



REDCap at RSJH, an introduction

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What is REDCap?

- REDCap is a secure, web-based application that supports data capture and management for research studies.
- Users are able to quickly and intuitively build and manage research data forms and surveys.
- REDCap access is currently provided at no cost to affiliates of the St. Joseph's Research Institute – Hamilton.



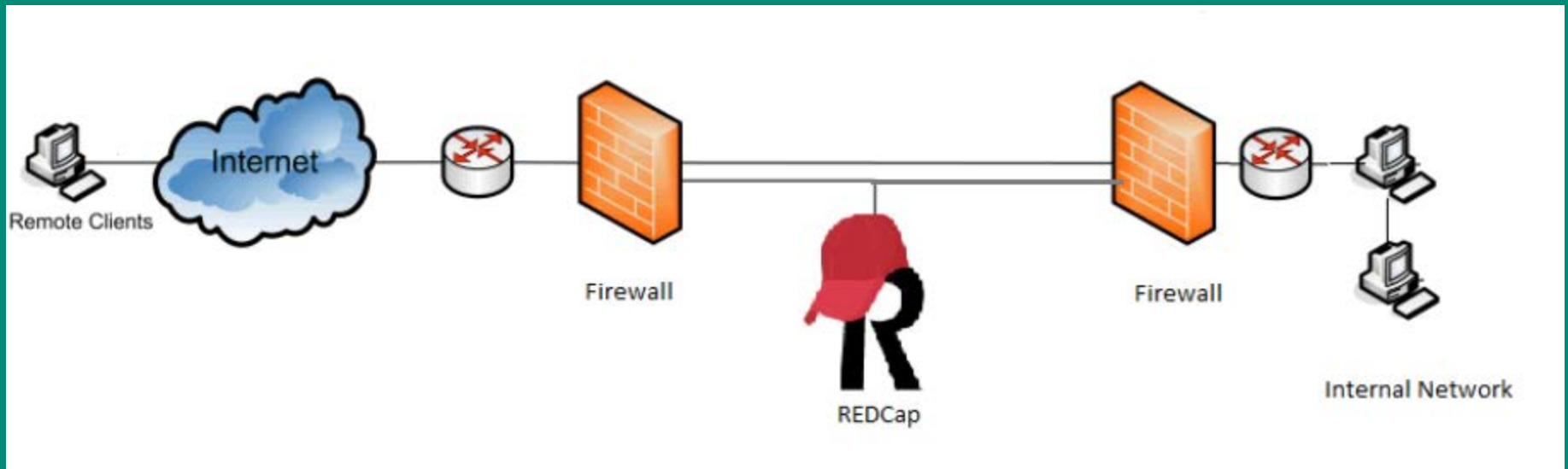
What isn't REDCap?

- REDCap is **NOT** a clinical tool. REDCap should not be used for anything other than administering and managing Research Endeavors.
- REDCap is **NOT** free, although provided at no cost to Affiliated Researchers REDCap licensing restricts certain use cases (for profit, non-local P.I.s).
- REDCap is **NOT** a replacement for a well planned, scientifically, and ethically rigorous Research Study (GIGO).



Where is REDCap?

REDCap is located within the hospital DMZ



Licensing

- REDCap is developed and maintained by Vanderbilt University and they are the owner of all rights, titles and interest in and to REDCap.
- REDCap uses a non-standard license, it is not a GPL or Apache style license.
- Licensing requires belonging to the REDCap consortium before being allowed to download/install/use the software.
- “Permitted Users” requires RSJH to warrant that access is restricted to employees (RSJH Affiliates and staff).

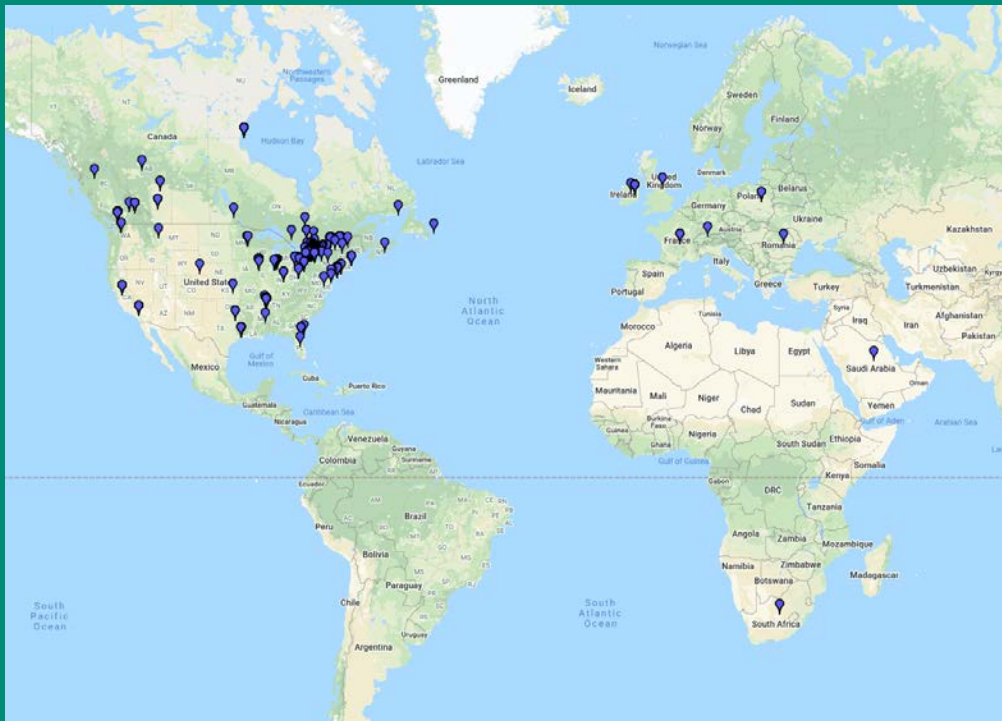


Licensing (cont.)

- Limited access may be provided to research collaborators as part of a “multi-site data collection effort”.
- Published results of a study using REDCap should cite REDCap.
- “Vanderbilt shall have the right to review, edit and approve publications created by Consortium Members which discuss the Software and its methodologies, functionality, and/or capabilities.”



REDCap at RSJH



- **Projects – 1,304**
(452 Production)
- **Users – 1,081**
- **Fields – 354,207**
- **Survey Responses**
– 744,801



Projects

A REDCap project is a collection of:

- Data Entry Forms (instruments).
- Surveys (instruments).
- User Rules or Data Access Groups.
- Data Quality Rules.
- Reports & Exports.



Projects (cont.)

A REDCap project can be:

- Singular (one set of data collection per record).
- Longitudinal (multiple repeating events).
- Infinitely repeating forms or events.
- Projects and forms can be copied and duplicated.
- Validated instruments can be downloaded on-line.
- Data collection forms (entered while logged in).
- Surveys (entered directly by participants).



Electronic CRF

- eCase Report Forms are intended to be completed by study staff logged into REDCap.
- Projects can use Double Data Entry to ensure error free data entry.
- Can require explanation on changes to existing record.
- Record Locking and e-signature are available as options.



Surveys

- Surveys can be anonymous or identified.
- REDCap can invite participants to take survey via email invite (with reminders).
- REDCap supports automatic invites triggered by logic on form/survey responses.
- Save and return later functionality.
- You can enable aggregate viewing of results.



Remote Features

- Web based, available from any Internet connection.
- REDCap Mobile App:
 - Allows for collection of data “off-line”.
 - Synchronizes with project once connected.
- MyCap (coming soon):
 - Installs on participants device.
 - Allows participants to complete surveys based on rules set by the project.



Project Setup

Before Logging into REDCap!

- Define Research Question.
- Investigate previous research in the field.
- Assemble the Research Team.
- Initiate the HiREB application (Resource signature required for RSJH REDCap).



Restrictions on Use

Still before logging into REDCap!

- Affiliation must be up to date.
- Agreements, uploaded reviewed.
- Locations, data transfer agreements in place.
- Funding can affect contracts and sites.
- Licensing, permission to use materials.



Decide on data to be collected

Still before logging into REDCap!

- Identify Identifiers! Privacy by Design.
- Less is more, do you REALLY need the identifiers?
- Consult with Biostatistics department .
- Randomization model.



Method(s) for Data Collection

Getting close to logging into REDCap

- Surveys (completed by study participants)
- eCRFs, (repeating forms, completed by research staff), Double Data Entry or DAGs

BOTH methods can be utilized in the same project!



Log into REDCap!

- Create the Project – Development Mode.
- Design data collection instruments (forms, surveys).
- Determine the appropriate level of access for study team members (collect data, modify data, export data, etc.).



FORM DEVELOPMENT

Current instrument: **Demographics** Preview Instrument

Add Field Here

Variable: study_id
Study ID

Add Field Here

Demographics Information

Add Field Here

Variable: last_name
Last Name
* must provide value this is required

Add Field Here

Variable: maiden_name [Branching logic exists]
Maiden Name
this is required

Add Field Here

Variable: first_name
First Name

Add Field Here

Variable: middle_init
Middle Initial

Add Field Here

Variable: mothers_maiden_name
Mothers Maiden Name

Add Field Here

Add New Field

You may add a new project field to this data collection instrument by completing the fields below and clicking the Save button at the bottom. When you add a new field, it will automatically be appended to the form on this page. For an overview of the different field types available, you may view the [Field Types video \(5 min\)](#).

Field Type:

Field Label

Variable Name (utilized during data export)

ONLY letters, numbers, and underscores

Validation? (optional)


Required?* No Yes
* Prompt if field is blank

Identifier? No Yes
Does the field contain identifying information (e.g. name, SSN, address)?

Custom Alignment
Align the position of the field on the page

Field Note (optional)

Small reminder text displayed underneath field

Looking for Branching Logic? Try clicking the  icon for this field after clicking the Save or Cancel button below.

Save Cancel



Field Types

Field Type	✓ ---- Select a Type of Field ----
	Text Box (Short Text)
	Notes Box (Paragraph Text)
	Calculated Field
	Multiple Choice - Drop-down List (Single Answer)
	Multiple Choice - Radio Buttons (Single Answer)
	Checkboxes (Multiple Answers)
	Yes - No
	True - False
	Signature (draw signature with mouse or finger)
	File Upload (for users to upload files)
	Slider / Visual Analog Scale
	Descriptive Text (with optional Image/File Attachment)
	Begin New Section (with optional text)
	Dynamic Query (SQL)

Validation by date/time, email, phone, integer, number, postal code, SSN etc.



User Rights and DAGS

[Project Home](#)
[Project Setup](#)
[User Rights](#)
[Data Access Groups](#)

This page may be used for granting users access to this project and for managing the user privileges of those users. You may also create roles to which you may assign users (optional). User roles are useful when you will have several users with the same privileges because they allow you to easily add many users to a role in a much faster manner than setting their user privileges individually. Roles are also a nice way to categorize users within a project. In the box below you may add/assign users or create new roles, and the table at the bottom allows you to make modifications to any existing user or role in the project, as well as view a glimpse of their user privileges.

Add new users: Give them custom user rights or assign them to a role.

— OR —

Create new roles: Add new user roles to which users may be assigned.

(e.g., Project Manager, Data Entry Person)

Role name <small>(click role name to edit role)</small>	Username or users assigned to a role <small>(click username to edit or assign to role)</small>	Expiration <small>(click expiration to edit)</small>	Data Access Group <small>(click DAG to assign user)</small>	Project Design and Setup	User Rights	Data Access Groups	Data Export Tool	Reports & Report Builder	Graphical Data View & Stats	Calendar	Data Import Tool	Data Comparison Tool	Logging	File Repository	Record Locking Customization	Lock/Unlock Records	Data Quality (create/edit rules)	Data Quality (execute rules)	API	REDCap Mobile App	Create Records	Rename Records	Delete Record
Administrator	dcampbel (doug campbell) API Token	never	—	✓	✓	✓	Full Data Set	✓	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	Export Import	✗	✓	✓	✓
Data Entry	dougtest (doug test) lgarrick (Laura Garrick)	never never	Halifax Montreal	✗	✗	✗	De-Identified	✓	✓	✓	✗	✗	✗	✓	✗	✗	✗	✗	✗	✗	✓	✗	✗



Test, Test, Test!

- Test the forms, test the surveys, test the scheduling, test the survey queue, test the data exports.
- Make sure the research team is comfortable using the forms and accessing the software.



Move to production

- Ensure HiREB approval and all agreements are in place.
- Start collecting “live” data.
- Monitor progress and identify issues, amend as necessary.

Making changes once the project is in production is not only time-consuming BUT runs the risk of corrupting already collected data!



Data Quality Rules

Data Quality

This module will allow you to execute data quality rules upon your project data to check for discrepancies in your data. Listed below are some pre-defined data rules that you may utilize and run. You may also create your own rules or edit, delete, or reorder the rules you have already created. To find discrepancies for a given rule, simply click the Execute button next to it, or click the Execute All Rules button to fire all the rules at once. It will provide you with a total number of discrepancies found for each rule and will allow you to view the details of those discrepancies by clicking the View link next to each. [Read more detailed instructions.](#)

Execute rules: All All except A&B Clear

Apply to: -- All records --

Rule #	Rule Name	Rule Logic (Show discrepancy only if...)	Real-time execution ?	Total Discrepancies	Edmont on	Halifax	Montreal	Toronto	Vancouver	Winnipeg	Delete rule?
A	Missing values*	-		Execute							
B	Missing values* (required fields only)	-		Execute							
C	Field validation errors (incorrect data type)	-		Execute							
D	Field validation errors (out of range)	-		Execute							
E	Outliers for numerical fields (numbers, integers, sliders, calc fields)	-		Execute							
F	Hidden fields that contain values**	-		Execute							
G	Multiple choice fields with invalid values	-		Execute							
H	Incorrect values for calculated fields	-		Execute							
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>								
	Add Enter descriptive name for new rule (e.g., Participants below age 18)	Enter logic for new rule (e.g., [age] < 18) How do I use special functions?	Execute in real time on data entry forms ?								



Reporting

The screenshot shows the REDCap reporting interface with the following sections:

- Name of Report:** A text input field.
- STEP 1: User Access:** A section for choosing who sees the report, with options for "All users" or "Custom user access".
- STEP 2: Fields to include in report:** A table with columns for "Field", "Instrument", and "Operator / Value". It includes a "Quick Add" button and a list of selected fields.
- STEP 3: Filters (optional):** A section for adding filters, including a "Filter" field, an "Operator / Value" dropdown, and a list of "Additional Filters" such as "Filter by DAGs".
- STEP 4: Order the Results (optional):** A section for ordering results, with columns for "First by", "Then by", and "Order".

Buttons for "Save Report" and "Cancel" are located at the bottom of the form.

- Reports can generate a quick view of data collected to date.
- Can add filters to zero in on relevant data points.
- Can filter on DAGS .
- Rudimentary Charts and Stats view.
- Detailed analysis requires export to third party program(s).



Study Close-out

- Turn off access to surveys.
- Freeze Database.
- Export Data (various formats available).
- Archive the project.
- Crunch the data.
- Disseminate your results.



Export Data to many formats



Resources

- Built in Help, FAQ and Training Videos.
- Best Practices Policy (<https://research.stjoes.ca>)
- Contact REDCap administrator link.



Questions / Demo

