

# PCORnet CDM Implementation Forum

*Wednesday, November 11, 2015, 11 AM – 12 PM Eastern*

*Hosted by Daniella Meeker, PhD*

*Facilitated by Shelley Rusincovitch and Michelle Smerek*



**pcornet**

The National Patient-Centered Clinical Research Network

# Agenda

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- 🌐 Welcome and announcements
- 🌐 Index of active CDM forum issues
- 🌐 Interest group updates
- 🌐 Public code repositories and facilitating PCORnet connections
- 🌐 ENC\_TYPE and “unreconciled encounters”
- 🌐 SAS data store refresh cycles (we may not get to this section)

# **Webex Poll: Making the forum more effective**

# DRNOC Podium Presentations at AMIA

**Jessica Malenfant:** Using PopMedNet to Support a Multi-Site Research Network: Lessons from PCORnet  
Monday, November 16, scheduled **9:36 - 9:58 AM Pacific**  
Imperial A, Hilton (S18)

**Jessica Sturtevant:** PCORnet Implementation of PopMedNet Data Characterization Tool  
Monday, November 16, scheduled **11:14 - 11:36 AM Pacific**  
Continental 7/8/9, Hilton (S29)

# PCORnet Informal Reception at AMIA

Tuesday, November 17, 6:30-8:30 PM Pacific Time

Conference hotel (Hilton San Francisco Union Square,  
333 O'Farrell Street, San Francisco, CA 94102)

Cityscape, 46th Floor, Tower 1

Please join us! This will be a cash bar with reserved seating to socialize and connect with your PCORnet colleagues.

*Any questions? Please feel free to contact Shelley Rusincovitch  
([shelley.rusincovitch@duke.edu](mailto:shelley.rusincovitch@duke.edu); cell: 919-247-1912).*

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**FYI on upcoming event: DRNOC presentations at AMIA (November 16 in SF)**

22hrs ago by Shelley Rusincovitch

Jessica Malenfant: Using PopMedNet to Support a Multi-Site Research Network: Lessons from PCORnet  
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Category: [Task Force Updates Action Items](#)Tags: [amia](#), [popmednet](#) [edit tags](#)[+ Leave a Comment](#)**FYI on upcoming event: Public Laboratory LOINC Workshop (December 2 in Indianapolis)**

Nov 5 by Shelley Rusincovitch

As discussed during the October 29 CDM forum, technical teams may be interested in considering the hands-on LOINC workshop on December 2.

For full details, please see:

<https://loinc.org/meetings/20151202/public-laboratory-loinc-workshop-committee-meeting-12-02-15-12-03-15.ics/view>

Meeting Location: Indiana University Health Information and Translational Sciences (HITS) Building, Regenstrief Institute, Indianapolis, Indiana  
No registration fee, but early registration is encouraged.

Tentative Workshop Agenda (December 2)

8:30 to 9:00 am	Registration
9:00 to 10:30 am	LOINC Overview
10:30 to 10:45 am	Break
10:45 to 12:00 pm	RELMA overview
12:00 to 1:00 pm	Lunch (provided)
1:00 to 3:00 pm	Mapping your codes to LOINC, RELMA features, loading local files
3:00 to 3:15 pm	Break
3:15 to 5:00 pm	RELMA functions continued, mapping local files

Category: [Task Force Updates Action Items](#)Tags: [cdm](#), [loinc](#), [meeting\\_announce](#) [edit tags](#)[+ Leave a Comment](#)**Feedback cycle: ADAPTABLE base phenotype draft (closes November 20)**

Nov 3 by Shelley Rusincovitch

Dear ADAPTABLE Colleagues,

We're pleased to distribute the ADAPTABLE base phenotype for your review (posted on Central Desktop at <https://pcornet.centraldesktop.com/p/ZgAAAAAaPz1>), and we welcome your comments and feedback. Using the same process as for the versions of the Common Data Model development, all comments will be reviewed, tagged, and collated.

**Blog Categories**[Task Force Updates Action Items](#)  
[Workgroups Update](#)**Blog Archive**[Nov, 2015 \(4\)](#)  
[Oct, 2015 \(5\)](#)  
[Jul, 2015 \(2\)](#)  
[May, 2015 \(2\)](#)  
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[Jul, 2014 \(1\)](#)  
[Jun, 2014 \(3\)](#)  
[Apr, 2014 \(3\)](#)  
[Mar, 2014 \(1\)](#)  
[Feb, 2014 \(3\)](#)**Tags**[task force updates \(2 \)](#)  
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[industry collaboration \(1 \)](#)

# CDM Forum Topic Index

# Outstanding CDM Forum Issues (1 of 2)

Outstanding Issue	Responsible	Date	Actions Taken/Pending
Unclear how to handle auto-generated records (e.g. as in IMO) in CONDITION Table; Unclear whether IMO should be source	Interest Group	TBD	Established interest group
Data partners have requested guidance on Medication Mapping conventions	Interest Group	TBD	Established interest group
Data partners have requested guidance on Encounter Classifications	DRNOC and Data Partners	<b>TODAY</b>	Some overlap with SBAR developed and presented at DRNOC-CDRN meeting on Oct 19
Data partners have requested guidance on death table constraints	DRNOC	TBD	Pending (SAR responsible)
Data partners have requested guidance on conventions for representing Smoking and Tobacco History	DRNOC and Data Partners	Next forum (Dec 3)	Identified legacy data differences from newer MU-mandated structuring



# Outstanding CDM Forum Issues (2 of 2)

Outstanding Issue	Responsible	Date	Actions Taken/Pending
Conventions for Datamart Structuring for EHR and Claims Sources need to be defined	DRNOC	Next forum (Dec 3)	SBAR developed and presented at DRNOC-CDRN meeting on Oct 19
SAS implementation expectations need to be defined	DRNOC	<b>TODAY</b>	Overlap with ADAPTABLE data strategy (session on Oct 30)
Data partners are interested in sharing best practices for performance optimization	Forum-facilitated discussion	TBD	Best practices are site-specific because different “fingerprints of data” are optimized differently
Data partners have requested guidance on conventions for mapping LOINC to PCORnet common measures	Interest Group	Scheduling for week of Dec 14	Lab Interest group established
Data partners are interested in sharing best practices for local death data acquisition	Forum-facilitated discussion	TBD	This topic is unrelated to study-specific death data acquisition (such as use of NDI for ADAPTABLE)

# CDM Forum Interest Groups

# Interest Groups (for discussion)

Active DRNOC-facilitated interest group:

- **Lab Mappings:** Local lab result mappings and LOINC references

Proposed DRNOC-facilitated interest group:

- **Med Mappings:** Dispensing and prescribing data, including RxNorm practices, order of preference as brand vs generic

Proposed network-facilitated interest group:

- **CONDITION Table:** Including IMO terminology

# Lab Mapping Interest Group Update

## PCORnet Lab Mapping Survey

- Survey will be launched immediately following today's Forum
- Survey is **voluntary**
- Goal: understand the landscape of lab mapping activity information from a greater number of sites/networks
- Goal: utilize this information to recognize and support strategic approaches by sites/networks to map local system labs to the PCORnet CDM
- Submission deadline = Tuesday, December 1<sup>st</sup>

## LOINC Public Laboratory Workshop – December 2<sup>nd</sup>

- DRNOC participation to gather information to support the work of the network implementation teams

# Public code repositories and making connections for sharing

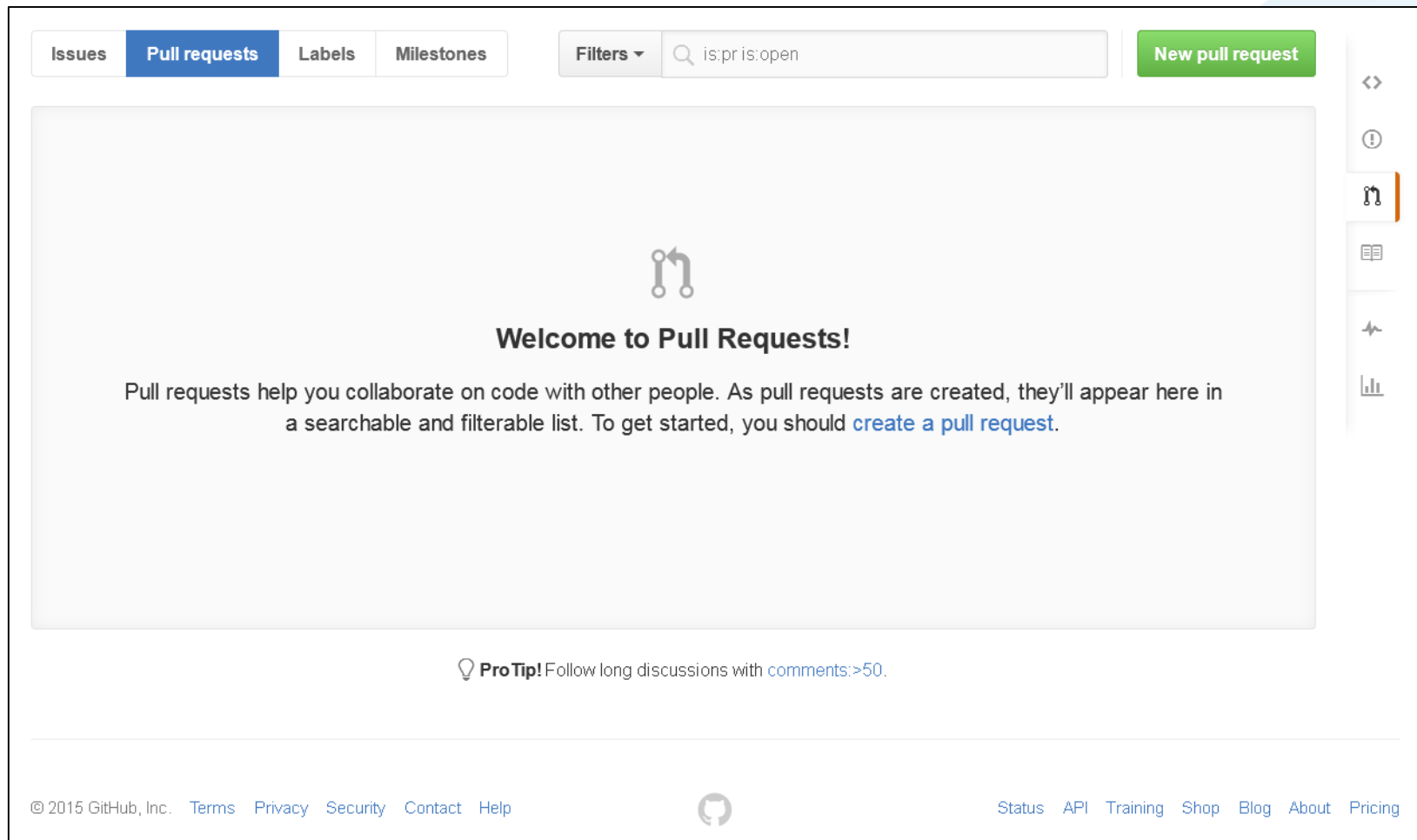
# **Webex Poll: Public code repositories**

# What would an index look like?

## Something like this?

Brief Title	Description	Contributor	Location	Tags
Batch load tool for PMN uploads	Batch load tool to upload to PMN that we created to deal with the IBQs and Data Characterization SQLs.	CAPriCORN-MRAIA	Contact <a href="#">x@y.com</a>	PopMedNet; IBQ; SQL output
DDL	SQL statements to create the CDM v3.0 tables in an Oracle database.	SEDI	<a href="https://github.com/AppInformatix/SEDI_to_PCORnetCDM">https://github.com/AppInformatix/SEDI_to_PCORnetCDM</a>	RDBMS; CDM

# Idea: PCORnet sharable index...on GitHub itself?





# Discussion

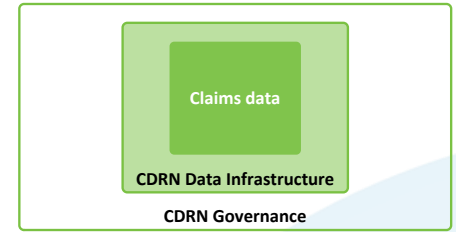
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- What are your experiences with online repositories (such as GitHub)?
- What are your thoughts on potential to use such platforms to facilitate sharing among PCORnet networks and technical teams?

(Our intended target: Code that can be freely shared and improved upon; protected IP is not part of this scope)

# ENC\_TYPE and “unreconciled encounters”

# SBAR: Background (continued)



- Both EHR data and claims data have the concept of “encounters” (interactions between patients and providers within the context of healthcare delivery)
- A patient could have encounter data in the EHR and claims, including associated diagnosis, procedure codes, etc
- Encounter data from each source may be **duplicative**
  - eg, hospitalization from 2/1/2015-2/5/2015 is in EHR; the same hospitalization is in the claims data
- Encounter data may be in **conflict**
  - eg, EHR data has a discharge date of 2/5/2015, claims data says 2/6/2016.

This slide from 2015-10-19 DRNOC-CDRN meeting:  
<https://pcornet.imeetcentral.com/p/ZgAAAAAaAfc>

## Option 2: Single datamart **without reconciliation of encounters**

- ⚙ Full duplication on every table where both claims and EHR data are available.
- ⚙ This solution would likely involve both record-level flags for source provenance, plus metadata about duplication present in datamart (potentially extend HARVEST table)
- ⚙ Pros:
  - Less burden upon data partner for reconciliation; likely the preferred option
- ⚙ Cons:
  - Some CDRNs will not have permission to comingle claims data in the foundational datamart
  - Duplication may impact analyses related to encounter (healthcare utilization) and procedure data
    - Note: Some EHR-only data sources do not reconcile encounter basis for facility vs. professional billing data streams; therefore, the issue of duplication is likely to be widely present

## Option 3. Single datamart with **complete integration of encounter basis**

- 🌐 The CDRN has transformed and reconciled the data so there is no duplication between claims and billing on any table
- 🌐 Pro: May not require additional modification of analytic tools
- 🌐 Cons:
  - Involves significant burden for the data partner
  - Given the complexity of reconciliation, it is possible for data partner to implement with poor quality
  - Some CDRNs will not have permission to comingle claims data in the foundational datamart

# Considerations for discussion

- Should we consider an “encounter” to be an event that generates a data record? [so could capture trial data collection encounters as well as clinical generation]
- PROVENANCE** tracking has not been discussed though is a subject of other data modeling and standards forums and is related to IMO/autogeneration

# Discussion

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- What are the factors that must be considered when deciding whether to create one “reconciled” inpatient encounter record vs. mapping the hospital claims to IP and the provider claims to OT, in an “unreconciled” fashion?
- What pros and cons do you see for each approach given YOUR data?

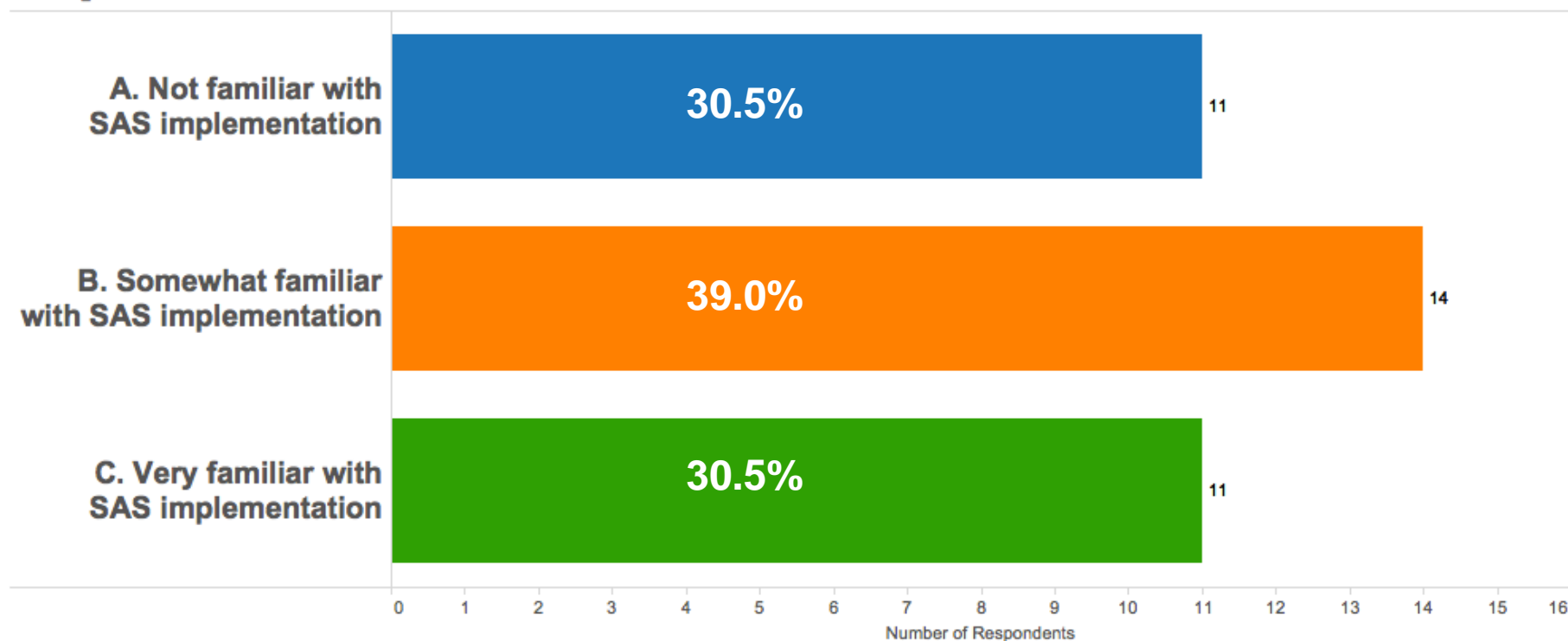
(Another in-depth discussion of this topic is intended for the December 3 forum)

# SAS data store refresh cycles



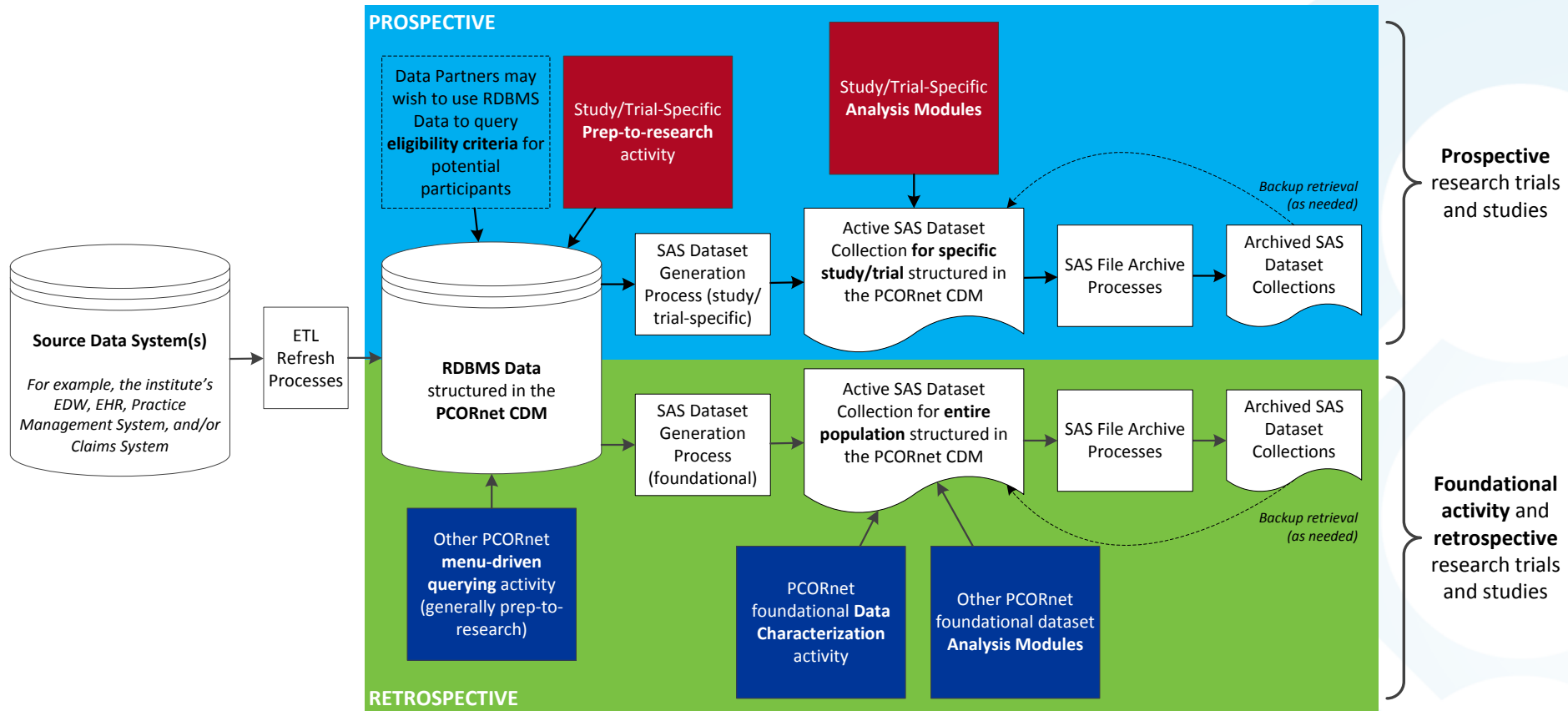
# Poll Results from CDM Implementation Forum on October 29, 2015

**How familiar are you (or your team) with SAS software implementation?**



# Recommended Approach\* for Data Partners Participating in Clinical Trials and Prospective Studies - DRAFT

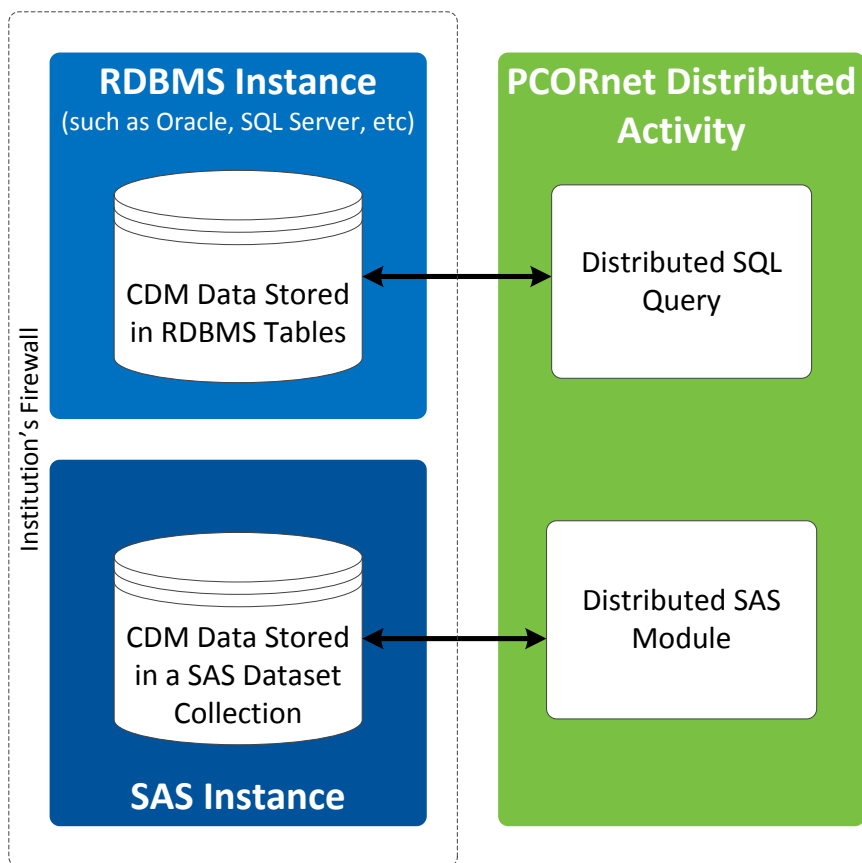
\* Please note that data partners are known to be heterogeneous in their technical configurations and processes.



## Data Stores for RDBMS-SAS

- ❁ Each site has 2 basic options:
  1. Most straightforward configuration: the site stores their data in 2 parallel instances: an RDBMS schema, and a SAS dataset collection
  2. Option for advanced technical teams: The site configures their SAS instance to run distributed SAS programs against 1 data store in their RDBMS tables
- ❁ Essential for each site to work with their institution's SAS technical team to determine the optimal SAS configuration at the site

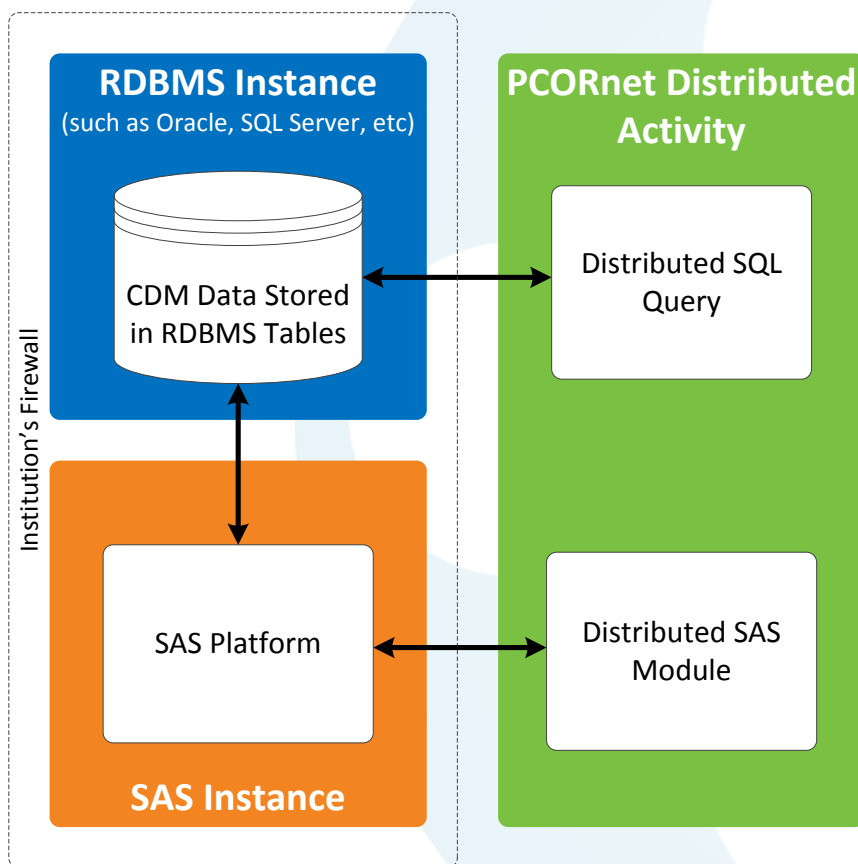
## Configuration A: Parallel Data Stores



 Both configurations need the SAS platform

This slide from 2015-10-05  
DRNOC-CDRN meeting:  
<https://pcornet.centraldesktop.com/p/ZgAAAAAAZytY>

## Configuration B: Stand-alone RDBMS Data Store



# Supplemental Slides

# How it all comes together for analysis (draft version)

