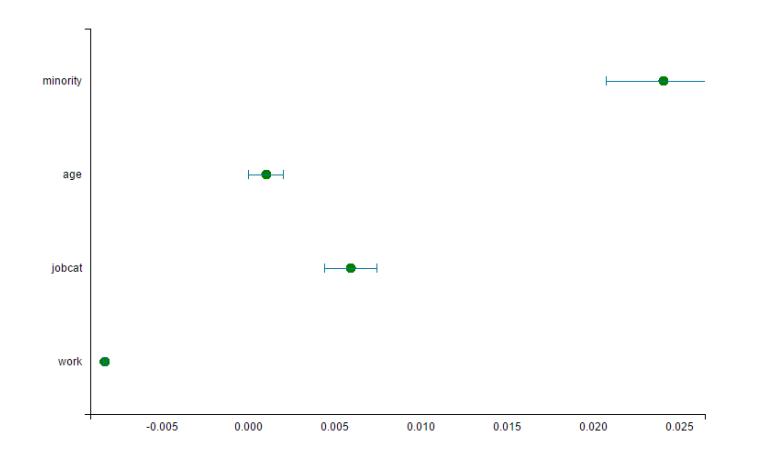


# Result – A single model across 3 sites



localpmn:9080/delta3graph/showResults?Scanner%20DM%201=<%3Fxml%20version%3D"1.0"%3F><PMML%20version%3D"4.2"%20xmlns%3D"





#### To Do



- Development and testing environment so that any developer can contribute and test methods to distributed query framework
- Integrate OHDSI tools and WebAPI to Portal Visualizations
  - > some method require sharing row-level data
- Implement web service for methods repository
- Conformance checks for methods
- "Task-lists" for multi-step projects using FHIR Task Resource

