Michigan ADRC Dashboard for REDCap

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REDCap Overview

Michigan ADRC adopted REDCap as provided by University of Michigan

- Supported by Michigan Institute for Clinical & Health Research (MICHR)
- HIPAA-compliant
- Easily stores longitudinal study data
- User-friendly, web-based interface
- Captures user metadata for accountability
- Features data double entry
- Behind Michigan Medicine firewall

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Functional Limitations

- Clinical Core need for real-time enrollment monitoring and metric tracking

- REDCap "reports" are basic query results
  - Inherent limitation: Only retrieves data in tabular format

- No system to easily summarize and visualize data
  - Data Core specialist needed to generate and summarize reports

Name of Report:	Test
Description (optional): Displayed on page below report name	HTML may be used in order to add links or to add style to text. Expand

STEP 1

👤+ User Access: Choose who can edit and view this report

👁 View Access: Choose who sees this report on their left-hand project menu [?]

◉ **All users** – OR – ○ **Custom user access** (Choose specific users, roles, or data access groups who will have access)

✏ Edit Access: Choose who can edit, copy, or delete this report (requires user to have 'Add/Edit/Organize Reports' privileges)

◉ **All users** – OR – ○ **Custom user access** (Choose specific users, roles, or data access groups who will have access)

STEP 2

🏷 Fields to include in report   **+ Quick Add**   Add all fields from selected instrument: -- choose instrument -- ▼

Field 1	subject_id "Subject ID"	🔲▼	Instrument: **Registration Form** ✖
Field 2	sex_value "Sex"	🔲▼	Instrument: **Patient Demographic Entry** ✖
Field 3	race_value "Race"	🔲▼	Instrument: **Patient Demographic Entry** ✖
Field 4	handedness "Handedness"	🔲▼	Instrument: **Patient Demographic Entry** ✖
Field 5	ed_level "Education level"	🔲▼	Instrument: **Patient Demographic Entry** ✖
Field 6	-- select a field --	🔲▼	

🏷 Additional report options (optional)

☐ Combine checkbox options into single column of only the checked-off options (will be formatted as a text field when exported to stats packages)

STEP 3

☑ **Show data for all events for each record returned** [?]   ❓ How to use filters and AND/OR logic

🔻 Filters (optional)   **Operator / Value**

Filter 1	-- select a field -- ▼ [ABI]	▼	
	in All events ▼		

🔁 Switch format: Use advanced logic
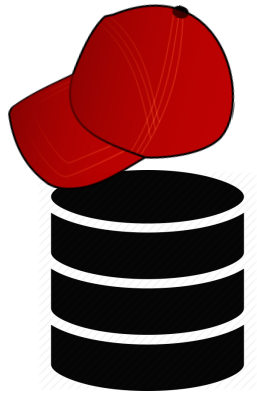
Functional Limitations (cont.)

- Limited resources
  - One programmer with other duties
  - We need low-cost, low-maintenance system in house

- Need for security
  - No PHI; aggregate data only
  - MADRC controls access (via LDAP)

A Need for Something New

- Admin Core, Clinical Core, OR Core collected criteria for quickly summarizing and visualizing longitudinal cohort data

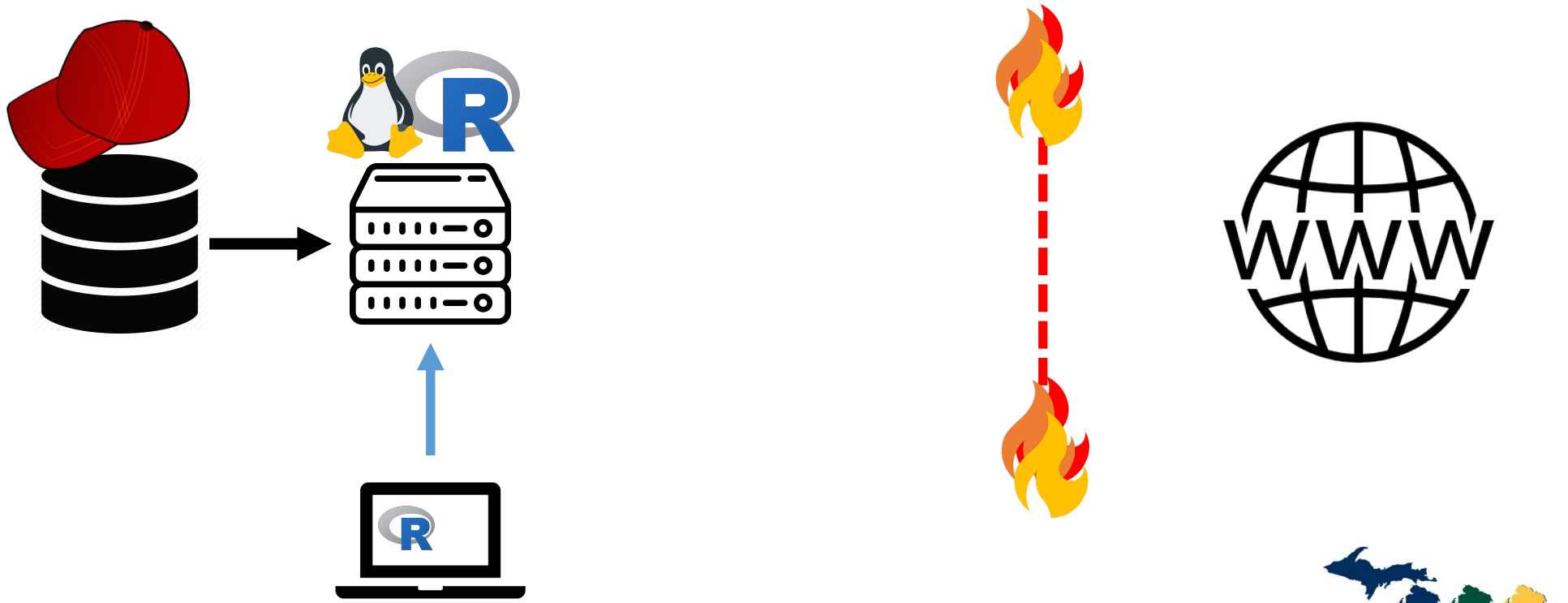- Data Core charged with task of finding reasonable solution

What's Available?
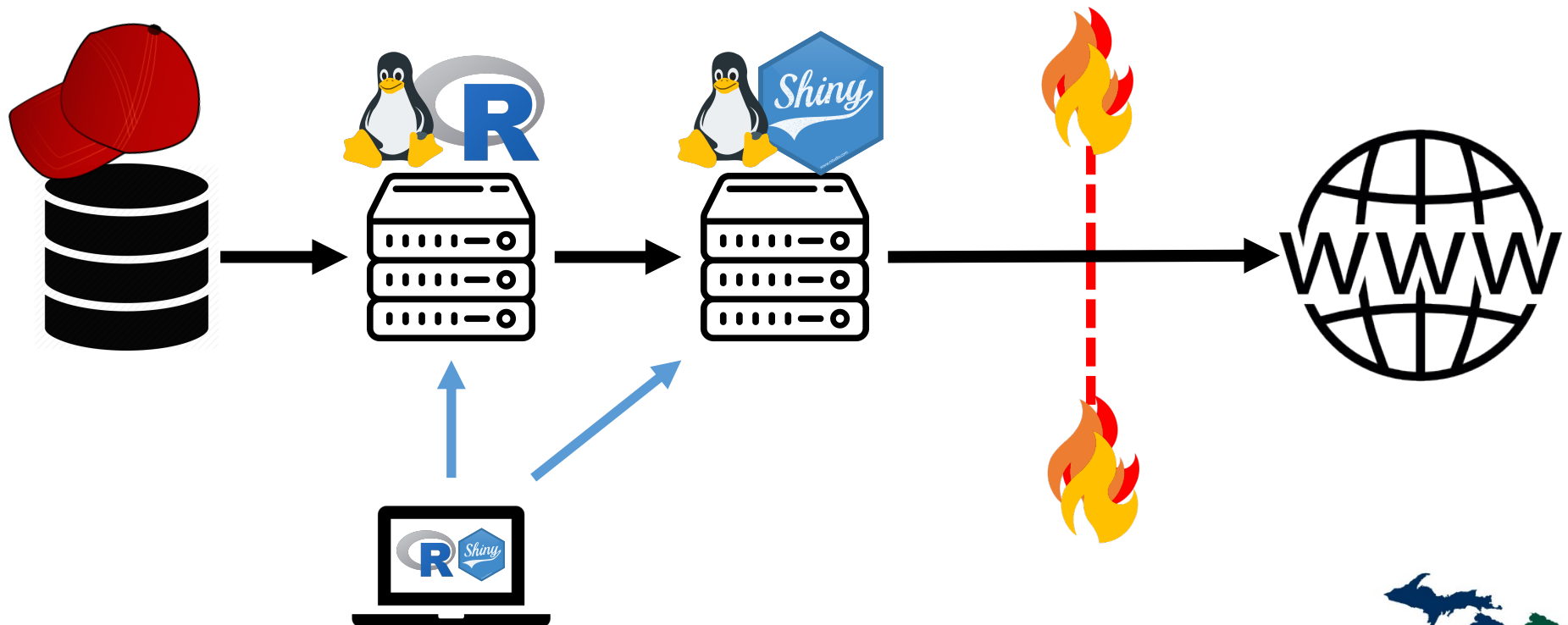
1. REDCap instance with API access

What's Available?

2. Firewalled Linux server with R

What's Available?

3. Firewalled Shiny Server Pro (RStudio)

Development Timeline

Late 2017: MADRC id'd Shiny @ Michigan Medicine

2018

Mar 2018: Input from DC, CC, AC

Apr 2018: Prototype; DC, CC, AC, OR feedback; **Build 1**

Jun 2018: CC requests productivity timelines data views; **Build 2**

Aug 2018: CC requests interactive data views of comorbid conditions by dx; **Build 3**

2019

Jan 2019: Interactive cohort char.z table; **Build 4**

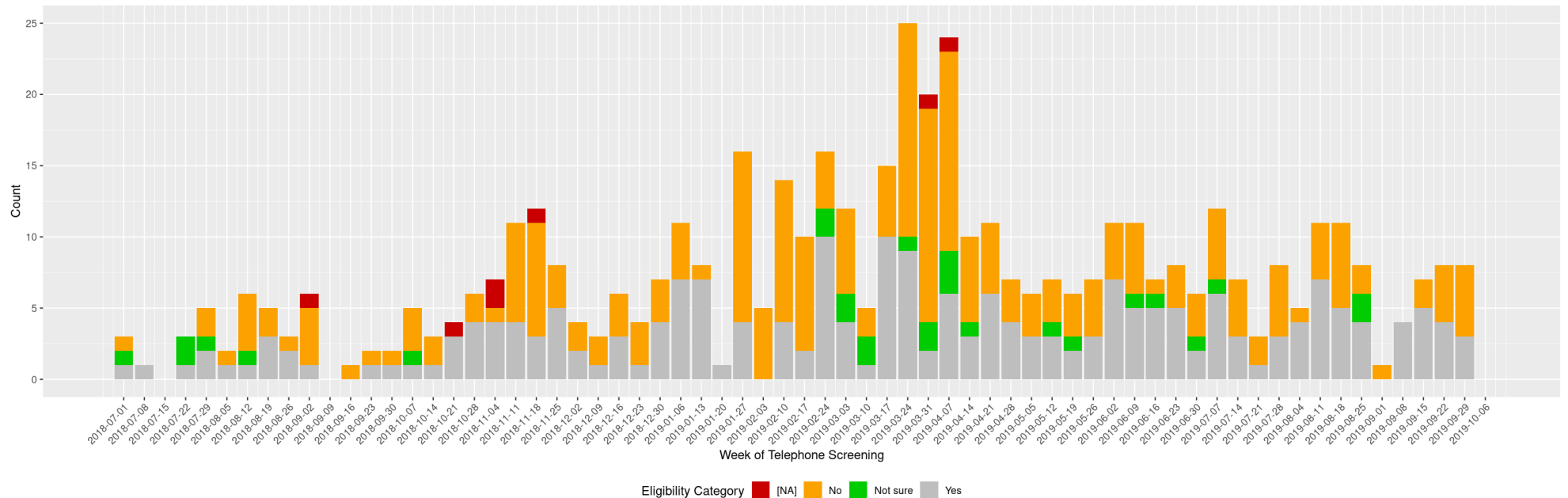**Sep 2019:** Interactive cohort char.z plots with plotly; **Build 5**

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Demo

Multisite Application: UM & OHSU

Two additional Shiny apps

- Participant Tracker
- Dashboard

What next?

- This is our in-house solution to summarize & visualize longitudinal data

We'd like to know what others are using…

- Collaborative tools ready for adoption
  - Store: **REDCap Collaborative Data Dictionary**
  - Validate for NACC: **NACCulator from 1Florida**
  - Summarize/Visualize: ???

Thank you!

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